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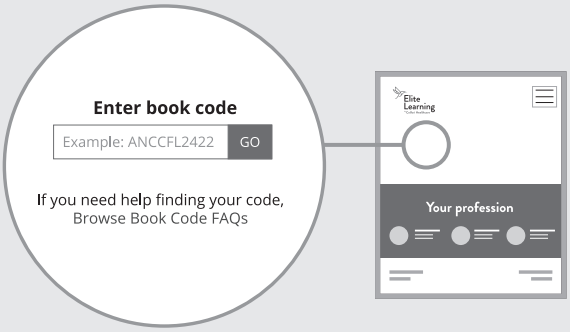

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Ethical and Legal Issues in Nursing Practice

7 Contact Hours

Release Date: September 2, 2022

Expiration Date: September 2, 2025

Faculty

Margaret-Ann Carno, PhD, MBA, MJ, PNP-AC/PC, ATSF, FAAN, is an educator, practitioner, and researcher. Her passions are healthcare law, regulations, and research regulations. She obtained a master's in jurisprudence from Loyola University Chicago, School of Law, with a concentration in Health Law. She regularly teaches on these subjects.

Margaret-Ann Carno has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Peer reviewer:
James Stowe, JD, RN, is both a nurse and attorney, obtaining his Nursing degree from Auburn University and Juris Doctor from Samford University, Cumberland School of Law. He practiced in the legal field, concentrating in part on medical claims, before returning to hospital administration. He is currently the director of a large emergency department.

James Stowe has disclosed that he has no significant financial or other conflicts of interest pertaining to this course.

Course overview

Legal issues in nursing are based on legislation, practice standards, and licensure. Ethical issues, on the other hand, are often based on subjective values of "right" and "wrong." The purpose of this course is to help nurses deal with many of the ethical issues they face in their professional practice, as well as legal considerations that may impact ethical issues of patient care.

***Author's Note**: This education program is not a substitute for, nor is it intended to be, legal/ethical counseling or legal/ethical advice. For specific legal/ethical advice pertaining to you and your practice, consult appropriate legal authorities or ethical experts.*

Learning objectives

After completing this course, the learner will be able to:

- Describe how nursing scope of practice and standards of professional nursing practice govern nursing.
- Explain how state nurse practice acts define and describe nursing practice.
- Describe how the act of delegation is encompassed in the nurse practice act.
- Correlate nursing professional boundaries with appropriate nursing practice.
- Discuss legal and ethical implications of nursing practice.
- Describe professional guidelines for use of social media.
- Discuss how a just culture impacts nursing.

How to receive credit

- Read the entire course online or in print which requires a 7-hour commitment of time.
- Complete the self-assessment quiz questions which are at the end of the course or integrated throughout the course. These questions are NOT GRADED. The correct answer is shown after you answer the question. If the incorrect answer is selected, the rationale for the correct answer is provided. These questions help to affirm what you have learned from the course.
- Depending on your state requirements you will be asked to complete either:
  - An affirmation that you have completed the educational activity.
  - A mandatory test (a passing score of 70 percent is required). Test questions link content to learning objectives as a method to enhance individualized learning and material retention.
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- Complete the MANDATORY Course Evaluation.
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Activity director

June D. Thompson, DrPH, MSN, RN, FAEN, Lead Nurse Planner

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Course verification

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INTRODUCTION

Nursing practice is guided by three major pillars: ethical concepts, professional standards, and laws/regulation to ensure safe and professional nursing practice. A nurse must know and understand all three of these guiding pillars. A nurse will be held to these guiding pillars and lack of knowledge or understanding will not be an excuse if something happens to a patient. This course will first describe ethical concepts that influence nursing practice, then examine professional standards, most of which are based on specific ethical concepts. Finally, laws and regulations will be discussed. By the end of the course the nurse will have a better understanding of the three pillars that guide nursing practice.

BASIC ETHICAL CONCEPTS FOR NURSES

Ethics can be defined as the philosophic area of study of values, actions, and choices to determine what is right and wrong. It is a system of value actions and involves reasoning, analysis, questions, and judgments to help differentiate between right and wrong. Beliefs about what constitutes ethical behavior vary widely among healthcare professionals (Wacko Guido, 2020). In nursing there are ethical concepts to understand. While there are several concepts and theories, the main concepts for nurses to understand are: 1) autonomy, 2) beneficence, 3) nonmaleficence, 4) informed consent (which will be discussed later in the course), 5) veracity, and 6) justice.

Autonomy

The first ethical concept for nurses to know is autonomy. This is in relation to the patient's decision making over their own body. Although this seems easy enough, underlying autonomy are the additional components of agency, self-determination, independence, and liberty (Wacko Guido, 2020). Agency can be thought of as the ability to take responsibility for one's actions, which includes the ability to critique one's actions. This also ties into self-determination, meaning that a person must be able to access the information, understand the information, and then act upon the information. Agency and self-determination can require a high cognitive level of function, which may or may not be present in an ill patient. When a patient is ill, the ability to exert independence may be compromised as the usual supports and familiar environment are not available. Independence is the ability to follow one's own values. Finally, liberty is the ability to make choices without coercion or manipulation from others. When nurses are caring for patients, liberty can be impacted. For example, the patient may not want to disagree with the providers or family may be impressing their wishes on the patient. Given all these separate components of autonomy, it is up to the nurse to ensure to the best of their ability that the patient is truly autonomous (Wacko Guido, 2020).

Beneficence

The ethical concept of beneficence is not just to prevent or to do no harm (which will be discussed in nonmaleficence), but to actually act in a way that provides benefit to the patient (Varkey, 2021). Beneficence can be considered the basis of healthcare (Wacko Guido, 2020). The act of "doing good" can be many different acts. This includes providing care (even if painful and extensive, if the expected outcome will improve quality and potentially quantity of a patient's life) and not providing "extraordinary care" (such as when a patient wishes to die without advanced life support' Wacko Guido, 2020). Defining what is "good" is the main stumbling block with this concept (Wacko Guido, 2020). What one patient or nurse would define as beneficence, another patient or nurse may not.

Nonmaleficence

The term nonmaleficence means to do no harm, which includes not causing pain or suffering, not depriving others of life, and not incapacitating (Varkey, 2021). The meaning also includes not imposing harm to a patient. With most care a detriment (risk)/ benefit analysis is conducted, even if it is only in the mind of the nurse/ healthcare provider (Wacko Guido, 2020). An example of this would be wound care. Wound care can be painful (immediate harm/risk), however, by caring for the wound, the patient will have a better outcome (benefit). Thus, the immediate "harm" (pain) is outweighed by the long-term outcome of improved healing of the wound.

Veracity
Veracity means to tell the truth (Wacko Guido, 2020). A nurse is obligated to provide truthful answers to patients and families' questions in an understandable manner. Also, a nurse is obligated to inform the patients and families what is not known at this time related to the care received. Veracity can be violated in a number of ways, two of which are telling of falsehoods and not providing all the information concerning alternatives to treatment. The third way is not usually thought of, but it is the use of medical terms and jargon that the patient or family does not understand. All information provided to patients and caregivers needs to be in a format that is understood. Providing information using more patient-centered language can assist with meeting this ethical principle. Also having the patient and family describe in their own words the information provided can help clarify any misconceptions and misunderstandings that may be present (Wacko Guido, 2020).

Fidelity
Fidelity is the principle of keeping any promises or commitments made to the patient and family (Wacker, 2019). This is one of the core principles of the nurse-patient relationship. Nurses should not make promises they cannot reasonably keep. An example if this would be telling a patient they will be pain free after a procedure, however complications arise that supersede this promise, such as hemodynamic instability or finding the medication regime which will keep the patient pain free when the initial regime is not keeping the patient pain free (Wacko Guido, 2020).

Justice
Treating all patients equally and fairly is the definition of justice (Varkey, 2021). This also includes treating all patients appropriately. All patients should be offered equal access to treatment. Justice recognizes the basic dignity of all patients the nurse provides care for (Wacko Guido, 2020).

Self-Assessment Quiz Question #1

A patient asks a nurse to explain the side effects of a medication. The nurse accurately does this. Which ethical principle is the nurse working under?
a. Veracity.
b. Justice.
c. Autonomy.
d. Nonmaleficence.

Case study 1

Susan is a new RN on an oncology floor. She is caring for an 88-year-old woman who has undergone several tests for night sweats and weight loss. The patient is very alert and mentally intact. The test results have shown that the woman has Acute Myeloid Leukemia (AML), which in adults has a very poor prognosis. Her two adult children do not want their mom to know the diagnosis and want every possible treatment to be given to their mom. They ask Susan not to answer any of their mother's questions about the diagnosis or treatment that she is going to receive. Susan is distressed by this request.

Question:
1. If Susan honors the children's request, which, if any, ethical principles are Susan violating?

Discussion:
1. Susan would be violating 1) autonomy, 2) beneficence, 3) nonmaleficence, and 4) veracity. The patient has the right to determine what will happen to their body (autonomy). The woman has the right to choose if she wants treatment or not, and if she wants treatment, what type. Susan is obligated to "do good for the patient." How could she being doing "good" for the patient (beneficence) if the patient does not know why the treatment is being given. Also, Susan is obligated to do no harm (nonmaleficence). Given the side effects of treatment, Susan could be doing harm that the patient does not want. Finally, Susan will most likely be lying to the patient and violating truth-telling or veracity. Every patient has a right to know what is going on with their medical care and determine what type of medical care to receive.

NURSING CODE OF ETHICS

The American Nurses Association (ANA) has taken these basic ethical concepts and incorporated them in the Code of Ethics for Nurses. The following summary highlights and paraphrases critical points of the ANA's Code of Ethics for Nurses (American Nurses Association, 2015). It is meant to serve as a brief introduction. For detailed information about the code, access the ANA website at https://www.nursingworld.org/coe-view-only.

The code is divided into nine provisions (American Nurses Association, 2015).

1. **The nurse practices with compassion and respect for the inherent dignity, worth, and unique attributes of every person.** Nurses must practice with compassion and respect for all patients regardless of social or economic status, personal attributes, or the nature of health problems. Inherent in this provision is an emphasis on respect for the worth, dignity, and human rights of all persons. A person's worth is not influenced by disease, disability, functional status, or nearness to death. All patients have the moral and legal right to determine their course of care. This is also referred to as self-determination and forms the basis for informed consent in healthcare.
2. **The nurse's primary commitment is to the patient, whether that is defined as an individual, family, group, community, or population.** The primary commitment is to promote the best interests of the patient. Nurses must examine their own beliefs and values to identify any conflicts between their beliefs and values and those of the patient's. Nurses must work to resolve such conflicts in the best interests of the patient.
3. **Nurses must promote, advocate, and work to protect the health, safety, and rights of the patient.** This means that nurses must guard the privacy and confidentiality of the patient as well as protect patients participating in healthcare research. Part of the protection aspect of this provision includes basic education and continuing education standards. For example, nurse educators must ensure that basic competencies are achieved. Nursing professional development specialists, in conjunction with nurses, must work to ensure that continuing education activities are designed and implemented to facilitate ongoing competency of licensed nurses. Nurses must also actively participate in the development of policies and review mechanisms designed to promote patient safety. Finally, nurses must be alert to instances of inappropriate or questionable practice and report such behavior to appropriate higher authorities within the employing institution or agency or to an appropriate external authority.
4. **Nurses are responsible for their individual nursing practices, including the appropriate delegation of tasks, to ensure optimum patient care.** This means that RNs are responsible not only for their own actions but also retain accountability for tasks that are delegated. Nurses should be aware of and adhere to the six "rights" of delegation (this is discussed later in this course).
5. **Nurses owe the same duties to themselves as to others.** They have a responsibility to preserve their integrity and safety, to maintain competence, and to continue their personal and professional growth. Competence includes

having knowledge relevant to the current scope and standards of nursing practice, changing issues, concerns, controversies, and ethics. It also requires a commitment to lifelong learning.

6. **Nurses must recognize that the healthcare environment and conditions of employment are essential to optimum patient care and maximal employee performance.** Therefore, nurses must participate in the establishment, maintenance, and improvement of healthcare environments and conditions of employment.
7. **Nurses are obligated to advance the profession of nursing.** They should do so by developing, maintaining, and implementing professional standards in clinical, administrative, and educational practice.
8. **Nurses must collaborate with other healthcare professionals and the public to promote community, national, and international efforts to meet health needs.** As part of this collaborative responsibility, nurses must recognize that this country and the world are filled with cultural diversity and avoid impinging their personal cultural values upon others.
9. **The nursing profession (as represented by professional associations and their members) is responsible for the communication and affirmation of the values of the profession to its members.** This is accomplished by articulating the values of nursing, maintaining the profession's integrity and that of its practice, and shaping social policy.

These ethical provisions must be incorporated into the legal realm of nursing practice. It is important that nurses have knowledge of basic legal principles and how to incorporate those principles into nursing practice.

NURSING SCOPE OF PRACTICE AND STANDARDS OF PROFESSIONAL NURSING PRACTICE

The International Council of Nurses (ICN;2022) defines nursing as encompassing "autonomous and collaborative care of individuals of all ages, families, groups, and communities, sick or well, and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled, and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy, in patient and health systems management, and education are also key nursing roles."

The American Nurses Association defines nursing as:

> *"Nursing integrates the art and science of caring and focuses on the protection, promotion, and optimization of health and human functioning; prevention of illness and injury; facilitation of healing; and alleviation of suffering through compassionate presence. Nursing is the diagnosis and treatment of human responses and advocacy in the care of individuals, families, groups, communities, and populations in recognition of the connection of all humanity"* (ANA, p. 9, 2021).

In the United States, there are three levels of nursing practice:

1. Registered nurse (RN).
2. Advanced practice registered nurse (APRN).
3. Licensed practical nurse (LPN).

The ANA describes RNs as forming the backbone of healthcare provision in the United States (American Nurses Association, 2019). The association identifies the following key responsibilities of the RN (American Nurses Association):

- Performs physical exams and obtains health histories before making critical decisions.
- Provides health promotion, counseling, and education.
- Administers medications, provides wound care, and carries out a multitude of personalized interventions.
- Coordinates care in collaboration with a large array of healthcare professionals.

The licensed practical nurse, known as licensed vocational nurse (LVN) in California and Texas, complements the healthcare team by providing basic and routine care consistent with their education and under the supervision of an RN, APRN, or MD (American Nurses Association, 2019).

Key responsibilities of the licensed practical nurse include the following (American Nurses Association, 2019):

- Checks vital signs and looks for signs that health is deteriorating or improving.
- Performs basic nursing functions such as changing bandages and wound dressings.
- Ensures patients are comfortable, well fed, and hydrated.
- Administers medications in some settings.

Self-Assessment Quiz Question #2

Which of the following can be delegated to an LPN?

a. Assessment and physical exam.
b. Initial education on medications.
c. Changing a bandage.
d. Coordinating care.

SCOPE OF PRACTICE

What is scope of practice?

The ANA describes nursing scope of practice as an explanation of the who, what, where, when, why, and how of nursing practice. Furthermore, scope of practice delineates what the law allows based on specific education, training, experience, and licensure (American Nurses Association, 2021).

Nursing consideration: Nurses must know not only their own scope of practice but also the scope of practice of others, such as LPNs and nursing assistants, to whom they delegate tasks. RNs who delegate tasks are still accountable for that delegation in terms of its safety and appropriateness.

Determining the scope of practice

How can nurses determine if an action is within their scope of practice? First, they must review appropriate standards, laws, and rules of nursing practice. They must know the content of their state's nurse practice act and what their licenses allow them to do (American Nurses Association, 2021a; Wacker Guido, 2020).

Step 1

Clarify what skills, education, and training are needed to perform an action. Nurses should ask themselves the following questions:

- Is this action allowable by law according to legal standards and the nurse practice act in my state?
- If so, does the employing healthcare facility have policies and procedures that provide guidance for its performance?
- Do I have the necessary skills, experience, and training to perform this action?
- Am I competent to perform this action? If in doubt, nurses must seek help from a supervisor or peer who is competent in this action. Nurses must remember that once a patient assignment is accepted, they are responsible for fulfilling it safely and competently.

Step 2

Realize that what may be common practice (e.g., "We've always done it this way") may not necessarily be legal or in the best interests of the patient. For example: suppose a highly experienced LPN has been allowed to perform physical assessments independent of, and without collaboration with, an RN. This has been going on for years. However, in some

states, this is beyond the legal scope of practice for LPNs. An RN who continues to delegate this action to LPNs is accountable for this illegal practice. Delegating tasks outside the scope of practice can be potential grounds for disciplinary action against both the LPN who performed the assessment and the RN who inappropriately delegated the task. It may also be the basis for a malpractice lawsuit if a patient is harmed as a result of such an action.

Step 3

Determine if the action taken is one that a reasonably prudent nurse with similar education, training, and experience would do; if a valid order for the task has been written by a physician, physician assistant, or APRN; and if the nurse in question has demonstrated competency in the skill and behavior required and has documentation of such competency. For example: Suppose a nurse is asked to counsel a patient regarding pregnancy prevention. This patient has received a diagnosis of schizophrenia and is not currently controlled with antipsychotic medication. The nurse has not worked with patients with schizophrenia and is unsure how to assess comprehension or how to adequately communicate with this patient. Nurse colleagues say, "Just do the best you can."

What should the nurse do?

In this situation, the nurse must seek help from a supervisor or another appropriate source of assistance such as a mental health specialist. Lack of competency in working with mental health patients is as much a concern as if they were asked to perform a specific motor skill procedure with which they are unfamiliar.

Nursing consideration: All nurses must be sure to act within their scope of practice and within their experience and training. If nurses are asked to do something that is within the legal scope of their nursing practice, but their training and experience have not prepared them to perform this action safely and competently, they should not do it (Wacko Guido, 2020). They should seek help from a nurse who can safely and competently perform the action. They also need to seek training opportunities so that they can achieve competency in performing new procedures.

STANDARDS OF PROFESSIONAL NURSING PRACTICE

The standards of professional nursing practice focus on facilitating the delivery of safe and effective nursing care. Most, if not all, state boards of nursing describe standards and scope of practice related to their nurse practice acts.

But what exactly are standards of professional nursing practice? Standards of professional nursing practice consist of the critical thinking model referred to as the nursing process and the ANA's Standards of Professional Performance. The standards for professional nursing practice describe those duties and responsibilities that all RNs must be able to fulfill safely and competently regardless of the setting of their practice or their specialty.

Nursing consideration: Professional nursing associations such as the American Association of Critical Care Nurses have developed scope and standards of practice pertaining to their respective specialties. Such standards generally build upon the ANA's Nursing Scope and Standards of Practice. Nurses must be aware of such scope and standards and practice within their respective specialties.

ANA STANDARDS OF PROFESSIONAL NURSING PRACTICE

The Standards of Professional Nursing Practice are "authoritative statements of duties that all registered nurses, regardless of role, population, or specialty are expected to perform competently." These standards are subject to formal, periodic review and revision. Competencies, which may be evidence of standard compliance, accompany each standard (American Nurses Association, 2021a).

The following is a summary of the highlights of the ANA Standards of Practice (American Nurses Association, 2021). Note that this is only a brief summary. Nurses should access the ANA website for further information on obtaining a copy of Nursing: Scope and Standards of Practice (4th ed.) at http://www.nursingworld.org/

Standard 1: Assessment

"The registered nurse collects pertinent data and information relative to the healthcare consumer's health or the situation." Competencies related to this standard focus on methods of data collection, including the incorporation of physical, psychosocial, environmental, emotional, cognitive, sexual, cultural, age-related, spiritual, and economic factors and engages interprofessional team members in data collection collaboration. The nurse also assesses the impact of family dynamics on the healthcare consumer's health and wellness and identifies enhancements and barriers to effective communication based on personal, cognitive, physiological, psychosocial, literacy, financial, and cultural considerations. The nurse engages the healthcare consumer, family, significant others, and interprofessional team members in holistic, culturally sensitive data collection and integrates knowledge from current local, regional, national, and global health initiatives and environmental factors into the assessment process (ANA, 2021a, Kindle Location 1773-1780).

Standard 2: Diagnosis

"The registered nurse analyzes assessment data to determine actual or potential diagnoses, problems, and issues." The diagnosis standard competencies focus on using assessment data to identify and prioritize nursing diagnoses (not medical diagnoses). The nurse will identify actual or potential risks to the healthcare consumer's health and safety or barriers to health, which may include but are not limited to, interpersonal, systematic, cultural, socioeconomic, or environmental circumstances. The nurse also uses assessment data, standardized classification systems, technology, and clinical decision support tools to articulate actual or potential diagnoses, problems, and issues. They identify the healthcare consumer's strengths and abilities, including but not limited to support systems, health literacy, and engagement in self-care. The nurse then verifies the diagnoses, problems, and issues with the healthcare consumer and interprofessional colleagues and prioritizes diagnoses, problems, and issues based on mutually established goals to meet the needs of the healthcare consumer across the health–illness continuum and the care continuum. Nurses document diagnoses, problems, strengths, and issues in a manner that facilitates the development of the expected outcomes and collaborative plan (ANA, 2021a., Kindle Location 1831-1833).

Standard 3: Outcomes Identification

"The registered nurse identifies expected outcomes for a plan individualized to the healthcare consumer or the situation." Competencies concentrate on engaging the entire healthcare team, including patients and families, in the identification of realistic outcomes. The nurse engages with the healthcare consumer, interprofessional team, and others to identify

expected outcomes and collaborates with the healthcare consumer to define expected outcomes, integrating the healthcare consumer's culture, values, and ethical considerations. From this information, the nurse formulates expected outcomes derived from assessments and diagnoses. They then integrate evidence and best practices to identify expected outcomes and develop expected outcomes that facilitate coordination of care. The nurse next identifies a time frame for the attainment of expected outcomes, documents expected outcomes as measurable goals, and identifies the actual outcomes in relation to expected outcomes, safety, and quality standards. If needed, the nurse then modifies expected outcomes based on the evaluation of the status of the healthcare consumer and situation (ANA, 2021a, Kindle Location 1864-1872).

Standard 4: Planning

"The registered nurse develops a plan that prescribes strategies to attain expected, measurable outcomes." Competencies involve developing an individualized, holistic, evidence-based plan of care in partnership with the patient, family, and interprofessional team. The RN develops an individualized, holistic, evidence-based plan in partnership with the healthcare consumer, family, significant others, and interprofessional team And designs innovative nursing practices that can be incorporated into the plan. The RN prioritizes elements of the plan based on the assessment of the healthcare consumer's level of safety needs to include risks, benefits, and alternatives. The RN establishes the plan priorities with the healthcare consumer, family, significant others, and interprofessional team and advocates for compassionate, responsible, and appropriate use of interventions to minimize unwarranted or unwanted treatment, and healthcare consumer suffering, or both. The RN includes strategies designed to address each of the identified diagnoses, health challenges, issues, or opportunities. These strategies may include but are not limited to maintaining health and wellness; promotion of comfort; promotion of wholeness, growth, and development; promotion and restoration of health and wellness; prevention of illness, injury, disease, complications, and trauma; facilitation of healing; alleviation of suffering; supportive care; and mitigation of environmental or occupational risks. The RN incorporates an implementation pathway that describes an overall timeline, steps, and milestones. The RN provides for the coordination and continuity of care and identifies cost and economic implications of the plan. The RN develops a plan that reflects compliance with current statutes, rules and regulations, and standards and modifies the plan according to the ongoing assessment of the healthcare consumer's response and other outcome indicators. The RN documents the plan using standardized language or recognized terminology (ANA, 2021a, Kindle location 1898-1913).

Standard 5: Implementation

"The registered nurse implements the identified plan." Competencies include use of evidence-based practice and partners with the healthcare consumer to implement the plan. Demonstrates caring behaviors to develop therapeutic relationships. Provides care that focuses on the healthcare consumer. Advocates for the needs of diverse populations across the life span. Uses critical thinking and technology solutions to implement the nursing process to collect, measure, record, retrieve, trend, and analyze data and information to enhance healthcare consumer outcomes and nursing practice. Partners with the healthcare consumer to implement the plan in a safe, effective, efficient, timely, and equitable manner. Engages interprofessional team partners in implementation of the plan through collaboration and communication across the continuum of care. Uses evidence-based interventions and strategies to achieve mutually identified goals and outcomes specific to the problem or needs. Delegates according to the health, safety, and welfare of the healthcare consumer. Delegates after considering the circumstance, person, task, direction or communication, supervision, and evaluation, as well as the state nurse practice act (ANA, 2021a; Kindle location 1945-1954).

Standard 5A: Coordination of Care

"The registered nurse coordinates care delivery." Competencies focus on coordinating care with the interprofessional team. "Collaborates with the healthcare consumer and the interprofessional team to help manage healthcare based on mutually agreed-upon outcomes. Organizes the components of the plan with input from the healthcare consumer and other stakeholders. Manages the healthcare consumer's care to reach mutually agreed-upon outcomes. Engages healthcare consumers in self-care to achieve preferred goals for quality of life" (ANA, 2021a, Kindle Location 1993-1997)

Standard 5B: Health Teaching and Health Promotion

"The registered nurse employs strategies to promote health and a safe environment." RN competencies focus on effective patient/family education. Provides opportunities for the healthcare consumer to identify needed health promotion, disease prevention, and self-management topics such as: - Healthy lifestyles - Self-care and risk management - Coping, adaptability, and resiliency. Uses health promotion and health teaching methods in collaboration with the healthcare consumer's values, beliefs, health practices, developmental level, learning needs, readiness and ability to learn, language preference, spirituality, culture, and socioeconomic status. Uses feedback from the healthcare consumer and other assessments to determine the effectiveness of the employed strategies. Uses technologies to communicate health promotion and disease prevention information to the healthcare consumer (ANA, 2021a, Kindle Locations 2031-2038).

Standard 6: Evaluation

"The registered nurse evaluates progress toward attainment of goals and outcomes." Competencies concentrate on conducting ongoing, criterion-based evaluation of patient goals and outcomes. "Uses applicable standards and defined criteria (e.g., Quality and Safety Education for Nurses [QSEN], Quadruple Aim, Institute for Healthcare Improvement [IHI]). Conducts a systematic, ongoing, and criterion-based evaluation of the goals and outcomes in relation to the structure, processes, and timeline prescribed in the plan. Collaborates with the healthcare consumer, stakeholders, interprofessional team, and others involved in the care or situation in the evaluation process. Determines, in partnership with the healthcare consumer and other stakeholders, the person-centeredness, effectiveness, efficiency, safety, timeliness, and equitability of the strategies in relation to the responses to the plan and attainment of outcomes. Uses ongoing assessment data, other data and information resources and benchmarks, research, and meta-analysis for the analytic activities to revise the diagnoses, outcomes, plan, implementation, and evaluation strategies as needed. Documents the results of the evaluation. Reports evaluation data in a timely fashion. Shares evaluation data and conclusions with the healthcare consumer and other stakeholders to promote clarity and transparency in accordance with state, federal, organizational, and professional requirements" (ANA, 2021a, Kindle Location 2066-2077).

Standard 7: Ethics

"The registered nurse practices ethically." Competencies focus on the integration of the Code of Ethics for Nurses and Interpretive Statements (ANA, 2015). "Demonstrates that every person is worthy of nursing care through the provision of respectful, person-centered, compassionate care, regardless of personal history or characteristics. (Beneficence) Advocates for healthcare consumer perspectives, preferences, and rights to informed decision-making and self-determination. (Respect for autonomy) Demonstrates a primary commitment to the recipients of nursing and healthcare services in all settings and situations. (Fidelity) Maintains therapeutic relationships and professional boundaries. Acts to prevent breaches to privacy and confidentiality. Safeguards sensitive information within ethical, legal, and regulatory parameters. (Non-maleficence). Identifies ethics resources within the practice setting to assist and collaborate in addressing ethical issues. Integrates principles of social justice in all aspects of nursing practice. (Justice)" (ANA, 2021a, Kindle Location 2105-2113).

Standard 8: Advocacy

The registered nurse: Champions the voice of the healthcare consumer. Recommends appropriate levels of care, timely and appropriate transitions, and allocation of resources to optimize outcomes. Promotes safe care of healthcare consumers, safe work environments, and sufficient resources. Participates in healthcare initiatives on behalf of the healthcare consumer and the systems(s) where nursing happens. Demonstrates a willingness to address persistent, pervasive systemic issues. Empowers all members of the healthcare team to include the healthcare consumer in care decisions, including limitation of treatment and end of life. Embraces diversity, equity, inclusivity, health promotion, and healthcare for individuals of diverse geographic, cultural, ethnic, racial, gender, and spiritual backgrounds across the life span. Develops policies that improve care delivery and access for underserved and vulnerable populations (ANA, 2021a, Kindle Location 2149-2158).

Standard 9: Respectful and Equitable Practice

"The registered nurse practices with cultural humility and inclusiveness." Competencies include providing care which is respectful, equitable and empathetic. "Demonstrates respect, equity, and empathy in actions and interactions with all healthcare consumers. Respects consumer decisions without bias. Participates in life-long learning to understand cultural preferences, worldviews, choices, and decision-making processes of diverse consumers. Reflects upon personal and cultural values, beliefs, biases, and heritage. Applies knowledge of differences in health beliefs, practices, and communication patterns without assigning value to the differences. Addresses the effects and impact of discrimination and oppression on practice within and among diverse groups. Uses appropriate skills and tools for the culture, literacy, and language of the individuals and population served. Communicates with appropriate language and behaviors, including the use of qualified healthcare interpreters and translators in accordance with consumer needs and preferences" (ANA, 2021a, Kindle location 2198-2206).

Standard 10: Communication

The registered nurse: "Assesses one's own communication skills and effectiveness. Demonstrates cultural humility, professionalism, and respect when communicating. Assesses communication ability, health literacy, resources, and preferences of healthcare consumers to inform the interprofessional team and others. Uses language translation resources to ensure effective communication. Incorporates appropriate alternative strategies to communicate effectively with healthcare consumers who have visual, speech, language, or communication difficulties. Uses communication styles and methods that demonstrate caring, respect, active listening, authenticity, and trust. Conveys accurate information to healthcare consumers, families, community stakeholders, and members of the interprofessional team. Advocates for the healthcare consumer and their preferences and choices when care processes and decisions do not appear to be in the best interest of the healthcare consumer. Maintains communication with interprofessional team members and others to facilitate safe transitions and continuity in care delivery. Confirms the recipient of the communication heard and understands the message. Contributes the nursing perspective in interactions and discussions with the interprofessional team and other stakeholders. Promotes safety in the care or practice environment, disclosing and reporting concerns related to potential or actual hazards or deviations from the standard of care. Demonstrates continuous improvement of communication skills" (ANA, 2021a, Kindle Location 2236-2251).

Standard 11: Collaboration

The registered nurse: "Partners with the healthcare consumer and key stakeholders to advocate for and effect change, leading to positive outcomes and quality care. Treats others with dignity and respect in all interactions. Values the expertise and contribution of other professionals and key stakeholders. Uses the unique and complementary abilities of all members of the interprofessional team to optimize attainment of desired outcomes. Articulates the nurse's role and responsibilities within the interprofessional team. Uses appropriate tools and techniques, including information systems and technologies, to facilitate discussion and team functions in a manner that protects dignity, respect, privacy, and confidentiality. Promotes engagement through consensus building and conflict management. Uses effective group dynamics and strategies to enhance performance of the interprofessional team. Partners with all stakeholders to create, implement, and evaluate plans. Role models the development of shared goals, clear roles, mutual trust, effective communication, efficient processes, and measurable outcomes within the interprofessional team" (ANA, 201a, Kindle location 2273-2284).

Standard 13: Education

The registered nurse: seeks knowledge and competence that reflects current nursing practice and promotes futuristic thinking". Competencies include "Identifies learning needs based on the various roles assumed and associated requisite nursing knowledge. Participates in continuing professional development activities related to nursing and interprofessional knowledge bases and professional topics. Seeks experiences that reflect current practice to maintain and advance knowledge, skills, abilities, and judgment in clinical practice or role performance. Maintains current knowledge and skills relative to the role, population, specialty, setting, and local or global health situation. Commits to lifelong learning through critical thinking, self-reflection, and inquiry for personal growth and learning. Advocates through formal consultations or informal discussions to address issues in nursing practice, demonstrating an application of education and knowledge. Identifies modifications or accommodations needed in the delivery of education based on the learner's needs. Shares educational findings, experiences, and ideas with peers and interprofessional colleagues. Mentors nurses new to their roles for the purpose of ensuring successful

enculturation, orientation, competence, and emotional support. Supports acculturation of nurses new to their roles by role modeling, encouraging, advocating, and sharing pertinent information relative to optimal care delivery. Facilitates a work environment supportive of ongoing education of healthcare professionals and interprofessional colleagues. Maintains a professional portfolio that provides evidence of individual competence and lifelong learning. Seeks professional or specialty certification" (ANA, 201a, Kindle location 2343-2361).

Standard 15: Quality of Practice

"The registered nurse contributes to quality nursing practice." Competencies include nursing practice is safe, effective, efficient, equitable, time, person-centered and includes evidence to improve nursing outcomes. "Ensures that nursing practice is safe, effective, efficient, equitable, timely, and person-centered. Incorporates evidence into nursing practice to improve outcomes. Uses creativity and innovation to enhance nursing care. Recommends strategies to improve nursing care quality. Collects data to monitor the quality of nursing practice. Contributes to efforts to improve healthcare efficiency. Provides critical review and evaluation of policies, procedures, and guidelines to improve the quality of health care" (ANA, 2021a, Kindle Location 2426-2431).

Standard 16: Professional Practice Evaluation

"The registered nurse evaluates one's own and others' nursing practice." Competencies include: "Engages in self-reflection and self-evaluation of nursing practice on a regular basis, identifying areas of strength as well as areas in which professional growth would be beneficial. Adheres to the guidance about professional practice as specified in the Nursing: Scope and Standards of Practice and the Code of Ethics for Nurses with Interpretive Statements. Ensures that nursing practice is consistent with regulatory requirements pertaining to licensure, relevant statutes, rules, and regulations. Influences organizational policies and procedures to promote interprofessional evidence-based practice. Provides evidence for practice decisions and actions as part of the evaluation process. Seeks feedback regarding one's own practice from healthcare consumers, peers, colleagues, supervisors, and others. Provides peers and others with constructive feedback regarding their practice or role performance. Takes action to achieve learning needs and goals identified during the evaluation process. Documents the evaluative process, strategies used, and next steps to enhance one's own practice" (ANA, 2021a, Kindle Location 2475-2486).

ANA RECOGNITION OF A NURSING SPECIALTY

In addition to the ANA's Nursing: Scope and Standards of Practice, many specialty nursing organizations have also developed their own scope and standards of practice. These standards often use the ANA's Nursing: Scope and Standards of Practice as a foundation for the development of specialty standards. Nurses practicing in various specialties—such as critical care, nursing professional development, cardiovascular nursing, psychiatric-mental health, medical-surgical nursing, and many others—need to be aware of these standards as well.

In 2021, the ANA published American Nurses Association Recognition of a Nursing Specialty, Approval of a Specialty Nursing Scope of Practice Statement, Acknowledgment of Specialty Nursing Standards of Practice and Affirmation of Focused Practice Competencies (American Nurses Association, 2021b). This document noted that specialization involves focusing on nursing practice in a specific field and "encompasses a specified area of discrete study, research, and practice as defined and recognized by the profession." It includes criteria for recognition as a nursing specialty and the process for attaining such recognition.

An example of a specialty nursing scope of practice is the American Association of Critical Care Nurses (AACN) "Scope and Standards for Progressive and Critical Care Nursing Practice". The standards state: "Standards of clinical practice describe a competent level of nursing practice, while standards of professional performance address the professional activities and behaviors expected of progressive and critical care RNs. All standards include performance expectations, or competencies, that describe how progressive and critical care nurses may demonstrate competent practice and build on the American Nurses Association's (ANA's) document: Nursing: Scope and Standards of Practice (2015)" (AACN, 2019, p2).

The AACN standards are then broken down into **Practice**:

- Standard1: Assessment.
- Standard 2: Diagnosis.
- Standard 3: Outcomes Identification.
- Standard 4: Planning.
- Standard 5: Implementation.
- Standard 6: Evaluation.

Standards for **Professional Performance**:

- Standard 1 Quality of Practice.
- Standard 2: Professional Practice Evaluation.
- Standard 3: Education.
- Standard 4: Communication.
- Standard 5: Ethics.
- Standard 6: Collaboration.
- Standard 7: Evidence-Based practice/research/clinical inquiry.
- Standard 8: Resource Utilization.
- Standard 9: Leadership.
- Standard 10 Environmental Health (AACN, 2019).

Most other professional nursing organizations also have scope and standards of practice. Some examples are: Emergency Nurses Association, Oncology Nurses Association, and the Academy of Medical-Surgical Nurses. A nurse would be wise to obtain the scope and standard for where they work, in addition to the ANA scope and standard.

NURSE PRACTICE ACTS

Nurse practice acts legally govern nursing practice by establishing and enforcing standards that regulate nursing practice. Each state has its own nurse practice act (NPA) defined by state legislature that defines the scope of nursing within that individual state. Although NPAs have many commonalities, they vary from state to state. The federal government has not established jurisdiction over nursing practice. Therefore, each state has legislated its own NPA and nurses are responsible for adhering to the NPA in the state or states in which they practice (Wacko Guido, 2020).

Nursing consideration: The National Council of State Boards of nursing (NCSBN) is a useful resource for nurses wanting to broaden their understanding of nursing standards and nurse practice acts. NCSBN is a not-for-profit organization whose members include the boards of nursing in the 50 states, the District of Columbia, and 4 US territories. NCSBN is the medium through which boards of nursing act and counsel together to provide regulatory excellence for public health, safety, and welfare. It can be accessed at https://www.ncsbn.org/index.htm

The state nurse practice act is an important piece of legislation affecting nursing practice within each state (Wacko Guido, 2020). Nurses are accountable under the legal provisions of their state's nurse practice act and must adhere to these legal mandates when practicing nursing. All states and territories in the United States have enacted NPAs (Wacko Guido, 2020).

Each nurse practice act is enforced by each state's board of nursing (BON). As noted, the specifics among NPAs vary from state to state, but all NPAs describe the following common items (Wacko Guido, 2020):

- Qualification for licensure.
- Nursing titles that are allowed to be used.
- Scope of practice.
- Actions that can or will happen if the nurse does not follow the nursing law (grounds for disciplinary action).
- Definitions.
- Authority, power, and composition of a BON.

Nursing consideration:
Why are Licenses Important: To quote Dr. Julie Socjalski "You do not become a registered nurse because you pass the NCLEX®. Yes, you need to pass it, but that's because a recognized authority, the state board, has been empowered to determine the qualifications for you to sit for licensure as a registered nurse. Your opportunity to become licensed as a registered nurse is something that has been granted by the public. It is, in fact, an agreement with the public. The public has deemed that the practice of nursing is something of such value, something of such significance, something that embodies such expert knowledge, something where they engage with you in their most vulnerable state, that they have decided to establish an agreement with you, your license, that allows you to minister your best to them. It is not something to take lightly, but rather something that calls you to recognize your practice as a sacred commitment to the public (NCSBN, 2018c).

Here is an example of parts of a nursing practice act from New York State:

§6901. Definitions.
As used in section sixty-nine hundred two:

1. "Diagnosing" in the context of nursing practice means that identification of and discrimination between physical and psychosocial signs and symptoms essential to effective execution and management of the nursing regimen. Such diagnostic privilege is distinct from a medical diagnosis.
2. "Treating" means selection and performance of those therapeutic measures essential to the effective execution and management of the nursing regimen, and execution of any prescribed medical regimen.
3. "Human Responses" means those signs, symptoms and processes which denote the individual's interaction with an actual or potential health problem.

§6902. Definition of practice of nursing.

1. The practice of the profession of nursing as a registered professional nurse is defined as diagnosing and treating human responses to actual or potential health problems through such services as case finding, health teaching, health counseling, and provision of care supportive to or restorative of life and well-being, and executing medical regimens prescribed by a licensed physician, dentist or other licensed health care provider legally authorized under this title and in accordance with the commissioner's regulations. A nursing regimen shall be consistent with and shall not vary any existing medical regimen.
2. The practice of nursing as a licensed practical nurse is defined as performing tasks and responsibilities within the framework of case finding, health teaching, health counseling, and provision of supportive and restorative care under the direction of a registered professional nurse or licensed physician, dentist or other licensed health care provider legally authorized under this title and in accordance with the commissioner's regulations.

§6903. Practice of nursing and use of title "registered professional nurse" or "licensed practical nurse".
Only a person licensed or otherwise authorized under this article shall practice nursing and only a person licensed under section sixty-nine hundred four shall use the title "registered professional nurse" and only a person licensed under section sixty-nine hundred five of this article shall use the title "licensed practical nurse". No person shall use the title "nurse" or any other title or abbreviation that would represent to the public that the person is authorized to practice nursing unless the person is licensed or otherwise authorized under this article.

§6904. State board for nursing.
A state board for nursing shall be appointed by the board of regents on recommendation of the commissioner for the purpose of assisting the board of regents and the department on matters of professional licensing and professional conduct in accordance with section sixty-five hundred eight of this title. The board shall be composed of not less than fifteen members, eleven of whom shall be registered professional nurses and four of whom shall be licensed practical nurses all licensed and practicing in this state for at least five years. An executive secretary to the board shall be appointed by the board of regents on recommendation of the commissioner and shall be a registered professional nurse registered in this state.

§6905. Requirements for a license as a registered professional nurse.
To qualify for a license as a registered professional nurse, an applicant shall fulfill the following requirements:

1. **Application**: file an application with the department.
2. ***Education**: have received an education, and a diploma or degree in professional nursing, in accordance with the commissioner's regulations, and in order to continue to maintain registration as a registered professional nurse in New York state, have attained a baccalaureate degree or higher in nursing within ten years of initial licensure in accordance with the commissioner's regulations. The department, in its discretion, may issue a conditional registration to a licensee who fails to complete the baccalaureate degree but who agrees to meet the additional requirement within one year. The fee for such a conditional registration shall be the same as, and in addition to, the fee for the triennial registration. The duration of such conditional registration shall be for one year and may be extended, with the payment of a fee, for no more than one additional year, unless the applicant can show good cause for non-compliance acceptable to the department. Any licensee who is notified of the denial of a registration for failure to complete the additional educational requirements and who practices as a registered professional nurse without such registration may be subject to disciplinary proceedings pursuant to section sixty-five hundred ten of this title.
   * NB Effective June 18, 2019.
3. **Experience**: meet no requirement as to experience.
4. **Examination**: pass an examination satisfactory to the board and in accordance with the commissioner's regulations.
5. **Age**: be at least eighteen years of age.
6. **Citizenship**: meet no requirement as to United States citizenship.
7. **Character**: be of good moral character as determined by the department.
8. **Fees**: pay a fee of one hundred fifteen dollars to the department for admission to a department conducted examination and for an initial license, a fee of forty-five dollars for each reexamination, a fee of seventy dollars for an initial license for persons not requiring admission to a department conducted examination, and a fee of fifty dollars for each triennial registration period (http://www.op.nysed.gov/prof/nurse/article139.htm).

As one can see, in this example, the term RN is defined, what RNs are allowed to do is detailed, and exactly what constitutes the New York State Board of Nursing and the requirements of education are listed. At the writing of this course, no other state required a bachelor's degree (in this case, 10 years after graduating with an associate degree or a diploma) for the practice of Nursing.

Compare this to California:
ARTICLE 2. Scope of Regulation [2725 - 2742]
(Article 2 added by Stats. 1939, Ch. 807.)

2725.

(a) In amending this section at the 1973–74 session, the Legislature recognizes that nursing is a dynamic field, the practice of which is continually evolving to include more sophisticated patient care activities. It is the intent of the Legislature in amending this section at the 1973–74 session to provide clear legal authority for functions and procedures that have common acceptance and usage. It is the legislative intent also to recognize the existence of overlapping functions between physicians and registered nurses and to permit additional sharing of functions within organized health care systems that provide for collaboration between physicians and registered nurses. These organized health care systems include, but are not limited to, health facilities licensed pursuant to Chapter 2 (commencing with Section 1250) of Division 2 of the Health and Safety Code, clinics, home health agencies, physicians' offices, and public or community health services.

(b) The practice of nursing within the meaning of this chapter means those functions, including basic health care, that help people cope with difficulties in daily living that are associated with their actual or potential health or illness problems or the treatment thereof, and that require a substantial amount of scientific knowledge or technical skill, including all of the following:
  (1) Direct and indirect patient care services that ensure the safety, comfort, personal hygiene, and protection of patients; and the performance of disease prevention and restorative measures.
  (2) Direct and indirect patient care services, including, but not limited to, the administration of medications and therapeutic agents, necessary to implement a treatment, disease prevention, or rehabilitative regimen ordered by and within the scope of licensure of a physician, dentist, podiatrist, or clinical psychologist, as defined by Section 1316.5 of the Health and Safety Code.
  (3) The performance of skin tests, immunization techniques, and the withdrawal of human blood from veins and arteries.
  (4) Observation of signs and symptoms of illness, reactions to treatment, general behavior, or general physical condition, and (A) determination of whether the signs, symptoms, reactions, behavior, or general appearance exhibit abnormal characteristics, and (B) implementation, based on observed abnormalities, of appropriate reporting, or referral, or standardized procedures, or changes in treatment regimen in accordance with standardized procedures, or the initiation of emergency procedures.

(c) "Standardized procedures," as used in this section, means either of the following:
  (1) Policies and protocols developed by a health facility licensed pursuant to Chapter 2 (commencing with Section 1250) of Division 2 of the Health and Safety Code through collaboration among administrators and health professionals including physicians and nurses.
  (2) Policies and protocols developed through collaboration among administrators and health professionals, including physicians and nurses, by an organized health care system which is not a health facility licensed pursuant to Chapter 2 (commencing with Section 1250) of Division 2 of the Health and Safety Code.

  The policies and protocols shall be subject to any guidelines for standardized procedures that the Division of Licensing of the Medical Board of California and the Board of Registered Nursing may jointly promulgate. If promulgated, the guidelines shall be administered by the Board of Registered Nursing.

(d) Nothing in this section shall be construed to require approval of standardized procedures by the Division of Licensing of the Medical Board of California, or by the Board of Registered Nursing.

(e) No state agency other than the board may define or interpret the practice of nursing for those licensed pursuant to the provisions of this chapter or develop standardized procedures or protocols pursuant to this chapter, unless so authorized by this chapter, or specifically required under state or federal statute. "State agency" includes every state office, officer, department, division, bureau, board, authority, and commission.

(Amended by Stats. 2003, Ch. 640, Sec. 5. Effective January 1, 2004.)

2725.1.

(a) Notwithstanding any other provision of law, a registered nurse may dispense drugs or devices upon an order by a licensed physician and surgeon or an order by a certified nurse-midwife, nurse practitioner, or physician assistant issued pursuant to Section 2746.51, 2836.1, or 3502.1, respectively, if the registered nurse is functioning within a licensed primary care clinic as defined in subdivision (a) of Section 1204 of, or within a clinic as defined in subdivision (b), (c), (h), or (j) of Section 1206 of, the Health and Safety Code.

(b) No clinic shall employ a registered nurse to perform dispensing duties exclusively. No registered nurse shall dispense drugs in a pharmacy, keep a pharmacy, open shop, or drugstore for the retailing of drugs or poisons. No registered nurse shall compound drugs. Dispensing of drugs by a registered nurse, except a certified nurse-midwife who functions pursuant to a standardized procedure or protocol described in Section 2746.51 or a nurse practitioner who functions pursuant to a standardized procedure described in Section 2836.1, or protocol, shall not include substances included in the California Uniform Controlled Substances Act (Division 10 (commencing with Section 11000) of the Health and Safety Code). Nothing in this section shall exempt a clinic from the provisions of Article 13 (commencing with Section 4180) of Chapter 9.

(c) Nothing in this section shall be construed to limit any other authority granted to a certified nurse-midwife pursuant to Article 2.5 (commencing with Section 2746), to a nurse practitioner pursuant to Article 8 (commencing with Section 2834), or to a physician assistant pursuant to Chapter 7.7 (commencing with Section 3500).

(d) Nothing in this section shall be construed to affect the sites or types of health care facilities at which drugs or devices are authorized to be dispensed pursuant to Chapter 9 (commencing with Section 4000).

(Amended by Stats. 2012, Ch. 460, Sec. 1. (AB 2348) Effective January 1, 2013.)

2725.2.

(a) Notwithstanding any other provision of law, a registered nurse may dispense self-administered hormonal contraceptives approved by the federal Food and Drug Administration (FDA) and may administer injections of hormonal contraceptives approved by the FDA in strict adherence to standardized procedures developed in compliance with subdivision (c) of Section 2725.

(b) The standardized procedure described in subdivision (a) shall include all of the following:

(1) Which nurse, based on successful completion of training and competency assessment, may dispense or administer the hormonal contraceptives.
(2) Minimum training requirements regarding educating patients on medical standards for ongoing women's preventive health, contraception options education and counseling, properly eliciting, documenting, and assessing patient and family health history, and utilization of the United States Medical Eligibility Criteria for Contraceptive Use.
(3) Demonstration of competency in providing the appropriate prior examination comprised of checking blood pressure, weight, and patient and family health history, including medications taken by the patient.
(4) Which hormonal contraceptives may be dispensed or administered under specified circumstances, utilizing the most recent version of the United States Medical Eligibility Criteria for Contraceptive Use.
(5) Criteria and procedure for identification, documentation, and referral of patients with contraindications for hormonal contraceptives and patients in need of a follow-up visit to a physician and surgeon, nurse practitioner, certified nurse-midwife, or physician assistant.
(6) The extent of physician and surgeon supervision required.
(7) The method of periodic review of the nurse's competence.
(8) The method of periodic review of the standardized procedure, including, but not limited to, the required frequency of review and the person conducting that review.
(9) Adherence to subdivision (a) of Section 2242 in a manner developed through collaboration with health care providers, including physicians and surgeons, certified nurse-midwives, nurse practitioners, physician assistants, and registered nurses. The appropriate prior examination shall be consistent with the evidence-based practice guidelines adopted by the federal Centers for Disease Control and Prevention in conjunction with the United States Medical Eligibility Criteria for Contraceptive Use.
(10) If a patient has been seen exclusively by a registered nurse for three consecutive years, the patient shall be evaluated by a physician and surgeon, nurse practitioner, certified nurse-midwife, or physician assistant prior to continuing the dispensation or administration of hormonal contraceptives.

(c) Nothing in this section shall be construed to affect the sites or types of health care facilities at which drugs or devices are authorized to be dispensed pursuant to Chapter 9 (commencing with Section 4000).

(Added by Stats. 2012, Ch. 460, Sec. 2. (AB 2348) Effective January 1, 2013.)

2725.3.

(a) A health facility licensed pursuant to subdivision (a), (b), or (f), of Section 1250 of the Health and Safety Code shall not assign unlicensed personnel to perform nursing functions in lieu of a registered nurse and may not allow unlicensed personnel to perform functions under the direct clinical supervision of a registered nurse that require a substantial amount of scientific knowledge and technical skills, including, but not limited to, any of the following:
(1) Administration of medication.
(2) Venipuncture or intravenous therapy.
(3) Parenteral or tube feedings.
(4) Invasive procedures including inserting nasogastric tubes, inserting catheters, or tracheal suctioning.
(5) Assessment of patient condition.
(6) Educating patients and their families concerning the patient's health care problems, including post discharge care.
(7) Moderate complexity laboratory tests.

(b) This section shall not preclude any person from performing any act or function that he or she is authorized to perform pursuant to Division 2 (commencing with Section 500) or pursuant to existing statute or regulation as of July 1, 1999.

(Added by Stats. 1999, Ch. 945, Sec. 2. Effective January 1, 2000.)

2725.4.

Notwithstanding any other provision of this chapter, the following shall apply:

(a) In order to perform an abortion by aspiration techniques pursuant to Section 2253, a person with a license or certificate to practice as a nurse practitioner or a certified nurse-midwife shall complete training recognized by the Board of Registered Nursing. Beginning January 1, 2014, and until January 1, 2016, the competency-based training protocols established by Health Workforce Pilot Project (HWPP) No. 171 through the Office of Statewide Health Planning and Development shall be used.

(b) In order to perform an abortion by aspiration techniques pursuant to Section 2253, a person with a license or certificate to practice as a nurse practitioner or a certified nurse-midwife shall adhere to standardized procedures developed in compliance with subdivision (c) of Section 2725 that specify all of the following:
(1) The extent of supervision by a physician and surgeon with relevant training and expertise.
(2) Procedures for transferring patients to the care of the physician and surgeon or a hospital.
(3) Procedures for obtaining assistance and consultation from a physician and surgeon.
(4) Procedures for providing emergency care until physician assistance and consultation are available.
(5) The method of periodic review of the provisions of the standardized procedures.

(c) A nurse practitioner or certified nurse-midwife who has completed training and achieved clinical competency through HWPP No. 171 shall be authorized to perform abortions by aspiration techniques pursuant to Section 2253, in adherence to standardized procedures described in subdivision (b).

(d) It is unprofessional conduct for any nurse practitioner or certified nurse-midwife to perform an abortion by aspiration techniques pursuant to Section 2253 without prior completion of training and validation of clinical competency.

(Added by Stats. 2013, Ch. 662, Sec. 2. (AB 154) Effective January 1, 2014.)

2725.5.

This chapter does not prohibit:

(a) Gratuitous nursing of the sick by friends or members of the family.

(b) Incidental care of the sick by domestic workers or by persons primarily employed as housekeepers as long as they do not practice nursing within the meaning of this chapter.

(c) Domestic administration of family remedies by any person.

(d) Nursing services in case of an emergency. "Emergency," as used in this subdivision includes an epidemic, pandemic, or other public disaster.

(e) The performance by a person of the duties required in the physical care of a patient or carrying out medical orders prescribed by a licensed physician, provided the person shall not in any way assume to practice as a professional, registered, graduate, or trained nurse.

(Amended by Stats. 2021, Ch. 628, Sec. 5. (AB 1532) Effective January 1, 2022.)

2727.5.

A person licensed under this chapter who in good faith renders emergency care at the scene of an emergency which

occurs outside both the place and the course of that person's employment shall not be liable for any civil damages as the result of acts or omissions by that person in rendering the emergency care.

This section shall not grant immunity from civil damages when the person is grossly negligent.
(Amended by Stats. 1984, Ch. 1391, Sec. 2.)

2728.
If adequate medical and nursing supervision by a professional nurse or nurses is provided, nursing service may be given by attendants, psychiatric technicians, or psychiatric technician interim permittees in institutions under the jurisdiction of the State Department of State Hospitals or the State Department of Developmental Services or subject to visitation by the State Department of Public Health or the Department of Corrections and Rehabilitation. Services so given by a psychiatric technician shall be limited to services which he or she is authorized to perform by his or her license as a psychiatric technician. Services so given by a psychiatric technician interim permittee shall be limited to skills included in his or her basic course of study and performed under the supervision of a licensed psychiatric technician or registered nurse.

The Director of State Hospitals, the Director of Developmental Services, and the State Public Health Officer shall determine what shall constitute adequate medical and nursing supervision in any institution under the jurisdiction of the State Department of State Hospitals or the State Department of Developmental Services or subject to visitation by the State Department of Public Health.

Notwithstanding any other provision of law, institutions under the jurisdiction of the State Department of State Hospitals or the State Department of Developmental Services may utilize graduates of accredited psychiatric technician training programs who are not licensed psychiatric technicians or psychiatric technician interim permittees to perform skills included in their basic course of study when supervised by a licensed psychiatric technician or registered nurse, for a period not to exceed nine months.
(Amended by Stats. 2012, Ch. 24, Sec. 1. (AB 1470) Effective June 27, 2012.)

2728.5.
Except for those provisions of law relating to directors of nursing services, nothing in this chapter or any other provision of law shall prevent the utilization of a licensed psychiatric technician or psychiatric technician interim permittee in performing services used in the care, treatment, and rehabilitation of mentally ill, emotionally disturbed, or developmentally disabled persons within the scope of practice for which he or she is licensed or authorized in facilities under the jurisdiction of the State Department of State Hospitals or the State Department of Developmental Services or licensed by the State Department of Public Health, that he or she is licensed to perform as a psychiatric technician, or authorized to perform as a psychiatric technician interim permittee including any nursing services under Section 2728, in facilities under the jurisdiction of the State Department of State Hospitals or the State Department of Developmental Services or subject to visitation by the State Department of Public Health.
(Amended by Stats. 2012, Ch. 24, Sec. 2. (AB 1470) Effective June 27, 2012.)

2729.
Nursing services may be rendered by a student when these services are incidental to the course of study of one of the following:
(a) A student enrolled in a board-approved prelicensure program or school of nursing.
(b) A nurse licensed in another state or country taking a board-approved continuing education course or a post-licensure course.
(Amended by Stats. 1978, Ch. 212.)

2730.
If he does not represent or hold himself out as a professional nurse licensed to practice in this State and if he has an engagement, made in another State or country, requiring him to accompany and care for a patient temporarily residing in this State during the period of such engagement, a nurse legally qualified by another State or country may give nursing care to such patient in this State.
(Repealed and added by Stats. 1939, Ch. 807.)

2731.
This chapter does not prohibit nursing or the care of the sick, with or without compensation or personal profit, when done by the adherents of and in connection with the practice of the religious tenets of any well recognized church or denomination, so long as they do not otherwise engage in the practice of nursing.
(Repealed and added by Stats. 1939, Ch. 807.)

2732.
No person shall engage in the practice of nursing, as defined in Section 2725, without holding a license which is in an active status issued under this chapter except as otherwise provided in this act.

Every licensee may be known as a registered nurse and may place the letter "R.N." after his name.
(Amended by Stats. 1976, Ch. 1053.)

2732.05.
(a) Every employer of a registered nurse, every employer of a registered nurse required to hold any board-issued certification, and every person acting as an agent for such a nurse in obtaining employment, shall ascertain that the nurse is currently authorized to practice as a registered nurse or as a registered nurse pursuant to a board-issued certification within the provisions of this chapter. As used in this section, "board-issued certification" includes, but is not limited to, certification as a nurse practitioner, nurse practitioner with a furnishing number, nurse anesthetist, nurse midwife, nurse midwife with a furnishing number, public health nurse, clinical nurse specialist, or board listed psychiatric mental health nurse.
(b) Every employer of a temporary licensee or interim permittee and every person acting as an agent for a temporary licensee or interim permittee in obtaining employment shall ascertain that the person is currently authorized to practice as a temporary licensee or interim permittee.
(c) As used in this section, the term "agent" includes, but is not limited to, a nurses registry and a traveling nurse agency.

Examination by an employer or agent of evidence satisfactory to the board showing the nurse's, licensee's, or permittee's current authority to practice under this chapter, prior to employment, shall constitute a determination of authority to so practice.

Nothing in this section shall apply to a patient, or other person acting for a specific patient, who engages the services of a registered nurse or temporary licensee to provide nursing care to a single patient.
(Amended by Stats. 2007, Ch. 588, Sec. 37. Effective January 1, 2008.)

2732.1.
(a) An applicant for license by examination shall submit a written application in the form prescribed by the board. Upon approval of the application, the board may issue an interim permit authorizing the applicant to practice nursing pending the results of the first licensing examination following completion of his or her nursing course or for a maximum period of six months, whichever occurs first.

If the applicant passes the examination, the interim permit shall remain in effect until a regular renewable license is issued by the board. If the applicant fails the examination,

the interim permit shall terminate upon notice thereof by first-class mail.

(b) The board upon written application may issue a license without examination to any applicant who is licensed or registered as a nurse in a state, district or territory of the United States or Canada having, in the opinion of the board, requirements for licensing or registration equal to or higher than those in California at the time the application is filed with the Board of Registered Nursing, if he or she has passed an examination for the license or registration that is, in the board's opinion, comparable to the board's examination, and if he or she meets all the other requirements set forth in Section 2736.

(c) Each application shall be accompanied by the fee prescribed by this chapter for the filing of an application for a regular renewable license.

The interim permit shall terminate upon notice thereof by first-class mail, if it is issued by mistake or if the application for permanent licensure is denied.

(Amended by Stats. 1994, Ch. 26, Sec. 57.5. Effective March 30, 1994.)

2733.

(a) (1)

(A) Upon approval of an application filed pursuant to subdivision (b) of Section 2732.1, and upon the payment of the fee prescribed by subdivision (k) of Section 2815, the board may issue a temporary license to practice professional nursing, and a temporary certificate to practice as a certified public health nurse for a period of six months from the date of issuance.

(B) Upon approval of an application filed pursuant to subdivision (b) of Section 2732.1, and upon the payment of the fee prescribed by subdivision (d) of Section 2838.2, the board may issue a temporary certificate to practice as a certified clinical nurse specialist for a period of six months from the date of issuance.

(C) Upon approval of an application filed pursuant to subdivision (b) of Section 2732.1, and upon the payment of the fee prescribed by subdivision (e) of Section 2815.5, the board may issue a temporary certificate to practice as a certified nurse-midwife for a period of six months from the date of issuance.

(D) Upon approval of an application filed pursuant to subdivision (b) of Section 2732.1, and upon the payment of the fee prescribed by subdivision (d) of Section 2830.7, the board may issue a temporary certificate to practice as a certified nurse anesthetist for a period of six months from the date of issuance.

(E) Upon approval of an application filed pursuant to subdivision (b) of Section 2732.1, and upon the payment of the fee prescribed by subdivision (p) of Section 2815, the board may issue a temporary certificate to practice as a certified nurse practitioner for a period of six months from the date of issuance.

(2) A temporary license or temporary certificate shall terminate upon notice thereof by certified mail, return receipt requested, if it is issued by mistake or if the application for permanent licensure is denied.

(b) Upon written application, the board may reissue a temporary license or temporary certificate to any person who has applied for a regular renewable license pursuant to subdivision (b) of Section 2732.1 and who, in the judgment of the board has been excusably delayed in completing their application for or the minimum requirements for a regular renewable license, but the board may not reissue a temporary license or temporary certificate more than twice to any one person.

(c) The board shall prominently display on the front page of its website the availability of temporary licenses and certificates pursuant to this section.

(Amended by Stats. 2021, Ch. 628, Sec. 6. (AB 1532) Effective January 1, 2022.)

2734.

Upon application in writing to the board and payment of the biennial renewal fee, a licensee may have his license placed in an inactive status for an indefinite period of time. A licensee whose license is in an inactive status may not practice nursing. However, such a licensee does not have to comply with the continuing education standards of Section 2811.5.

(Added by Stats. 1976, Ch. 1053.)

2736.

(a) An applicant for licensure as a registered nurse shall comply with each of the following:

(1) Have completed such general preliminary education requirements as shall be determined by the board.

(2) Have successfully completed the courses of instruction prescribed by the board for licensure, in a program in this state accredited by the board for training registered nurses, or have successfully completed courses of instruction in a school of nursing outside of this state which, in the opinion of the board at the time the application is filed with the Board of Registered Nursing, are equivalent to the minimum requirements of the board for licensure established for an accredited program in this state.

(3) Not be subject to denial of licensure under Section 480.

(b) An applicant who has received his or her training from a school of nursing in a country outside the United States and who has complied with the provisions of subdivision (a), or has completed training equivalent to that required by subdivision (a), shall qualify for licensure by successfully passing the examination prescribed by the board.

(Amended by Stats. 1992, Ch. 1289, Sec. 21. Effective January 1, 1993.)

2736.1.

(a) The course of instruction for an applicant who matriculates on or after September 1, 1985, shall include training in the detection and treatment of alcohol and chemical substance dependency.

(b) The course of instruction for an applicant who matriculates on or after January 1, 1995, shall include training in the detection and treatment of client abuse, including, but not limited to, spousal or partner abuse. The requirement for coursework in spousal or partner abuse detection and treatment shall be satisfied by, and the board shall accept in satisfaction of the requirement, a certification from the chief academic officer of the educational institution from which the applicant graduated that the required coursework is included within the institution's required curriculum for graduation.

(Amended by Stats. 1993, Ch. 1234, Sec. 5. Effective January 1, 1994.)

2736.5.

(a) (1) The board shall adopt regulations to require that, on and after January 1, 2022, all continuing education courses for licensees under this chapter contain curriculum that includes the understanding of implicit bias.

(2) Beginning January 1, 2023, continuing education providers shall ensure compliance with paragraph (1). Beginning January 1, 2023, the board shall audit continuing education providers, pursuant to Section 2811.5.

(b) Notwithstanding the provisions of subdivision (a), a continuing education course dedicated solely to research or other issues that does not include a direct patient care component is not required to contain curriculum that includes implicit bias in the practice of nursing.

(c) In order to satisfy the requirements of subdivision (a), continuing education courses shall address at least one or a combination of the following:
(1) Examples of how implicit bias affects perceptions and treatment decisions of licensees, leading to disparities in health outcomes.
(2) Strategies to address how unintended biases in decision-making may contribute to health care disparities by shaping behavior and producing differences in medical treatment along lines of race, ethnicity, gender identity, sexual orientation, age, socioeconomic status, or other characteristics.
(Added by Stats. 2019, Ch. 417, Sec. 3. (AB 241) Effective January 1, 2020.)

2736.6.
The board shall determine by regulation the additional preparation in nursing, in a school approved by the board, which is required for a vocational nurse, licensed under Chapter 6.5 (commencing with Section 2840) of this division, to be eligible to take the examination for licensure under this chapter as a registered nurse. The board shall not require more than 30 units in nursing and related science subjects to satisfy such preparation.
(Added by Stats. 1969, Ch. 1541.)

2737.
An applicant for a license authorizing him to practice nursing in this State under this chapter, upon the filing of his application shall pay the fee required by this chapter.
(Repealed and added by Stats. 1939, Ch. 807.)

2738.
The board shall hold not less than two examinations each year at such times and places as the board may determine.
(Amended by Stats. 1953, Ch. 1174.)

2740.
Examinations shall be written, but in the discretion of the board may be supplemented by an oral or practical examination in such subjects as the board determines. All examinations shall be conducted by such persons and in such manner and under such rules and regulations as the board may prescribe.

The board shall finally pass or reject all applicants. Its actions shall be final and conclusive and not subject to review by any court or other authority.
(Added by Stats. 1939, Ch. 807.)

2741.
An application for reexamination shall be accompanied by the fees prescribed by this chapter.
(Amended by Stats. 2005, Ch. 621, Sec. 38. Effective January 1, 2006.)

2742.
The board shall issue a license to each applicant who passes the examination and meets all other licensing requirements. The form of the license shall be determined in accordance with Section 164. (California Legislative Information, n.d.)

As one can see, the California Nurse Practice act is much more detailed in describing what a nurse can and cannot do, than the New York State NPA. For example, issues of delegation are contained in the California nurse practice act, whereas in New York state this information is not readily available on the BON and Office of Professions website. On the other hand, New York State protects the title "Registered Professional Nurse", whereas California does not.

Nursing consideration: Ignorance of the law as it relates to the NPA in a nurse's state is never an excuse for failing to follow its mandates. Nurses can find the mandates by logging on to the website of their state board of nursing. The National Council of State Boards of nursing at https://www.ncsbn.org/index.htm has information about how to access all state boards of nursing in the United States.

Self-Assessment Quiz Question #3

Who enforces a nursing practice act?
a. American Nurses Association.
b. Specialty nursing practice groups.
c. International Council of Nurses.
d. Boards of Nursing.

COMMON VIOLATIONS OF NURSE PRACTICE ACTS

The National Council of State Boards of Nursing list the following as Violations of Nurse Practice Acts (NCSB, 2022a). Please note this is not an inclusive list but examples.

Practice Related
- Failure to assess changes in condition.
- Failure to implement appropriate or ordered interventions.
- Failure to accurately document assessment information or nursing care provided.
- Failure to follow the "Five Rights" of drug administration (right patient., right time and frequency, right dose, right route of administrations and right drug.

Drug Related
- Misappropriation of medications intended for clients.
- Failure to document or falsely document that medications were administered to clients.
- Engagement in intemperate use of medications causing impairment.
- Attempting to obtain drugs by communicating or presenting unauthorized prescriptions to pharmacies.

Boundary Violations
- Sharing stories of personal challenges to entice gifts or money from clients.
- Establishing gratifying relationships with current or former clients.
- Sexual misconduct.
- Touching the patient or having the patient touch the nurse in a sexual way.

Abuse
- Hitting, slapping threats and verbal assailments.

Fraud
- Over statement of credentials of experience.
- Claiming unworked hours or visits on payroll.
- Falsely documenting care or procedures when related to payment.
- Submitting inaccurate billing records to defraud insurance companies.

Self-Assessment Quiz Question #4

Which of the following is a violation of a nurse practice act according to NCSBN?
a. Following the Five Rights of Medication Administration.
b. Accurately documenting care.
c. Failure to refuse some cupcakes from a family member when you did not ask.
d. Stating you have a certification when it has just expired.

NURSE LICENSURE COMPACT (NLC)

To be able to provide nursing care where it is needed and to decrease the need for many different state-issued RN licenses, the NCSBN developed the *Nurse Licensure Compact* which began in 2000 (Oyeleve, 2019). Historically, each state had its own rules and regulations for RN practice, and requirements for sitting for licensure exams. For nurses who wanted to work in different states, the nurse had to meet the individual state requirements and apply for a license. This required a lot of time, energy, and money for nurses. This also prevented state BONs from disciplining a nurse who harmed a patient working remotely from another state. Finally, in 1995, the Pew Commission reported all 50 states entry into practice requirements were not standardized (Oyeleve, 2019).

In 2000, the first states to pass legislation and agree to the NLC were Maryland, Texas, Utah and Wisconsin. Not all states and nurses were in agreement with this. There were concerns related to different state regulations for practice (not just licensure), state sovereignty on who could practice in the state, and public safety. Another concern was some inconsistencies between requirements, especially related to past criminal issues, where some states would bar a candidate for license and those listed in the NLC (Oyeleve, 2019).

Even though there were issues and concerns with the NLC, states did join. However, in 2015 when the North Carolina BON and state legislature were thinking about joining, there were ongoing concerns. The NLC did not guarantee competency of the nurses between the different states (Oyeleve, 2019). Given this issue, the Nation Council of State Boards of Nursing examined all the concerns and developed the Enhanced Nursing Licensure Compact (eNLC). The eNLC was designed to replace the NLC with requirements that would address issues raised and improve confidence. The eNLC went into effect in July 2017 with a final implementation date in January, 2018 to allow nurses with NLCs to apply for eNLCs (Oyeleve, 2019).

The eNLC has uniform requirements and federal background checks for any nurse applying for an eNLC if their state is a member. The eNLC also standardized key disciplinary provisions among all the member states and required reporting of all disciplinary actions against a nurse within the eNLC (Oyeleve, 2019).

The following are the uniform requirements:

1. Meets the requirements for licensure in the home state (state of residency).
2. (a) Has graduated from a board-approved education program; or (b) Has graduated from an international education program (approved by the authorized accrediting body in the applicable country and verified by an independent credentials review agency).
3. Has passed an English proficiency examination (applies to graduates of an international education program not taught in English or if English is not the individual's native language).
4. Has passed an NCLEX-RN® or NCLEX-PN® Examination or predecessor exam.
5. Is eligible for or holds an active, unencumbered license (i.e., without active discipline).
6. Has submitted to state and federal fingerprint-based criminal background checks.
7. Has not been convicted or found guilty, or has entered into an agreed disposition, of a felony offense under applicable state or federal criminal law.
8. Has no misdemeanor convictions related to the practice of nursing (determined on a case-by-case basis).
9. Is not currently a participant in an alternative program.
10. Is required to self-disclose current participation in an alternative program.
11. Has a valid United States Social Security number (National Council of State Boards of Nursing, n.d.a).

What does the eNLC mean for RNs? Besides the requirements above, the RN who is applying for an eNLC is also required to do the following:

1. On all application forms for multistate licensure in a party state, an applicant shall declare a primary state of residence.
2. A nurse who changes primary state of residence to another party state shall apply for a license in the new party state when the nurse declares to be a resident of the state and obtains privileges not ordinarily extended to nonresidents of the state.
3. A nurse shall not apply for a single state license in a party state while the nurse holds a multistate license in another party state (National Council of State Boards of Nursing, 2021).

What it *does* allow nurses to do is practice across borders in other eNLC states, practice telenursing in all eNLC states, quickly respond to disasters in all eNLC states, and allow nurse educators with an eNLC to teach via distance education in all eNLC states (National Council of State Boards of Nursing, n.d.b).

THE BON AND DISCIPLINARY CASES

Most nurses are competent individuals whose primary goal is to provide safe, appropriate nursing care that enhances patient outcomes. However, when problems arise with a nurse's performance, a complaint may be filed with the BON, which is responsible for reviews and action regarding complaints. The BON may act only if sufficient evidence exists that the nurse violated state laws or regulations (National Council of State Boards of Nursing, 2022b).

Nursing consideration: In any given year there are over 12,000 nurses with adverse actions against them reported to the National Practitioner Data Bank. The National Practitioner Data Bank is managed by the US department of Health & Human Services (2022).

What types of disciplinary action can be taken by a BON? The BON may act to impose such actions as the following (National Council of State Boards of Nursing, 2022b):

- Fines.
- Civil penalties.
- Public reprimand or censure for minor violations of the NPA.
- Referral to an alternative-to-discipline program for practice monitoring and recovery support. This may be offered to nurses with drug or alcohol dependence, or another type of mental or physical condition.
- Mandated monitoring, remediation, education, or other provisions established to meet the needs of specific situations.
- Limitations on practice such as restricting roles, the practice setting, and/or hours that may be worked.

Nursing consideration: The actions taken by the BON are considered public information. Some BONs, believing that it is in the public interest to publicize actions taken against nurses, communicate actions via such means as newsletters and websites (National Council of State Boards of Nursing, 2022b).

Rules and position statements

Nurses should also be aware of BON rules, regulations, and position statements. BONs have the authority to develop administrative rules to clarify laws. Rules must be consistent with the NPA, but cannot go beyond the law. For example, an NPA may mandate that nurses' practice safely and competently, and a rule related to this mandate may specify a plan for ongoing continuing education so that nurses achieve and maintain their competency.

Position statements are a means of providing direction for nurses on issues relevant to nursing practice and consumer safety. Position statements do not have the force of law, but are designed to act as education resources that help licensed nurses and other interested persons in determining safe, appropriate, and legal practice (Texas Board of Nursing, 2022). Examples of position statements include death pronouncements, carrying out orders from physician assistants, and performance of laser therapy by RNs. Position statements are generally posted on the BON website for review by nurses and the public.

Delegation

Delegating patient-care responsibilities to another RN, LPN/LVN, or unlicensed assistive personnel such as nursing assistants often triggers legal and ethical questions among those nurses doing the delegating. Delegation is an important responsibility. To properly delegate a task, the nurse must know the skills and knowledge level of the delegatee and that the task being delegated falls within the delegatee's scope of practice (National Council of State Board of Nursing and American Nurses Association, 2019.).

Even though the RN may delegate a task, they retain responsibility for the conduct and actions of delegatees. RNs cannot delegate their own accountability. They retain responsibility for the patient care delivered by the LPNs and nursing assistants (National Council of State Board of Nursing and American Nurses Association, 2019).

However, this does not mean that delegatees do not have responsibility and accountability for their own actions. It is important to remember that delegatees still maintain responsibility and accountability for their own actions.

Nursing consideration: It is the RNs responsibility to check the NPA in their states to determine which tasks may and may not be delegated.

The "Rights" of delegation

Safe and appropriate delegation of tasks requires that the RN adhere to "rights" of delegation. The American Nurses Association and the National Council of State Boards of Nursing have published guidelines for delegation (American Nurses Association & National Council of State Boards of Nursing, 2019):

- **Right task**: "The activity falls within the delegatee's job description or is included as part of the established written policies and procedures of the nursing practice setting. The facility needs to ensure the policies and procedures describe the expectations and limits of the activity and provide any necessary competency training."
- **Right circumstance**: "The health condition of the patient must be stable. If the patient's condition changes, the delegatee must communicate this to the licensed nurse, and the licensed nurse must reassess the situation and the appropriateness of the delegation."
- **Right person**: "The licensed nurse, along with the employer and the delegatee, is responsible for ensuring that the delegatee possesses the appropriate skills and knowledge to perform the activity."
- **Right directions and communication**: "Each delegation situation should be specific to the patient, the licensed nurse, and the delegatee. The licensed nurse is expected to communicate specific instructions for the delegated activity to the delegatee; the delegatee, as part of two-way communication, should ask any clarifying questions. This communication includes any data that need to be collected, the method for collecting the data, the time frame for reporting the results to the licensed nurse, and additional information pertinent to the situation. The delegatee must understand the terms of the delegation and must agree to accept the delegated activity. The licensed nurse should ensure that the delegatee understands that she or he cannot make any decisions or modifications in carrying out the activity without first consulting the licensed nurse."
- **Right supervision and evaluation**: "The licensed nurse is responsible for monitoring the delegated activity, following up with the delegatee at the completion of the activity, and evaluating patient outcomes. The delegatee is responsible for communicating patient information to the licensed nurse during the delegation situation. The licensed nurse should be ready and available to intervene as necessary. The licensed nurse should ensure appropriate documentation of the activity is completed."

Case study #2

Charlotte is a newly licensed RN. One of the LPNs under her supervision has many years of nursing experience and is quite resentful: "Why do I have to take orders from this new kid? I've been a nurse longer than she's been alive!" Charlotte does her best to not only be friendly, but also to adhere to the scope and standards of practice for both RNs and LPNs. On one particularly busy day, the LPN insists that she can handle the arrival of a postoperative patient without any help. The patient is young and healthy and underwent surgical intervention for a compound fracture of the left femur. Charlotte knows that it is her responsibility to conduct assessments, but she is especially busy with several patients whose conditions are deteriorating. At the end of their shift, the LPN remarks, "That guy with the compound fracture sure is a whiner. He's complaining about a cough and chest pain. He had a bad cold before surgery, so what does he expect!" Alarmed, Charlotte and the charge nurse for the oncoming shift rush to check on the patient, who is found to be cyanotic and unresponsive. He is rushed to the critical care unit with a diagnosis of fat embolism.

Nursing consideration: Nurses who practice in more than one state should know the scope of practice and the NPA in each state in which they practice or hold licensure.

Questions

1. Who is accountable for this lack of proper patient care?
2. How could this have been avoided?
3. Which of the "rights" of delegation were violated?

Discussion

Both Charlotte and the LPN are accountable for the lack of proper patient care. As the RN, Charlotte is the person who needs to conduct the assessment. If she was "too busy" because her other patients were deteriorating, she should have gone to the charge nurse and either asked for another RN to be assigned to the new patient, or ask the charge nurse to assess the patient, which could have prevented the patient from deteriorating. The LPN, while experienced, does not have the authority to conduct an assessment on a patient. The LPN should have not offered to assess the patient, as she should have known this was not part of her scope of practice. The LPN should have let Charlotte know the patient was experiencing signs and symptoms that were not associated with a normal post-operative course (chest pain and short of breath), no matter who did the assessment. LPNs are required to report to the supervising RN any changes in a patient's vital signs. The principles of delegation that were violated were all of them. Charlotte delegated a task (assessment) that was not in the scope of practice of the LPN. Because of this Charlotte did not know if the patient was

stable, and the principles state that only stable patients may be delegated to LPNs. There also seemed to be a breakdown in communication from Charlotte's part in what to delegate. Finally, there was no supervision on Charlotte's part. The LPN also has not followed the rights of delegation. The LPN accepted an assignment for which she may not have been qualified for and did not alert Charlotte to changes in the patient's status (or out of normal signs and symptoms for postoperative course). Thus, every right of delegation was violated.

INTERNAL POLICIES AND STANDARDS

Each healthcare institution sets the policies and procedures for that particular institution. These polices cannot expand standards of practice as stated in the state's nurse practice act. However, an institution can set narrower limits on practice of the RN. These polices usually include education, experience, and other directives that explain the scope of practice for the RN (Wacko Guido, 2020).

For a nurse to be practicing within their scope of practice, they must be practicing within the ANA code of ethics, ANA scope and standards of nursing practice, the respective state nursing practice act, and the healthcare organization's policies and procedures. Thus, the RN is accountable to a number of scopes of practice.

Case study #3

Shannon is a newly licensed registered nurse. During orientation to her new role as an RN on an oncology unit, Shannon is told that she must become familiar with (and stay familiar with) the scope and standards of nursing practice of the state in which she practices. Shannon has studied, in general terms, scope and standards of nursing practice during her years in a BSN program. However, as she is now a licensed professional, Shannon wants to understand, in more depth, the scope of practice that defines nursing actions.

Questions:

1. Where should Shannon look for her scope of practice?
2. What other information should Shannon review to be within her scope of practice?

Discussion:

Shannon needs to review a number of documents to understand what her scope of practice is. First, she should look at her state's scope of practice for RNs, including what is on the state's BON website. This will provide her with the foundation of what she is allowed to do within the state she is practicing in. The ANA scope and practice standards also need to be reviewed. Shannon should also look at the website for the Oncology Nurses Association to see if there is specialty scope of practice information, she should familiarize herself with. Finally, Shannon needs to review the policies and procedures of both the hospital and unit where she is working.

LEGAL IMPLICATIONS OF NURSING PRACTICE

Ethics and law overlap to a certain extent. Codes of ethics generally describe a vision that exceeds what is expected under prevailing laws. The law says what must be done. Ethical codes provide a picture of what ought to be done. Therefore, ethical conduct means that, at the very least, a nurse or other healthcare professional performs duties legally and acts with integrity and fidelity according to the profession's principles of ethical behavior (Wacko Guido, 2020).

Nurses should be familiar with legal terms that are the basis for safe practice. Below is a list of terms nurses should be familiar with and examples of nursing practice where the term would be applied.

Advocacy

The nurse speaks on behalf of the patient for the patient's right(s) to receive appropriate care, and intervenes on behalf of the patient in situations where there are changes in health status that may or may not affect care (Wacker Guido, 2020).

Assault

Assault is action that placed another person in a position of being touched in a manner that is considered offensive, insulting, or physically injurious without consent (Wacker Guido, 2020). An example of this would be threatening a patient with an injection if the patient does not do something.

Battery

Battery is harmful or unwarranted contact with someone (Wacker Guido, 2020). An example of this would be holding a patient down forcibly to insert an intravenous catheter when a patient has refused the procedure.

Causation

An injury must have occurred that was directly due to the action(s) of the nurse. This can be cause-in-fact or proximate cause (Wacker Guido, 2020). An example of cause-in-fact would be administering an incorrect medication resulting in an adverse effect. An example of a proximate cause would be a patient falling out of bed after being given a narcotic and the bedrails were not in correct position. While cause-in-fact is a direct link, proximate causation has foreseeability connected to the concept (Wacker Guido, 2020).

Duty

Duty refers to a legal duty to the patient - an obligation recognized and enforceable by law. Legal duty to a patient exists as soon as the nurse–patient relationship is established, showing that the patient relies on the nurse for the delivery of safe and competent care. The basis for the element of duty is the professional standards of care that the nurse is responsible for adhering to. As previously noted, the NPA governs nursing practice. Thus, duty to the patient requires that the nurse adhere to the NPA, ANA standards of care and code of ethics, specialty nursing organization standards, and organizational policies and standards (Wacker Guido, 2020).

Breach of duty

Breach of duty is defined as a violation of nursing standards of care. The plaintiff's attorney will provide evidence to support the claim that a breach of duty occurred. Such evidence can be obtained from written documentation on the plaintiff's medical record, diagnostic test results, photos, and testimony from witnesses, including hospital personnel, other nurses, experts in the field, and the plaintiff's family members. Breach of duty may also be claimed if a nurse abandons a patient after assuming a duty to them (Wacker Guido, 2020).

Some states actually define what abandonment is and is not, so nurses should be familiar with any state regulations.

Abandonment

A specific type of breach of duty is Abandonment. For example, New York law prohibits nurses from committing what is commonly referred to as "abandonment" or "patient abandonment". Abandonment typically occurs when:

- A nurse who has accepted a patient care assignment and is responsible for patient care abandons or neglects a patient needing immediate professional care without making reasonable arrangements for the continuation of such care.
- A nurse abandons nursing employment without providing reasonable notice and under circumstances that seriously impair the delivery of professional care to patients.

The New York State Education Department (NYSED) evaluates each complaint of patient abandonment individually, taking into consideration the unique circumstances of each situation.

Key considerations for determining whether or not a nurse has "abandoned" a patient include:

- Whether the nurse accepted the patient assignment, which established a nurse-patient relationship.
- Whether the nurse provided reasonable notice when severing the nurse-patient relationship.
- Whether reasonable arrangements were made for the continuation of nursing care by others when proper notification was given.

Some examples of patient abandonment include the following:

- A nurse assigned to provide resident care in a nursing home walks off duty in the middle of the shift without telling anyone and does not return, seriously impairing the delivery of nursing care to the residents.
- A circulating nurse leaves the operating room during a surgical procedure without transferring responsibility for nursing care to another qualified healthcare practitioner, seriously impairing the delivery of surgical care.
- A private RN suddenly stops providing nursing care to a home-bound patient without notifying anyone and without making any arrangements to ensure that the patient will continue to receive needed care.
- A nurse who works on a hospital pediatric unit informs the unit clerk that she must leave work immediately. The nurse immediately leaves the hospital for the day without telling anyone else, even though some of the nurse's patients require immediate nursing care. Since the nurse failed to transfer her responsibility for the nursing care for her patients to another qualified healthcare practitioner by reporting on her patients, other hospital staff were unaware of the immediate care needs of the nurse's patients.

The following situations are **not** usually considered to be patient abandonment:

- A nurse promptly refuses her supervisor's request to float to an unfamiliar hospital unit because she lacks the experience to competently carry out the assignment. The hospital did not provide the nurse with any training or orientation to the hospital unit and does not modify the nursing assignment (so that the nurse who must float provides only services the nurse is competent to perform).
- An LPN immediately refuses their supervisor's request to float to a hospital Emergency Room to perform triage (which is outside the legal scope of practice of an LPN).
- In a non-emergency situation, a nurse promptly refuses their supervisor's request to accept an assignment to work additional hours beyond the posted work schedule (i.e., a double shift).
- In a non-emergency situation, a nurse completes their assigned shift at a nursing home and then notifies their employer that they are quitting, effective immediately.
- The nurse fails to return to work at a nursing home after a scheduled leave of absence and the nursing home is not experiencing staff shortages (NYSED, n.d.).
- A nurse agrees to work 4 hours longer than their scheduled shift because of an emergency. After working overtime, the nurse refuses the supervisor's request to work additional hours because the nurse is too exhausted to continue to practice safely and informs their supervisor that they are too exhausted to work safely.

Contributory negligence
Contributory negligence refers to the patient's acts or omissions that contribute to their claimed injury. Forms of contributory negligence include the patient's failure to take reasonable care or to follow physician or discharge orders to prevent injury. A finding of contributory negligence may prevent the injured party from recovering damages in a lawsuit. An example of contributory negligence includes the patient's right to refuse care (Wacko Guido, 2020).

False imprisonment
False imprisonment means holding a person against their will with an unjustifiable reason (Wacko Guido, 2020). An example of this would be restraining a competent patient against their wishes.

Foreseeability
A concept that certain events may be expected to cause specific results (Wacko Guido, 2020). For example, not providing a patient their insulin foreseeably results in high glucose levels.

Negligence
Negligence is an omission or commission of an act that is a deviation from a standard of care, also equated with carelessness (Wacker Guido, 2020). Malpractice is professional misconduct or negligence, improper discharge of professional duties, or failure to meet the standard of care of a professional that results in emotional, physical, or monetary harm to another in their care (Wacker Guido, 2020).

Respondeat superior
Under respondeat superior, or "let the master answer," the employer is held responsible for the legal consequences of the acts of a nurse or other employee acting within the scope of employment. The basic idea behind this theory comes from the concept that the employer has the right to control the acts of the employee. In other words, the hospital is held responsible for the actions of the nurse, which in turn encourages employers to ensure competencies of their employees. Likewise, the nursing supervisor can be held responsible for staff nurses' actions. Typically, a plaintiff files suit against both the nurse and the institution. The institution is usually named as a defendant because it usually has adequate assets to cover a judgment (Wacker Guido, 2020).

Ordinary negligence
Nurses may be sued personally for matters not involving medical malpractice under ordinary negligence. Under this scenario, the allegedly negligent conduct is compared with the conduct of a reasonably prudent layperson, not a reasonably prudent nurse. Ordinary negligence is conduct that involves undue risk of harm to someone. For example, if an orderly observes water on the floor but fails to clean it, resulting in a patient fall, the orderly may be held responsible for damages suffered by the patient. Professional negligence is different from ordinary negligence because professionals are held to professional standards of care (Wacker Guido, 2020).

Malpractice or professional negligence
Nurses are held liable for malpractice or professional negligence in most settings. Nurses' increased responsibilities and the increased number of nurses carrying personal malpractice insurance makes them financially attractive to plaintiffs. However, a plaintiff's attorney usually does not inquire into the insurance status of a nurse before filing suit. Accordingly, carrying a personal policy does not increase the risk of involvement in a lawsuit. Malpractice law enforces the moral value to do no harm to the patient. The law represents the minimum standard of nursing practice. The standards of good nursing practice include assessment, planning, implementation, and evaluation. In nursing, negligence is the failure to meet accepted standards for nursing competence and nursing scope of practice (Wacker Guido, 2020).

Spoliation
Spoliation is a term used to describe any action, including destruction, alteration, or concealment of records, that deprives the court or patients of evidence. Failure to preserve, or inability to produce, evidence, including medical records, can lead to severe consequences. Although state laws differ, some laws require the court to order an adverse presumption against the party unable to produce the records – that is, the records would have been harmful to the party. Moreover, defending a case is difficult, if not impossible, without the pertinent medical records. If the jury learns of the absence of the records, they may assume

that the records contained damaging information that led the healthcare provider to destroy the records (Jun, J. & Ihm, R., 2021).

Informed consent

Informed consent is the voluntary consent a healthcare agency or healthcare provider requires to provide care for the patient. This can be given by the patient themself or a legal representative (Wacko Guido, 2020). One needs to remember that informed consent is not just a piece of paper, but a process. The patient must understand what they are agreeing to. The information needs to be provided in a manner the patient understands. Many factors influence a patient's ability to give informed consent. Mental status, the ability to comprehend information provided that is necessary for informed consent, the ability to understand the terminology used when treatments or procedures are explained, understanding of the language being spoken, and fear and anxiety are just some of the factors that influence informed consent. The nurse has a legal and ethical obligation to facilitate the patient's ability to give consent as well as the same obligation to support a patient's decision to refuse to give such consent.

Sometimes patients sign a blanket consent to treatment form that allows the healthcare team to provide general care. A specific procedure will need another consent form. Examples of this would include invasive procedures (insertion of a central catheter) and surgery. To ensure the patient is actually providing informed consent, the patient should be asked to explain the procedure back to the healthcare provider. Even though a blanket consent form has been granted, the nurse should ask permission before conducting any nursing care such as bathing, turning, and insertion of an intravenous catheter.

Nurses are often asked to witness the written informed consent process. What the nurse is signing to is that the patient's signature was given freely and without coercion. The nurse is not attesting that the patient understands the care provided (Wacko Guido, 2020).

An informed consent must include the following:

1. Brief but complete explanation of the treatment or procedure.
2. Name and qualifications of the person performing the treatment or procedure and any assistants.
3. Explanation of potential risks/harms that may occur, including death if it is a potential outcome.
4. Explanation of alternatives to the therapy or procedure, which should also include the risks of doing nothing.
5. Explanation that the patient can refuse the procedure or therapy without having other therapies or alternatives discontinued.
6. Explanation that the informed consent can be removed, even if the procedure has started (Wacko Giodo, 2020).

Here are key points of the ANA Code of Ethics (American Nurses Association, 2015). The nurse's role in the informed consent process may include the following:

- **Providing patient education**: One of the most important roles of the nurse is that of patient educator. Nurses can facilitate the informed consent process by providing accurate, objective, and supportive patient education. Initiating patient education can trigger important patient questions and concerns, which if addressed appropriately, can facilitate the decision-making process and alleviate some anxiety.
- **Facilitating patient comprehension**: Patients may have difficulty understanding the plethora of information that accompanies diagnostic procedures and treatment options. Nurses can help with comprehension by asking patients to explain what they understand about proposed treatment and procedures. Common issues that require further explanation or information include the disease being treated, coping with anxiety, dealing with pain, and the impact of other treatment measures already in place on proposed treatments and procedures.
- **Reducing fear and anxiety**: Fear and anxiety can significantly interfere with patient comprehension and the informed consent process. The nurse should work to identify and address the source of anxiety and to relieve or reduce it.

The nurse should make sure that all information is provided and documented, including that the patient knows they have the right to withdraw consent at any time without repercussions. Some healthcare providers have a template for certain types of informed consent such as a written explanation of specific chemotherapeutic drugs, their names, doses, how the drugs will be administered, and on what schedule, as well as anticipated adverse effects. It is especially important that patients and families know what to do when adverse effects occur and how to recognize when an adverse effect is typical and when it could lead to a serious complication.

One of the biggest areas of concern in any type of informed consent or patient education process is assessment of the patient's understanding of the information presented. Did the patient acquire the appropriate knowledge to give an informed consent? How was this assessed? How was this documented?

For example: It is not sufficient to simply ask John and his wife, "Do you understand the side effects this chemotherapy can cause?" Questions that can be answered with a yes or no should be avoided. Some people will simply say "yes" because they are nervous and want to move along or because they do not want to admit that they do not understand.

A more appropriate way of assessing knowledge acquisition regarding side effects would be for the healthcare provider to say, "Please tell me the side effects of the drugs you will be receiving and what to do if you experience them." This requires the patient to explain what they know. The healthcare provider can then assess just how much knowledge the patient actually gained and what information needs to be presented again.

The nurse should ensure that the patient's explanation is then documented. For example: "Patient was able to state that the medication (insert the name of the actual medication) typically causes nausea and vomiting the second day after administration. He states that if he is unable to drink and retain fluids for more than 12 hours, he should telephone his physician. He described the signs and symptoms of dehydration: dizziness; hot, dry skin; parched lips; and confusion. He states that if these occur, he or his wife will seek immediate medical assistance."

It is impossible to anticipate all potential problems regarding informed consent. But if appropriate informed consent is obtained and documented, these problems should be reduced in number and desired patient outcomes facilitated.

Implied consent

Implied consent is consent which may be inferred (Wacko Guido, 2020). An example of this would be a nurse letting the patient know an intravenous catheter is needed and the patient extends an arm without comment. Related to this is emergency consent (Wacko Guido, 2020). In this situation the patient is unable to make their wishes known and a delay in care would result in an adverse situation or poor outcome (Wacko Guido, 2020).

Self-Assessment Quiz Question 5#

Which of the following would be a correct question to assess if the patient truly understood the informed consent they are asked to sign?

a. "You understand the risks of the procedure, correct?"
b. "Do you have any questions?"
c. "Please tell me the risks of the procedure in your own words."
d. "Let me know if you have any questions."

SOME COMMON LAWS WHICH AFFECT PATIENT CARE

There are a number of laws at both the federal and state levels that affect patient care. This list is not meant to be complete, however it presents two of the federal laws that directly affect nurses.

HIPAA

The Health Insurance Portability and Accountability Act (HIPAA) was initially enacted as a means to prevent employers from denying employees health insurance coverage because of pre-existing conditions. In 2003, a privacy rule was published to mandate a consistent level of protection for all health information housed or transmitted electronically that pertains to an individual. This rule applies to "covered entities," including nurses, other employees in healthcare facilities or agencies, health insurance companies, and medical-billing or data-collection companies (Wacko Guido, 2020). Covered entities include nearly all healthcare providers regardless of whether they work in outpatient, inpatient, or residential settings, as well as other persons or organizations that bill or are paid for healthcare (Wacko Guido, 2020).

The HIPAA Privacy Rule is the first comprehensive federal protection initiative to protect the privacy of health (including mental health) information. The purpose of the rule is to provide significant legal protection to ensure the privacy of individual health information without interfering with access to treatment or quality of care (Wacko Guido, 2020).

Basic principles of the HIPAA Privacy Rule

Here is a summary of some of the basic principles of the HIPAA Privacy Rule (Wacko Guido, 2020):

- The privacy rule protects all protected health information (PHI) including any electronic PHI. Protected health information includes "individually identifiable health or mental health information held or transmitted by a covered entity in any format, including electronic, paper, or oral statements." Protected health information includes: name, address (all geographic subdivisions, smaller than state (so street zip code, city or country), all elements of dates, telephone numbers, fax numbers, email addresses, social security numbers, medical record number, health plan beneficiary number, certificate or license number, vehicle identifiers, device identifiers and serial numbers, Wed URL, Internet Protocol (IP) address, finger or voice print, and photographic images (not just face) and other characteristic that could uniquely identify the individual.
- A covered entity, such as a nurse, may not use or disclose PHI information to others except as the privacy rule allows or as authorized by the person or the person's representative who is the subject of the health information.
- A covered entity must provide individuals (or their personal representatives) access to their own PHI unless there are permitted grounds for refusal. The covered entity must provide an accounting of the disclosures of the PHI to others upon request.
- The privacy rule supersedes state law. However, state laws that provide greater privacy protections or give individuals greater access to their own PHI remain in effect.

Disclosures to other persons

Nurses and other healthcare professionals are often in the difficult position of having to refuse to give information to a patient's family, friends, or others involved in the patient's care in order to adhere to confidentiality and privacy mandates. However, under certain circumstances, the privacy rule does allow disclosures to family, friends, and others involved in the patient's care or payment for care (Wacko Guido, 2020).

- Disclosures to family and friends is allowed if the patient is present and has the capacity to make healthcare decisions. A provider may disclose pertinent information to family and friends if the provider does one of the following:
  - Obtains the patient's permission.
  - Gives the patient an opportunity to object and the patient does not object.
  - Decides from the circumstances (based on professional judgment) that the patient does not object.
- Disclosure may be made in person, over the telephone, or in writing if the patient is not present or is incapacitated if, based on professional judgment, the disclosure is in the patient's best interest. Examples of such professional judgment include allowing someone to pick up a filled prescription or other types of similar health information for the patient.
- Disclosures to other persons are allowed if the patient is present and has the capacity to make healthcare decisions if the provider does one of the following:
  - Obtains the patient's permission.
  - Gives the patient an opportunity to object and the patient does not object.
  - Decides from the circumstances (based on professional judgment) that the patient does not object.
- Disclosures to other persons may be made in person, over the telephone, or in writing if the patient is not present or is incapacitated. A provider may disclose relevant information if the provider is reasonably sure that the patient has involved the person in the patient's care and, using professional judgment, the provider believes the disclosure to be in the patient's best interests.

Case study #3

Mrs. Davidson is a 60-year-old investment banker who has been diagnosed with Stage II breast cancer. Her mother and grandmother are breast cancer survivors. Mrs. Davidson has a 35-year-old daughter from whom she is estranged. After undergoing genetic testing, Mrs. Davidson was found to have a genetic mutation that significantly increases the risk of breast cancer. Mrs. Davison has made it clear to her physician and the nursing staff that she will not be sharing the results of the genetic testing with her daughter, Victoria. One of Mrs. Davidson's nurses knows Victoria; they attend the same church.

Questions:

1. Victoria asks the nurse if any test results have come back on her mom. What should the nurse say and why?
2. If she tells Victoria, are there ethical and legal concerns? If so, what are they?
3. If Victoria did not ask the nurse, should the nurse still say anything? Why or why not?

Discussion

The nurse cannot tell Victoria if there were any tests and if there were any results. The nurse would be best saying "I am not allowed to say anything, including if there are test results as your mom's medical information is private." Mrs. Davidson expressed clearly that she did not want her daughter to know. Mrs. Davidson's results are protected under HIPAA; no one has access to the results without Mrs. Davidson's expressed permission. From an ethical point of view, autonomy is not limited to physical autonomy but the autonomy to decide who has access to information. Finally, if Victoria does not ask, the nurse has no obligation for letting her know the results for the reasons above. While some could say, given the nature of the results (genetic), the daughter has a right to know, even genetic results are considered private and require permission from the patient to be disclosed.

Safeguards to protect PHI

The privacy rule requires that reasonable safeguards be used to protect PHI. Such safeguards vary, depending on the organization, the providers involved, the individual patient's condition, and individual healthcare plans. The rule does not mean, however, that safeguards will absolutely guarantee the privacy of PHI. It is expected that all covered entities evaluate the possibility of violations of confidentiality and privacy and work to eliminate them. Nurses must be completely familiar with their organization's policies and procedures pertaining HIPAA and PHI (Wacko Guido, 2020).

Following are examples of reasonable safeguards (Wacko Guido, 2020):

- Mandating the use of secure passwords for computers that contain PHI.
- Speaking quietly when it is necessary to converse in public areas, such as hallways or nursing stations.
- Avoiding discussing patient information in public waiting rooms.

HOSPITAL READMISSIONS REDUCTION PROGRAM (HRRP)

This is a Medicare value-based purchasing program that encourages hospitals to provide improved communications and care coordination around discharges to decrease avoidable readmissions (CMS.gov, 2021). There are six conditions that are monitored for avoidable hospital readmissions within 30 days. The six conditions are: 1) Acute Myocardial Infarction (AMI), 2) Chronic Obstructive Pulmonary Disease (COPD), 3) Heart failure, 4) Pneumonia, 5) Coronary Artery Bypass Graft (CABG) surgery, and finally, 6) elective primary total hip arthroplasty and/or total knee arthroplasty (THA/TKA; CMS.gov, 2021). This program went into effect in 2010 as part of the Patient Protection and Affordable Care Act (Gia and Pachamanova, 2019). In 2019, Gia and Pachamanova reported examining the Medicare AMI readmissions rate and demonstrated a decrease in readmissions with no negative impact on vulnerable populations (Gia and Pachamanova, 2019).

Impact on nurses

Given nurses are on the front-line during patient education and discharge, it is important for nurses to understand the purpose of the HRRP and how nurses contribute to the overall hospital mission to decrease readmission rates. For example, Bahr, et al in 2020 reported a 7.8% decrease in adult readmissions when the patient had the same nurse for 2 consecutive days before discharge. This was independent of other factors historically related to readmissions (Bahr, et.al, 2020).

Self-Assessment Quiz Question 6#

Sue is an RN who works on a busy medical floor. Today is an exceptionally busy day and she needs to discharge a number of patients, some of whom have COPD or heart failure. She decides to skip going over the discharge instructions with her patients and just provide handouts. What could happen to where she works because of this decision?

a. The institution could be charged with a HIPAA violation.
b. The patient could be readmitted within 30 days and the facility could be in violation of HRRP.
c. The patient could feel their PHI is being exposed.
d. There are no issues with what Sue has done.

ISSUES WITH SOCIAL MEDIA, NURSING, AND LEGAL CONCERNS

Social media and nurses

Social media is instantaneous, powerful, and postings are not able to be completely deleted. It has transformed the way people communicate. For nurses, social media can be a useful tool that facilitates professional connections, promotes appropriate and timely communication with patients and family members, and educates and informs both healthcare professionals and healthcare consumers alike.

Using social media is not a problem for nurses or other healthcare professionals as long as they remain aware of the scope, standards, and laws that guide their practice. Patients expect nurses to act in their best interests at all times and to respect their dignity and the dignity of loved ones. Unintentional as well as deliberate breaches of patient confidentiality and privacy can cause harm, destroy the nurse–patient professional relationship, and can even have legal implications for nurses who (willingly or inadvertently) breach duty through the use of social media. Occurrences of inappropriate use of electronic media have been reported to state BONs; reported in the nursing and general public media; and, in some cases, have resulted in severe disciplinary action (National Council of State Boards of Nursing, 2018a).

The NCSBN has published a white paper titled *A Nurse's Guide to the Use of Social Media* (National Council of State Boards of Nursing, 2018a). Although most healthcare organizations have policies that address employee use of social media during work hours, many do not address the use of such media outside of the workplace. When using social media outside the workplace, the nurse is still vulnerable to accusations of professional misconduct such as violations of clients' rights and confidentiality. This white paper attempts to address some of these occurrences.

A nurse's use of social media is still guided by professional, legal, and ethical standards. Client information must be protected regardless of whether the nurse is on or off duty. Privacy refers to the client's expectation and right to be treated with dignity and respect. Federal law reinforces such privacy through HIPAA. Breaches of client confidentiality and privacy can be intentional or accidental and can occur in a multitude of ways. However, even unintentional breaches leave the nurse vulnerable to legal and other forms of disciplinary action. This includes posting information via social media (National Council of State Boards of Nursing, 2018a).

A BON may investigate reports of inappropriate disclosures on social media on the following grounds (National Council of State Boards of Nursing, 2018a):

- Unprofessional or unethical conduct.
- Moral turpitude (actions that are immoral, unethical, or unjust).
- Mismanagement of patient records.
- Revealing privileged communication.
- Breaching confidentiality.

Nursing consideration: Improper use of social media by nurses may violate state or federal laws, thus making the nurse vulnerable to personal liability claims (National Council of State Boards of Nursing, 2018).

Examples of misuse of social media

The following are some examples of misuse of social media that have been, unfortunately, well publicized in various media formats.

A Facebook Photograph. A junior nursing student provided nursing care to a 3-year-old leukemia patient as part of her pediatric clinical rotation. When the child's mother was out of the room, the nursing student took his picture with her cell phone and posted the photo on her Facebook page, commenting about the bravery of the child and how proud she was to be a nurse. The patient's room number was clearly visible in the photo. A nurse from the hospital was browsing Facebook and found the photo. The nurse reported it to hospital authorities. Although the student did not mean to do so, she had violated a client's confidentiality. She was expelled from the nursing program; the nursing program was barred from using the pediatric site for future clinical rotations for their students; and the hospital faced a HIPAA violation (National Council of State Boards of Nursing, 2018).

The nursing student meant no harm, but naively breached confidentiality according to the HIPAA Privacy Rule. Additionally, the nursing program in which the student was enrolled had a clearly stated policy about students not breaching confidentiality and HIPAA (National Council of State Boards of Nursing, 2018).

Another example is Jane, a nurse working at a long-term care facility, who arrived at work one day and found a photo of one of the residents' buttocks on her computer screen. Jane sent the photo to several colleagues who also forwarded the photo. One nurse posted the photo to her Facebook page, saying, "This is what we have to deal with on a daily basis!" By noon, all the nurses and unlicensed personnel were snickering and talking about the photo, and eventually their supervisor was alerted. Being concerned about protecting the residents' rights, the facility began an investigation and alerted the BON. Local media reported on the incident and law enforcement became involved to investigate whether sexual exploitation had been committed. By the end of the day, it made national news and the family threatened a lawsuit. The nurses involved were fired and had to appear before the BON. All of this could have been avoided if Jane, the first nurse, had promptly reported finding the photo to her supervisor and not shared it (NCSBN, 2018c).

A Blog Entry. A nurse blogged on a local newspaper's online chat room about taking care of a client. She referred to the client as her "little handicapper" and mentioned the child's age and using a wheelchair. The description made the client identifiable in the small town in which the nurse worked. A reader of the blog complained to the BON that the nurse had violated privacy laws.

The BON issued a warning to the nurse advising her that further evidence of release of personal information about clients would result in disciplinary action. The nurse could have faced severe disciplinary action and was considerably shaken. She learned a lesson about privacy violations as well as the use of unprofessional language (little handicapper' National Council of State Boards of Nursing, 2018).

Consequences of the misuse of social media

The ease and instant communicability of posting information on social media can lead to serious professional consequences. The NCSBN advises nurses to avoid posting information about patients electronically and on any type of social media. They should be aware of and adhere to all employers' policies regarding social media and promptly report any breach of client confidentiality or privacy.

The following are some possible consequences of misusing social media (National Council of State Boards of Nursing, 2018a):

> Nurses must report any violation of privacy or confidentiality that others make against patients. Failure to do so could result in employer or BON disciplinary action and the filing of civil or criminal penalties against the nurse who failed to report such violations.

- Online posts about coworkers—such as intimidation, threats, or humiliation—could be viewed as lateral violence even if posted from home or other private locations during off-duty hours. Such posts are referred to as cyberbullying.
- Employers must also be cautious in their use of social media. Posting comments about patients, family, or employees may also result in legal action.
- Faculty members are another group who must be mindful of how they use social media. Students are more frequently reporting that faculty members are asking for students' social media passwords or to be friended to bypass privacy settings. Students were not comfortable doing this but were also not comfortable refusing the requests. Faculty must not only instruct student about the proper use of social media but also use social media in an appropriate manner themselves.

Nursing consideration: In addition to disciplinary action by employers and BONs, nurses who violate privacy via social media can face civil or criminal penalties that could include monetary fines or imprisonment (National Council of State Boards of Nursing, 2018a).

Myths surrounding social media

Finally, healthcare professionals as well as students can be naïve when it comes to the use of social media. Here are some common myths regarding the use of social media.

Myth*: Communication posted on social media is private and accessible only to the intended recipient.*

> **Reality**: Content, once posted or transmitted, can be sent to others and is usually not under the control of the original writer. Some social media sites even have a very broad waiver of rights to limit use of transmission or posting of content (National Council of State Boards of Nursing, 2018a).

Myth*: Content deleted or removed from a social media site is no longer accessible or recoverable by others.*

> **Reality**: As soon as something is posted, it exists forever and can always be discoverable by a court of law (National Council of State Boards of Nursing, 2018a).

Myth*: It is OK to post private information about patients as long as the communication is accessed only by the intended recipient.*

> **Reality**: Posting such information is still a confidentiality breach. It is also unacceptable and inappropriate for nurses to discuss or refer to patients, even if such patients are not identified by name but referred to by room number, diagnosis, condition, behavior, or even a nickname. This constitutes a breach of confidentiality (National Council of State Boards of Nursing, 2018a).

Self-Assessment Quiz Question #7

Tom, who is an RN, has had a really rough day and feels the need to vent. He states how short the staffing is on his unit, names his unit, uploads a picture of the staffing and states most of his patients were combative on his private Instagram account. Which of the following is one of the issues with his post?

a. Breach of confidentiality.
b. Breach of nurse/nurse patient information.
c. Breach of protected hospital information.
d. Breach of nurse-to-nurse confidentiality.

Impaired nurses

Substance use disorders are still stigmatized for nurses, which could cause them to be hesitant to reach out for help (Webster, 2022). Rates of reported substance abuse are the same as the general population at around 6% to 8%, however, about 18% of nurses *show signs* of substance abuse at work and many nurses report using substances to cope with stressors (Webster, 2022). Risk factors include family history of substance abuse or past emotional or physical trauma. The vast number of nurses report work stress as the reason for choosing to use drugs or alcohol. The workplace stress includes chronic staff shortages with extra shifts, and excessive workload during shifts (Webster, 2022).

Nursing consideration: Signs of unhealthy substance use in nurses: Changes in work habits, conflicts with patients or patients' families, charting errors or omission, dramatic mood swings, and social/professional isolation. Impaired performance is a clear warning sign; however, symptoms of impairment might be subtle such as being dazed or sleepy (Webster, 2022).

In most states a nurse may enter a non-disciplinary alternative to discipline program (National Council of State Boards of Nursing, 2018b). The sooner the substance abuse is identified and treated, the better the chance the nurse will return to work and patients will be protected (National Council of State Boards of Nursing, 2018b).

Nursing consideration: Recreational marijuana: As more states legalize recreational use of marijuana, nurses may wonder if there are implications for their practice. The answer is in a grey area but can be yes. A nurse can be subjected to random drug testing at work or before obtaining employment. Marijuana can stay in the blood stream for up to 30 days, thus with recreational use, even if it has been a few days, drug screens can be positive. Current recommendation is not to use any products for recreational use that contain marijuana (Brown, 2018).

LAWSUITS

Categories of negligence that often lead to malpractice lawsuits

Nurses can be sued for some of the following reasons (O'Neil, 2022):

1. Medication errors.
2. Failure to follow orders.
3. Practicing outside of one's scope of practice.
4. Failure to recognize an order error.
5. Failure to communicate, report, or notify and provide pertinent information about a patient in a timely and proper manner.
6. Wrongful delegation of a nursing function.
7. Lack of, or poor documentation.

Nursing consideration: In a court of law, the patient is referred to as the plaintiff. The nurse named in the malpractice lawsuit is referred to as the defendant (Wacko Guido, 2020).

Standards of care

Failure to follow established standards of care can change as new treatment interventions are discovered and nursing roles and responsibilities evolve. Policies and procedures often change based on advances in treatment and the need to use new or unfamiliar equipment. Examples of failure to follow standards of care can be as simple as failure to adhere to medication administration procedures; failure to institute necessary protocols such as a fall protocol; or failure to use equipment in a responsible manner. In fact, failure to use equipment safely and accurately is identified as a separate category among the six major categories of negligence that can lead to malpractice lawsuits (Wacko Guido, 2020).

Communication

Failure to communicate is a consideration in most malpractice lawsuits (Wacko Guido, 2020). Because many conversations are not documented, it can be difficult to prove the adequacy of communication between nurses and other healthcare professionals.

Here are some suggestions for ensuring adequate communication (Wacko Guido, 2020):

- Clearly communicate all pertinent patient information to the physician and other healthcare professionals as appropriate.
- Provide all relevant discharge information to the patient.
- Document thoroughly.
- Clearly communicate all assessment findings to the nurse from the oncoming shift.
- Participate in continuing education activities that focus on communication.

Documentation

Failure to document can be summed up in the familiar sentence, "If it isn't documented, it wasn't done." Failure to document can also lead to a specific treatment intervention (e.g., medication administration, dressing change) done more than once. Failure to document can lead to an inadequate plan of care if, for example, new assessment findings are not documented and shared with the appropriate colleagues (Wacko Guido, 2020). A well-documented medical record can provide an accurate reflection of nursing care, improve communication among the interdisciplinary team, demonstrate competency, and may help guard against a lengthy litigation process (NSO, 2020).

Assessments and monitoring

Failure to assess and monitor indicates that the nurse did not assess and monitor the patient appropriately based on the patient's clinical presentation or the facility policy. When evaluating, monitoring, and assessing are reviewed in a court of law, nursing expert opinions are crucial. The nurse expert for the plaintiff would describe what a reasonably careful and prudent nurse would do under the same or similar circumstances (Wacko Guido, 2020).

Elements of malpractice

What evidence must be obtained to prove malpractice? Four elements must be shown before a nurse is said to be liable for malpractice (Wacko Guido, 2020):

1. Duty.
2. Breach of duty.
3. Harm or damages.
4. Causation.

Nursing consideration: Remember that once duty is established, the nurse cannot abandon the patient. For example, when a nurse accepts an assignment, the nurse cannot stop caring for the patient without insuring there is another nurse to care for the patient (Wacko, Guido, 2020)

In a malpractice action, the plaintiff (the patient) must prove that the nurse's actions, or failure to act, violated a standard of care, thereby breaching the duty to the patient. Attorneys for the plaintiff will present testimony concerning the nurse's failure to competently provide safe and appropriate nursing care (Wacko Guido, 2020).

What types of evidence will the plaintiff's attorneys use to show breach of duty? Evidence is gathered to show that there was

a violation of the standard of care. Sources of such evidence include the following (Wacko Guido, 2020):

- The patient's medical record.
- Photographs.
- X-rays.
- Results of diagnostic (including imaging) studies.
- Testimony from witnesses such as other nurses, nurse managers, the patient, the patient's family members, and other visitors.

Another way the attorneys may seek to prove a breach of duty is to call on an expert witness to give testimony. A nurse expert witness must meet the following criteria to provide testimony (Wacko Guido, 2020):

- Be currently licensed to practice nursing.
- Have credentials that match or exceed the defendant's credentials.
- Be without bias.
- Not have any professional or personal relationship with any of the persons involved in the lawsuit.
- Be able to describe the relevant standard of care.
- Be able to describe how the nurse (defendant) failed to meet the standard of care and how that failure caused or contributed to patient injury.

Harm

For a nurse to be held liable for malpractice, the plaintiff (patient) must prove that actual harm resulted from the nurse's breach of duty (Wacko Guido, 2020). For example, suppose a nurse administered a dose of ampicillin to the wrong patient because they did not verify the patient's identity. The patient was not allergic to the medication and had no adverse effects from receiving this medication in error. Although the nurse failed to adhere to an accepted standard of care, no harm was done to the patient. Therefore, the "harm" element of malpractice has not been met.

***Now consider this example**: A patient is to ambulate for the first-time following surgery. The RN had not assessed this patient before ambulation. Instead, they delegated the responsibility for ambulating the patient to a nursing assistant. As the nursing assistant helped the patient to stand, the patient complained of feeling dizzy and fell to the floor, fracturing their hip. The nurse was found to have breached their duty to the patient because they failed to assess the patient before ambulation and delegated a task to a nursing assistant who was not qualified to assess the patient's postoperative condition. The patient was harmed; therefore, the first three elements of malpractice has been met.*

Causation

Causation is the fourth element of malpractice. The plaintiff must prove not only that the nurse breached their duty and the patient suffered harm, but also that the nurse's breach of duty specifically caused the patient's harm. In other words, there must be a causal link between the failure to meet the standard of care and the harm the patient suffered (Wacko Guido, 2020).

Nursing consideration: The plaintiff's attorney must prove that "but for" the nurse's negligence, the patient would not have suffered harm (Wacko Guido, 2020).

***For example:** Consider the patient who received the ampicillin by mistake in the earlier scenario. Suppose that Monica, an RN, administered the ampicillin around 9 a.m. At 6 p.m., the patient told a nursing assistant that he was having aching pain in his left calf. The nursing assistant reported the complaint to Sharon, the RN accountable for providing nursing care to the patient that evening. Sharon told the nursing assistant to keep an eye on the patient but did not assess them herself. The pain became worse, and ultimately the patient suffered a pulmonary embolism caused by phlebitis in the left calf. They later died in the intensive care unit. The patient's family sued both Monica and Sharon for malpractice. Upon review, it was determined that, although Monica did administer the ampicillin to the patient in error, this medication incident did not cause the harm suffered as a result of the pulmonary embolism. Sharon, however, was held liable for the patient's death because she failed to adhere to the standard of care and the NPA by inappropriately delegating assessment to a nursing assistant.*

Damages

Once malpractice has been proven, the plaintiff's damages are determined. Damages refers to the monetary value of the harm that occurred (Wacko Guido, 2020).

Nursing consideration: Damages usually include out-of-pocket medical and related expenses resulting from the occurrence of malpractice. Examples of expenses include lost wages, costs of medical treatment, and pain and suffering experienced by the patient as the result of the harm caused by malpractice (Wacko Guido, 2020).

For the patient/plaintiff to win a malpractice lawsuit, all elements of malpractice must be proven. The burden of responsibility for proving malpractice remains with the patient/plaintiff. The nurse/defendant does not have to prove that their actions were not negligent. The patient/plaintiff's attorney must prove that malpractice occurred and will attempt to convince the judge or jury that each element of malpractice has been proven (Wacko Guido, 2020).

Case study #5

Carol is one of several nurses named in a malpractice lawsuit. A patient had been receiving antibiotic therapy for an infection. The infection grew steadily worse, and the patient had to have his leg surgically amputated as a result of the infectious process. There is no documentation that Carol evaluated the effectiveness of the antibiotic therapy, as evidenced by documenting and monitoring the appearance of the wound when she and her colleagues changed the dressing.

Questions:

1. What element of the ANA scope of practice was violated here?
2. Has the plaintiff proven malpractice?

Discussion:

Assessment and documentation have been violated. Given there was no assessment data concerning the wound in the chart, it would be hard to say during dressing changes that anyone actually examined the wound. For malpractice the following must be met: duty, breach of duty, harm or damages, and causation. Yes, Carol had a duty to the patient to care for the wound. There was a breach of duty as there was no documentation of assessment that the infection was getting worse (and notification of the provider of this). There was harm to the patient as the patient needed an amputation because of the uncontrolled infection. There was causation in this case. Carol and the other nurses' lack of documentation did not give the provider an opportunity to change the antibiotics for the wound, thereby potentially preventing the amputation.

Nursing consideration: Failure to maintain minimum standards of nursing practice accounts for 58.9% of scope of practice license protection matters (NSO, 2020). An example of this is the following. "An RN working at a medical center failed to follow policies and procedures related to proper patient identification of two patients and to review relevant laboratory results. As a result of bypassing these standards, the nurse gave an extra unit of blood to one patient that was intended for the other patient. The State Board of Nursing (SBON) placed the nurse on probation for 3 years." Another example is "an RN working in the PACU was caring for a patient with extreme nausea. The nurse made several attempts to contact the treating provider but was unsuccessful. The nurse called the pharmacist, stating that she believed the patient's condition was urgent and she would contact the provider for an order. The medication was dispensed and the nurse gave it to the patient without ever obtaining an order. The SBON publicly reprimanded the nurse and ordered her to pay a fine for violating the Nursing Practice Act by practicing beyond the scope of practice for an RN" (NSO, 2020).

Protection from being sued

No strategy guarantees complete protection from being sued for malpractice. Unfortunately, patients or families may file lawsuits against nurses and other healthcare professionals for reasons that have nothing to do with the quality of care received (Wacko Guido, 2020).

Patients may be unhappy about a diagnosis or the outcome of a procedure. They may believe they were not treated with respect, or they may express anger over the death of a loved one even though standards of care were upheld. Unfortunately, some people are simply looking for an opportunity to obtain money regardless of the care received. Although none of these reasons is the result of a nurse's failure to adhere to appropriate standards of care, lawsuits can still be filed. Remember, however, that for the plaintiff to win a malpractice action, the four elements of malpractice must be proven (Wacko Guido, 2020).

Nursing consideration: A malpractice lawsuit has what is called an applicable statute of limitations. This means that a legal action must be filed against all defendants within a specific period of time from the time the allegedly negligent incident occurred (Wacko Guido, 2020). Sometimes, to avoid discovering that the statute of limitations has expired, and certain nurses and other healthcare professionals were not included as defendants in the lawsuit, the patient's/plaintiff's attorney may include as defendants "anyone and everyone" who may have been in any way involved in the client's care concerning the events leading to the alleged harm. After investigation, nurses and others not actually involved may be eliminated from the lawsuit (Wacko Guido, 2020).

Is there anything nurses can do to reduce the chances of being named in a malpractice action? Here are some suggestions (Wacko Guido, 2020):

- Practice only within the framework of their NPA and the scope and standards of their practice.
- Remain competent by attending in-services and continuing education activities.
- Become active in professional organizations.
- Identify their strengths and weaknesses. Work to enhance strengths and reduce weaknesses. Do not accept assignments if they feel they are not competent to perform them.
- Use all equipment safely and appropriately. If a nurse is unsure about the operation of a piece of equipment, they should seek assistance.
- Document all patient care activities and communications relating to patient care.
- Know how to use the chain of command to seek clarity or report situations that compromise patient care, and do not hesitate to do so.
- Interact in an objective, honest, and respectful manner with patients, families, and colleagues.

Nursing consideration: The most effective way for nurses to protect themselves from facing a malpractice lawsuit is to know and practice according to the NPA and standards for their levels of nursing practice and degree of specialization. This means that they must know the standards and NPA of the state or states within which they practice. They must also know the scope of practice standards as established by other recognized authorities such as relevant specialty organizations and the healthcare organization in which they practice (Wacko Guido, 2020).

The National Council of State Boards of Nursing does provide a checklist to enhance patient safety and minimize a nurse's liability for exposure (NCSBN, 2018c).

Below are some of the points on the checklist:

1. Read nurse practice act at least annually.
2. Decline to perform a requested service that is outside legal scope of practice and immediately notify supervisor or the director of nursing.
3. Contact the risk management or legal department regarding patient and practice issues, if necessary.
4. Contact the board of nursing and request an opinion or position statement on nursing practice issues.
5. Use the chain of command or the legal department regarding patient care or practice issues.
6. Evaluate every patient for risk of falling utilizing a fall assessment tool that considers the following factors, among others: Previous fall history and associated injury, gait and balance disturbances, foot and leg problems, reduced vision, medical conditions and disabilities, cognitive impairment, bowel and bladder dysfunction, special toileting requirements, use of both prescription and over-the-counter medications, and need for mechanical and/or human assistance.
7. Evaluate environmental factors needed to reduce risks - whether working in a hospital, rehabilitation, long term care facility, or in a home setting.
8. Accurately document all falls; some of the documentation should include patient functional status before and after fall, any witnesses to the fall, any contributory concerns (wet floor), and mental state, along with other things.
9. Complete a patient drug history, including current prescription medications; over-the-counter drugs and

supplements; alternative therapies; and alcohol, tobacco and illicit drug use.
10. Review allergy notations on medication profiles before administering any medications.
11. Review laboratory values and diagnostic reports before administering medications and make practitioners aware of any abnormalities.
12. Utilize machine-readable barcoding to check patient identity and drug data before administration of drugs or, if this is not possible, verify patient identity using two patient identifiers (such as patient ID number and birthdate) from the original prescription.
13. Document simultaneously with medication administration to prevent critical gaps or oversights.
14. Accept verbal drug orders from practitioners only during emergencies or sterile procedures and, before transcribing the order, read it back to the prescriber and document the read-back for verification.
15. Follow procedures to prevent wrong dosages or concentrations of identified high-alert drugs (e.g., anti-coagulants, muscle relaxants, insulin, potassium chloride, opioids, adrenergic agents, dextrose solutions and chemotherapeutic agents).
16. Ensure that high-alert medications are always accompanied by standardized orders and/or computerized safe-dosing guidelines and are verified by two persons before administration.
17. Ensure that pediatric medications are accompanied by standardized orders and/or computerized dosing guidelines.
18. Follow employer's guidelines for both adult and pediatric patients' dosages, formulations, and concentrations of drugs.
19. Follow the employer's policies and procedures to keep drugs with look-alike and sound-alike names separate (NCSBN, 2018c).

Nursing consideration: Per report by the Nurses Service Organization (2020) the top defense matters in nursing litigation were 32.5% professional misconduct; 24.8% scope of practice, 9.7% documentation errors of omissions, 9.3% treatment and care; 8.8% patient's rights and patient abuse; 6.2% medication administration (NSO, 2020).

What to do if named in a malpractice suit

The first step the nurse should take is to inform their employer. Then the nurse needs to ask the following questions and be sure to receive clear answers (Wacko Guido, 2020):

- Am I covered by the organization's malpractice insurance policy?
- Up to how much in damages will the malpractice policy pay?
- Will the organization's attorney represent me in this lawsuit?
- May I hire my own attorney?

Even if the nurses are covered by the organization's malpractice insurance policy, it might be wise to consult with a personal attorney. It might be important to have legal counsel whose first and only priority is the nurse, not the employing healthcare organization.

Case study #6

Olivia is a critical care nurse. She is certified in that specialty and is familiar with the scope and standards of practice as they relate to critical care nursing. Olivia has worked in a large metropolitan medical center for 10 years as a critical care nurse. In this setting, Olivia has fulfilled her role as a critical care nurse to the maximum level within the standards legally and ethically allowed.

Recently, because of family needs, Olivia moved to a rural area served by a large community hospital. Hospital policies and procedures prohibit Olivia from performing some of the critical care procedures that she did in her previous work setting. Olivia is very upset about this and has complained, vehemently, to the nurse manager of the critical care unit. The manager sympathizes with Olivia but explains that change comes slowly to this facility. She suggests that Olivia form a task force to help provide evidence regarding the procedures now prohibited, showing that they are within the properly educated and trained critical care nurse's legal realm of practice. The manager promises to be part of the task force and to help develop and support any necessary training and education for Olivia's critical care colleagues. Olivia is frustrated: "It's not my job to show these outdated people how stupid they are being!"

One evening Olivia performs a procedure that, although within her scope of practice, is prohibited by hospital policy. The patient suffers a life-threatening complication.

Questions:

1. Can the family bring a lawsuit against Olivia and the hospital? Why or why not?
2. If the family can bring a lawsuit against Olivia and the hospital, do you think all elements of malpractice will be met?

Discussions:

Yes, the family can bring a lawsuit against Olivia and the hospital. While anyone can file a lawsuit, in this case there is potential malpractice. For malpractice, there needs to be a duty, breach of duty, harm, and causation. Olivia had a duty to care for the patient *following the hospital's policies and procedures.* While Olivia could perform the procedure in her original hospital, there were no policies in place for her to perform the procedure in the current hospital. Thus, by breaking the *scope of care at the hospital*, she breached her duty to the patient. Even if a NPA says an RN can do something, if the hospital has a policy that prohibits it, the nurse is obligated to follow the hospital policy. Hospital policy can restrict scope of care but cannot expand it larger than the state's nurse practice act. Yes, there was harm. The patient suffered a life-threatening complication and there was causation due to the fact the harm was caused by the procedure. So yes, all elements of malpractice have been met.

The nurse should not discuss the case with anyone except the attorney who is representing them (Wacko Guido, 2020). This includes other defendants and close friends. Discussing the case with even close friends may lead to problems later if these close friends indulge in gossip about the lawsuit or are called to testify against the nurse/defendant.

Suppose a nurse is not being represented by the healthcare organization but by an attorney they have hired. In that case, the nurse may be told not even to discuss the case with their employer (Wacko Guido, 2020).

Giving a deposition

A nurse named as a defendant in a malpractice lawsuit should expect to give a deposition. A deposition is "sworn pretrial testimony in response to written or oral questions and cross-examination, recorded by a certified court reporter." Depositions are taken from the plaintiff (patient or family), other defendants, and expert witnesses for both the plaintiff and the defendant. A written, audio, or video record is made of the testimony given during the deposition. Testimony is given under oath, meaning that the persons involved swear that the testimony they

are giving is truthful. If the person lies, then perjury has been committed (Wacko Guido, 2020).

Nursing consideration: The information provided during a deposition can be used during the actual malpractice trial. Testimony given during a deposition that differs from testimony given during the trial may be a point of controversy during the trial. Such differences may have an adverse impact on any or all parties involved in the lawsuit. The credibility of the person whose testimony at the trial differs from the testimony given during the deposition could be damaged (Wacko Guido, 2020).

Here are other key points about giving a deposition (Wacko Guido, 2020):

- Depositions given by the defendant are meant to clarify what the patient's medical record contains (documentation by the defendant) and what the defendant intends to say as part of their testimony at trial.
- Depositions given by expert witnesses are meant to examine the scope of the experts' opinions.
- Before the deposition, the nurse's attorney will provide the nurse with advice and guidance as to how they should conduct themselves. The attorney will also review with the nurse the patient's medical record and questions likely to be asked by the patient's/plaintiff's attorney. The attorney will also explain which documents and discussions do not have to be answered - such as information about incident reports. Nurses and other defendants should follow the advice of legal counsel carefully. Deviating from such advice such as discussing the case with friends can have serious consequences.
- During a deposition, in addition to the patient's/plaintiff's attorney and the nurse's/defendant's attorney, other people may be present such as the patient, the patient's family members, and lawyers who represent other defendants in the case.
- During the deposition, the nurse will be asked about their background, education, nursing experience, and the care provided to the patient/plaintiff.

Malpractice coverage

Although the healthcare organization for which the nurse works may cover them under the organization's malpractice insurance policy, it is important that all nurses understand the kinds of events and financial limitations covered by the policy. Nurses should regularly check their employer's coverage of its nurses to be sure that coverage has not changed or been discontinued (Wacko Guido, 2020).

Nursing consideration: If the nurse and their employer are both named as defendants in a lawsuit, even if the nurse is covered by the employer's malpractice insurance, the interests of the nurse and the employer may be contradictory. It is possible that the employer could claim that the nurse failed to act within the scope of their employment and is consequently not covered by the employer's malpractice policy (Wacko Guido, 2020).

Here are some questions nurses need to ask regarding malpractice coverage (Wacko Guido, 2020):

- Am I covered by my employer's malpractice insurance? If so, what are the monetary limits of this coverage?
- What kinds of events and actions does the malpractice insurance policy cover?
- How many claims per year does the malpractice insurance policy cover?
- Does the malpractice insurance policy cover me if the incident that triggered the malpractice lawsuit occurred while I was an employee, but was not an employee by the time legal action was taken? In other words, does my protection stop if I am no longer employed by the organization, even though the incident occurred during my time as an employee?
- Does my employer's malpractice insurance cover the cost of an attorney to represent me?
- What are the laws in the state in which I practice concerning malpractice coverage? Are certain professionals mandated to have coverage? If so, how much coverage is mandated?

Employer's insurance relates to malpractice litigation. However, suppose a complaint is filed against a nurse by the state BON or other regulatory body. Legal representation is still necessary. An employer's policy will cover only malpractice representation. The nurse is on their own when dealing with the BON or other regulatory body complaints unless covered by personal malpractice insurance that includes such coverage (Wacko Guido, 2020).

Nursing consideration: If the nurse and their employer are both named as defendants in a lawsuit, even if the nurse is covered by the employer's malpractice insurance, the interests of the nurse and the employer may be contradictory. It is possible that the employer could claim that the nurse failed to act within the scope of their employment and is consequently not covered by the employer's malpractice policy (Wacko Guido, 2020).

Understanding malpractice insurance

A number of myths surround nursing malpractice insurance. Below are some reasons why a nurse should carry their own individual liability insurance (Wacko Guido, 2020):

1. Defending against a lawsuit is expensive and the healthcare agency's insurance may not cover all the nurse's legal expenses.
2. Nurses with private professional liability insurance are not sued more frequently. A plaintiff does not know if the individual has individual liability insurance until after the lawsuit is filed.
3. Costs may be relatively inexpensive, depending on where the nurse works.
4. Malpractice is not synonymous with incompetence or guilt. Sometimes, untoward events do occur placing the patient at risk, which can place the nurse at risk of being named in a lawsuit.
5. Should the institution decide to sue the nurse for reimbursement, the nurse has coverage for this.
6. A nurse can be sued, even if standard of care was followed. The patient's or family's perception that an error has occurred may be sufficient to trigger a lawsuit.

Types of malpractice insurance and their coverage

Occurrence-based policies cover nurses for events that occurred while the policy was in effect (e.g., the policy period). This is true even if the policy has expired but the claim was from an incident within the time period where the policy was enforced. *Claims-made policies* only provide for claims made within the active policy period and when the lawsuit has been filed with the courts, and when the insurance company is made aware of the lawsuit. If the lawsuit is filed after the policy has expired, the nurse is not covered (Wacko Guido, 2020). Policies usually cover defense costs; covered injuries, which can include bodily injury, mental anguish, property damage, libel, slander; and economic damages (Wacko Guido, 2020).

Policies will include limits of liability (individual claim, and overall [aggregate]). Some policies will not cover criminal actions, incidents under the influence of drugs or alcohol, "physical assault, sexual abuse, molestation, habitual neglect, licentious and immoral behavior toward patients whether intentional, negligent, inadvertent, or committed with the belief that the other party was consenting," and finally actions that violate state nursing practice acts (Wacko Guido, p. 188, 2020).

JUST CULTURE

A just culture is one that supports a safe haven for the reporting of errors and near misses in healthcare (Paradiso & Sweeney, 2019). It is the organization that is ultimately accountable for systems they design and the analysis of the incident, not the individual. The organization realizes errors are a sequence of events with multiple opportunities for correction, as opposed to occurring in a vacuum (Paradiso & Sweeney, 2019). There is not one definition of just culture; however, a generally accepted one is "organizational accountability for the systems they've designed and employee accountability for the choices they make" (Paradiso & Sweeney, 2019).

The first pillar of a just culture is the adoption of a nonpunitive, non-blaming system for the reporting of errors. The goal of the organization is to improve patient outcomes but not blame the individual (Paradiso & Sweeney, 2019). The second pillar is understanding the behavior leading up to a person's choice. Behaviors that could lead to errors would be "at-risk" behaviors, where the risk is not recognized or is believed to be justified. There can also be reckless behavior, which is a conscious decision to disregard the risk that is substantial and unjustifiable (Paradiso & Sweeney, 2019).

Once an error or near miss has been reported, the organization should conduct a root cause analysis (RCA) or failure missed and effects analysis (FMEA) to truly understand how the error occurred and what change is needed to prevent this in the future (Schroeder, Parisis & Foster, 2019). Systems are not infallible. Even with all the checks and balances in US healthcare systems (electronic medical records, orders etc.), mistakes still occur (Paradiso & Sweeney, 2019).

So, does a "Just Culture" mean there is never repercussions for an individual in a healthcare system? No, as stated above, there is a pillar consisting of understanding the behavior underlying the error. There are "at-risk" behaviors, which are a known violation of a rule or procedure, done in good faith that the violation is inconsequential; or reckless behavior, which is the commission of an error out of intentional disregard for the rule or procedure, its consequence, or both (Wasserman, Redinger and Gibb, 2020).

The question is "what should be the repercussion?" Samuel Reis-Dennis (2018) provided an ethical basis for some sort of repercussion for errors based on the ethical idea of a moral imbalance. When someone decides to knowingly break the rules, they are taking advantage of a non-blame culture. This brings about a disadvantage for others. Also, the person who "breaks the rules" is demonstrating a contempt for themselves and for those who follow the rules (Reis-Dennis, 2018). The message communicated is "the rules only apply to others, but not to the person who has broken them" (Reis-Dennis, 2018). He does not advocate punishment for system breakdown, but when members of the healthcare team knowingly break the rules. If there are also system issues, those need to be investigated and handled (Reis-Dennis, 2018).

What should the consequences be for "breaking the rules?" Wasserman, Redinger and Gibb (2020) provide some ideas. The recommendations are for medical students who "break the rules," however they can be applied to all persons working in healthcare. They advocate for two different sets of responses based on the type of "error". If it was a medical error, there is one set of responses and if there is a lapse in professionalism, there is another set (Wasserman, Redinger and Gibb, 2020). Below is a table adapted from their article, expanded to all healthcare providers, not just medical students.

Table 1

Type of Error or Lapse	Response	Example
Medical/Nursing Error		
Inadvertent human error: an error, usually resulting from shortcomings of human cognition, that was unintended.	Console.	Not hearing a patient call button, forgetting to turn a patient.
At-risk behavior: a knowing violation of a rule or procedure but with a good-faith belief that the violation is inconsequential.	Coach.	Error caused by failing to scan a patient's bedside barcode before delivering medication because the system often doesn't work correctly or ignoring a medication dosage alert in the electronic medical record because such alerts pop up constantly.
Reckless behavior: commission of an error out of intentional disregard for the rule or procedure, its consequences, or both.	Discipline.	Failure in completing a procedure or not following policies that directly endanger a patient (e.g., not monitoring a patient after giving a medication that is known to potentially cause harm).
Lapse in Professionalism		
No-fault suboptimality: a lapse caused largely by environmental factors, but that could have been handled better by the employee.	Affirm, support, advise.	Missing a dressing change because central supply did not deliver the necessary supplies. Being late to work because of a storm where power outages were predicted and alarm clock did not go off.
Nonegregious unprofessionalism: knowing engagement in an unprofessional behavior but with a reasonable and good-faith belief that the violation is minor or inconsequential.	Remediate.	Skipping a mandatory inservice because it is felt the content is redundant.

Table 1		
Type of Error or Lapse	**Response**	**Example**
Egregious unprofessionalism: knowing violation of a professionalism expectation without a reasonable claim or good-faith belief that the violation is minor or inconsequential.	Discipline.	Logging into a family member or friend's electronic medication record after training in HIPAA and other policies.
Modified from: Responding to Unprofessional Behavior by Trainees- A "Just Culture" Framework. Wasserman, Redinger, & Gibb, 2020.		

What is the difference between a "Just Culture" and law enforcement?

Both cultures aim to prevent harm to persons/patients and public interest. According to Eng and Schweikart (2020) "Just culture emphasizes the quality or desirability of an individual's choices and behaviors and apportions corrective actions or discipline on that basis more so than on the severity of the consequences. Criminal law, on the other hand, often focuses on outcomes, and while the law "generally disallow[s] criminal punishment for careless conduct, absent proof of gross negligence" (i.e., a heightened level of negligence that may include recklessness; p781)." This means in a just culture all aspects of the incident are reviewed, however, when examining the same situation through the lens of the criminal system, only the outcome is important." Instead of imposing punishments for all categories of failures of duty, a just culture advocates acceptance and support for errors, coaching to change risky behaviors, and discipline or punishment for those whose actions are reckless because they were committed with knowledge of harm or with purposeful intent to harm" (Eng and Schweikart, 2020 p781). Whereas in law enforcement, there may not be "coaching" but punishment, no matter if the behavior was risky (such as driving 5 miles over the speed limit) or with wanton recklessness (driving 50 miles over the speed limit and swerving wildly; Eng and Schweikart, 2020).

Even with Just Culture, does the error still effect the healthcare provider?

The most obvious victim of a medical error is the patient (and family), however, there is a second victim - the healthcare worker who was involved with the error (White and Delacroix, 2020). The healthcare worker can suffer significant emotional harm and burnout, whether their contribution to the error was preventable or not, and depending on the severity of the error (Sexton, Adair, Profit, Milne, McCulloh, Scott and Frankel, 2021). White and Delacroix, in their integrative review of the research, describe a six-stage recovery process which most second victims go through.

The six stages are:

1. Chaos and accident response, where the medical error is first detected and usually involves an acute stress response.
2. Intrusive reflections, where those who err experience a period of self-isolation and rumination regarding the event.
3. Restoring personal integrity, in which healthcare providers are haunted by intrusive thoughts regarding the error and its impact on their personal and professional self.
4. Enduring the inquisition, where second victims worry about legal and professional repercussions.
5. Obtaining emotional first aid for those who err to seek emotional support from trusted family members, friends, and/or colleagues.
6. Moving on by either dropping out, surviving, and/or thriving (White and Delacroix, 2022 p7). A healthy recovery after a medical error is highly grounded in the individual's coping skills and self-forgiveness (White and Delacroix, 2022).

What also assists with second victim recovery is support from the employing institution. According to the findings in the White and Delacroix article, the second victim needs 1) fair treatment; 2) respect; 3) institutional understanding of their need for assistance in coping with the experience; 4) institutional support; and 5) transparency as the institution fosters a culture of openness to aid in the healing process (White and Delacroix, 2020, p8).

This finding was also supported in a research study published after White and Delacroix's publication. Sexton, et al in 2021 published their findings examining the perception of institutional support for second victims (Sexton, Adair, Profit, Milne, McCulloh, Scott, and Frankel, 2021). They examined cross sectional data from 13,040 healthcare workers across 440 work settings within one academic health system (Sexton, Adair, Profit, Milne, McCulloh, Scott and Frankel, 2021). Forty-three percent of the registered nurses surveyed (the largest group within the respondents with an n=3,367) were aware of a second victim (Sexton, Adair, Profit, Milne, McCulloh, Scott, and Frankel, 2021). But of those nurses, only 31% felt the institution actually provided support for second victims. (Sexton, Adair, Profit, Milne, McCulloh, Scott and Frankel, 2021). The study also demonstrated that those who felt there was poor support for second victims also scored more negatively on the assessment of the safety culture of the institution, than those who did not know a second victim. Thus, the authors concluded this dichotomy could have significant repercussions on the overall culture of the institution. Leaders can take away from this the need to assess the gaps in perceived second victim support and to improve the institutional structure of support, which may help with overall increase in the support of a safety culture (Sexton, Adair, Profit, Milne, McCulloh, Scott, and Frankel, 2021).

Should the error be disclosed to the patient or family?

Traditionally, patients and families were not made aware of the error unless it was obvious. Healthcare systems traditionally had a deny and defend strategy in hope of providing limited information to the family and denying fault. However, this has changed (Agency for Healthcare Research and Quality [AHRQ], 2019). This is in direct contrast to patient-centered care. Now a number of institutions have adopted the philosophy of "communication and response." This philosophy emphasizes early disclosure of adverse events, appropriate investigations (and letting the patient and family know the institution is investigating the event), changes to mitigate the chances of the event happening again, and, if care was inappropriate, financial compensation. Research has demonstrated this approach has led to a decrease in malpractice lawsuit and lower litigation costs. How the adverse event is disclosed to the patient and/or family needs to be handled thoughtfully and with sensitivity to avoid alienating the patient and/or family. State legislatures have supported this change in the culture of healthcare with more than 33 states having laws that preclude some or all information contained in the disclosure from being used in a malpractice lawsuit (AHRQ, 2019).

Self-Assessment Quiz Question #8

Taylor makes a medication error. He forgets to scan the patient's identification before administering the medication. There was no harm to the patient. He submits a report in the hospital's reporting system. In a just culture, should there be any consequences, and if so, what should they be?

a. No consequences, since he reported the failure to scan.
b. No consequences, since there was no harm to the patient.
c. Yes, this is an at-risk behavior and coaching would be appropriate.
d. Yes, this is a reckless behavior, and he should be written up.

Conclusion

Nurses have faced legal and ethical dilemmas for many years. It is the obligation of each nurse to practice within the scope and standards of practice as established by NPAs and within ethical codes of conduct. Understanding what could place a nurse in legal jeopardy is important. Also understanding what a "just culture" is and is not, will help the nurse in their care. Finally, the best interest of the patient is every nurse's primary goal and responsibility.

References

- Agency for Health Care Research and Quality (AHRQ). (2019). PSNet- Patient Safety Network Disclosure of Errors. https://psnet.ahrq.gov/primer/disclosure-errors
- American Association of Critical Care Nurses (AACN). (2019). *AACN Scope and standards for progressive and critic care nursing practice*. Aliso Viejo, CA. American Association of Critical Care Nursing.
- American Nurses Association (ANA). (2015). *Code of ethics for nurses with interpretive statements*. Silver Spring, MD: American Nurses Association.
- American Nurses Association. (2021b). Recognition of a nursing specialty, approval of a specialty nursing scope of practice, acknowledgement of specialty nursing standards of practice and affirmation of focused practice competencies. https://www.nursingworld.org/~49d755/globalassets/practiceandpolicy/scope-of-practice/3sc-booklet-2021-june.pdf
- American Nurses Association. (2021a). *Scope and standards of practice*. Silver Spring, MD: American Nurses Association.
- Bahr, S, J., Bang, J., Yakusheva, O., Bobay, K. L., Krejci, J., Costa, L., Hughes, Ronda, R. G., Hamilton, M., Siclovan, D. M., & Weiss, M.E. (2020). Nurse Continuity at Discharge and Return to Hospital, *Nursing Research*: 69(3) p 186-196 doi: 10.1097/NNR.0000000000000417
- Brown, L. (2018). Nurses and Marijuana. Your Nurse Attorney https://yournurseattorney.com/nurses-and-marijuana/
- California Legislative Information. (n.d.) BUSINESS AND PROFESSIONS CODE – BPC DIVISION 2. HEALING ARTS [500 – 4999.129] (Division 2 enacted by Stats. 1937, Ch. 399). CHAPTER 6. Nursing [2700 – 2838.4] (Chapter 6 repealed and added by Stats. 1939, Ch. 807.) ARTICLE 2. Scope of Regulation [2725 – 2742] (Article 2 added by Stats. 1939, Ch. 807.) https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=BPC&division=2.&title=&part=&chapter=6.&article=2.
- Eng, D. M. & Schweikart, S. J. (2020). Why accountability sharing in health care organization cultures means patients are probably safer. *American Medical Associations Journal of Ethics*. 22(9) E779-783. www.doi: 10.1001/amajethics.2020.779.
- Gai,Y. & Pachamanova, D. (2019). Impact of the Medicare hospital readmissions reduction program on vulnerable populations. *BMC Health Services Research19*(837) https://doi.org/10.1186/s12913-019-4645-5
- International Council of Nurses. (2022). Definition of Nursing https://www.icn.ch/nursing-policy/nursing-definitions
- Jun, J., & Ihm, R. (2021). The federal rule of civil procedure 37(e) and achieving uniformity of case law on sanctions for esi spoliation: Focusing on the "intent to deprive" culpability under rule 37(e)(2). Catholic University Law Review, 70(2),177-200. https://heinonline.org/HOL/Page?handle=hein.journals/cathu70&div=13&g_sent=1&casa_token=4x6Nm-STWdAAAAAA:3glLBuJh8y2lFifleddL86MdLFUPhwR2cko0dU9bqaG9xGh13lHO3KTR5YTDe3rD9ML7efBl&collection=journals
- National Council of State Boards of Nursing (NCSBN). (n.d.a). Requirements for eNLC https://www.ncsbn.org/NLC_ULRs.pdf
- National Council of State Boards of Nursing (NCSBN). (n.d.b.) eNLC Fats facts https://www.ncsbn.org/NLC_Fast_Facts.pdf
- National Council of State Boards of Nursing. (2018a). A nurse's guide to the use of social media; https://www.ncsbn.org/NCSBN_SocialMedia.pdf
- National Council of State Boards of Nursing. (2018b). A nurse's guide to substance use disorder in nursing. https://www.ncsbn.org/SUD_Brochure_2014.pdf
- National Council of State Boards of Nursing. (2018c). NCSBN Welcomes you to the Nursing Profession. https://www.ncsbn.org/New_Nurse-Booklet-Web.pdf
- National Council of State Boards of Nursing. (NCSBN). (2021). The Interstate Commission of Nurse Licensure Compact Administrators: Final rules. https://www.ncsbn.org/FinalRulesadopted81120clean_ed.pdf
- National Council of State Boards of Nursing. (2022a). Initial Review of complaint https://www.ncsbn.org/1616.htm#:~:text=The%20BON%20is%20called%20into,fraud%2C%20positive%20criminal%20background%20checks
- National Council of State Boards of Nursing. (2022b). Board Action https://www.ncsbn.org/673.htm#:~:text=Boards%20of%20Nursing%20(BON)%20take,objective%20is%20not%20time%2Dlimited
- National Council of State Boards of Nursing and American Nurses Association. (2019). National Guidelines for Nursing delegation. https://www.ncsbn.org/NGND-PosPaper_06.pdf
- New York State Education Law (2010) Article 139, Nursing retrieved from https://www.op.nysed.gov/prof/nurse/article139.htm.
- New York State Office of the Professions: (n.d.). Abandonment of Patients who need care. http://www.op.nysed.gov/prof/nurse/nurse-patientabandonment.htm
- Nursing Service Organization (NSO). (2020). Nurse Professional Liability Exposure Claim Report 4th Ed: Minimizing Risk, Achieving Excellence. Nursing Service Organization. www.CNA_CLS_NURSE20_061120p2_CF_PROD_ONLINE_SEC.pdf
- O'Neill, S. P. (2021). Individual nurse liability insurance, Understand your options. *American Nurse Journal*16(5) p 53- 58 www.myamericannurse.com/wp-content/uploads/2021/05/an5-Insurance-414a.pdf.
- Oyeleye, O. A. (2019). "The Nursing Licensure Compact and Its Disciplinary Provisions: What Nurses Should Know" *OJIN: The Online Journal of Issues in Nursing* 24(2 https://doi.org/10.3912/OJIN.Vol24No02PPT09
- Paradiso, L. & Sweeney, N. (2019) Just culture, *Nursing Management*. 50(6) p 38-45 www. doi: 10.1097/01.NUMA.0000558482.07815.ae
- Reis-Dennis, S. (2018). What 'Just Culture' doesn't understand about just punishment *Journal of Medical Ethics* 44:739-742. doi:10.1136/medethics-2018-104911
- Schroeder, P., Parisi, L. L., & Foster, R. (2019). Health care quality improvement then and now. *Nursing management*. 50(9)p20-25 www.DOI-10.1097/01.NUMA.0000579004.87116.35
- Sexton, J. B., Adair, K. C., Profit, J., Milne, J., McCulloh, M., Scott, S., & Frankel, A. (2021). Perceptions of Institutional Support for "second victims" are associated with safety culture and workforce well-being. The *Joint Commission Journal on Quality and Patient Safety*. 47:306-312. https://doi.org/10.1016/j.cjp.2020.12.001
- Texas Board of Nursing. (2022). *Practice: Texas Board of Nursing position statements.* Retrieved from *https://www.bon.texas.gov/practice_bon_position_statements.asp*
- United States Department of Health and Human Services. (2021). Hospital Readmissions Reduction Program (HRRP) https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program CMS.gov
- United States Department of Health and Human Services; National Practitioner Data Bank. (2022). Data Analysis Tool: RN Adverse Action Report. https://www.npdb.hrsa.gov/analysistool/
- Wacker Guido, G. (2020). Legal and ethical issues in nursing (7th ed.). Pearson Education.
- Wasserman, J. A., Redinger, M., & Gibb, T. (2020). Responding to Unprofessional Behavior by Trainees — A "Just Culture" Framework. *New England Journal of Medicine*. 382(8). https://doi:10.1056/nejmms1912591.
- Varkey, B. (2021). Principles of Clinical Ethics and Their Application to Practice. *Medical principles and practice: international journal of the Kuwait University, Health Science Centre, 30*(1), 17–28. https://doi.org/10.1159/000509119
- Webster, A. (2022). Drug and Alcohol Rehab for nurses near you. American Addictions centers organization. https://americanaddictioncenters.org/healthcare-professionals/rehab-for-nurses
- White, R. M. & Delacroix, R. (2020). Second victim phenomenon: Is "just culture" a reality? An integrative review. *Applied Nursing Research 56*(151319). https://doi.org/10.1016/j.apnr.2020.151319

ETHICAL AND LEGAL ISSUES IN NURSING PRACTICE

Self-Assessment Answers and Rationales

1. The correct answer is A.
Rationale: A veracity is telling the truth. By accurately telling the patient the side effects of the medication, the nurse is being truthful to the patient.

2. The correct answer is C.
Rationale: Changing a bandage is within what can be delegated to an LPN. The rest of the items can be performed only by RNs.

3. The correct answer is D.
Rationale: It is each state or territory's board of nursing which develops and enforces nursing practice acts.

4. The correct answer is D.
Rationale: You are overstating your credentials.

5. The correct answer is C.
Rationale: This forces the patient to tell you what they understood, and any misconceptions can be discussed. The rest of the answers can be answered yes/no or not answered at all by the patient.

6. The correct answer is C.
Rationale: Given the Hospital Readmissions Reduction Program, if one of the patients is readmitted within 30 days of discharge, the hospital may lose the reimbursement for the admission.

7. The correct answer is A.
Rationale: Even though Tom has not posted names, he has posted private patient information by using patient descriptions (most of his patients were combative) and location (unit and hospital).

8. The correct answer is C.
Rationale: While there was no harm to the patient and Taylor reported the incident, he did place the patient at risk. After an investigation to see why Taylor did not scan (no scan wand in the room, the scan wand was broken, etc.) and any systems issues fixed, Taylor should be coached on how to prevent this from happening again.

Course Code: ANCCGA07EL

Illicit Drug Use in the United States

3 Contact Hours

Release Date: July 15, 2022

Expiration Date: July 15, 2025

Faculty

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Kelly Crum has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

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Susan Rubin has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Course overview

This course provides the status of drug misuse in the United States and presents common substances, triggers, and interventions that areproving to have successful impacts.

Learning objectives

Upon completion of this course, the learner should be able to:

- State the severity of drug abuse in the United States.
- Differentiate between *club* and *prescription* drug abuse.
- List five club drugs and associated street names.
- Identify the most frequently abused prescription drug types and examples of each type.
- Describe three new emerging drug trends.
- Describe the impact the COVID-19 pandemic has had on drug abuse and overdoses.
- Discuss how abusing drugs influences the patient outcomes who develop COVID-19.
- Describe priorities for nursing assessment and care when dealing with a patient who has abused drugs.
- Describe at least three elements of the national drug control strategy.

How to receive credit

- Read the entire course online or in print which requires a 3-hour commitment of time.
- Complete the self-assessment quiz questions which are at the end of the course or integrated throughout the course. These questions are NOT GRADED. The correct answer is shown after you answer the question. If the incorrect answer is selected, the rationale for the correct answer is provided. These questions help to affirm what you have learned from the course.
- Depending on your state requirements you will be asked to complete either:
  - An affirmation that you have completed the educational activity.
  - A mandatory test (a passing score of 70 percent is required). Test questions link content to learning objectives as a method to enhance individualized learning and material retention.
- If requested, provide required personal information and payment information.
- Complete the MANDATORY Course Evaluation.
- Print your Certificate of Completion.

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Activity director

Shirley Aycock, DNP, RN, Executive Director of Quality and Accreditation

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INTRODUCTION

Despite individual and federal efforts to curb drug abuse, nurses care for patients who have drug problems every day. This course will offerinformation that may help the nurse to understand the drug crisis in America, as well as provide strategies to help nursing professionals dealwith individuals struggling with addiction.

OVERDOSE DRUG DEATHS

Deaths from drug use can be divided into two categories: prescription drugs and illicit, or "street," drugs. The statistics tell the story. In 2019 (the latest year from which data are available), 70,630 people died of drug-induced causes (NIDA, 2021). This number is up by 30,301 individuals since 2010 and represents a 132% increase. Of the number of 2019 deaths from drug use, 14,139 were from prescription drugs (National Institute on Drug Abuse [NIDA], 2021).

Deaths involving synthetic opioids other than methadone increased between 2010 to 2019 with 36,359 reported in 2019. In 2019, fentanyl became the leading cause of drug overdoses with 49,860 overdose deaths, double the number in 2010 (NIDA, 2021). Fentanyl-related deaths increased 200%, and heroin-related deaths increased from 1,960 in 1999 to 15,469 in 2016. Since 2016, the heroin-related deaths have trended down to 14,109 reported in 2019 (NIDA, 2021). Although both numbers are unacceptable, the number of semi-synthetic and synthetic opioid and heroin deaths in the United States has risen from 2017 to the present compared to a decline in deaths related to prescription opioids (NIDA, 2021). The trends of drug abuse and drug-related deaths are national public health problems. The trends are staggering; since 2012, drug-related deaths have experienced nearly a 14-fold increase (NIDA, 2021).

THE COST TO SOCIETY

Children

Annual averages for 2009 to 2014 (latest available data) indicated that more than 7.5 million children under 17 years of age—or almost one in eight (10.5%)—lived with at least one parent who was dependent upon alcohol within the previous year (Smith & Wilson, 2016). Of these, about 6.1 million children lived with a parent who was dependent upon or abused alcohol (Smith & Wilson, 2016). The annual average for 2009 to 20014, indicated that 2.1 million children under the age of 17 lived in a household with at least one parent who used illicit drugs within the past year. Of these, about 1.6 million lived with a parent who had an illicit drug use disorder (Lipari & Van Horn, 2017).

According to Keller (2020), drug use in eighth graders illustrates the nation's urgent need to continue to address the substance abuse problems in today's youth. Eighth graders are more likely to carry forward behaviors and attitudes regarding substance use as they age. The middle school years are a time of intense curiosity, rapid growth, and a strong desire to fit in with their peers. Approximately 33% of middle schoolers say students use, keep or sell drugs within their school (Keller, 2020).

Statistics among the eighth graders in 2020 included the following (Keller, 2020; NIDA, 2020a):

- One in four (23.1%) reported having tried alcohol.
- One in 11 (9%) reported having been drunk at least once, with 4% admitting to binge drinking during the previous two weeks.
- 11.5% reported having tried cigarettes, up from 9% in 2017.
- 62% recognized the risk of smoking one or more packs of cigarettes each day; however, for many it is too late, as they have already developed a smoking habit.
- 7.8% have tried smokeless tobacco with 2.3% using in the previous month and 0.5% using daily.
- 22.7% have tried vaping in their lifetime; with 2% using daily.
- 12.6% reported trying inhalants, compared to 1.2% in 2016.
- 14.8% reported having tried marijuana, 6.5% reported using marijuana in the last month, and 1% report daily use.
- 8.9% report having used amphetamines in their lifetime; 2.2% reporting use within the last month.
- 21.3% reported having tried some illicit drug (heroin, cocaine, methamphetamines, LSD) in their lifetime with 8.7% having used within the past month

In summary, the use of so-called gateway drugs (tobacco, alcohol, inhalants, and marijuana) suggests that a significant number are at risk of proceeding to using other drugs such as LSD, cocaine, amphetamines, and heroin. The younger an individual is when they begin drug use, the greater the likelihood that they will become addicted (Keller, 2020).

Self-Assessment Quiz Question #1

Aubrey is an eighth grader, based on statistics, what is the chance that she will try illicit drugs in her lifetime?

a. 10%
b. 14%
c. 18%
d. 21%

Psychosocial impact

Children in homes where substances are abused suffer from a disruption or lack of healthy family routines and rituals. Parents' substance abuse may affect their ability to prioritize their child's basic needs over their own substances. Children whose parents abuse substances commonly experience educational delays and inadequate dental and medical care. It is estimated that 25% of children of mothers who abuse substances do not receive routine child maintenance care in the first two years of life (Lipari & Van Horn, 2017). In addition, there is unnecessary parental conflict and stress, and children generally lack security associated with structure and stability typically provided by parents (Lipari & Van Horn, 2017). Children of substance abusers are 3 times more likely to be physically, emotionally, or sexually abused and are four times more likely to be emotionally or physically neglected (Child Welfare Information Gateway [CWIG], 2021). The rural populations of children have a higher rate of neglect than urban populations (CWIG, 2021).

In addition, the home environment generally lacks appropriate childproofing measures. Open flames and lighters can lead to burns, fires, and explosions where children live. Children of substance abusers are at a greater risk of infectious disease because of the exposure to needles and drug paraphernalia (Child Welfare Information Gateway, 2021). Children living in these environments tend to witness criminal behavior and interactions and, if they are subjected to sexual abuse or sex trafficking, are exposed to deplorable living conditions. Current data are lacking, but previous estimates from the U. S. Department of Health and Human Services concluded that substance abuse by a parent is the contributing factor for one-thirds to two-thirds of children who are involved in the child welfare system (Child Welfare Information Gateway, 2021).

School performance

Educational problems are common in children who have a parent dependent on a substance or who misuses substances. It is estimated that 30% of children from homes with one or both addicted parents have suffered an "adverse childhood experience" or "ACE" at some point (American SPCC, 2021; National Association for Children of Addiction (NACoA), 2018). These experiences can lead to trauma. Trauma can lead to a multiplicity of challenges in the educational setting including attention deficit disorder, anxiety, depression, disruption in the classroom. These educational challenges may be secondary to perinatal substance exposure or external distraction from an unstructured or chaotic home environment. Children whose parents misuse a substance have a higher absenteeism rate in school. Their academic productivity is generally compromised. In addition, they are at a greater risk of expulsion and suspension from school. Children are generally distressed by their parents' abuse and may blame themselves (American SPCC, 2021; NACoA, 2018).

College-age students who use nonmedical prescription stimulant medications typically have slightly lower grade point averages and are more likely to be heavy drinkers and users of other illicit drugs. In a study of 219 students, who were from seven colleges/universities in Georgia, the researchers found that 45.7% of the participants were taking prescription stimulants without an attached diagnosis (Fairman et al., 2019). Use of the stimulants, were significantly correlated with individuals who were using marijuana and tobacco. In addition, it is noted that the use of marijuana among 19 to 30-year-olds is at an all time high in 2020 (Schullenberg et al., 2021). The increase was seen in annual use, 30-day use, and daily use. From 2015-2020, the increase was significant with four-in-ten young adults using marijuana at least once in the past 12 months, 27% using it at least once in the past 30 days, and 9.8% (one-in-ten) using daily for the past 3 days (Schullenberg et al., 2021). In terms of illicit drugs, other than marijuana, the rate has been fairly steady in the last five years with no significant changes.

In contrast, all forms of drinking among young adults have remained steady with a significant decline in the 30-day alcohol use, having been drunk, and binge drinking, dropping by 3.5, 5.0, ad 3.8 percentage points respectively (Schullenberg et al., 2021). The decline suggests that the pandemic has had an effect in terms of decreased social time.

Self-Assessment Quiz Question #2

Jaquan comes from a home where both parents either use drugs or alcohol regularly. Given the statistics, he will likely experience all of the following except:

a. Sex trafficking
b. An infectious disease
c. Slightly higher GPA than peers
d. Becoming a substance user

ECONOMIC COSTS

According to the last available estimate, the economic cost of drug abuse in the United States was 1.45 trillion in economic loss and societal harm annually (Recovery Centers of America [RCA], 2017). This includes 578 billion in economic loss and $874 billion in social harm through adjustments of quality of life and premature loss of life (RCA, 2017). The value represents the use of resources to address health and crime consequences and the loss of potential productivity from disability, premature death, and withdrawal from the legitimate workforce. According to RCA (2017), 60% of the costs tied to illicit drug use are directly related to intangible costs of loss of quality of life; and if everyone who needed treatment would receive treatment, there could be a 142-billion-dollar economic gain to society because of recuperation of direct, indirect, and intangible costs associated with untreated substance abusers. The challenge with the economic impact is that there is a paucity of studies available to determine the current economic impact particularly as there has been a rapid change in the criminal just system towards non-violent drug offenses over the last decade (RCA, 2017).

In addition, according to Carpenter, McClellan, and Rees (2017), there is a direct inverse relationship between unemployment rates within a state and substance use. For each percentage point increase in the unemployment rate within the state, there is an estimated 6% increase in the likelihood of having a disorder involving analgesics and an 11% increase in the likelihood of having a disorder involving hallucinogens (Carpenter et al., 2017). Specifically, the researchers' study identified that white men between the ages of 18 and 64 and who are less educated are at the most significant risk of developing or having an analgesic or hallucinogenic disorder. The study supports the postulation that economic conditions play a strong role in substance use disorders.

The financial toll of addiction focuses primarily on poverty. Individuals who abuse substances often do so with the heavy price tag of poverty for both themselves and for their future generations (American Addiction Centers, 2020; RCA, 2017). Addictions place a toll on the economics of a family and can lead to unpaid debts, missed payments, late fees, and property foreclosures (American Addiction Centers, 2020).

ADDICTION AND TREATMENT NEED

In 2019, 165.4 million persons in the United States (or stated another way, 60.1% of the population) aged 12 and older used some form of tobacco, alcohol, kratom (a plant that has opioid and stimulant properties), or other illicit drug (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020). Among these 165.4 million users, the percentage with a substance use disorder remained stable at 20.4 million (SAMHSA, 2020). Moreover, of these, 4.5 million received substance use treatment in some form in the past year; while 2.6 million people received treatment at a specialty facility in the past year (SAMHSA, 2020).

The cost of drug abuse treatment saves not only lives but also billions of dollars. It is estimated that for every dollar spent on treatment, $4 is saved in health care costs and $7 is saved in law enforcement costs (American Addiction Centers, 2020).

Self-Assessment Quiz Question #3

There is a 1.45 trillion-dollar economic price tag to drug addiction yearly, of this percentage which of the following percentage reflects the intangible loss of quality of life?

a. 60%
b. 40%
c. 20%
d. 5%

ACUTE HEALTH EFFECTS

According to the latest data available, in 2014 there were 177.7 per 100,000 population drug-related ED visits nationwide compared to 89.1 per 100,000 population in 2005 representing a 99.4% increase (Jackson et al., 2020). Of these, heroin-related ED visits peaked at 266.1 for every 100,000 people in the 21-to-24-year-old age group. Methamphetamine-related ED visits demonstrated a 61% increase overall from 2009 to 2011. Marijuana-related ED visits demonstrated a 61% increase in the male 15-to-17-year-old age group from 2005 to 2011 (Centers for Disease Control and Prevention [CDC], 2017).

In addition to the health effects of heroin, methamphetamines, and marijuana, the worsening prescription and synthetic opioid epidemic remains in the light. In a report by Mattson et al. (2021), from 2013-2019, the age adjusted rates of death involving psychostimulants increased 317% and those involving synthetic opioids increased 1,040%. Overdose deaths involved opioids 70.6% of the time with 51.5% involving synthetic opioids and 22.9% involving psychostimulants. Synthetic opioid overdose deaths were highest in the Northeast at 71.0% and lowest in the West at 26.4%. In nine states, greater than 70% of overdose deaths involved synthetic opioids with the highest percentage in New Hampshire (84.3) (Mattson et al., 2021). The West experienced the largest opioid involved death rate during 2018-2019 at 67.9%; while the Northeast experienced the largest relative psychostimulant-involved death rate at 43.8% (Mattson et al., 2021). In total, in 2019, there were 70,630 drug overdose deaths in the United States with a 56.5% increase since 2013 with meaningful increases observed for involvement of cocaine, heroin, and psychostimulants. The West and Midwest had the greatest increase of psychostimulant-involved overdose deaths with Hawaii seeing 70.2% and Oklahoma experiencing 50.7% (Mattson et al., 2021).

SUBSTANCE AND DRUG TYPES

Drug addiction is a chronic, relapsing disease that causes compulsive drug seeking and use despite harmful consequences and long-lasting changes in the brain to the drug addict (NIDA, 2020b). Although it is true that, for most people, the initial decision to take drugs is voluntary, over time the changes in the brain caused by repeated drug use can affect the individual's self-control and ability to make sound decisions.

The two major drug categories discussed in this course are illicit drugs (also referred to as street drugs or club drugs) and prescription drugs.

Illicit drugs

Overview

Illicit drugs are a pharmacologically heterogeneous group of synthetic opioids or psychoactive or "other" compound that may be abused by teens and young adults. Club drugs are often seen at nightclubs, bars, raves, or trance scenes and were made popular through the rave phenomenon in the U.S. (Dryden-Edwards, 2021). Heroin, bath salts, cocaine, LSD, PCP, MDMA (ecstasy), salvia, spice, mushrooms, and methamphetamine are common drugs that are abused by teenagers and young adults. These drugs are dangerous because there is no way of knowing how strong the drug actually is or what exactly is in the drug (Dryden-Edwards, 2021). Prescription and synthetic opioids, and marijuana are also commonly abused drugs and will be discussed.

Heroin

Heroin (diacetylmorphine) is derived from the morphine alkaloid found in opium and is roughly two to three times more potent than morphine (NIDA, 2021b). As defined by the Drug Enforcement Agency (DEA; n.d.), heroin is a Schedule 1 substance under the Controlled Substances Act, which means it has high potential for abuse, has no accepted medical use for treatment in the United States, and lacks accepted safety for use even under medical supervision. According to NIDA (2021b), the first-time users doubled from 2006 to 2016 with a reported 170,000 people newly using. In the U.S. during 2016 (the latest data available) there are a reported 948,000 users of heroin within the past year. Heroin use has replaced other higher priced, commonly abused opiates and has become the drug of choice in the United States. Its use has increased rapidly since 2010. However, a significant decline in 2016 was also noted among 8th, 10th, and 12th graders. This decline was the lowest it had been since 1991, with less than 1% reporting in each grade level (NIDA, 20121b).

Heroin is a white or brown powder or black sticky substance that can be injected, inhaled, or smoked. It is an opioid derived from the opium poppy flower. Once ingested, it is quickly metabolized to morphine and other metabolites that bind to opioid receptors in the brain. New forms of heroin are available and much cheaper.

Cheese heroin is a combination of Mexican black tar heroin and cold medicine obtained over the counter. It is a highly addictive substance, very inexpensive (only a few dollars), and is therefore often targeted to young people. Children as young as nine years old have been identified in emergency rooms with addiction, overdose, and withdrawal to this form of heroin, which suppresses the central nervous system causing breathing and heartbeat to slow or stop (Foundations for a Drug-Free World; 2006–2021).

Following ingestion of any form of heroin is a surge of euphoria (the rush) accompanied by a warm flushing of the skin, a dry mouth, analgesia, slowed breathing and heart rate. Following the initial euphoria, the users will be drowsy and mental function is cloudy (NIDA, 2021b).

Heroin: Clinical Signs	
Short Term	*Long Term*
Euphoria	Altered level of consciousness
Flushing of skin	Collapsed veins
Dry mouth	Hypotension
Heavy extremities	Muscle spasms
Itching	Seizure
Decreased mental functioning	Coma
Respiratory depression	Possible death
Constricted (pinpoint) pupils	
Nausea	
Bradycardia	
Abscesses	
(NIDA, 2021b)	

Nursing Considerations: Heroin produces a profound degree of tolerance as well as physical dependence. Once a person has a heroin use disorder, their primary purpose in life is to seek and use the drug. Nurses in the emergency department setting need to be aware that withdrawal symptoms include, feelings of drug craving, restlessness, muscle and bone pain, insomnia, diarrhea, and vomiting (NIDA, 2021b). The individual may experience cold flashes and shivering. Major withdrawal symptoms peak between 48 and 72 hours after the last dose is stopped and may last up to one week.

Tolerance develops with regular heroin use, and the abuser must use more of the drug to get the same effect or substance intensity. As higher doses are used over time, physical dependency and addiction develop. With physical dependence, the body adapts to the presence of the drug and withdrawal symptoms may occur within a few hours of nonuse. There may be feelings of drug craving, restlessness, muscle and bone pain, insomnia, diarrhea, and vomiting (NIDA, 2021b). There may also be cold flashes and shivering. Major withdrawal symptoms may peak between 48 and 72 hours after the last dose is stopped and may last up to one week. Sudden heroin withdrawal by heavy users can result in death (NIDA, 2021b).

Beyond the immediate withdrawal symptoms of heroin, there may be long-term consequences. Ongoing heroin use can lead to collapsed veins, gastrointestinal problems, liver disease, kidney disease, brain damage, and needle contamination diseases such as HIV. Heroin use during pregnancy may cause a spontaneous abortion or lead to premature birth, neonatal abstinence syndrome, low birth weight, slow weight gain, or birth defects (NIDA, 2021b).

Treating heroin addiction and/or overdose

There are three types of medications that can be used to treat heroin addiction. Methadone has been used since the 1960's to treat heroin addiction. The use of this medication for opiate dependency is highly regulated within the United States and use for treating heroin differs among states. Oral methadone, a slow-acting opioid agonist, is approved for opiate detoxification and maintenance only in approved and certified treatment programs, although certain emergency and inpatient care exceptions may exist (NIDA, 2021b). Buprenorphine is a partial opioid agonist which relieves drug cravings without producing the "high". Unlike the strict regulation of methadone daily monitoring, buprenorphine patients do not have a required daily check-in. The medication can be taken orally or sublingually and prevents attempts to get high through injecting medication (NIDA, 2021b). Naltrexone is an opioid antagonist, which blocks the action of opioids. This medication is not addictive or sedating and will not result in physical dependence. However, because of the nature of this medication, patients often have trouble complying with treatment, which limits the effectiveness (NIDA, 2021b).

Naloxone is the gold standard to reverse the effects of heroin overdose. The drug is not new and has been used by emergency medical personnel on the streets and in hospitals for over 40 years in an injectable form. Originally approved in April 2014, naloxone was approved and released for sale by medical doctor prescription in all states and in some states by pharmacist prescribing (SAMHSA, 2021). Naloxone comes in the form of a handheld device, an injector, a nasal spray, and a sublingual tablet (the newest form). It can be injected intramuscularly or subcutaneously. Naloxone is an opioid antagonist and revives overdose victims from death because of respiratory depression (SAMHSA, 2021).

New naloxone laws are expanding in regard to who can receive naloxone, who can distribute naloxone, and simplifying the process of obtaining naloxone (SAMHSA, 2021). Government

and health care leaders are hailing the medication as a groundbreaking tool to address the epidemic of heroin overdoses across the nation.

As the opioid epidemic has worsened, emergency medical services, law enforcement, and families are the first line of defense. In a study done in North Carolina the implementation of a community -based naloxone distribution program resulted in the avoidance of 352 opioid overdose deaths between 2013-2016 (Naumann et al., 2019). In addition, for every dollar spent on the program, there was a $2752 dollar benefit because of overdose deaths avoided (Naumann et al., 2019). The study suggests that a community-based naloxone program is associated with decreased opioid overdose rates and generates substantial societal benefits.

Since 2010, law enforcement agencies across the United States have been training and supplying their officers to use naloxone, but not all have been included. Police generally are the first on the scene ahead of emergency medical technicians and other first responders. Because of the opioid epidemic and overdose deaths, the 2017 report of the President's Commission on Combating Drug Addiction and the Opioid Crisis recommended that all law enforcement in the United States be equipped with naloxone and trained in its use (Fleming et al., 2018).

The release of the drug has been controversial. Some experts believe it will give addicts a false sense of confidence that they can continue to use as much heroin as they want and that the drug will save them from death by overdose. Many also object because it will increase insurance costs. Proponents of the drug do not believe addicts will intentionally take enough of the drug to overdose just because naloxone is available, and they feel the FDA has addressed a life-threatening public health crisis that has reached epidemic proportions (Fleming et al., 2018).

One drawback of naloxone is that if the heroin is adulterated with fentanyl, patients will need a larger dose over a longer period to combat the longer acting drug combinations. This may cause the patient to sink back into respiratory distress once revived by naloxone and require repeated naloxone doses. Patients will also require emergency medical care or hospitalization despite receiving the drug and being revived (Fleming et al., 2018).

In addition, in a safety alert published in Police and Security News, first-line responders, police and family members must be careful regarding giving naloxone to someone who is experiencing an overdose. In an incident in Appleton, Wisconsin, a firefighter named Mitchell Lundgaard was killed during a routine aid call to a bus stop. Police officers and firefighters responded to a bus passenger's medical emergency in downtown Appleton (Peters & Gunta, 2019). The passenger was reported by others to be snoring oddly and seemed to be experiencing a seizure. Upon further assessment, it was determined that the passenger's eyes were extremely dilated and his breathing inconsistent. Naloxone was administered and further aid was offered. During the pat-down, following the naloxone administration, the passenger became aggravated and unexpectedly pulled out a handgun firing two shots that struck Firefighter Lundgaard, killing him. As reported in the safety alert, when someone administers naloxone to an individual who is high, Emergency Medical Service providers often refer to this time as "waking the dragon". The recommendation within the article is that providers need to give small amounts of naloxone at one time while monitoring the patient's reaction (Peters & Gunta, 2019).

Self-Assessment Quiz Question #4

Nora was found unresponsive with shallow breathing. Her partner reports that she took a white powdery substance, and he couldn't get her to wake up so he called 911. Of the following, which would be given for first-line treatment?

a. Naltrexone
b. Naloxone
c. Buprenorphine
d. Methadone

Self-Assessment Quiz Question #5

Jose recently had a hospitalization because of a polysubstance overdose. He really desires to get his life straightened out, but he has limited access to healthcare and he has limited transportation. Which of the treatment options would be best for him?

a. Naltrexone
b. Naloxone
c. Buprenorphine
d. Methadone

Bath Salts

The intake of patients in the emergency department who have abused bath salts is an emerging trend. Bath Salts consist of a synthetic powder that is sold legally online and in drug paraphernalia shops. Bath salts contain manufactured stimulants called cathinone, which are similar to amphetamines. Because these substances are stimulants, they increase dopamine levels in the brain and create a sensation of euphoria. The substance comes as a white or brown powder, sometimes sold as jewelry cleaner, but may be snorted, injected, smoked, and ingested orally or even rectally. The substance is inexpensive and is easy to acquire (NIDA, 2020d).

Bath Salts: Common Street Names	
Ivory wave	Bath blow
Lunar wave	Cloud nine
Bloom	Salting
Blue silk	Lunar wave
Bubbles	Scarface
Vanilla sky	Flakka
White lightning	Wicked X
(NIDA, 2020d)	

Once consumed, Bath salts affect the brain in a similar fashion as cocaine; however, it is 10 times stronger. Individuals who consume bath salts experience agitation, paranoia, hallucinations, chest pain, tachycardia, hypertension, and suicidal thinking/behavior (NIDA, 2020d). The suicidal thinking/behavior can last even after the stimulatory effects have worn off. Therefore, there is a tendency for users to consume more than they intended to get a certain result, which can lead to possible overdoses and death (NIDA).

Bath Salts Abuse: Clinical Signs		
Tachycardia	Vessel constriction	Seizures
Chest pain	Kidney failure	Severe panic attack\psychosis
Hypertension	Muscle spasm	Paranoia
Hyperthermia	Tremors	Insomnia
Irritability	Agitation	Violent behavior
(NIDA, 2011)		

Nursing Considerations: Care of patients with an overdose of bath salts may require hospital admission, use of intravenous sedatives, antipsychotics, restraints, or other measures to protect the patient and health care team. Nurses should be vigilant about personal safety when caring for these patients.

Cocaine

Pure cocaine was first used in the 1880s as an anesthetic in eye, nose, and throat surgeries and for its ability to constrict blood vessels and limit bleeding. It was even an ingredient in the early formulations of Coca-Cola® products. However, many of its therapeutic applications are now obsolete because of the development of safer drugs (NIDA, 2016).

The National Survey on Drug Use and Health (NSDUH) estimated that cocaine use decreased from 2.5% of the U.S. population (or approximately 5.9 million individuals age 12 or older) in 2002 to 2.0% (or 5.5 million individuals) in 2019 (SAMHSA, 2020). Use has fluctuated over time. The percentage in 2019 was lower than 2002-2007, higher than 2011-2014, and similar to 2015-2018 (SAMHSA, 2020). According to the NSDUH, 0.4% of children ages 12 to 17 were current users of cocaine. For young adults ages 18 to 25, the use of cocaine was estimated at 5.3%. All numbers within the represented age groups have remained similar to the 2015-2018 percentages (SAMHSA, 2020).

Cocaine is made from the coca plant and is the most potent stimulant of natural origin. It can be snorted, smoked, or injected. When snorted, cocaine powder is inhaled through the nose where it is absorbed into the bloodstream through the nasal tissues. When injected, the user uses a needle to release the drug directly into the bloodstream. Smoking involves inhaling cocaine vapor (or smoke) into the lungs where absorption into the bloodstream is as rapid as it is by injection. All of these methods of administration pose great risks to the user (NIDA, 2020e).

Crack is cocaine base that has not been neutralized by an acid to make the hydrochloride salt. This form of cocaine comes in a rock crystal that is heated to produce vapors that are smoked. The term crack refers to the crackling sound produced by the rock as it is heated (NIDA, 2020e; NIDA 2016).

Cocaine: Common Street Names	
Blow	Crack
Bump	Flake
C	Snow
Nose candy	Sniff
Rock	Toot
Coke	White rock
(NIDA, 2020e)	

Cocaine is highly addictive. It triggers the brain to release dopamine and creates a euphoric feeling, a high that is intense but short-lived. This leads individuals to keep using the drug repeatedly. The duration of cocaine's immediate euphoric effects depends upon the route of administration. The faster the absorption, the higher the intensity. Also, the faster the absorption, the shorter the duration of action. The high from snorting is relatively slow in its onset and may last 15 to 30 minutes; the high from smoking may last 5 to 10 minutes (NIDA, 2020e, NIDA, 2016).

Cocaine Abuse: Clinical Signs	
Short Term	*Long Term*
Narrowed blood vessels	Loss of sense of smell
Tachycardia	Nosebleeds
Hypertension	Problems swallowing
Hyperthermia	Hoarseness
Gastric pain/nausea	Poor nutrition
Loss of appetite	Weight loss
Panic attack	Infection and death of bowel tissue because of decreased blood flow
Restlessness	
Malnourishment	
Cardiac dysrhythmias	
Stroke	
Loss of smell	
Seizure	
Coma	
Sudden death	
(NIDA, 2020e)	

Evidence-based practice! The full extent of cocaine's effect on an unborn or newborn child is not fully known. Studies have shown that infants born to women who use cocaine during pregnancy may be delivered prematurely, have low birth rates, and may be shorter in length at birth. There is an increased risk of placental abruption. Women who abuse cocaine may have other addictive habits such as nicotine and alcohol use. The amount of prenatal care, exposure to sexually transmitted diseases, and socioeconomic factors may also affect infant outcomes. Research is finding that exposure to cocaine in utero may also lead to deficits in cognitive abilities, information processing, and the ability to complete tasks in childhood (NIDA, 2016).

A tolerance to the cocaine high may develop. Many addicts report that they fail to achieve as much pleasure from their subsequent cocaine use as they did from their first cocaine exposure. Some users increase their dose in an attempt to intensify and prolong the euphoria. This can also increase the risk of adverse psychological or physiological effects and overdose (NIDA, 2020e).

Evidence-based practice! Evidence suggests that users who smoke or inject cocaine may be at an even greater risk of causing harm to themselves than those who snort the substance. For example, cocaine smokers also suffer from acute respiratory problems such as cough, shortness of breath, and severe chest pains with lung trauma (NIDA, 2020e). In addition, when combined with alcohol, the individual creates a greater risk for cardiac toxicity than from either drug alone.

Self-Assessment Quiz Question #6

Kiki has been regularly injecting and smoking cocaine while drinking alcohol on the week-ends. Which of the following is she at a greater risk of developing if she was pregnant?

a. Kidney failure, preeclampsia
b. Respiratory failure, gestational diabetes
c. Abscesses, placenta previa
d. Cardiac toxicity, abruptio placenta

Hallucinogens

Hallucinogenic substances are characterized by their ability to cause changes in a person's perception of reality. Persons using hallucinogenic drugs often report seeing images, hearing sounds, and feeling sensations that seem real but do not exist. In the past, natural plants and fungi that contained hallucinogenic substances were used and abused and were primarily used for religious or healing rituals; however recently people are using them for social or recreational purposes. Currently, these hallucinogenic substances are produced synthetically to provide a higher potency (NIDA, 2019). Hallucinogens are split into two categories: classic hallucinogens, such as LSD; and dissociative drugs, such as PCP.

LSD

Lysergic acid diethylamide (LSD) is one of the major drugs in the hallucinogen class. It is one of the most powerful mind-altering chemicals. The substance was created in 1938, became popular in the 1960s, and is still commonly used today (NIDA, 2019). The substance is manufactured from lysergic acid, which is found in ergot, a fungus that grows on rye and other grains.

LSD: Common Street Names (Sold under more than 80 street names)	
Acid	Looney Tunes
Blotter	Lucy Mae
Boomers	Yellow sunshine
CID	Microdots
Golden	Tabs
Dragon	
(NIDA, 2020f)	

LSD is produced in crystalline form. It is then mixed with excipients or is diluted as a liquid for production in ingestible forms. It is odorless and colorless and has a slightly bitter taste. LSD is sold in tablet form (usually small tablets known as microdots), on sugar cubes, or in thin squares of gelatin (commonly referred to as window panes). Most commonly, however, it is sold as blotter paper, sheets of absorbent paper soaked in or impregnated with LSD, covered with colorful designs or artwork, and perforated into one-quarter inch square individual dosage units (Drugs.com, 2000-2021).

The effects of LSD are unpredictable. Usually, the first effects of the drug are felt 20 to 90 minutes after taking it. A wide variety of physical and behavioral effects may result (Drugs.com, 2000-2021; NIDA 2020f).

LSD Abuse: Clinical Signs	
Short Term	*Long Term*
Rapid mood swings from one emotion to another	Frightening flashbacks
Distortion of ability to think rationally	Ongoing visual disturbances
Visual hallucinations	Disorganized thinking
Hypertension	Panic feeling
Tachycardia	Paranoia
Dry mouth	Mood swings
Insomnia	Fear of insanity and death
Dizziness	
Insomnia	
Dilated pupils	
Hyperthermia	
Sweating	
Nausea	
Loss of appetite	
Tremors	
Perception of hearing colors and seeing sounds	
Increased blood sugar	
(Drugs.com, 2000-2021; NIDA, 2020f)	

LSD produces tolerance, so some who use the drug repeatedly must take progressively higher doses to achieve the state of intoxication that they had previously achieved. This is an extremely dangerous practice given the unpredictability of the drug (Drugs.com, 2000-2021).

Phencyclidine

Phencyclidine (PCP) was developed in the 1950s as an intravenous anesthetic. Its use in humans was discontinued in 1965 because patients often became agitated, delusional, and irrational as they recovered from its anesthetic effects. PCP is now illegally manufactured in laboratories (Drugs.com, 2000-2021b; NIDA, 2020g).

In its pure form, it is a white crystalline powder that is readily soluble in water or alcohol. It has a distinctive bitter chemical taste. PCP can be easily mixed with dyes and turns up on the illicit drug market in a variety of tablets, capsules, and colored powders. These are taken either orally or by insufflation (snorted). It can be snorted, smoked, injected, or ingested. For smoking, PCP is often applied to a leafy material such as mint, parsley, oregano, or marijuana (Drugs.com, 2000-2021b). Although it is a white crystalline powder in its pure form, on the illicit drug market it can contain a number of contaminants. This causes the color to range from a light to darker brown, and its consistency can range from a powdery substance to a gummy mass. The liquid form of PCP is actually PCP base dissolved most often in ether, a highly flammable solvent.

PCP: Common Street Names	
Angel dust	Sherms
Embalming fluid	Boat
Hog	Tic tac
Rocket fuel	Zoom (mixed with marijuana)
(Drugs.com, 2001-2021b; NIDA, 2020g)	

The effects of PCP use are unpredictable. Effects can be felt within minutes of ingestion and can last for many hours. When taken in a moderate amount, PCP causes the user to feel distracted, distant, and estranged from her surroundings; as the dosage is increased, the individual's behavior may escalate to hostility and even psychosis (Drugs.com, 2001-2021b).

PCP Abuse: Clinical Signs	
Short Term, Low Dose	*Short Term or High Dose*
Delusions	Rapid and involuntary eye movement
Hallucinations	Acute anxiety
Paranoia	Hypotension (late)
Problems thinking	Tachypnea
Distracted	Nausea
Anxiety	Vomiting
Tachypnea	Blurred vision
Hypertension (early)	Drooling
Tachycardia	Loss of balance
Exaggerated gait	Violence
Auditory hallucinations	Suicidal thoughts
Image distortion	Impending doom
Severe mood swings	Seizure
Slurred speech	Coma
Blank stare	Death
Numbness in hands and feet	
Hypoventilation	
(Drugs.com, 2001-2021b; NIDA, 2019)	

Psilocybin

Psilocybin is a hallucinogenic obtained from certain mushrooms found in South America, Mexico, and the United States. The substance can also be produced synthetically. Mushrooms containing psilocybin are available fresh or dried and have long, narrow stems topped by caps with dark gills on the underside. These mushrooms are usually ingested orally but can also be brewed in a tea or added to food to mask the bitter flavor. Once ingested, psilocybin is broken down in the user's body to produce psilocin, another hallucinogenic substance (NIDA, 2020h).

MDMA

MDMA, known as ecstasy or molly, was first used in the 1970s as an aid in psychotherapy, not a recreational drug. In 1985, the Drug Enforcement Administration labeled MDMA a Schedule 1 substance, or a drug with a high abuse potential and no recognized medical use (NIDA, 2020i).

MDMA is a synthetic psychoactive drug similar to both the stimulant amphetamine and the hallucinogen mescaline. It produces feelings of increased energy, euphoria, and emotional warmth and empathy toward others. It also produces distortions in sensory and time perception. MDMA was initially popular among white adolescents and young adults in nightclub scenes or at raves (long dance parties), but the drug now affects a broader range of users and ethnicities (NIDA, 2020i).

MDMA: Common Street Names	
Ecstasy	Eve
Molly	Lover's speed
Adam	Uppers
Clarity	

MDMA is taken orally, usually as a capsule or tablet. The popular term molly (slang for molecular) refers to the pure crystalline powder form of MDMA that is usually sold in capsules. The drug's effects last approximately three to six hours; it is not uncommon for users to take a second dose of the drug as the effects of the first dose begin to fade. It is commonly taken in combination with other drugs. For example, some urban gay and bisexual men report using MDMA as part of a multiple-drug experience that includes cocaine, GHB, methamphetamine, ketamine, and the erectile-dysfunction drug sildenafil (Viagra; NIDA, 2020i).

MDMA impacts the brain by creating a surge of serotonin, dopamine, and norepinephrine while depleting the brain of its important chemical balance. This results in negative effects with additional drug cravings (NIDA, 2020i). Longer term, MDMA can have many of the same physical effects as other stimulants like cocaine and amphetamines (NIDA, 2020i).

MDMA Abuse: Clinical Signs		
Initial	*Short Term*	*Long Term*
Lowered inhibition	Distortion in sensory and time perception	Memory deficits
Increased energy	Depression	Long-lasting confusion
Euphoria	Sleep problems	Problem with attention
Emotional warmth	Drug cravings	Impulsiveness
Empathy toward others	Tachycardia	Aggression
Anxiety	Hypertension	Increased anxiety
	Hyperthermia	Loss of appetite
	Sleep disturbances	Less interest in sex
	Nausea	
	Blurred vision	
	High dose may lead to death	
NIDA, 2021i; 2020j		

Marijuana

Marijuana is a green, brown, or gray mixture of dried, shredded leaves, stems, seeds, and flowers of the hemp plant *Cannabis sativa*. *Cannabis* is a term that refers to marijuana and other drugs made from the same plant. Other forms of cannabis include sinsemilla, hashish, and hash oil. All forms of Cannabis are psychoactive (mind-altering) drugs (NIDA, 2019b).

The main active chemical in marijuana is delta-9-tetrahydrocannabinol (THC).

Although legalized in some states, Cannabis remains the most commonly used illegal drug in the United States. According to the 2019 NSDUH report, Americans aged 12 and over who initiated marijuana use increased from 2.2 million people in 2002 to 3.5 million in 2019, averaging 9,500 people per day (SAMHSA, 2020). The number of initiands in 2019 was higher than any year previously from 2002 through 2018. Vaping THC has grown in popularity with 4% of 12th graders reporting they vape THC daily (NIDA, 2019b).

Short-term effects of marijuana use include problems with memory and learning, distorted perception, difficulty in thinking and problem solving, loss of coordination, increased heart rate, and anxiety. Marijuana is usually smoked as a cigarette (called a joint) or in a pipe or bong. Marijuana has also appeared in blunts, which are cigars that have been emptied of tobacco and refilled with marijuana, sometimes in combination with another drug such as crack. It can also be mixed into foods or used to brew a tea (NIDA, 2019b). When inhaled, the smoke irritates the lungs and contains more cancer-causing chemicals than tobacco smoke. Common effects of marijuana use include pleasure, relaxation, and impaired coordination and memory (NIDA, 2019b). Marijuana is often the first illegal drug people use and is associated with an increased risk of progressing to more powerful and dangerous drugs such as cocaine and heroin. The risk for progressing to cocaine is 104 times higher if marijuana has been smoked at least once than if there has never been marijuana use (SAMHSA, 2020).

In recent decades, marijuana growers have been genetically altering their plants to increase the percentage of THC, the main active ingredient in marijuana. The average potency of marijuana has more than doubled since 1998 (NIDA, 2019b).

The use of marijuana can produce adverse physical, mental, emotional, and behavioral effects. It can impair short-term memory and judgment and distort perception. Because marijuana affects brain systems that are still maturing through young adulthood, its use by teens may have a negative effect on their development (NIDA, 2019b). Youth who report heavy use beginning in adolescence may lose IQ points. Babies of mothers who use marijuana may have problems with attention, memory, and problem solving (NIDA, 2019b).

Studies have shown an association between chronic marijuana use and increased rates of anxiety, depression, suicidal thoughts, and schizophrenia (NIDA, 2019b).

Contrary to popular belief, marijuana can be addictive. Marijuana addiction is also linked to a withdrawal syndrome similar to that of nicotine withdrawal, which can make it difficult to quit. People trying to quit report irritability, sleeping difficulties, craving, and anxiety (NIDA, 2019b).

Marijuana: Common Street Names	
Grass	Bud
Pot	Dope
Weed	Ganja
Blunt	Herb joint
Gangster	Mary Jane
Hash	Green
Hemp	Sinsemilla
Doobie	Skunk
Herb	Smoke
Stinkweed	Boom
Trees	Reefer
Gangster	Shatter
(NIDA, 2020k)	

Marijuana Abuse: Clinical Signs		
Initial	*Short Term*	*Long Term*
Enhanced sensory perception	Drowsiness/relaxation	Mental health problems
Euphoria	Slowed reaction time	Chronic cough
	Problems with balance and coordination	Frequent respiratory infections
	Tachycardia	
	Increased appetite	
	Problems with learning	
	Problems with memory	
(NIDA, 2019b; 2020k)		

Methamphetamine

Methamphetamine is a highly addictive central nervous system stimulant that can be injected, snorted, smoked, or ingested orally. Methamphetamine users feel a short yet intense rush when the drug is initially administered. The immediate effects of methamphetamine include increased activity and decreased appetite. The drug has limited medical uses for the treatment of narcolepsy, attention deficit disorders, and obesity (NIDA, 2019c).

Most amphetamines that are distributed to the black market are produced in clandestine laboratories. Methamphetamine laboratories are, by far, the most frequently encountered clandestine laboratories in the United States. The ease of clandestine synthesis, combined with tremendous profits, has resulted in significant availability of illicit methamphetamine. Large amounts of methamphetamine are also illicitly smuggled into the United States from Mexico (NIDA, 2019c).

Methamphetamines: Common Street Names	
Crystal	Speed
Meth	Crystal
Fire	Trash
Bikers' coffee	Yellow ban
Crank	Pookie
Ice	Quartz
Chalk	Rocket fuel
Dunk	Hugs and kisses
Gak	Party and play
Scooby Snax	
Croak	
Shabu	
(NIDA, 2020l)	

Methamphetamine is a powerful stimulant that increases alertness, decreases appetite, and gives the individual a sense of euphoria or pleasure. Withdrawal can lead to depression (NIDA, 2019c).

Methamphetamines: Clinical Signs	
Short Term	*Long Term*
Increased alertness	Confusion
Increased physical activity	Delusions
Decreased appetite	Weight loss
Tachypnea	Severe dental problems (meth mouth)
Mood disturbances	Psychotic signs
Hallucinations	Violent behavior
Tachycardia	Paranoia
Anxiety	Delusions (such as sensation of bugs crawling under skin).
Insomnia	
Irregular heart rate	
(NIDA, 2019c; 2020l)	

Pregnant women using methamphetamines may have premature delivery or a placenta abruption from the uterus. Babies born to these mothers are often born with low birth weight, lethargy, and heart or brain problems (NIDA, 2020l).

PRESCRIPTION DRUGS

Overview

The nonmedical use or abuse of prescription drugs is an ongoing drug problem. The National Institute on Drug Abuse (2021) estimate that 70,640 opioid-involved overdose deaths were reported in 2019. Of these deaths, it is estimated that 68% occurred among males. The overdose death rate from prescription medication has had a 14-fold increase driven by the illicit manufacturing of fentanyl (NIDA 2021). Overdose rates for all drug types was 29.1 per 100,000 males and 14.4 among females. Overdose rates from opioids are highest among people aged 25 to 34 years (CDC, 2019). The most common drugs involved in opioid-involved overdose deaths are natural and semi-synthetic opioids and methadone (NIDA, 2021).

In focus: United States

Misuse and abuse of prescription painkillers alone costs the country an estimated $78 billion a year in lost productivity, medical costs, and criminal justice costs (NIDA, 2018). Only 0.8% of Americans aged 12 years and older with a substance abuse disorder reported that they received some form of drug treatment in the past year (CDC, 2019). According to CDC (2019), Americans filled 191 million prescriptions for opioid pain relievers making it the most prescribed medication in the United States. There were wide variations of opioid prescription rates across states with Alabama having three times as many per person with Hawaii having the lowest prescribing rate (CDC, 2019). The most common drugs prescribed were oxycodone, methadone, and hydrocodone.

Men are at a particular risk for prescription opioid-involved drug overdose. According to CDC (2019), men died at a rate of 6.1 per 100,00 compared to 4.2 among females. While overdose death rates are higher among men, women have a higher rate of hospitalizations and Emergency Department visits related to intentional and unintentional overdose attempts at a rate of 20.7 per 100,000 compared to 15,8 in males (CDC, 2019).

Prescription drugs account for the second most commonly abused category of drugs, behind marijuana and ahead of cocaine, heroin, and methamphetamine. Opiate overdoses (almost always heroin overdoses) are now increasing because of the abuse of prescription painkillers. Prescription drug abuse poses a unique challenge because of the need to balance prevention, education, and enforcement with the need for legitimate access to controlled substance prescription drugs (CDC, 2019).

The extent of prescription drug misuse can only be estimated. Data from 2019 from the Substance Abuse and Mental Health Services Administration (SAMHSA) (2020) reported that about 16.3 million people in the United States misused psychotherapeutic drugs in the past year. Of these, 9.7 million were misusers of prescription pain relievers within the past year. The most commonly misused type of prescription pain relievers was Vicodin, Lortab, Norco, Zohydro, and generic hydrocodone (SAMHSA, 2020). An estimated 6.9 million people aged 12 or older misused these products in the previous year (SAMHSA, 2019).

According to NIDA's research report Misuse of Prescription Drugs (2020m), three classes of prescription drugs are most commonly abused:

a. Opioids or painkillers
b. Central nervous system depressants or tranquillizers
c. Stimulants

The problem most often with prescription drug abuse is that the individual does not just take one substance. As dependency increases, more pills or substances are needed to create the same effect. Then, when more usage of various substances does not work to create the desired sensation, the individual may begin mixing substances and adding alcohol or other illegal substances. According to NIDA (2020m), of older patients (ages 57 to 85), more than 80% are taking at least one prescription medication with 50% of patients using were also taking five or more prescription drugs. It is also concerning that more than 29% were prescribed benzodiazepines, 28% were prescribed muscle relaxants, and 8% were prescribed all three medications

concurrently placing them at a significant risk of overdosing (NIDA, 2017). Misuse of prescription opioids is a risk factor for heroin use. People who initiate heroin reported 80% of the time that they misused prescription opioids before heroin use (NIDA, 2017).

Opioids

Many Americans benefit from the appropriate use of prescription painkillers, but when abused, they can be as addictive and as dangerous as illegal drugs. Pain is a complex topic, and adequate control of pain may enhance the quality of life for people who suffer from chronic pain. Short-term opioid use under a provider's cautious supervision rarely leads to addiction or dependence. However, when used long term, opioids may lead to drug abuse and physical dependence or addiction.

Nursing Consideration: Older adults are at a higher risk for unintentional misuse or abuse because many have multiple prescriptions. This increases the risk of drug-to-drug interactions. In addition, a large percentage of older adults use over the counter medications, dietary and herbal supplements, which could compound adverse health consequences. When assessing a patient, it is imperative that a nurse ask what dietary and herbal supplements as well as over-the-counter medications an individual is using at home.

Table 1. Opioids

Generic Name	*Brand Names*	*Street Names*	*Common Forms*	*Common Ways Taken*
codeine	Various names	Captain Cody, Coties, lean, schoolboy, sizzurp, purple drank, doors & fours, loads, pancakes and syrup	tablet, capsule, liquid	injected, swallowed (often mixed with soda and flavorings)
fentanyl	Actiq, Duragesic, Sublimaze	Humid, Blonde, Blue diamond, snowflake, jackpot, murder 8, tango and cash, TNT, Birria	lozenge, sublingual tablet, film, buccal tablet	injected, smoked, snorted
hydrocodone or dihydrocodeinone	Lorcet, Lortab, Norco, Vicodin, zohydro	Vike, Veeks, Idiot pills, Scratch, 357s, Lemonade, Bananas, Dones, Droco, Lorries, Triple V	capsule, liquid, tablet	swallowed, snorted, injected
hydromorphone	Dilaudid	D, dillies, K4, Needle Candy	liquid, suppository	injected, rectal
meperidine	Demerol	demmies, painkiller	tablet, liquid	swallowed, snorted, injected
methadone	Dolophine, Methadose	amidone, fizzies Biscuits, Jungle Juice, Maria, Wafer; *with MDMA:* Chocolate chip cookies	tablet, dispersible tablet, liquid	swallowed, injected
morphine	Duramorph, MS, Contin	Miss Emma, Dreamer, monkey, white stuff, First Line, Joy Juice, Unkie, Mister Blue	tablet, liquid, capsule, suppository	injected, swallowed, smoked
oxycodone	OxyContin, Percodan, Percocet, OxyFast, Roxicodone	30's, 40's, 512s, oxy, Beans, Blues, Buttons, Cotton, Kickers, Killers, percs, Roxy	capsule, liquid, tablet	swallowed, snorted, injected
oxymorphone	Opana	biscuits, blue heaven, blues, Mrs. O, bomb, octagons, stop signs	tablet	swallowed, snorted, injected
(NIDA, 2020n)				

Opioids can be life-threatening in an overdose. The threat is enhanced when the opioids are taken with alcohol or with central nervous system depressants. Because the drugs may slightly delay the feelings the users are wanting, they often take additional substances with the hopes of enhancing the feelings of euphoria. If the dosage and mixture of systems is significant, the individual may slip into a drug overdose situation with central nervous system depression and other life-threatening signs (NIDA, 2020m; 2020n).

Clinical Signs of Abuse or Overdose	
Short Term	*Long Term or High Dose*
Feelings of euphoria	Respiratory depression
Pain relief	Central nervous system depression
Drowsiness	Loss of consciousness
Nausea	Cardiac dysrhythmias
Constipation	Death

Nursing Considerations: Nurses should carefully monitor individuals trying to suddenly withdraw from chronic opioid drug use for restlessness, muscle and bone pain, insomnia, diarrhea, vomiting, cold flashes with shivering, and leg movements (NIDA, 2020m; 2020n)

Benzodiazepines and barbiturates: Central nervous system depressants

Benzodiazepines depress the central nervous system (CNS). Millions in the United States use benzodiazepines to treat anxiety and sleep disorders, including insomnia. Barbiturates are commonly used for anesthesia and are prescribed to treat seizures and occasional insomnia or anxiety (NIDA, 2020m).

Table 2. Central Nervous System Depressants

Generic Name	*Brand Names*	*Street Names*	*Common Forms*	*Common Ways Taken*
Benzodiazepinesb				
alprazolam	Xanax	Benzos, downers, Poles, Totem Z-Bars, Vs, Yellow/Blue Zs, tranks, Zannies	pill, capsule, liquid	swallowed, snorted
chlordiazepoxide	Librium			
diazepam	Valium			
lorazepam	Ativan			
triazolam	Halcion			
Barbiturates				
pentobarbital	Nembutal	barbs, Dolls, phennies, red birds, Bluebirds, tooties, yellow jackets, yellows	pill, capsule, liquid	swallowed, injected
phenobarbital	Luminal			
Sleep Medications				
eszopiclone	Lunesta	forget-me pill, Looney Bar, R2, roche, Tic-Tacs, Sleep-easy, Symphony, Zombie flip	pill, capsule, liquid	swallowed, snorted
zaleplon	Sonata			
zolpidem	Ambien			
(NIDA, 2020o)				

Taking CNS depressants for a few days to a few weeks may help to calm nerves or enhance sleep. After a while, however, larger doses may be needed to get the same calm or sleepy feeling. As with opioids, the individual may overdose if the substances are taken in large amounts and mixed with opioids, other substances, or alcohol. Sleep medications are sometimes used as date rape drugs (NIDA, 2020o).

Clinical Signs of Abuse or Overdose	
Short Term	*Long Term*
Drowsiness	Unknown
Slurred speech	
Poor concentration	
Confusion	
Dizziness	
Problems with movement and memory	
Decreased alertness	
Seizure	
Respiratory depression	
Decreased heart rate	
(NIDA, 2020m; 2020o)	

Patients addicted to barbiturates or benzodiazepines should not attempt to stop taking the drugs on their own. Withdrawal from these drugs can be dangerous, in the case of certain CNS depressants, life-threatening. Patients addicted to these medications should undergo medically supervised detoxification because the treatment dose must be gradually tapered off. Inpatient or outpatient counseling can help the individual during this process. Cognitive-behavioral therapy has also successfully been used to help individuals adapt to the removal from benzodiazepine use.

Stimulants

Stimulants have often been used for weight loss. Other substances such as methylphenidate are used therapeutically for attention deficit disorders and narcolepsy. Stimulants impact the body with a fast jump-start causing a great increase in alertness, energy, and attention to detail (NIDA, 2020m; 2020p).

Table 3. Stimulants				
Generic Name	*Brand Names*	*Street Names*	*Common Forms*	*Common Ways Taken*
amphetamine	Adderall,	Addys, bennies, black beauties, crosses, hearts, Ivy league drug, speed, uppers	tablet, capsule	swallowed, snorted, smoked, injected
methylphenidate	Concerta, Ritalin	Diet Coke, Kiddie coke, JIF, MPH, r-ball, R-pop, study buddies, skippy, the smart drug, vitamin R	liquid, tablet, chewable tablet, capsule	swallowed, snorted, smoked, injected, chewed
(NIDA, 2020p)				

Clinical Signs of Abuse or Overdose of Stimulants	
Short Term	*Long Term or High Dose*
Increased alertness	Anger
Energy	Seizure
Increased body temperature	Dangerously high body temperature
Increased blood sugar	Cardiovascular system failure
Tachycardia	Psychosis
Hypertension	Paranoia
Constriction of blood vessels	
Irregular heartbeat	
(NIDA, 2020m, 2020p)	

Treatment of an addiction to prescription stimulants is based on behavioral therapies used in treating cocaine and methamphetamine addiction. At this time, no medications are FDA approved for treating stimulant addiction (NIDA, 2020p).

Self-Assessment Quiz Question #7

Prescription medications are among the most abused. All of the following categories have been identified as medications at risk for being abused except:

a. Marijuana.
b. Stimulants.
c. CNS depressants.
d. Opioids.

EMERGING SUBSTANCES OF ABUSE

New drug and drug-use trends often occur without notice. The National Drug Early Warning System (NDEWS), begun in August 2014, watches and publishes trends as soon as they are identified (NIDA, 2017d). The National Drug Early Warning System (NDEWS) funded by the National Institute on Drug Abuse provides a yearly report that highlights 12 sentinel community sites and describes and compares drug use patterns and trends across the United States. The NDEWS was created in 2014 and has provided data yearly to assist communities in understanding the shift in trends. The four primary trends found in the NDEWS 2020 report included:

a. Polysubstance use played a prominent role in drug overdose deaths;
b. Increase in methamphetamine-related overdose deaths reported at 7 of the 12 sites;
c. Fentanyl remains the most lethal drug in many NDEWS sites; and
d. Minorities are becoming increasingly impacted by drug overdoses in some areas.

During 2020, the United States faced two public health emergencies. The combination of the opioid crisis and the Covid-19 pandemic influenced the availability of drugs and the availability of resources for individuals struggling with substance use. According to the NDEWS, there was a 17.6% increase in reports of drug overdoses between May 2019 and May 2020. There is ongoing research being conducted related to the Covid-19 Pandemic and drug use and overdoses as there are a variety of factors that could impact what is happening at the local level.

COVID-19 AND SUBSTANCE USE

The COVID-19 pandemic has brought more challenges to individuals health both physically and mentally. Researchers have observed and statistics support that there has been an increase in drug overdose deaths as well as first time users of substances (NDEWS, 2020; NIDA, 2021c). In addition, individuals who are fully vaccinated with substance use disorders have an increased risk of COVID-19 breakthrough infections. These breakthrough infections reported by Wang et al (2021) may be related to the individuals compromised immune status and a greater incidence of exposures to populations who are ill with the virus. The study concluded that individuals who were fully vaccinated and used substances were at a significantly higher risk of a COVID-19 breakthrough infection because of their comorbidities and adverse socioeconomic determinants. Subsequently, these individuals are at a greater risk of hospitalization and death because of the breakthrough infection (Wang et al., 2021).

Self-Assessment Quiz Question #8

Terry has a history of polysubstance abuse and has now developed COVID-19 despite having been fully vaccinated. All of the following likely contribute to being positive for COVID-19 except:

a. Compromised immune status.
b. Comorbidities.
c. Socioeconomic determinants.
d. Drug that they were abusing.

EMERGING DRUG TRENDS

Polysubstance and Fentanyl

As reported by the NDEWS, fentanyl plays an increasing role in deaths involving other drugs such as illicit stimulants. In addition, minorities are increasingly impacted by drug overdose deaths. Fentanyl remains the most lethal drug and is often mixed with other opioids resulting in overdose deaths and/or overdoses requiring naloxone treatment. Fentanyl has been found laced in cocaine and heroin (NDEWS, 2020). Previously it was largely reported that fentanyl was added to heroin only; however, new trends found that in 2019 in the state of Maine, one in three overdoses were cocaine laced with fentanyl or heroin laced with fentanyl (NDEWS, 2020). Philadelphia saw a trend of fentanyl being detected with simulants, such as cocaine or methamphetamine in 48% of overdose deaths (NDEWS, 2020). Polysubstance-related deaths in Denver involved theww or more drugs in 54% of overdose deaths and 5 or more drugs in 18% of overdose deaths (NDEWS, 2020).

Methamphetamines

The surge of methamphetamine-related overdose deaths was reported in 7 of the 12 sentinel community sites (NDEWS, 2020). Philadelphia reported that 50% of overdose deaths in 2019 involved some type of cocaine and methamphetamine. Atlanta, in contrast, had reported a decrease over several years; however, from 2012 to 2018 overdose deaths increased from 108 to 614; however, in 2019 the number did decrease to 552 (NDEWS, 2020). Maine reported an 81% increase in methamphetamine deaths from 2018 to 2019; while Florida reported an increase from 2015 to 2019 from 33 to over 100 deaths (NDEWS, 2020).

Fake prescription pills

The Drug Enforcement Administration (DEA) issued a report (2021) that there has been an alarming increase in lethality and availability of fake prescription pills which contain fentanyl and methamphetamine. There has been a 430 % increase since 2019 in counterfeit pills that contain fentanyl (DEA, 2021). Two out of every five counterfeit pills contain a potentially lethal dose of fentanyl. The most common counterfeit pills are produced to look like prescription opioids (such as oxycodone, hydrocodone, and alprazolam) and prescription stimulants (such as adderall) (DEA, 2021). Counterfeit pills are widely available and seizure by the DEA has included unprecedented quantities.

E-Cigarettes

E-cigarettes are the most popular tobacco product among youth today. In 2020, an estimated 3.6 million middle school and high school U.S. students reported using e-cigarettes within the past 30 days; 80% of whom reported using flavored e-cigarettes (CDC, 2021). A prefilled or refillable cartridge were the most common device type in 2019 and 2020 (CDC, 2021). E-cigarettes are viewed by youth as a safer alternative to smoking conventional cigarettes. They produce a flavored nicotine aerosol that looks and feels like tobacco smoke, but without the tar or other chemicals produced by burning tobacco leaves. However, even though e-cigarettes do not produce tobacco smoke; however, in the formative years of adolescence nicotine causes harm to the developing brain (CDC, 2021). They still deliver nicotine, which is a highly addictive drug. Also, vapor from some e-cigarette products has been found to contain known carcinogens and toxic chemicals (CDC, 2021). While previous surveys indicate that the juul was popular among e-cigarette users, 26.1% reported that Puff Bar was their usual brand, followed by Vuse (10.8%), SMOK (9.6%) and JUUL (5.7%) (CDC, 2021). E-cigarettes are available in fruit, dessert, or other sweet flavors as well as mint and menthol.

Synthetic cannabinoids

Synthetic cannabinoids are chemically related to THC, the active ingredient in marijuana. They are sometimes called synthetic marijuana or legal marijuana, but the effects can be considerably more powerful and more dangerous than marijuana's effects. The current trend is lacing cannabinoids with anticoagulants. This form of cannabinoids, which are often sold in gas stations, can result in bleeding, easy bruising, and nosebleeds that need medical attention. In addition, synthetic cannabinoids can result in the user's experiencing anxiety and agitation, nausea and vomiting, high blood pressure, shaking and seizures, hallucinations, and paranoia. The users may act violently or be

in a delirium (Hassamal & Hassamal, 2021). Despite the similarity on the molecular level to marijuana, these drugs are much more dangerous than marijuana and have resulted in very serious health consequences that include overdose and aggressive or suicidal behavior in users.

Novel synthetic opioids

Novel synthetic opioids (NSO) include carfentanil and 3-methylfentanyl. Carfentanil is a potent animal opioid sedative is one of the strongest available. Carfentanil, a fentanyl analog, has a potency approximately 100 times more potent than fentanyl. The drug has been linked to a significant number of overdoses. It has been found added to heroin and other street drugs (Noble, et al., 2021; NDEWS, 2021). In a study conducted by Noble et al (2021), heroin and cocaine had a high prevalence for being positive for carfentanil in overdose cases from different regions of the United States. Cocaine is most prevalent to be laced with 3-methylfentanyl increasing the likelihood of a drug overdose.

These NSO have emerged and proliferated since the mid-2010s. 3-methylfentanyl is a synthetic opioid designed with a potency of 400-6000 times of morphine. Carfentanil was created as a potent synthetic opioid to tranquilize large animals.

Carfentanil was confirmed in 635 post-mortem cases in 2017 and has subsequently decreased in post-mortem cases in 2020. Carfentanil post-mortem cases were predominantly midwest (463) and the south (376) (Noble, et al, 2021). In contrast, 3-methylfentanyl was reported in only 153 post-mortem cases between 2017 and 2020. 3-methylfentanyl cases were reported in 90% of the Pennsylvania cases, which supported a previous finding from the 1980's (Noble et al, 2021). In addition, Noble et al (2021) supports the NDEWS findings that there is an increase in polysubstance use; especially when an overdose death occurs.

MDPV

MDPV, also called flakka, is chemically similar to other synthetic cathinone drugs popularly called bath salts. It takes the form of a white or pink, foul-smelling crystal that can be eaten, snorted, injected, or vaporized in an e-cigarette or similar device. Vaporizing, which administers the drug very quickly into the bloodstream, may make it particularly easy to overdose. This is a synthetic cathinone that affects the brain in a similar manner as cocaine but is 10 times more powerful. Like other drugs of this type, MDPV can cause a condition called excited delirium that involves hyperstimulation, paranoia, and hallucinations and can lead to violent aggression and self-injury. The drug has been linked to suicide and heart attack. It can also dangerously raise body temperature and lead to kidney damage or kidney failure (NIDA, 2020q).

Caffeine powder

Bulk bags of pure caffeine powder are readily available online. These products may be attractive to young people looking for added caffeine stimulation or for help losing weight. But they are extremely dangerous: just a teaspoon of pure caffeine powder is equivalent to about 25 cups of coffee—a lethal amount. In addition to death, severe caffeine overdose can cause fast and erratic heartbeat, seizures, vomiting, diarrhea, and disorientation, symptoms that are much more extreme than those from drinking too much coffee or tea or from consuming too many sodas or energy drinks (U.S. Food and Drug Administration ;FDA, 2021).

Self-Assessment Quiz Question #9

Synthetic drugs exist, of the following, which is the most lethal?

a. Cannabinoid.
b. Flakka.
c. Carfentanil.
d. 3-methylfentanyl.

DRUG ABUSE NURSING ASSESSMENT AND CARE

The nursing assessment related to drug abuse may take one of two paths. Path 1 focuses on identification, screening, and possible prevention. Path 2 focuses on the individual who may seek health care after having consumed one or more substances. This may include either the intentional or the unintentional consumption of a substance or medication. The assessment and care depend completely on the path and situation.

Path 1: Identification and screening

The CAGE assessment is a standardized screening tool that helps to identify individuals at risk for substance or drug abuse (Mayfield, McLeod, & Hall, 1974). This simple four-question screening tool is a reliable method to identify individuals at risk. If any question is answered yes, the individual should be considered at risk.

The CAGE Questionnaire

1. Have you ever felt you ought to Cut down on your drug use (or drinking)?
2. Have people Annoyed you by criticizing your drug use (or drinking)?
3. Have you ever felt bad or Guilty about your drug use (or drinking)?
4. Have you ever used drugs (or had a drink) first thing in the morning (Eye opener) to steady your nerves to get the day started (or to get rid of a hangover)?

Path 2: Brief assessment, identification, and care

Health care providers are often surprised when an individual suddenly appears with an acute drug-related crisis. Regardless of whether the substance is an illegal street drug or a prescription medication, the initial assessment and care are the same. As the health care provider, it is important to gather as much information as possible, keep the patient and staff safe, provide intervention and supportive care, and ensure that the patient receives the help necessary to deal with the drug problem (Waszak, 2018).

It is vitally important to determine what substance or substances may have been consumed. The patient often may have taken more than one substance type or mixed the substances with alcohol. If street drugs were consumed, they might have been tainted with unknown chemicals that may create a totally unanticipated patient response.

Brief Assessment (Waszak, 2018)

- Conscious?
- A-B-C assessment?
- Vital signs? Stable or unstable?
- Track marks or skin lesions?
- Ensure safety for individual, family, and staff.

LABORATORY TESTS

Secure toxicology and other tests as indicated. Toxicology and other laboratory tests are critical to understand the substance, the amount in the individual's system, and the impact on other vital body systems. Even though not all substances can be immediately identified, it is helpful to understand how long a substance remains in the individual's system (Waszak, 2018).

Clinical Care

(Minnesota Department of Health, 2020; Painter, 2017):

- Safety for patient, family, and staff is the first priority when an individual is identified as having experienced a nonfatal overdose.
- Provide supportive care to the individual and their support system while in the emergency department or point of contact.
- Begin medication-assisted treatment during the emergency department visit.
- Facilitate the transition of care to a detox or inpatient treatment if possible.
- As a nurse or first responder who has engaged with the patient and built trust, provide a warm handoff to mental health services so that they can experience continuity of care.

Resources and education

Although providing education during an acute care situation may not be appropriate, it is important to know the resources available in the local community to help those who have addiction or abuse problems. Nationally, the Substance Abuse and Mental Health Services Administration (SAMHSA) provides a treatment location service that offers behavioral health help in the individual's local community. The agency's national helpline is 1-800-662-HELP. The agency's primary website is h*ttp://www.samhsa.gov/find-help*. From this location, one can enter a local address, city, or ZIP Code to find local or state help.

During an encounter where drug abuse is identified, and the individual is ready for help, the most important part the health provider can play is to ensure that a multidisciplinary team is involved and that the individual has a concrete plan and a next step for evaluation and care. It is not helpful to simply provide a pamphlet, a phone number, or website.

In addition to resources and education available for individuals and agencies as it relates to drug overdose identification and treatment, there are also resources available through the Emergency Nurses Association for nurses to learn to respond to an opioid overdose while maintaining a priority of protecting themselves. The Be-Safe© educational intervention for emergency department nurses provides 14 sections of information found in two chapters. In addition to information, the book also includes a case study for nurses to apply the Be-Safe© content (Clark et al., 2020).

Self-Assessment Quiz Question #10

Nurse Joe was called out of the emergency department to a patient's car because of reported patient unresponsiveness, shallow breathing and suspected overdose. The patient was given naloxone, what is the first priority for the nurse?

a. Consider their own safety.
b. Consider the patient's safety.
c. Consider the onlooker's safety.
d. None of the above.

NATIONAL DRUG CONTROL STRATEGY

The Biden-Harris administration created a clearly outlined plan to address the overdose and addiction epidemic that plagues the United States. The American Rescue Plan, signed into law in March 2021 appropriated nearly $4 billion dollars to enable the Substance Abuse and Mental health Services Administration (SAMHSA) and the Health Resources and Services Administration (HRSA) to expand critical behavioral health services to the American public (The White House, 2021). Citing that the COVID-19 pandemic has exacerbated the addiction and overdose epidemic, The White house laid out an aggressive, evidence-based response to implement in the first year with a goal to diminish the curve.

Following are some highlights of the strategy, which harnesses the collaborative strength of local, state, tribal, and federal agencies; community-based organizations; and other nongovernmental partners (The White House, 2021). The Biden-Harris Administration drug policy priorities include:

- Expanding access to evidence-based treatment, particularly medication for opioid use disorder
- Advancing racial equity in our approach to drug policy
- Enhancing evidence-based harm reduction efforts.
- Support evidence-based prevention efforts to reduce youth substance use
- Reducing the supply of illicit substances. This includes work with key global partners to curb illicit drug production ad trafficking, dismantling drug trafficking networks, and strengthening efforts to halt illicit internet drug sales
- Advancing recovery-ready workplaces and expanding the addiction workforce
- Expanding access to recovery support services

Priority 1: Expanding access to evidence-based treatment

The administration is committed to achieving universal coverage for individuals who struggle with substance use disorders. Addiction services and healthcare has existed as two separate systems and it is necessary to provide them in a streamlined, easily accessed, and low-cost manner to be successful in reducing the stigma that individuals with substance use disorders face. The administration strategy in coordination with the Office of National Drug Control Policy (ONDCP) includes:

- Evaluate progress made since 2016 Mental Health and Substance Use Parity Task Force and identify steps that need to be taken to complete any unfinished recommendations
- Review policies related to methadone treatment and create recommendations to modernize
- Remove unnecessary barriers to prescribing buprenorphine and identify opportunities for expansion of low-barrier treatment services
- Identify and address policy barriers and explore reimbursement related to contingency management interventions for simulant use disorder
- Expand access to treatment for incarcerated individuals
- Explore, identify barriers, and establish policy to help pregnant women with substance use disorder

Priority 2: Advancing racial equity in our approach to drug policy

There is a clear need to take steps to reduce racial equity issues within the current drug policy. Inequalities manifest through disparate access to care, differential treatment, and poorer health outcomes in certain groups. The administration wishes to pursue a comprehensive approach to advancing equity for all, including those who have historically been underserved, marginalized, and adversely affected by poverty and inequality. The administration strategy in coordination with the Office of National Drug Control Policy (ONDCP) includes:

- Identifying data gaps related to drug policy to target diverse communities whose needs are not met
- Establish a research agenda to meet the needs of underserved communities
- Establish an interagency work group to set specific policy priorities for criminal justice reform
- Develop a drug budget that will account for how federal dollars meet the needs of diverse populations and to target resources to address equity issues
- Identify culturally competent and evidence-based practices across the continuum of care

Priority 3: Enhancing evidence-based harm reduction efforts

Access to quality care for substance use disorders is critical for an individual to overcome their addiction; however, for some individuals with chronic conditions these services are inaccessible. Harm-reduction organizations provide a key point of contact for individuals who use drugs. Regular engagement helps to build trust in relationships allowing for ongoing exchange of information, resources, and connection. Harm reduction staff can build trust over time and be in a unique position to encourage people who use drugs to pursue treatment, recovery services, and healthcare. The administration strategy in coordination with the Office of National Drug Control Policy (ONDCP) includes:

- Integrate and build funding links to support syringe service programs
- Examining availability of the overdose antidote, naloxone
- Support and promote research for emerging harm reduction practices.

Priority 4: Support evidence-based prevention efforts to reduce youth substance use

Efforts to prevent youth substance use are critical to young people's healthy growth and development. Consideration of social determinants, such as poverty, homelessness, and other conditions are critical to developing an effective prevention strategy targeted towards today's youth. Illicit drug use rises during the adolescent and young adult years; indicating that this age group is a critical population for prevention efforts. The administration strategy in coordination with the Office of National Drug Control Policy (ONDCP) includes:

- Evaluate prevention programs to determine if they are using evidence-based approaches.
- Identify opportunities to enhance culturally competent prevention programs.
- Identify communities for prevention program development who experience high rates of adverse childhood experiences.
- Update evidence-based prevention curricula for families of school-aged children.
- Identify opportunities to increase screenings, school-based health centers, and back-to-school physicals to include brief interventions and referrals for care and treatment as appropriate.

Priority 5: Reducing the supply of illicit substances

With many of the substances created in the market outside of the United States, there is work to be done to block the illicit drug trafficking. The increased availability of drugs with historically high purity and low price, along with the increased lethality of synthetic opioids has driven the overdose and addiction epidemic. This trafficking is combined with the misuse of legal pharmaceutical drugs, such as prescription opioids, stimulants, and sedatives contributing even further to the nation's overdose and addiction epidemic. The administration strategy in coordination with the Office of National Drug Control Policy (ONDCP) includes:

- Working with key global partners to curb illicit drug production and trafficking
- Use multiple forums to engage source countries to disrupt the global flow of synthetic drugs
- Strengthen effort to disrupt the manufacture, marketing, sale, and shipment of illicit internet drug sales
- Support law enforcement to disrupt and dismantle domestic and transnational drug trafficking networks

Priority 6: Advancing recovery-ready workplaces and expanding the addiction workforce

There is a reluctance to hire a person with a history of a substance use disorder. Often this reluctance is based in misconceptions and fears and negative attitudes. The Office of the President sees the current economic crisis along with the opioid epidemic as a time for public and private sectors to work together to overcome this reluctance and become prepared to meet the challenges of today. Staffing shortages among the nation's addiction workforce must be addressed to meet the demand; while hiring a diverse workforce to reflect the people and cultures that are to be served. The administration strategy in coordination with the Office of National Drug Control Policy (ONDCP) includes:

- Reduce barriers to employment for individuals in recovery from addiction.
- Request that agencies support training for clinicians in addiction and identify vocational programs that can expand the workforce.
- Seek opportunities to expand the workforce to include bilingual prevention professionals and peer specialists.

Priority 7: Expanding access to recovery support services

Expanding the continuum of care can address the chronicity of substance use disorders. Recovery services can help individuals build recovery capital to manage and sustain long-term recovery. Scaling up capacity and infrastructure of these recovery support programs will create strong networks to equip communities to support recovery for everyone. The administration strategy in coordination with the Office of National Drug Control Policy (ONDCP) includes:

- Work with federal, state, and local governments along with recovery stakeholders to begin developing sustainable protocols for housing
- Develop interagency support for Recovery Month activities
- Engage individuals with "lived experience" to assist in the development of drug policy

The National Drug Control Strategy relies on a comprehensive approach, informed by experience and evidence, to reduce drug use and its consequences within the United States. The

overdose and addiction epidemic are an urgent issue facing the United States. The strategy is a collaborative effort by dozens of departments, agencies, members of Congress, and the American people. The Biden-Harris Administration posits that a multi-faceted and evidence-based approach is what is needed to meet this challenge. Its implementation is a shared responsibility guided by the Office of National Drug Control Policy and its interagency partners.

Conclusion

Drug abuse (particularly the opioid crisis) in America is a public health problem of great proportion. This course points to the need for a multidisciplinary approach that must start early in life to address the complex factors that lead to at-risk behaviors that may lead to drug experimentation. Factors that contribute to addiction have been identified and discussions related to economic and psychosocial effects on youth and college age individuals have been explicated. These factors are critical in developing effective treatment and prevention programs. Addressing these factors among youth at an early age may be the only way to control the epidemic as law enforcement tries to eradicate the sources of the drugs. Prevention begins by educating parents, teachers, and health care staff about early identification of risk factors in childhood and the early signs and symptoms of drug use is imperative.

Case study

Margo is a 27-year-old patient who has been admitted to the critical care unit with COVID-19 despite vaccination. She has struggled with polysubstance use disorder off and on since she was in eighth grade when she experienced soccer injury and the doctor prescribed hydrocodone for pain relief. Subsequently, she was introduced to marijuana in high school and began to experiment further and further. She has a two-year old who was delivered at small for gestational age baby following an abruptio placenta. The child now lives with her mother and is being cared for by family as Margo has recently relapsed and is homeless.

Caleb is taking care of Margo in the critical care unit and is concerned for the overall well-being of the patient following her recovery from COVID-19.

Questions:

1. What is the Caleb's responsibility as it relates to Margo's polysubstance use disorder?
2. While Caleb can involve multiple disciplines to assist Margo, what are some other means by which Caleb can get involved as it relates to local and state options for someone like Margo?
3. What resources are available for patients like Margo who need options to overcome their polysubstance use disorder?

Discussion:

1. Even though, Margo is recovering from COVID-19, it is important that Caleb understand how Margo's polysubstance use disorder has placed her at greater risk for COVID-19 and the gravity of the potential outcome as it relates to comorbidities. It is the responsibility of each health care professional to know the facts, know the laws, understand screening, provide the best care, and take an active role in preventing, reporting, and caring for individuals who need help kicking the problem. It is the responsibility of all health care professionals to advocate for their clients and promote access to health care for everyone.
2. The disease of drug addiction impacts all ages in all communities, so health professionals today must work to bring drug addiction out of the shadows. Health care professionals and community resource agencies can identify and refer at-risk individuals and struggling families to social services for prevention and treatment programs. Once identified, these families can benefit from early intervention programs, including health care, counseling, assistance with parenting, and discipline to support healthy family interaction. Health care professionals must participate in prevention and treatment programs in the community through fundraising activities, lobbying local officials and state legislators, conducting community outreach activities to identify and offer services to young people and adults at risk, educating the public about the disease, and working with the media to develop effective campaigns to combat negative cultural influences.
3. Using a multidisciplinary approach, health care professionals can close the drug treatment gap and increase prevention efforts. As advocates, health professionals, government agencies, and politicians must collaborate to write policies and increase funding for prevention and treatment programs for all drug types to stop the escalating cycle of addiction and relapse. Advocating for funding is necessary to increase the accessibility and ease of treatment to encourage families and individuals to seek help to stop the cycle of addiction and prevent it in the future. There is no way to put a price on the mounting death toll from this epidemic, and health care professionals are the front line of defense. The epidemic of drug addiction is a massive problem that requires effort on the part of every health care professional and Caleb needs to remain vigilant to identify what he can do to help break the cycle of addiction in his community.

Resources

Resources specific to substance abuse disorders and COVID-19: https://www.samhsa.gov/coronavirus

Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration (SAMHSA). https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR1PDFW090120.pdf

Treatment locator: 1-800-662-HELP or https://www.samhsa.gov/find-treatment

SAMHSA's store has a wide range of products: https://www.samhsa.gov/resource/dbhis/samhsa-store

Seeking Drug Abuse Treatment: Know What to Ask (n.d.), NIDA Publication #13-7764: https://www.drugabuse.gov/publications/seeking-drug-abuse-treatment-know-what-to-ask/introduction

Addiction Severity Index: provides a structured clinical interview designed to collect information about substance use and functioning in life areas from adult clients seeking drug abuse treatment: https://adai.washington.edu/instruments/pdf/Addiction_Severity_Index_Baseline_Followup_4.pdf

Clinical trials: information on federally and privately supported clinical trials: https://clinicaltrials.gov

Drugs, Brains, and Behavior: The Science of Addiction (Reprinted 2018). This publication provides an overview of the science behind the disease of addiction. Publication #NIH 18-DA-5605: https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/soa.pdf

Complete NSDUH findings at National Institute for Drug Addiction: https://drugabuse.gov

National Institute of Drug Addiction: https://www.drugabuse.gov NIDA Public Information Office: 301–443–1124

The National Institute of Justice: the research agency of the Department of Justice. For information, contact the National Criminal Justice Reference Service at 800-851-3420 or 202-307-2942 or https://nij.gov/Pages/welcome.aspx

National Institute of Mental Health: https://www.nimh.nih.gov/index.shtml

NIDA DrugFacts: Treatment Approaches for Drug Addiction (2019): a fact sheet covering research findings on effective treatment approaches for drug abuse and addiction: https://www.drugabuse.gov/publications/drugfacts/treatment-approaches-drug-addiction

NIDA DrugPubs Research Dissemination Center: publications and treatment materials. Staff provide assistance in English and Spanish and has TTY/TDD capability. Phone: 877-NIDA-NIH (877-643-2644); TTY/TDD: 240-645-0228; fax: 240-645-0227; e-mail: drugpubs@nida.nih.gov; website: https://drugpubs.drugabuse.gov

Preventing Drug Use among Children and Adolescents: A Research-Based Guide for Parents, Educators, and Community Leaders, Second Edition: a booklet that lists more than 20 examples of effective research-based drug abuse prevention programs: https://www.drugabuse.gov/sites/default/files/preventingdruguse_2.pdf

Principles of Drug Abuse Treatment for Criminal Justice Populations: A Research-Based Guide (Revised 2014), NIH Publication No.: 11-5316: https://www.drugabuse.gov/publications/principles-drug-abuse-treatment-criminal-justice-populations/principles

Research Report Series: Therapeutic Communities: (Revised 2015), NIH Publication #15-4877: information on the role of residential drug-free settings and their role in the treatment process: https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/therapueticcomm_rrs_0723.pdf

Definitions

To better understand the comprehensive nature of addiction, the following definitions are included in the National Institute for Drug Addiction (NIDA) publication on the Science of Drug Abuse and Addiction (NIDA, 2018b);

Addiction: A chronic, relapsing disease, characterized by compulsive drug seeking and use accompanied by neurochemical and molecular changes in the brain (detailed definition to follow below).

Agonist: A chemical compound that mimics the action of a natural neurotransmitter and binds to the same receptor on nerve cells to produce a biological response.

Antagonist: A drug that binds to the same nerve cell receptor as the natural neurotransmitter but does not activate the receptor, instead blocking the effects of another drug.

Buprenorphine: A partial opioid agonist for the treatment of opioid addiction that relieves drug cravings without producing the "high" or dangerous side effects of other opioids.

Co-morbidity: The occurrence of two disorders or illnesses in the same person, either at the same time (co-occurring co-morbid conditions) or with a time difference between the initial occurrence of one and the initial occurrence of the other (sequentially co-morbid conditions).

Craving: A powerful, often uncontrollable desire for drugs.

Detoxification: A process of allowing the body to rid itself of a drug while managing the symptoms of withdrawal; this is often the first step in a drug treatment program.

Dopamine: A brain chemical classified as a neurotransmitter, found in regions of the brain that regulate movement, emotion, motivation, and pleasure.

Mental disorder: A mental condition marked primarily by sufficient disorganization of personality, mind, and emotions to seriously impair the normal psychological or behavioral functioning of the individual. Addiction is a mental disorder.

Methadone: A long-acting opioid agonist medication shown to be effective in treating heroin addiction.

Naloxone: An opioid receptor antagonist that rapidly binds to opioid receptors, blocking heroin from activating them. An appropriate dose of naloxone acts in less than two minutes and completely eliminates all signs of opioid intoxication to reverse an opioid overdose.

Naltrexone: An opioid antagonist medication that can only be used after a patient has completed detoxification. Naltrexone is not addictive or sedating and does not result in physical dependence; however, poor patient compliance limits effectiveness. A new, long-acting form of naltrexone called Vivitrol® is now available that is injected once per month, eliminating the need for daily dosing, improving patient compliance.

Neonatal Abstinence Syndrome (NAS): NAS occurs when heroin from the mother passes through the placenta into the baby's bloodstream during pregnancy, causing the baby to become addicted along with the mother. NAS requires hospitalization and treatment with medication (often a morphine taper) to relieve symptoms until the baby adjusts to becoming opioid-free.

Neurotransmitter: A chemical produced by neurons to carry messages from one nerve cell to another.

Opioid: A natural or synthetic psychoactive chemical that binds to opioid receptors in the brain and body. Natural opioids include morphine and heroin (derived from the opium poppy) as well as opioids produced by the human body (e.g., endorphins); semi-synthetic or synthetic opioids include analgesics such as oxycodone, hydrocodone, and fentanyl.

Opioid use disorder: A problematic pattern of opioid drug use, leading to clinically significant impairment or distress that includes cognitive, behavioral, and physiological symptoms as defined by the new Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-V) criteria. Diagnosis of an opioid use disorder can be mild, moderate, or severe depending on the number of symptoms a person experiences. Tolerance or withdrawal symptoms that occur during medically supervised treatment are specifically excluded from an opioid use disorder diagnosis.

Partial agonist: A substance that binds to and activates the same nerve cell receptor as a natural neurotransmitter, but produces a diminished biological response.

Physical dependence: An adaptive physiological state that occurs with regular drug use and results in a withdrawal syndrome when drug use stops.

Self-medication: The use of a substance to lessen the negative effects of stress, anxiety, or other mental disorders (or side effects of their pharmacotherapy). Self-medication may lead to addiction and other drug- or alcohol-related problems.

Rush: A surge of euphoric pleasure that rapidly follows administration of a drug.

Tolerance: A condition in which higher doses of a drug are required to produce the same effect as during initial use; often leads to physical dependence.

Withdrawal: A variety of symptoms that occur after use of an addictive drug is reduced or stopped.

References

- American Addiction Centers. (2020). The *financial toll of addiction*. *https://drugabuse.com/financial-toll-addiction/*
- American SPCC. (2021). *Child maltreatment statistics.* https://americanspcc.org/child-abuse-statistics/
- Carpenter, C. S., McClellan, C. B., & Rees, D. I. (2017). Economic conditions, illicit drug use, and substance use disorders in the United States. *Journal of Health Economics, 52*, 63–73. https://doi.org/10.1016/j.jhealeco.2016.12.009
- Centers for Disease Control and Prevention (CDC). (2019) *2019 Annual Surveillance Report of Drug-Related Risks and Outcomes — United States Surveillance Special Report.* https://www.cdc.gov/drugoverdose/pdf/pubs/2019-cdc-drug-surveillancereport.pdf.
- CDC. (2020). *National Hospital Care Survey: Emergency department visits for substance abuse.* https://www.cdc.gov/nchs/data/nhsr/nhsr149-508.pdf
- CDC. (2021). *Notes from the field: E-cigarette use among middle and high school students – National Youth Tobacco Survey, United States.* https://www.cdc.gov/mmwr/volumes/70/wr/mm7039a4.htm
- Child Welfare Information Gateway. (2021). *Domestic violence: A primer for child welfare professionals.* U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau. https://www.childwelfare.gov/pubPDFs/parentalsubuse.pdf
- Clark, A., Burnie, J., Johann, R., Baker, R., & Hassert, C. (2020). Be-Safe©: A guide for emergency department nurses responding to opioid overdoses in personal vehicles. *The Online Journal of Issues in Nursing, 25*(3). https://www.doi.org/10.3912/OJIN.Vol25No03Man02
- Drugs.com. (2000-2021). *LSD*. *https://www.drugs.com/illicit/lsd.html*
- Drugs.com. (2000-2021b). *PCP*. *https://www.drugs.com/illicit/pcp.html*
- Drug Enforcement Administration. (n.d.). *Drug scheduling.* https://www.dea.gov/drug-information/drug-scheduling
- Drug Enforcement Administration (DEA). (2021). *Public safety alert: Sharp increase in fake prescription pills containing fentanyl and meth.* https://www.dea.gov/alert/sharp-increase-fake-prescription-pills-containing-fentanyl-and-meth
- Dryden-Edwards, R. (2021). *Club drugs. https://www.emedicinehealth.com/club_drugs/article_em.htm#what_are_club_drugs*
- Fairman, R. T., Vu, M., Haardorfer, R., Windle, M., & Berg, C. J. (2019). Prescription stimulant use among young adult college students: Who uses, why, and what are the consequences. *Journal of American College Health.* https://doi.org/10.1080/07448481.2019.1706539
- Fleming, C., Burke, T. W., & Owen, S. S. (2018). *Police use of naloxone*. https://policeandsecuritynews.com/2018/05/15/2215/
- Foundations for a Drug-Free World. (2006–2021). *Cheese heroin*. *https://www.drugfreeworld.org/drugfacts/heroin/cheese-heroin.html*
- Hassamal, S. & Hassamal, S. (2021). The rise in synthetic cannibinoids and cathinones. *Psychiatric Times,* 38(7), 14-16.
- Jackson, G., Brown, A.M., & DeFrances, C. (2020). Opioid-involved emergency department visits in the National Hospital Care Survey and the National Hospital Ambulatory Medical Care Survey. *National Health Statistics Report, 149,* 1-15. https://www.cdc.gov/nchs/data/nhsr/nhsr149-508.pdf
- Keller, A. (2020). *Drug use in middle school.* https://www.drugrehab.com/teens/middle-school/
- Lipari, R.N. & Van Horn, S. L. (2017) *Children living with parents who have a substance use disorder.* The CBHSQ Report: August 24, 2017. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Rockville, MD. https://www.samhsa.gov/data/sites/default/files/report_3223/ShortReport-3223.html
- Mattson, C. L., Tanz, L. J., Quinn, K., Kariisa, M., Patel, P., & Davis, N. L. (2021). Trends and geographic patterns in drug and synthetic opioid overdose deaths – United States, 2013-2019. *MMWR Morbidity Mortality Weekly Report 2021, 70*(6), 202-207. http://dx.doi.org/10.15585/mmwr.mm7006a4
- Mayfield, D., McLeod, G., & Hall, P. (1974). The CAGE questionnaire: Validation of a new alcoholism screening instrument. *American Journal of Psychiatry, 131*(1), 1121–1123.
- Minnesota Department of Health (2020). *Opioids: Follow-up care after drug overdose.* https://www.health.state.mn.us/communities/opioids/prevention/followup.html
- National Association for Children of Addiction (NACoA). (2018). *Children impacted by addiction: A toolkit for educators*. https://helpandhopewv.org/docs/Kit4Teachers_ALt_2018-4.pdf
- National Drug Early Warning System (NDEWS) (2020). Highlights from NDEWS sentinel community site 2020 reports. file:///C:/Users/PC%20User/Downloads/NDEWS-Year-6-Selected-Findings-Final.pdf
- NDEWS. (2021,). *Carfentanil circulating in Toronto*. https://www.toronto.ca/wp-content/uploads/2021/08/9572-Drug-Alert-August-18final.pdf
- NIDA. (2016). *Cocaine research report*. https://www.drugabuse.gov/download/1141/cocaine-research-report.pdf?v=3f3fb3f0903dfa8879388c2a5d086cb9
- NIDA. (2017). *Improving opioid prescribing. https://www.drugabuse.gov/publications/improving-opioid-prescribing/improving-opioid-prescribing*
- NIDA. (2018). *Medications to treat opioid use disorder research report.* https://www.drugabuse.gov/download/21349/medications-to-treat-opioid-use-disorder-research-report.pdf?v=99088f7584dac93ddcfa98648065bfbe
- NIDA. (2018b). *Drugs, brains, and behavior: The science of addiction*. https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-misuse-addiction
- NIDA. (2019). *Hallucinogens*. *https://www.drugabuse.gov/publications/drugfacts/hallucinogens*
- NIDA. (2019b). *Marijuana drugfacts.* https://www.drugabuse.gov/download/1073/marijuana-drugfacts.pdf?v=b34b81f2cc8f9811c7935c856dac138d
- NIDA. (2019c). *Methamphetamine research report*. https://www.drugabuse.gov/download/37620/methamphetamine-research-report.pdf?v=f6a96a8721a56a0f765889a3d3e678c7
- NIDA. (2020a). *Monitoring the future study: Trends in prevalence of various drugs.* https://www.drugabuse.gov/drug-topics/trends-statistics/monitoring-future/monitoring-future-study-trends-in-prevalence-various-drugs
- NIDA. (2020b). *Drugs, brains, and behavior: The science of addiction*. *https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-misuse-addiction*
- NIDA. (2020c). *Commonly used drugs charts: Heroin. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020d). *Commonly used drugs charts: Synthetic cathinones (Bath salts). https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020e). *Commonly used drugs charts: Cocaine. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020f). *Commonly used drugs charts: LSD. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020g). *Commonly used drugs charts: PCP. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020h). *Commonly used drugs charts: Psilocybin. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020i). *MDMA (Ecstasy/Molly) drugfacts.* https://www.drugabuse.gov/download/938/mdma-ecstasymolly-drugfacts.pdf?v=0b3f31f8d4c907e79f28bda4054dd9c4
- NIDA. (2020j). *Commonly used drugs charts: MDMA (Ecstasy). https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020k). *Commonly used drugs charts: Marijuana. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020l). *Commonly used drugs charts: Methamphetamine. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020m). *Misuse of prescription drugs research report.* https://www.drugabuse.gov/download/37630/misuse-prescription-drugs-research-report.pdf?v=add4ee202a1d1f88f8e1fdd2bb83a5ef
- NIDA. (2020n). *Commonly used drugs charts: Prescription opioids. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020o). *Commonly used drugs charts: Central nervous system depressants. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020p). *Commonly abused drug charts: Prescription stimulants. https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts*
- NIDA. (2020q). *Synthetic cathinones ("Bath Salts") DrugFacts.* https://www.drugabuse.gov/publications/drugfacts/synthetic-cathinones-bath-salts
- NIDA. (2021). *Trends & statistics: Overdose death rates*. https://www.drugabuse.gov/drug-topics/trends-statistics/overdose-death-rates
- NIDA. (2021b). *Heroin research report.* https://www.drugabuse.gov/download/37596/heroin-research-report.pdf?v=51a4d835474c19d304997b55486a00ec
- NIDA. (2021c). *COVID-19 & substance use.* https://www.drugabuse.gov/drug-topics/comorbidity/covid-19-substance-use
- Noble, C., Papsun, D. M., Diaz, S., & Logan, B. K. (2021). Detection of two potent synthetic opioids carfentanil and 3-methylfentanyl in forensic investigations during a four-year period 2017-2020. *Emerging Trends in Drugs, Addictions, and Health, 1. https://doi.org/10.1016/j.etdah.2021.100022*
- Painter, S. G. (2017). Opiate crisis and healthcare reform in America: A review for nurses. *The Online Journal of Issues in Nursing, 22*(2), 1. https://doi.org/10.3912/OJIN.Vol22No02Man03
- Peters, J. G. & Gunta, G. J. (2019) Safety alert: What they didn't teach you about naloxone could get you killed. *Police and Security News.* https://policeandsecuritynews.com/2019/10/01/safety-alert-what-they-didnt-teach-you-about-naloxone-could-get-you-killed/
- Recovery Centers of America (RCA). (2017). *Economic cost of substance abuse in the United States, 2016.* https://recoverycentersofamerica.com/economic-cost-substance-abuse/
- SAMHSA. (2020). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR1PDFW090120.pdf
- Schulenberg, J. E., Patrick, M. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Miech, R. A. (2021). *Monitoring the Future national survey results on drug use, 1975–2020: Volume II, College students and adults ages 19–60.* Ann Arbor: Institute for Social Research, The University of Michigan. http://www.monitoringthefuture.org/pubs.html#monographs
- Smith, V. C., & Wilson, C. R. (2016). *Families affected by parental substance use. http://pediatrics.aappublications.org/content/early/2016/07/14/peds.2016-1575*
- U.S. Food & Drug Administration (FDA). (2021). *Pure and highly concentrated caffeine.* https://www.fda.gov/food/dietary-supplement-products-ingredients/pure-and-highly-concentrated-caffeine
- The White House. (2021). *The Biden-Harris Administration's statement of drug policy priorities for year one.* https://www.whitehouse.gov/wp-content/uploads/2021/03/BidenHarris-Statement-of-Drug-Policy-Priorities-April-1.pdf
- Wang, L., Wang, Q., Davis, P.B., Volkow, N.D., & Xu, R. (2021). Increased risk for COVID-19 breakthrough infection in fully vaccinated patients with substance use disorders in the United States between December 2020 and August 2021. *World* Psychiatry. **https://doi.org/10.1002/wps.20921**
- Waszak, D. (2018). O*pioid overdose: Keep your patient alive, but protect yourself.* Retrieved from *https://www.workingnurse.com/articles/Opioid-Overdose-Keep-Your-Patient-Alive-But-Protect-Yourself*

ILLICIT DRUG USE IN THE UNITED STATES

Self-Assessment Answers and Rationales

1. The correct answer is D.
Rationale: 21.3% reported having tried some illicit drug (heroin, cocaine, methamphetamines, LSD) in their lifetime with 8.7% having used within the past month.

2. The correct answer is C.
Rationale: Children who come from homes where there is one or more parents who use substances or consume alcohol are more likely to be exposed to sex trafficking, experience infectious disease because of drug paraphernalia exposure, and become a user of substances or alcohol themselves.

3. The correct answer is A.
Rationale: According to RCA, 60% of the costs tied to illicit drug use are directly related to intangible costs of loss of quality of life.

4. The correct answer is B.
Rationale: Naloxone is the gold standard to reverse the effects of heroin overdose.

5. The correct answer is C.
Rationale: Buprenorphine is a partial opioid agonist which relieves drug cravings without producing the "high". Unlike the strict regulation of methadone daily monitoring, buprenorphine patients do not have a required daily check-in. The medication can be taken orally or sublingually and prevents attempts to get high through injecting medication (NIDA, 2021b).

6. The correct answer is D.
Rationale: Studies have shown that infants born to women who use cocaine during pregnancy are at an increased risk of placental abruption. When cocaine is combined with alcohol, the individual creates a greater risk for cardiac toxicity than from either drug alone.

7. The correct answer is A.
Rationale: According to NIDA's research report Misuse of Prescription Drugs (2020m), three classes of prescription drugs are most commonly abused: opioids or painkillers, central nervous system depressants or tranquillizers, stimulants.

8. The correct answer is D.
Rationale: These breakthrough infections reported by Wang et al (2021) may be related to the individuals compromised immune status and a greater incidence of exposures to populations who are ill with the virus. The study concluded that individuals who were fully vaccinated and used substances were at a significantly higher risk of a COVID-19 breakthrough infection because of their comorbidities and adverse socioeconomic determinants.

9. The correct answer is C.
Rationale: Carfentanil is a potent animal opioid sedative is one of the strongest available. Carfentanil, a fentanyl analog, has a potency approximately 100 times more potent than fentanyl.

10. The correct answer is A.
Rationale: Emergency Nurses Association provides resources for nurses to learn to respond to an opioid overdose while protecting themselves.

Mental Health Concerns and The Older Adult

6 Contact Hours

Release Date: October 12, 2022

Expiration Date: October 12, 2025

Faculty

Mary Perry, MSN, RN, PMHNP-BC, is a psychiatric mental health nurse practitioner board certified across the life span. She also holds a board certification as a clinical nurse leader. Her background is medical-surgical, aerospace medicine, military contingency aeromedical evacuation support, and mental healthcare. She received her BSN in 2006 from The University of Alabama at Birmingham, her MSN in 2016, and a postgraduate certificate in 2020 from The University of Alabama. Her previous employment includes the U.S. Air Force as an active-duty nurse; the U.S. Navy in Okinawa, Japan, as an independent contract nurse; and at Troy University in Montgomery, Alabama, as an adjunct professor.

Mary Perry has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Reviewer: Tonya Kasselman, MSN, RN, FNP-BC, is a board-certified family nurse practitioner. Her background includes skilled rehabilitation, long-term care, assisted living, diabetes management, and geriatric care. She received her BSN in 2003 from Fort Hays State University in Hays, Kansas. She received her MSN in 2011 from Wichita State University.

Tonya Kasselman has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Course overview

The healthcare worker meeting mental health needs will be able to view the older adult within the context of aging theories and identify interpersonal connection, biopsychosocial elements, and the assessment and treatment for common mental health problems in the older adult. The target audience is any healthcare worker who will assess, intervene, or treat mental health needs of an older adult client. Registered nurses, mental health technicians, mental health providers, case managers, and primary care healthcare workers can benefit from the perspective provided by this course.

Learning objectives

Upon completion of this course, the learner will be able to do the following:

- Examine the most common theories on aging, developmental tasks, and reflection from the older adult perspective.
- Evaluate essential components of the therapeutic alliance with the older adult.
- Demonstrate verbal communication styles that enhance the interpersonal connection with the older adult.
- Differentiate the social determinants of health and the barriers to care for the older adult.
- Select recommended assessment considerations for the older adult.
- Appraise biopsychosocial considerations for the assessment for the older adult.
- Analyze crisis, loss, grief, and bereavement for the older adult.
- Distinguish risk factors, treatment, and recovery for the older adult with a mental health diagnosis.

How to receive credit

- Read the entire course online or in print which requires a 6-hour commitment of time.
- Complete the self-assessment quiz questions which are at the end of the course or integrated throughout the course. These questions are NOT GRADED. The correct answer is shown after you answer the question. If the incorrect answer is selected, the rationale for the correct answer is provided. These questions help to affirm what you have learned from the course.
- Depending on your state requirements you will be asked to complete either:
  - An affirmation that you have completed the educational activity.
  - A mandatory test (a passing score of 70 percent is required). Test questions link content to learning objectives as a method to enhance individualized learning and material retention.
- Provide required personal information and payment information.
- Complete the MANDATORY Self-Assessment and Course Evaluation.
- Print your Certificate of Completion.

CE Broker reporting

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Individual state nursing approvals

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Nursing, Provider #50-4007; Florida Board of Nursing, Provider #50-4007; Georgia Board of Nursing, Provider #50-4007; Kentucky Board of Nursing, Provider #7-0076 (valid through December 31, 2023; CE Broker Provider #50-4007); Michigan Board of Nursing, Provider #50-4007; Mississippi Board of Nursing, Provider #50-4007; New Mexico Board of Nursing, Provider #50-4007; North Dakota Board of Nursing, Provider #50-4007; South Carolina Board of Nursing, Provider #50-4007; and West Virginia Board of Registered Nurses, Provider #50-4007. This CE program satisfies the Massachusetts States Board's regulatory requirements as defined in 244 CMR5.00: Continuing Education.

Activity director

Deborah Martin, DNP, MBA, RN, NE-BC, FACHE, Director of Learning Innovation Colibri Healthcare, LLC

Disclosures

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Course verification

All individuals involved have disclosed that they have no significant financial or other conflicts of interest pertaining to this course. Likewise, and in compliance with California Assembly Bill No. 241, every reasonable effort has been made to ensure that the content in this course is balanced and unbiased.

INTRODUCTION

Aging is a normal biological process. It is a distinctive, often progressive, natural decline in functioning that includes all body systems— cardiovascular, endocrine, immune, and neurological, to note a few. *Elderly* is a term often used interchangeably with *older adult*, which the American Association of Geriatric Psychiatry (Lundebjerg et al., 2017) defines as those age 65 years and older, which qualifies them for Medicare eligibility. This patient population is projected to double from 2015 to 2050 worldwide (World Health Organization, 2017). As the world population rapidly increases, so too do mental health needs. Everyone will experience aging on some level, but differing populations will advance at different rates. However, increasing age is not proportionally associated with declining intellectual and physical capacity. Older adults with mental health needs are a population subset with specific characteristics for the healthcare worker. The ability to thoroughly assess and diagnose, individualize care (whether lifestyle related or pharmacologic), and tailor mental health interventions for the older adult can improve quality care and safety. The unique presentation of the older adult can provide a better understanding for assessment, intervention, and treatment considerations for the healthcare worker addressing the mental health needs of the older adult.

THEORIES ON AGING

The inevitability of aging and its developmental stages in association with human health have been studied and debated over the years. What follows is a summarization of the most common theories on older adulthood, from Sigmund Freud, Heinz Kohut, Bernice Neugarten, Daniel Levinson, and Erik Erikson. Healthcare workers see aspects of each of these while assessing and caring for the older adult's mental health needs. Sigmund Freud was focused on the need to control the ego (part of the human psyche that operates in the real world) and id (part of the human psyche that strives to fulfill primal needs) with the superego (internalized values and morals that push the ego to act in a more virtuous way). Regression may induce rudimentary methods of coping to resurface in the older adult (Sadock et al., 2015). Heinz Kohut stated that the elderly are constantly faced with narcissistic injury as they cope and adapt to the biological, psychological, and social losses associated with the aging process. The central task of aging is preservation of self-esteem (Sadock et al., 2015). Bernice Neugarten theorized the major conflict of old age to lie in the release of autonomy and authority; the focus is on accomplishments and previous victory. This time is for reconciliation with others and processing grief related to the death of others and the inevitability of death of self (Sadock et al., 2015). Daniel Levinson found that age 60 to 65 is a transition period. Older people, "late adults," become consumed by the thought of their death and are often narcissistic and heavily engrossed in their body appearance. He found that creative mental activity is recommended and is a healthy substitute for decreased physical activity (Sadock et al., 2015). All the above theorists have aspects of interest for the healthcare worker to note; however, Erik Erickson's eight psychosocial stages of development are especially worthwhile to consume prior to working with an older adult.

Erik Erikson created a framework that highlights tasks to be accomplished, virtues to be gained, or—conversely—a crisis can occur throughout the life span. He expanded on Freud's theory by recognizing the relationship between the individual and their environment to include a client's customs and traditions (Sadock et al., 2015). The healthcare worker should approach each client's meaning, acceptance, or toil with life and death with cultural awareness. Erikson's stages from birth to older adult are a trajectory of development, an amalgamation of physical, cognitive, instinctual, and sexual realms (Sadock et al., 2015). An interruption or inability to accomplish the tasks in each stage may lead the client to undergo a decision point in their life. The

older adult is influenced by each stage along the continuum. The healthcare worker can gain much by capturing the perspective of the older adult client through the lens of the stages of Erik Erikson's psychosocial stages of development. Stage 1 is trust versus mistrust (usually met in infancy and has an associated virtue of hope); stage 2 is autonomy versus shame (usually met in the toddler timeframe with an associated virtue of will); stage 3 is initiative versus guilt (usually met in the preschool age and the associated virtue is purpose); stage 4 is industry versus inferiority (usually met during the school age and the associated virtue is competence); stage 5 is identity versus confusion (usually met in adolescence and the associated virtue is fidelity); stage 6 is intimacy versus isolation (usually met in early adulthood and the associated virtue is love); stage 7 is generativity versus stagnation (usually met in adulthood and has the associated virtue of care); and stage 8 is integrity versus despair (usually met in older adulthood and has the associated vesture of wisdom) (Boyd, 2017).

The older adult grew an appreciation of interdependence from stage 1. Acceptance of the life cycle and self-control were gained in stage 2. In stage 3, the older adult gains humor, empathy, resilience, and life direction. The older adult developed humility and acceptance of the course of their life to include unfulfilled hopes in stage 4. Stage 5 brings a sense of complexity to life and helps merge perception and devotion to life for the older adult. The older adult gathers a sense of relationships and comes to value tenderness and love during stage 6. In stage 7, the older adult has learned empathy and how to care for others with concern. The eighth and final stage, integrity versus despair, refers to the time period between being an older adult and death. An older adult client in this stage of life is juggling the purpose versus the finality of their life. This concept can be deep and meaningful, and it can drive the decisions a client makes toward their own health and the care they want/expect at the end of their life. An older adult client struggling with the fulfillment of this stage can experience high levels of despair and detachment (Sadock et al., 2015). These can be barriers the healthcare worker must consider when planning care and offering mental health interventions and treatments to the older adult. With an awareness of the theories on aging, the healthcare worker can more accurately conceptualize the client in their current presentation and use this information in the administration of mental healthcare.

Self-Assessment Quiz Question #1

The healthcare provider identifies the sense of satisfaction the older adult feels reflecting on a life lived productively as which task from the final stage of Erik Erikson's psychosocial stage of development?

a. Integrity.
b. Despair.
c. Generativity.
d. Stagnation.

INTERPERSONAL CONNECTION WITH THE OLDER ADULT

An essential component of mental healthcare is the therapeutic relationship between the healthcare worker(s) and the older adult client. A healthcare worker who builds and maintains a therapeutic relationship will be connected to the older adult client, enhancing their ability to meet their mental healthcare needs. The older adult views connection as vital to their identity, autonomy, and self-esteem (Jack et al., 2019). Key elements in the healthcare worker forming a therapeutic relationship are rapport, empathy, and professional boundaries—all within the bounds of cultural consideration for the older adult. These elements will aid communication between the healthcare worker and the older adult, which in turn strengthens the therapeutic relationship, a paramount component of mental healthcare.

Rapport—trust

Rapport is "interpersonal harmony" rooted in mutual understanding and respect for another (Boyd, 2017, p. 93). This concept of rapport is critical for the healthcare worker to develop a therapeutic relationship with the older adult in order to address their mental health needs. Trust is the foundation of the therapeutic alliance (Carlat, 2017). How a healthcare worker establishes rapport and builds trust depends on their individual capabilities and the current presentation of the client.

Connecting with the older adult can be challenging if the healthcare worker harbors conscious or unconscious bias or stereotypes. Ageism is a healthcare worker's perception and outlook based on their assumptions, perceptions, expectations, and beliefs that they form about older people, aging, and old age (Ayalon & Tesch-Romer, 2018). Ageism can negatively drive a healthcare worker's interaction with the older adult client. The World Health Organization (WHO) has identified ageism as one of the key targets for improving health (WHO, 2021). Awareness of ageism by the healthcare worker when meeting and building rapport with an older adult mental health client is imperative.

An example of ageism is a healthcare worker undervaluing depressive symptoms reported by the older adult and failing to address them in a timely manner or adequately because the healthcare worker assumes depression is common in all older adults. Ageism in this context could lead to a reduced calculation of risk, leaving the older adult client in an unsafe situation to self or others. Caution is warranted to avoid discriminating against the older adult client.

The healthcare worker can decrease common pitfalls of ageism through the practice of self-examination. The principle of self-awareness is defined as a healthcare worker's personal beliefs, thoughts, motivations, biases, and limitations (Boyd, 2017). By evaluating one's self, often through directed questions/thoughts, the healthcare worker can break internal or external barriers that inhibit personal connection with the older adult client. Self-concept awareness can be explored with a series of methodical questions related to what, when, and how a person has come to define themselves. The questions can be thought of as being in three major categories: body image, self-esteem, and personal identity (Boyd, 2017). Body image refers to the physical attributes that make up the outside of one's appearance and includes beliefs and attitudes about one's body (Boyd, 2017). An example of how this idea can be self-searched is to ask questions such as "How do I see myself when I look in the mirror?" and "What do I like about my body and/or dislike about my body?" How comfortable a person feels within their own skin can positively or negatively affect the way they interact with others. Self-esteem, another category, is one's perception of worth or importance, and it is a deeper view than body image (Boyd, 2017). It encompasses a person's confidence, which can be molded throughout time. An example of how to review self-esteem is to ask questions such as "How do I feel about myself and my worth?" and "How do I talk to myself in my own head (positive or negative self-talk)?" The third category of self-concept awareness is personal identity.

Personal identity is how a person sees themselves in relation to others (Boyd, 2017). An example of how to search this concept further is to ask questions such as "What words describe who I am?" and "What groups do I identify with?" and "How does my cultural or spirituality play into who I am?" By knowing more about body image, self-esteem, and personal identity, a healthcare worker can have a better understanding of their own roots, which provides insight into relationships. Self-assessment takes time and humility but will benefit the healthcare worker in all client interactions. Self-awareness leads a healthcare worker closer to objective empathy, thus allowing for connection with the older adult shaped through their individualism. Spend time getting to know yourself and re-evaluate regularly. There is value in understanding yourself and how you have changed over time, and this understanding can enhance interpersonal relationships with the older adult.

Rapport and trust are assembled or hindered from the initial client meeting and transform/shift at every subsequent interaction. Other ways to increase rapport and trust are with the use of interpersonal warmth and a nonjudgmental attitude (Boyd, 2017). The healthcare worker should prepare for positive interactions prior to the first interaction with the client and work at strengthening the bond whenever possible. Healthcare organizations can also strive to decrease ageism by offering educational activities that dispel misconceptions and prejudices while addressing intergenerational concerns of the older adult (WHO, 2021). Ultimately, the healthcare worker must foster a therapeutic relationship nurtured in rapport and trust in order to meet the mental health needs of the older adult.

Cultural care

To understand the older adult more completely, the healthcare provider must enter the therapeutic relationship with the understanding that cultural beliefs and practices impact care. The older adult client may identify with a particular culture, and the healthcare provider needs to assess that identification in order to provide quality mental health services. The healthcare worker needs to understand the definition of culture, its application, and how to extend cultural acceptance.

Definition of culture (American Psychiatric Association, 2022c):

1. The distinctive customs, values, beliefs, knowledge, art, and language of a society or a community. These values and concepts are passed on from generation to generation, and they are the basis for everyday behaviors and practices.
2. The characteristic attitudes and behaviors of a particular group within society, such as a profession, social class, or age group.

The healthcare provider must assess each older adult client with openness using cultural competence and cultural humility. Cultural competence is the knowledge, skill, and awareness the healthcare provider possesses (Boyd, 2017). Cultural humility is the healthcare provider's ability to self-reflect on potential bias and possible factors that could interfere with providing mental healthcare (Stubbe, 2020). It places emphasis on a continuous learning process for the healthcare worker. Both concepts are defined and designed to aid the healthcare worker in their interactions with older adult clients and provide cultural acceptance.

Techniques for the healthcare worker to extend cultural acceptance (Stubbe, 2020) include:

- Review your agency's policies and practices toward culture.
- Find out if your agency provides accommodations for language.
- Simply ask the client how they identify their culture.
- Take notes on specific practices, customs, and beliefs the client discusses.
- Avoid assumptions.
- Ask about discrimination, bullying, or possible harassment related to culture.
- For validation, reword and repeat what is being shared.
- Give the client permission to speak up when they are feeling misunderstood.

Empathy

In the healthcare profession, empathy has nineteenth-century historical beginnings. Florence Nightingale is the most notable advocate as a result of her role in bringing compassion and empathy to patients. She is credited with unifying science and skill with compassion and empathy (Magpantay-Monroe, 2015). Exhibiting empathy can be thought of as an individualistic portion of healthcare with artistic freedom. There is more than one correct and therapeutic way to connect with older adult clients when assessing, intervening, and delivering treatment—especially when meeting mental health needs. The healthcare worker addressing mental health concerns can utilize and modify various approaches to communication to elicit trust and rapport that enrich the environment for information exchange, often of a sensitive nature. The healthcare worker can use originality with the empathetic approach, with the goal of maximizing the dialogue with the older adult client. This is important for the older adult client because the WHO (2021) notes empathy as a method for combatting ageism. With trust and empathy, the healthcare worker can increase interpersonal connection enveloped in empathy with the older adult client, making it easier to assess, intervene, and treat mental healthcare needs.

Professional boundaries for the mental healthcare worker

While meeting the needs of the older adult mental health client, the healthcare worker is cautioned to maintain professional boundaries. Ethical topics such as abuse can be of concern with older adult mental healthcare, and they warrant a review of appropriate interaction. The National Council of State Boards of Nursing (2018) defines professional boundaries as the area between the healthcare worker's "power and the client's vulnerability." Mental healthcare assessments and interactions depend on the healthcare worker's aptness within this delicate scope. The focus during the interview should always be the client. Keeping the perspective of the client's recovery goals can guide the healthcare worker to maintain appropriate balance. The healthcare worker should avoid self-disclosure whenever possible. Self-disclosure is defined as personal information a healthcare worker shares with a client (Boyd, 2017). Using honesty and redirection can give the healthcare worker the ability to shift questions or comments about themselves back in line with the therapeutic relationship. Remember, the goal is to help the older adult client through professional interactions and work to improve their quality of life.

Transference and countertransference are two sides of the same coin. The healthcare worker meeting mental healthcare needs for the older adult should use acute recognition/awareness for the hindrance of either element. Transference is a client placing the thoughts, feelings, or behaviors they associate with someone else onto the healthcare worker (Boyd, 2017). This can be heard when a client says things such as "You remind me so much of my son/daughter" or "You look like a girl/boy a grew up with." While these comments are not infallible indicators, they should prompt the healthcare worker to follow up on the association the client is making. The association can be favorable—or an obstacle to overcome. Countertransference is when a healthcare worker knowingly or unknowingly places their own feelings or attitudes onto the client (Boyd, 2017). This term can present in a positive or negative connotation. If the elderly client reminds you of your loving grandparent, then you might take great care in meeting needs or risk breeching professional boundaries. If the older adult client reminds you of your abusive grandparent, then the client is at risk for decreased objectivity in assessment and possible degradation of care rendered. Both transference and countertransference can be combatted with awareness. The practice of self-awareness and the review of extenuating factors that contribute to ageism, as discussed above, can also be applied to transference and countertransference. Trust, empathy, and a focus on professionalism place the healthcare worker in the appropriate space for communicating and enhancing mental healthcare needs of the older adult.

Theory of interpersonal relationship

In 1952, Hildegarde Peplau created the first psychiatric framework for the nurse–patient relationship (Boyd, 2017). The systematic organization of the professional relationship she created can be generalized to a wider spectrum for healthcare workers meeting mental health needs. The framework consists of three phases of the professional relationship. The first phase is the orientation phase: the introduction and initial exchange of acquaintance and building of trust that can happen in minutes or may take months (Boyd, 2017). The older adult is seeking help and has identified unmet mental health needs. The therapeutic relationship begins with the first interaction and changes with every subsequent interaction. The healthcare worker uses the orientation phase to listen, establish boundaries, manage expectations, and use self-awareness to check for countertransference (Boyd, 2017). The second phase is the working phase: the space for examining existing problems and finding acceptable solutions to overcome them (Boyd, 2017). This phase is where the majority of the interpersonal relationship for assessing, implementing, and evaluating take place. It typically happens over time. A sense of comfort is felt in this phase for the older adult and the healthcare worker. The older adult has emotional safety in this phase and is able to address mental health struggles. The healthcare worker is cautioned that transference is common in this phase (Boyd, 2017). Goals toward recovery should be reached during this phase. The final stage of the framework is the resolution phase: the termination of the services and relationship take place in this stage (Boyd, 2017). Not all relationships will follow through to the resolution phase. But if they do, the healthcare worker can say "good-bye" and reflect on the progress made by the older adult as well as the social support put into place for continued success (Boyd, 2017).

The components of trust that build rapport, culture consideration, empathy, and professional boundaries can be applied throughout Hildegarde Peplau's framework. The healthcare worker can visualize the potential psychiatric therapeutic relationship with the older adult client prior to initiation with the goal of improved interactions. The healthcare worker can also have an awareness for the progression and evolution of the therapeutic relationship, including its termination.

COMMUNICATION AND LIMITATIONS WITH OLDER ADULTS

Communication is a vital key for the healthcare worker to properly meet mental health needs of older adult clients. A healthcare worker can provide dignity and respect when the older adult client feels heard (Jack et al., 2019). The National Institute on Aging (NIA) has recommendations for improving communication with the older adult. Communication with older adults is often hindered by declining sensory, cognitive, and physical abilities (NIA, 2021a). Therefore, a healthcare worker must utilize a variation in communication techniques—tailored to suit the needs/abilities of the client. These can aid the healthcare worker's ability to elicit information for proper assessment and intervention. They also have recommendations for communicating with the older adult who has hearing, visual, or cognitive deficiencies. Hearing and vision are both normal biological processes that decline with age and need to be accommodated when assessing and intervening with the older adult to ease the information exchange.

Recommendations for improving communication with the older adult include the following (NIA, 2017):

- Use an older client's preference for being addressed and include their proper titles such as Mr., Mrs., Ms., Dr.
- Avoid endearing terms such as *honey* and *dear*.
- Ensure comfort for them and provide adequate chairs or adjust the setting as needed.
- Choose your words wisely and clarify when confusion seems apparent; some words are used flippantly, such as *depression* and *crazy*.
- Proceed with cultural competence.
- Encourage the client to write or take notes if desired.
- Suggest that a family member or caregiver be present during interactions and be involved in tasks to provide support.
- Include reassurance of understanding and use the teach-back method when applicable to the older adult and the family members or caregivers.

Recommendations for accommodating hearing impairments include the following (NIA, 2017):

- Assess that the client can clearly hear you. If they cannot, ask if they use a hearing aid and make sure it is being used properly if needed.
- Use a regular pitch and volume. Raising your voice actually decreases understanding for those with hearing difficulties.
- Posture yourself directly in front of the client for face-to-face contact, which enhances their ability to read your lips if needed.
- Decrease background noise and close doors if they're comfortable with it.
- Spell words out if confusion is present nonverbally.
- Have a piece of paper ready if you need to write or they want to write to you.
- When transitioning is going to take place in the interview, tell them verbally that you are changing the subject, for example, "I'm going to move on to the next part of this interview."

Recommendations for accommodating visual impairments include the following (NIA, 2017):

- Assess whether the client can clearly see. If they need eyeglasses, ask if they brought them.
- Proper lighting is necessary for the older adult. Reduce glare for screens.
- Ask for their preferred method of learning when providing instructions (verbal, written, visual, pictures, etc.)
- If writing, make sure they can read it.
- If using printed materials, 14-point font is suggested.

Recommendations for accommodating cognitive impairments include the following (NIA, 2017):

- Be patient and allow for ample time to reduce feeling rushed.
- Ensure you have the client's attention prior to starting.
- Orient and reorient the client as needed throughout the interaction.
- Use a familiar setting for the interview if possible.
- Include family, friends, or caregivers with client consent.
- Avoid medical jargon and rephrase to understandable wording.
- Present one question or direction at a time.
- Choose open-ended (e.g., "How does that make you feel?" or "What do you think might have contributed to this feeling?") or closed-ended questions (e.g., "Did you get any sleep last night?" or "Have you been feeling sad and down lately?") based on the client's ability to answer (closed-ended questions are often easier if cognitive deficits are present).
- Consider following up with the client within the week to assess for understanding and allow for questions.
- Encourage cognitively stimulating activities, exercise, and a healthy diet.

Hearing, visual, or cognitive impairments that are clinically prohibitive to communication will require the healthcare worker to utilize more extensive variations in technique, and possibly require professional assistance or assistive devices. If professional assistance and assistive devices are required, the healthcare worker can collaborate with experts, such as case management, to mitigate communication barriers for the older adult client.

A brief review of verbal and nonverbal communication with older adult considerations can benefit the healthcare worker. Nonverbal communication is gestures, expressions, and body language (Boyd, 2017). It encompasses more of the interaction than verbal communication. The psychiatric older adult client can be difficult to interpret if disabilities or cultural differences are present. Using understandable language to verbally validate nonverbal observations can help clear any perceived deficiency in the information exchange.

Ten techniques can be used to improve the psychiatric interview with the older adult: acceptance, confrontation, doubt, interpretation, observation, open-ended statements, reflection, silence, and validation (Boyd, 2017). Acceptance is a therapeutic way to encourage information exchange in an open manner and is useful for establishing trust and building rapport (Boyd, 2017). The healthcare worker can practice this by saying things such as "It is ok to tell me about it—I would like to hear how it made you feel." Confrontation is used with discretion when trying to confront reality for the older adult (Boyd, 2017). The healthcare worker can use confrontation gently to address inconsistencies; however, it has the potential to divide the therapeutic relationship and cause discourse in communication. Doubt is also used cautiously when a healthcare worker is certain the older adult is incorrect about factual information. The healthcare worker should assess for the presence of cognitive deficiencies if misinformation in the older adult's communication is apparent.

Interpretation is a technique that the healthcare worker can embrace when trying to help the older adult identify their thoughts and feelings. For example, if the older adult is adamant that they cannot attend appointments anymore after dark because they might wreck their car, the healthcare worker could state, "It sounds like you are scared to drive after dark. Let us chat about driving safety." The older adult may respond to the interpretation, and the healthcare worker can work from the given response. Observation is the healthcare worker noticing and remarking on the older adult's verbal and/or nonverbal behaviors (Boyd, 2017). It can be used by noting body language and remarking on it by saying, "I can see that you are reluctant to discuss this topic." Open-ended statements are a method for getting the older adult to speak freely on topics to aid with insight (Boyd, 2017). The healthcare worker can start a statement with something like "Happiness means . . ." and have the older adult finish the sentence/thought. Reflection is a technique that gives the older adult permission to have uncomfortable feelings (Boyd, 2017). If the older adult asks a pointed question to the healthcare worker such as, "Should I stop drinking alcohol?" The healthcare worker can use reflection to answer back with, "Do you think you should stop drinking alcohol?" The use of reflection can keep the focus on the patient instead of the healthcare worker. Restatement is a therapeutic way of validating what the older adult is saying (Boyd, 2017). For example, if the older adult says, "I hate coming here," the healthcare worker can restate the expression and say, "It sounds like you do not want to be here." A similar technique is validation. It is used when the healthcare worker is searching for understanding (Boyd, 2017).

When the healthcare worker uses it, it can sound like "I want to make sure I understood you"—and then describe what you think you heard. If restated or validated correctly, they both can reassure the older adult that you are listening and open to discussion. Silence is a communication tool that needs proper utilization with the older adult. With therapeutic silence, the healthcare worker remains silent but uses nonverbal facial expressions to show interest so that the older adult can have time to put their thoughts together (Boyd, 2017). The healthcare worker can try therapeutic silence early in the assessment and ask if the extra time is helpful. Extra silence during communication may indicate the need for intervention for the older adult or the need to change selected communication techniques. All communication techniques are useful for various situations. The healthcare worker will choose which technique(s) work best for each individual communication exchange.

The healthcare worker can also have difficulties with communication if the older adult client is reluctant to talk or, inversely, is overly talkative. These challenges can be due to poor cognition or resistance to change in the older adult (Jack et al., 2019). The healthcare worker needs a specific approach to address these situations.

Recommendations for the reluctant patient include the following (Carlat, 2017):

- Use open-ended questions, allowing for an opportunity for free dialogue such as "What things make you feel sad?"
- Use continuation prompts such as "Go on" and "Tell me more."
- Search for a neutral ground when the interview is going awry; talking on neutral ground can provide an easier and subtle way into difficult thoughts, feelings, or emotions.
- Remember that rapport and trust take time.
- Triage the information you need at each visit, and prioritize safety.

Recommendations for the overly talkative patient include the following (Carlat, 2017):

- Use close-ended questions and multiple-choice questions to keep the patient's answers brief (an interview needs open-ended questions as well, but closed questions and multiple choice can speed the interview along to maximize the information shared).
- Learn to politely interrupt. This requires empathy. If it was not covered prior to starting the assessment, a reminder of the allotted time of the interview helps reign in an overly talkative client.

The older adult who is unable to communicate may experience high rates of loneliness and depression (Palmer et al., 2016). Depression in older adulthood is often accompanied by tears. This can make interviewing difficult for the healthcare worker. Traversing tears and sad emotions can be heavy and uncomfortable for the healthcare worker.

Recommendations for the tearful patient include the following (Carlat, 2017):

- Refrain from self-disclosure.
- Provide tissues.
- Embrace any lengthy silences and lean into empathy.
- Try to understand the meaning behind the tears.
- Assess the frequency of tearful episodes.
- Validate that crying is acceptable if needed.
- Be aware that crying is also a sign of intense emotion and warrants further investigation; assess for safety.

The healthcare worker should view each older adult client as an individualized opportunity. Being able to effectively communicate is crucial for the healthcare worker to assess and build trust with the older adult. Understanding the problems and difficulties the client is facing will not be possible if a mutual understanding is not present. There are a multitude of variations in communication styles and techniques the healthcare worker can utilize to nurture rapport, build trust, and foster a therapeutic alliance with the older adult. If more assistance is needed to connect and communicate with the older adult client, ask for help from family, caregivers, and/or your employer. An inability to communicate is determinantal to successfully meeting the mental health needs of the older adult.

Self-Assessment Quiz Question #2

The healthcare worker initiates a therapeutic conversation with an older adult and is focused on improving communication techniques to enhance the relationship and elicit information for assessment. The healthcare worker will use all of the following EXCEPT:

a. Cultural competence.
b. Inclusion of family or caregivers.
c. Teach-back method.
d. Terms such as honey and dear.

Older adults seek mental healthcare 40% less than younger populations (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). Mental health treatment for instability or illness for the older adult is multifaceted. How the older adult views their collective health can determine the level at which they will seek care to maintain or restore their mental imbalance or illness. The U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion (ODPHP) in Healthy People 2030 names five areas related to social determinants of health: education access and quality, healthcare access and quality, neighborhood and built environment, social and community context, and economic stability (ODPHP, 2022). Each will be expanded upon for potential barriers and benefits of care.

Determinant 1: Education access and quality

On average, people who have greater levels of education live longer and healthier lives (ODPHP, 2022). Educational opportunities are often focused on younger populations, and older adults might be beyond the point of increasing their educational status level. However, the healthcare worker can identify and help them overcome this deficit. The healthcare worker should assess health literacy in the older adult client and plan written materials accordingly. Further assistance might be necessary for people with disabilities that severely impair cognition, hearing, or vision.

The Centers for Disease Control and Prevention (CDC) states that 71% of adults over the age of 60 struggle to read printed materials (CDC, 2021a). This is often due to naturally declining vision. With recommendations to help older adults who struggle with poor vision, the healthcare worker can help mitigate hindrances related to vision.

Ensuring health literacy in the older adult with visual challenges includes the following practices (CDC, 2021a):

- Ensure the written material can be read by the client (have them read it to you).
- Use high contrast (black words on a white background are best).
- Use an average font size of 16 to 18 (increase if needed).
- Use extra white space between lines of information (make the space of the lines at least 25% of the point size).
- Do not use glossy paper (it creates glare).
- Use the least amount of text necessary.
- Use audio instruction in addition or as a substitute (see NIA recommendations listed prior for best outcomes).
- Adjust needs accordingly and reduce screen glare if electronic materials are used.

Determinant 2: Healthcare access and quality

Older adults often delay addressing mental health needs until the problems become chronic or severe. While access to mental health services is problematic for many people across the mental health spectrum, it is critically important for those that suffer with severe mental illness (SMI) (Sadock et al., 2015). To address the healthcare access and quality social determinant for the older adult, the healthcare worker can review the frequency, ease, or difficulty of accessing mental health services. Available options for care, transportation, technology, and stigma will be discussed related to the role they play in the older adult client accessing or being prohibited from accessing mental healthcare.

If access to healthcare or decreased quality of current care is an issue for the older adult, the healthcare worker can propose federally qualified and/or local community-based options. The following recommendations are from the U.S. Department of Health and Human Services (HHS) and provide recommendations and tools to increase healthcare access and quality of care for the older adult. The older adult client, family, or caregiver can search for local options using the official benefits website of the U.S. government. One website to explore is Medicare. The older adult client can sign up for benefits that include preventative screenings and services; check what services are covered; submit claims; compare providers; find physicians, group practices, hospitals, home health agencies, and facilities based on star ratings, services offered, and quality of care; and get a replacement card if needed (United States Department of Health and Human Services [HHS], 2022). Another website to search is Medicaid. The older adult client can access information about state programs (HHS, 2022). The website Eldercare can connect the older adult to local and community-based care. The older adult, family, or caregiver can use their ZIP code or city and state to find resources in the local community that provide information and assistance for older adults and caregivers (HHS, 2022). Sometimes access to care is hindered by awareness, and the healthcare worker can increase awareness by providing federal and local sources for care.

Transportation

A crucial component of face-to-face access and quality of healthcare is transportation. The older adult may access public, community-based transportation options or a privately owned vehicle. If options are lacking, the deficit can be noted and further assistance sought. The need to assess an older adult's ability to safely operate a vehicle will be addressed in depth in the psychosocial assessment section.

Technology

The use of technology for healthcare dramatically increased with the COVID-19 pandemic. Telemedicine decreases direct contact and limits disease transmission while providing access to care. The WHO (2021) classifies its use as advantageous for vulnerable populations such as older adults. Telemental health has been found to reduce the number of emergency department visits for older adults with comorbid depression and chronic obstructive pulmonary disease or congestive heart failure (Tusaie & Fitzpatrick, 2017). It has also been effective for psychotherapy interventions. One study found that older adults who suffer from depression and insomnia had positive outcomes from cognitive-behavioral therapy administered via telemental health (Tusaie & Fitzpatrick, 2017). Telemental health can benefit the older adult in many ways.

The American Psychiatric Association (APA) collaborated with the American Telehealth Association (ATA) to address telepsychiatry. The healthcare worker is encouraged to reference the APA and ATA for clinical tips, tools, guidelines, and more, while continuing to follow all policies at their place of employment. The APA (2018) has specific recommendations for the healthcare worker caring for the older adult population: include family members on video calls when clinically necessary (with patient permission); adapt technology and assessment for cognitively, visually, or audio impaired patients; modify cognitive testing carried out via videoconferencing.

Although telemedicine ensures access to care, it is not always available for the older adult client. It is estimated that 40% of older adults on Medicare are unable to receive video care and 20% are unable to receive phone care (Chu et al., 2022). This can place an older adult needing virtual mental healthcare in a difficult position. The healthcare worker must perform a baseline assessment of the infrastructure required for and attainability of this option for the older adult.

Deficits in cognition, hearing, or vision may present greater challenges for the older adult client using telemedicine. The ATA has created guidelines for telemedicine. However, the guideline only addresses live video conferencing for mental health services (Tusaie & Fitzpatrick, 2017). Other forms of communication such as phone text messaging, social media, apps, and emails are not covered by the ATA. The healthcare worker is encouraged to refer all questions to their place of employment. The same considerations the healthcare worker would utilize for in- person visits for securing protected information exist for telemedicine. The older adult client would need access to stable Internet as

well as reliable video and audio services on a Health Insurance Portability and Accountability Act (HIPAA)–compliant site prior to medical use (Johnson et al., 2021). Barriers to utilizing telemedicine must be weighed when considering this approach for mental healthcare for the older adult.

To increase the potential benefits of telemedicine, the healthcare worker can interview the older adult as well as their family, friends, or caregivers when assessing the inclusion of telemedicine for mental healthcare. There are other technological gains for a willing and able client. Apps related to, for example, healthy coping techniques, exercise logs, medication reminders, and communication can enhance the quality of life and safety of the older adult. Technology can strengthen mental healthcare for the older adult; however, the healthcare worker must prudently examine the initial and continued feasibility of its use.

Stigma

Mental healthcare access and quality can also be affected by stigma. Racial inequalities have been found in this social determinant of health. Research has found that African Americans experience greater amounts of stigma surrounding mental health treatment than other Americans (Conner et al., 2010). The basis and continued existence of mental health stigma for African Americans is unclear; however, the rates of access to mental healthcare are undeniable. Stigma is a mental healthcare barrier that the healthcare worker should not ignore. More than half of people suffering with mental illnesses do not get help (APA, 2020). Older adults can be unwilling to seek mental healthcare due to feelings of shame and guilt; these same patients, who are willing to receive treatment from their primary care provider, are often reluctant to seek mental health specialty care until their symptoms are severe (SAMHSA, 2021). Stigma can trap the older adult and cause them to suffer silently. It can drive an older adult to feel the loss of dignity and reinforce isolation, which perpetuates loneliness (APA, 2020). The healthcare worker should be equipped to help reduce the feelings around stigmas.

Suggestions to help reduce the stigma of mental illness include the following (APA, 2020):

- Encourage the client to talk openly about mental health (share with others).
- Empower the client to stand up to misconceptions (give them facts and data).
- Be aware of the language used (this goes for words you say or they say; humor is acceptable but in the proper context).
- Educate the client about the importance of mental illness (draw comparisons to how they would treat someone with a physical illness).
- Show empathy for those with mental illness.
- Be honest about treatment (normalize mental health treatment).

The healthcare worker can educate family, friends, and caregivers about participating in normalizing mental healthcare for the older adult. Table 1 presents communication suggestions the healthcare worker can pass on to family, friends, or caregivers of the older adult suffering from mental illness. Words are powerful, so encourage others to choose them wisely.

Table 1: Anyone Can say This and Not That to Reduce Stigma

Say This	Not That
"Thanks for sharing with me."	"That's not that bad."
"Can I help you in any way?"	"You can do it."
"That sounds really difficult."	"Life moves on."
"I'm here for you."	"That happens to everyone."
"That sounds heavy and sad."	"Everything happens for a reason."
"I can't imagine. Tell me more."	"I know all about that."
"How are you feeling?"	"You've got to think happy thoughts."

Determinant 3: Neighborhood and built environment

The physical place where someone resides contributes to their overall health and safety. Those at highest risk for unsafe or unhealthy environments in the U.S. are ethnic and racial minorities (CDC, 2022b). Examples of negative impacts on health and safety are neighborhoods with high crime rates or environments close to pollution sources. A client's physical environment falls into the social and developmental history of the mental health assessment. Homelessness falls into this social determinant and would require additional assessment and coordination of care. The depth a healthcare provider should reach will depend on the client and their individual living situation. Clarity of a client's physical health and safety can also be obtained with client consent by interviewing and family, friends, or caregivers.

Determinant 4: Social and community context

Relationships and social support play crucial roles for the older adult. Lack of social support and decreased or absent significant relationships negatively impact mental health in the older adult (Harandi et al., 2017). A healthcare worker can assess this social determinant in the social and developmental history of the mental health assessment. Older adults are at significant risk of experiencing isolation and loneliness (CDC, 2021c). This can be due to the death of a spouse/significant other, estrangement from family, worsening disabilities, or perceived feelings of burden to others. Groups most at risk within the older adult population are immigrants; those who are lesbian, gay, bisexual, and transgender; and those suffering abuse (CDC, 2021c). While there is not a clear measure for loneliness, there is evidence of related health risks that accompany it.

Health risks of loneliness include the following (CDC, 2021c):

- Higher risk for premature death from disease, especially related to smoking, obesity, and sedentary lifestyle.
- Dementia risk increases by 50%.
- Heart disease risk increases by 32%, leading to higher rates of stroke.
- Coincides with higher rates of depression, anxiety, and suicide.
- Specific to heart failure: risk of death increases four times, risk of hospitalization increases by 68%, and emergency visits increase by 57%.

Determinant 5: Economic stability

Poverty contributes to clients not being able to meet their basic needs. Approximately 9.3% of the older adult population in the U.S. lives below the poverty line (SAMHSA, 2019). Housing, healthcare, and nutritious food and drink are major concerns for older adults that could contribute to mental health conditions. Case managers are a prudent referral for the older adult lacking the financial means to meet their needs.

The five *Healthy People 2030* social determinants from the U.S. Department of Health and Human Services {ODPHP, 2022 #17}—education access and quality, healthcare access and quality, neighborhood and built environment, social and community context, and economic stability—can be used as a circular framework for the healthcare worker assessing older adult mental health needs (ODPHP, 2022). A deficiency in any of the determinants for the older adult can be a barrier to

accessing mental health services and treatment. More than one social determinant can be missing for a client. Assessing social determinants can lead to better understanding of the obstacles an older adult must overcome to seek mental healthcare. Insufficient coverage in social determinants might require additional assistance from case management, family, or peer interventions. Stigma can stand in the way of access to care and treatment. Breaking stigma is everyone's job, but it can start with one healthcare worker. The healthcare worker capable of fostering a therapeutic alliance built on trust and rooted in empathy will enhance the possibility for healthy communication and connection, naturally decreasing stigma. Friends, family, and caregivers can also be educated in empathetic communication with the older adult to normalize mental illness and treatment.

Self-Assessment Quiz Question #3

Social determinants of health can enhance or inhibit care for the older adult. When the healthcare worker assesses Internet access and connectivity along with the technological capabilities of the older adult for telemental health follow-ups, the healthcare worker is exploring which social determinant of health?

a. Healthcare access and quality.
b. Education access and quality.
c. Social and community context.
d. Stigma.

ASSESSMENT CONSIDERATIONS FOR THE OLDER ADULT

Addressing mental health needs in the older adult will depend on the assessment recorded or provided to the healthcare worker. Assessment is not a single interaction; rather, it is a calculated and continuous process that evolves throughout the care for the older adult client (Boyd, 2017). The first interview can set the tone. Preparation prior to meeting the client is encouraged.

The healthcare worker can review common developmental tasks of the older adult at any point while providing mental healthcare. Developmental tasks of the older adult are to maintain body image and physical integrity, to conduct a life review, to maintain sexual interests and activities, to deal with the death of significant loved ones, to accept the implications of retirement, to accept the genetically programmed failure of organ systems, to divest oneself of the attachment to possessions, and to accept changes in relationships with grandchildren (Sadock et al., 2015). Any of these tasks can be explored in more depth to establish known protective factors or barriers to the mental health of the older adult.

An assessment is a deliberate and systematic gathering of information with the goal of formulating a plan. A mental health assessment includes biopsychosocial data to show current and previous health, functional ability, and problems/diseases/illnesses both present and future (Boyd, 2017). The mental health assessment includes the biological domain, that is, the physical status of the client. This assessment is often carried out in conjunction with the client's primary care provider. Biological data is important to the mental healthcare worker; however, a team approach to the older adult can serve the client best by allowing multiple disciplines to focus on their specialty area of practice. The medical record for the older adult can be quite involved. However, a records review and collaboration with the older adult client's primary care provider can benefit the holistic picture of the mental health needs to be addressed. Physical problems or disorders can be exacerbated or accounted for by addressing the underlying psychiatric disturbance. The overlap of biological problems and psychosocial problems can be complicated. The American Geriatric Society (AGS) organizes geriatric health via alliteration for ease of remembrance. The five M's of older age are multicomplexity, mind, mobility, medication, and what matters most (AGS, 2020). Multicomplexity is the description of the older adult as a client with comorbid biopsychosocial needs that can challenge the healthcare worker. Mobility refers to the level of autonomous or diminished functionality of the older adult, especially the ability to ambulate and care for themselves. Medication is typically remarkable for the older adult; polypharmacy can be common and problematic and often results in undesirable side effects that signal a strict need for regular consolidation evaluation. The final ideal, mattering most, encompasses the notion of aging and decision making to include the older adult as an advocate for health decisions and goals. This depiction can aid the mental healthcare worker to conceptualize the older adult's biopsychosocial needs.

Assessing the older adult as they present in their current level of functioning is paramount and requires establishing trust and building rapport. The psychiatric interview is the most important part of the mental health assessment. It provides an opportunity to positively impact older adults suffering from mental health issues and illnesses.

Approaches that can enhance the therapeutic alliance include the following aspects (Boyd, 2017):

- Establishing a relationship rooted in cultural competence and cultural humility.
- Availability to assist in times of crisis.
- Awareness of acute safety issues related to the patient.
- Ability to provide education and manage expectations.
- Review and modification of treatment to individual preferences.
- Realistic intervention and goal setting.
- Support for patient to maintain safe autonomy.

Every interaction provides the opportunity to strengthen or weaken this bond and to obtain facts, feelings, and thoughts that can be targeted for treatment. The psychiatric interview can be administered in any setting (e.g., hospital, clinic, nursing home, residential facility). The length of time allotted or needed will vary by client and setting. Consult your facility for the proper organization of psychiatric assessment documentation.

Healthcare directives

Advanced care planning can be completed for clients of any age; however, it is responsible to offer the option to all older adults prior to medical crises or the end of life. The mental healthcare provider can support the older adult in these legal and ethical plans according to policy. Advanced care planning decisions include measures that can be taken in an emergency: cardiopulmonary resuscitation, use of a ventilator, artificial nutrition such as tube feedings or intravenous fluids, and comfort care measures (NIA, 2018). Older adults need to be aware of the risks and benefits of these differing emergency measures. Older adults with multiple comorbidities are less likely to recover from cardiopulmonary resuscitation and might need extended ventilator care (NIA, 2018). The healthcare provider seeing the older adult for mental health needs can prompt the discussion with the inclusion of quality of life. Several options exist for an older adult in terms of an advanced directive: living will, durable power of attorney, and other specific medical measures such as a do not resuscitate order or a tissue or organ donation request (NIA, 2018). The mental healthcare worker can assist the older adult and family with advance care planning needs to increase the likelihood of receiving desired treatment during crises or the end of life.

Healthcare provider exceptions to confidentiality

There are notable exceptions to confidentiality for the healthcare worker meeting the mental health needs of the older adult. The healthcare provider should refer all scope of practice questions to their state regulatory agency. State laws define the scope of practice. Understanding confidentiality, and when to breach it, is a necessary discussion when caring for older adults.

Confidentiality is a client's right for restricted information (Boyd, 2017). All healthcare workers play a role in maintaining client confidentiality. The HIPAA of 1996 is a federal guarantee of legal protection for privacy and confidentiality.

Exceptions to confidentiality (when the need to inform outweighs confidentiality) include the following (Boyd, 2017):

- Client has an intent to harm self or others.
- Litigation if an attorney is involved.
- Insurance company need to know for coverage and billing purposes.
- Sending information to answer a court order, subpoena, or summons.
- State requirement to report.
- Tarasoff principle—warn victim of imminent homicidal danger.
- Elder abuse suspected or involved (refer to state laws for proper channels).

Knowing when and how to provide notification when exceptions of confidentiality are in question varies per state. The healthcare provider will need to follow policies subject to their practice and should take steps to familiarize themselves with the relevant policies and regulations.

Informed consent and diminished capacity

The American Bar Association (ABA) and APA created a working group to address the diminished capacity of the older adult in 2008. The framework is aimed at the psychologist who could be called to determine capacity in a legal, a medical, an ethical, or a civil situation for the older adult in medical, long-term care, or private practice settings. The healthcare provider should consult their scope of practice for their role in determining capacity. The ABA and APA outline six domains for capacity: medical consent, sexual consent, financial, testamentary, driving, and independent living capacities (American Bar Association & American Psychological Association, 2008). The ABA and APA working group highlights the importance of cultural and age considerations. Cultural intricacies such as immigration status, language, health perceptions, family member roles, and economics must be considered. The ABA and APA caution against ageism and the surrounding negative consequences. Clinical assessment and evaluation of older adult capacity is complex. Older adults have the right to informed consent for treatment. The healthcare provider must be aware of the importance of providing informed consent in conjunction with the client's voluntary competency.

> The APA (2022f) defines informed consent as a person's voluntary agreement to participate in a procedure on the basis of his or her understanding of its nature, its potential benefits and possible risks, and available alternatives. Informed consent is a fundamental requirement of research with humans and typically involves having participants sign documents, prior to the start of a study, that describes specifically what their involvement would entail and noting that they are free to decline participation or to withdraw from the research at any time. In therapeutic contexts, the principle of informed consent has provided a foundation for do not resuscitate (DNR) orders and other advance directives and for the natural-death acts that have been passed into law throughout the United States.

Along the lines of DNR and advanced directives for the older adult is the legal concept of undue influence:

> Undue influence is defined as a dynamic between an individual and another person. It describes the intentional use of social influence, deception, and/or manipulation to gain control of the decision making of another. For the healthcare worker, undue influence can be understood as a dynamic of a relationship when a person uses a role and power to exploit the trust, dependency, and/or fear of another. The role and power permit the person to gain control over the decision making of the victim. In cases of undue influence, a person may have full capacity. Alternatively, there may be a cognitive impairment that increases susceptibility and dependence. (ABA & APA, 2008, p. 14)
>
> Mental capacity can be questioned for the older adult. The healthcare provider must differentiate between capacity and competency. Competency is a legal (not a medical) concept.
>
> The APA (2022b) defines capacity as:
>
> - The maximum ability of an individual to receive or retain information and knowledge or to function in mental or physical tasks.,
> - The potential of an individual for intellectual or creative development or accomplishment.
> - Inborn potential, as contrasted with developed potential

Collateral reports

Family, friends, and caregivers often play an important role in the mental healthcare of an older adult. The healthcare provider must obtain permission from the older adult client prior to discussing any medical or mental health information. Family, friends, and caregivers can help corroborate information (objective and subjective) gathered in the psychiatric interview of the older adult. Legal and ethical matters must be considered at all times. While caregivers can be beneficial to older adults and healthcare workers, they can also be sources of abuse and negative interactions in private for the older adult. Caregivers can experience overextension of self and inflict harm on older adults knowingly or unknowingly (NIA, 2017). The healthcare provider is cautioned to consult all places of practice and state boards of practice for scope of practice questions or concerns.

The healthcare worker has much to incorporate for the older adult assessment. Common developmental tasks can focus the healthcare worker's assessment and note strengths and deficits. Legal documentation or intervention for healthcare directives, confidentiality, informed consent, and diminished capacity considerations should be included in older adult mental healthcare. If assistance is needed, consult your place of employment. Assessment considerations specific to the older adult are integral to addressing mental health concerns.

ASSESSMENT OF THE OLDER ADULT: BIOLOGICAL AND PSYCHOSOCIAL

Assessment is a prerequisite for intervention and treatment. The healthcare worker needs to tailor the styles and techniques for obtaining the information needed to fully assess the older adult based on abilities and disabilities. The healthcare worker must enter each interaction with the older adult client with a willingness to embrace an objective perspective, the uniqueness of the encounter, and individualization of the assessment to maximize the quality of mental healthcare.

The assessment of the older adult will include biological and psychosocial elements. The current presentation and history of the older adult will help define the assessment depth, highlight symptoms of diagnostic criteria, as well as maneuver toward or eliminate treatment options and interventions for stabilization and recovery. The biological considerations of the older adult can impact the psychiatric treatment options and necessitate the need to collaborate with primary care or initiate coordinated care efforts. The most troubling mental health symptoms or concerns that interfere with daily functioning or relationships are often at the surface. The healthcare provider must verify nonverbal cues with verbal inquiry. The variation in communication and information exchange will be individualized, and the review of records will be taken into consideration,

preferably before the initial interview. The psychiatric history will provide the healthcare provider with a detailed, longitudinal picture of effective and ineffective treatments. A discussion of biological and psychosocial considerations for the older adult is imperative for the healthcare provider prior to diagnosing and recommending mental health treatment. Biological components coupled with psychosocial components provide the mental healthcare provider with a more comprehensive assessment of the older adult presenting with mental health concerns. The older adult assessment can be extensive and take multiple visits. The complexity level does not negate the need to assess in its entirety.

Biological considerations

The APA lists medical components for psychiatric evaluation. The healthcare worker can gather the data for the older adult directly from the client, family, friends, or caregivers (with consent), as well as historical medical charts. The information can be accumulated over time and prioritized during each interview. For example, the healthcare provider needs a complete medication history that includes all interventional trials (successes and failures), and most notably any side effects, prior to beginning or restarting psychiatric medication. The APA recommends that the following biological considerations be obtained by the healthcare worker: primary care involvement; allergies or drug sensitives; an exhaustive medication review of past and current prescription drugs as well as over-the-counter nutrients, supplements, and vitamins; current or historical medical illnesses, including hospitalizations, past or present medical treatments, surgeries, procedures, and alternative treatments; past or present neurological or neurocognitive disorders; physical trauma, especially head injuries and any sequela; sexual and reproductive history; cardiopulmonary issues; endocrinology involvement; past or current infectious disease; and current or past pain levels and treatments (Sadock et al., 2015).

There are a few notable biological considerations in neuropsychiatry for the healthcare worker to include when planning mental healthcare for the older adult. The healthcare worker understands the older adult can learn new information; however, the rate at which an older adult solidifies the material can take longer than for other age populations (Sadock et al., 2015). In addition, psychomotor speech and memorization are slower in older age, especially simple recall and encoding ability, but they are considered normal for the older adult. In addition, the intelligence quotient (IQ) typically holds steady until age 80 (Sadock et al., 2015). These biological considerations can drive the approach and length of time the healthcare worker might allot for assessment, intervention, or treatment. The healthcare worker might also include the older adult's family, friends, or caregiver(s) when new information is presented to the older adult. A historical baseline is an important piece of the assessment for the healthcare worker. The healthcare worker needs to know basic objective measures for physiological functioning such as vital signs (blood pressure, pulse rate, temperature, respiratory rate, and pain level) and nutritional status for older adult clients if psychopharmacology is involved. The healthcare worker adult can increase their understanding and provide a more thorough plan of care by coupling with the older adult's primary care provider.

Psychosocial considerations

There are psychosocial considerations related to an older adult's mental healthcare. Some overlap with biological considerations and can be assessed and targeted for treatment. For example, driving is a psychosocial aspect that can be affected by biology.

Activities of daily living (ADLS)
The healthcare worker needs to assess the older adult's ability to be autonomous. The inability to perform ADLs may indicate an unsafe or poor quality of life (Edemekong et al., 2022). The healthcare worker can utilize standardized measurement tools for assessing ADLs (basic and instrumental) of the older adult and intervene with other services when safety or quality of life is at stake. The AGS defines basic and instrumental ADLs.

Basic ADL are (AGS, 2022):
- Ambulating (ability to move and transfer independently, walking).
- Feeding (ability to feed self independently).
- Dressing (ability to cover self with clothing).
- Grooming (ability to care for personal hygiene, bathing, hair and nail care).
- Continence (ability to maintain bowel and bladder function).
- Toileting (ability to make it to the toilet and clean self).

Instrumental ADL are (AGS, 2022):
- Transportation and shopping (ability to buy groceries and necessities).
- Financial management (ability to pay bills and manage finances).
- Cooking (ability to prepare meals and serve them).
- Household maintenance (ability to clean and live in a home).
- Communicate (ability to get in touch with others via phone or electronic means).
- Medicate (ability to manage medications as prescribed).

Increasing age and health problems can cause increased difficulty with ADLs. Decreased physical functioning can be caused by biological deficiencies in the musculoskeletal, neurological, circulatory, or sensory systems. Cognitive, auditory, or visual impairments can increase difficulty with ADLs (Edemekong, 2022). Dementia can limit the older adult's capable and safe performance of ADLs like cooking and self-medicating. The healthcare provider can assess the strengths and weaknesses verbalized by the older adult as well as gather information from collateral sources. Interventions might include caregivers, family, other healthcare providers, or case management.

Employment status
The healthcare worker needs to assess the employment status and working habits of the older adult. Retirement is common in the older adult and can be a turbulent period of transition. The healthcare worker should attempt to assess whether retirement was voluntary or involuntary. Involuntary retirement is associated with negative mental health effects and decreased self-image (Rhee et al., 2016). However, the Age Discrimination Employment Act (ADEA) of 1967 protects older adults in the workforce from forced retirement by making it unlawful (Sadock et al., 2015). If the older adult is retired, follow-up questioning about how the older adult feels about the loss of occupation can open an opportunity for exploration of other topics like finance and relationships. The healthcare provider can assess beyond formal employment for responsibilities and time commitments acquired by the older adult.

Housing
The healthcare worker should assess the housing situation of the older adult. Housing is a basic need and typically must be met prior to the administration of interventions. It is estimated that about 5% of Americans live in nursing homes; however, approximately 35% of older adults will reside in a long-term care facility at some point during their lifetime (Sadock et al., 2015). The living situation of an older adult can affect treatment options. For example, an older adult that lives near a bus stop has the necessary financial resources, and is capable of navigating will have greater options for meeting their needs like attending mental health treatment. Where an older adult resides must be assessed to understand available mental health intervention and treatment.

Transportation—Driving safety
One of the most difficult subjects for the healthcare worker to discuss with the older adult, yet an impactful topic for self and others is autonomous driving. Driving is the leading cause of injury-related deaths in the 65- to 74-year-old population and is the second leading cause (behind falls) in the 75- to 84-year-old population (Promidor, 2019). The cessation of driving privileges

is inevitable for everyone. Each older adult interaction is an opportunity for the healthcare worker to assess for prevention. Knowing when and how to approach the older adult about driving safety is imperative. Preventing driving disability with properly timed interventions can impact lives.

There are acute and chronic medical conditions that should be strong indicators of safety for the older adult client. Cessation of driving privileges should be reviewed when the conditions in Tables 2 and 3 manifest or the medications in Table 4 are prescribed in the older adult and until they are medically evaluated by their primary care provider. The healthcare worker meeting mental health needs of the older adult will need to be in contact with the primary care provider about medical conditions and medications outside of their scope of practice.

Table 2. Acute Medical Conditions That Require Immediate Driving Cessation

- Acute myocardial infarction.
- Acute stroke or other traumatic brain injury.
- Arrhythmia (e.g., atrial fibrillation, bradycardia).
- Lightheadedness, dizziness.
- Orthostatic hypotension.
- Syncope or presyncope.
- Vertigo.
- Seizure.
- Surgery.
- Delirium from any cause.
- Newly prescribed sedating medications or those that can cause confusion or dizziness.
- Acute psychiatric diseases impairing cognitive function or decision making.

Note. Reproduced with permission (Promidor, 2019).

Table 3. Chronic Medical Conditions That Require Investigation for Driving Safety

Medical Condition	Examples
Disease/conditions affecting vision	• Cataracts • Diabetic retinopathy. • Macular degeneration. • Glaucoma. • Retinitis pigmentosa. • Field cuts. • Low visual acuity even after correction.
Cardiovascular disease, especially when associated with presyncope, syncope, or cognitive deficits	• Unstable coronary syndrome. • Arrhythmias. • Palpitations. • Congestive heart failure. • Hypertrophic obstructive cardiomyopathy. • Valvular disease.
Neurologic disease	• Dementia. • Multiple sclerosis. • Parkinson's disease. • Peripheral neuropathy. • Brain injury. • Spinal cord injury.
Psychiatric disease	• Mood disorders. • Depression. • Anxiety disorders. • Psychotic illness. • Personality disorders. • Alcohol or other substance abuse.
Metabolic disease	• Type 1 and type 2 diabetes mellitus (especially with hypoglycemic attacks or severe swings in blood glucose).

Table 3. Chronic Medical Conditions That Require Investigation for Driving Safety

Medical Condition	Examples
Musculoskeletal disabilities	• Arthritis and foot abnormalities. • Contractures and decreased range of motion. • Inflammation. • Pain.
Respiratory disease	• Chronic obstructive pulmonary disease. • Obstructive sleep apnea.
Chronic renal failure	• End-stage renal disease. • Hemodialysis.
Cancer and chemotherapy	• Weakness and extreme fatigue. Medication side effects.
Insomnia	• Sleep apnea. • Restless leg syndrome. • Anxiety/depression/pain contributing to insomnia.

Note: Reproduced with permission (Promidor, 2019).

Table 4. Medications that can Impair Older Adults and Increase Driving Risk

- Anticholinergics.
- Anticonvulsants.
- Antidepressants.
- Antiemetics.
- Antihypertensives.
- Antiparkinsonian agents.
- Antipsychotics.
- Benzodiazepines and other sedatives/anxiolytics.
- Hypoglycemic agents.
- Muscle relaxants.
- Narcotic analgesics.
- Stimulants.
- Hypnotics.
- Marijuana.
- Alcohol.
- Over-the-counter agents with anticholinergic adverse effects such as sleeping agents or allergy/cold medications, which are often first-generation antihistamines.

Note. Reproduced with permission (Promidor, 2019).

The healthcare worker should check for routine driving safety of the older adult and can refer to the CDC when planning interventions that maximize safe independence. Interventions should be individualized and performed in collaboration when necessary. The healthcare worker can help the older adult maintain their autonomous driving with proper identification of and interventions addressing clinical deficits. The most common disturbances are vision, cognitive, and motor/sensory (CDC, 2022a). The healthcare worker can evaluate the older adult or refer the older adult for prompt assessment of any notable organ systems, acute or chronic conditions, and medication(s) that interfere with safe driving. Intervention and rehabilitation can keep the older adult safely behind the wheel. The healthcare worker can utilize referrals and other resources to help the older adult client maximize restoration of functioning, leading to safer driving. The healthcare worker can contact case management and other specialty areas to collaboratively form a holistic care plan that meets all the needs of the driving older adult.

The healthcare worker is faced with a complicated decision matrix when it comes to addressing the older adult's driving privilege; there are personal, clinical, ethical, and legal ramifications. The healthcare worker is often consulted about the safety of the older adult who drives and is faced with the weight of the older adult's needs and safety versus the safety of society. The healthcare worker is encouraged to refer to state laws associated with reporting of unsafe driving and prescribed revocation of driving privileges in addition to the information provided.

Social support system (Isolation)
An important part of the social history is the social connectedness of the older adult. The older adult is capable of being physically and mentally healthy and maintaining autonomy. However, the inescapability of mortality often pushes the older adult living away from friends, family, and possibly their partner. An increased sense of isolation can cause symptoms of depression (Sadock et al., 2015). The healthcare worker can assess the social support system the older adult utilizes on a daily/weekly/as needed basis to better understand any deficits of care in the social history section of the psychiatric interview. Where the older adult resides is an important consideration for social support. The healthcare worker might work along with the long-term care facility team in coordinating the social needs of the older adult. Social isolation and loneliness have negative effects on the mental health for the older adult. They increase the risk for negative health consequences such as obesity and smoking as well as shorten life span (Czaja et al., 2021). The members of an older adult's social cohort and family structure will vary. There are objective and subjective measurements for social isolation and loneliness. The number of contacts and size of a social support network can be quantified, whereas loneliness is subjective. Loneliness is verbalized by the client and assessed qualitatively. Older adults who live alone are not always lonely. Loneliness is multifaceted and often intertwined with social interactions, which are unique to each client. Assessing limitations such as revoked driving privileges that can alter social interactions requires the healthcare provider to assess the social domain. Social engagement (personal, community, society connection) and individual productivity are major keys of successful aging (Czaja et al., 2021). This requires the healthcare provider to assess the quality of interactions and feelings of belonging when evaluating quality of life of the older adult.

Faamily history
The family history of an older adult can provide a genetic understanding and hint at vulnerabilities. Formal diagnosis can be lacking in older generations; however, subjective data on family members is a worthwhile investigation for the healthcare provider. Some mental health diagnoses are more likely than others to run in families. Obtaining historical family mental health diagnoses and medical diagnoses can focus risks as well as treatment options for the healthcare provider to consider. The healthcare worker can obtain the family history from the older adult, the family of the older adult (with consent), or caregiver(s).

Sexual orientation, function, and dysfunction
Sexual identification and function are assessed regardless of age. Older adults who identify as part of a sexual or gender minority (lesbian, gay, bisexual, transgender, etc.) are more prone to sexual difficulties and psychological distress later in life (NIA, 2022a). The healthcare provider is cautioned to assess with open empathy. Older adults often redefine the meaning of sexuality and intimacy in their life, and the healthcare provider must approach sexuality professionally and at the comfort level of the older adult. The healthcare provider needs to assess for the importance of sexual performance in the older adult's life. For example, sexual dysfunctions that can include decreased desire, delayed or absent orgasm and ejaculation are known side effects of antidepressant medications (Sadock et al., 2015). The healthcare provider must know the expected physical changes that occur in the older adult female, shortening and narrowing of the vaginal walls and decreased lubrication, which can decrease enjoyment of sexual activity (NIA, 2022a). The healthcare provider must also know the age-related physical changes that occur in the older adult male, erectile dysfunction (impotence) and decreased firmness with erection, which can cause stress in the older adult (NIA, 2022a). The healthcare provider can assess for sexual dysfunction distress. There are other common causes of sexual dysfunction: alcohol in excess, arthritis, chronic pain causing exhaustion and decreased energy, dementia, depression, diabetes, heart disease, incontinence, obesity, and stroke (NIA, 2022a). The healthcare provider can prescribe or refer the older adult for evaluation and treatment if desired.

Substance use, abuse, and treatment history
Substance use and abuse are a crucial part of the psychiatric assessment for the older adult. The Substance Abuse and Mental Health Services Administration (SAMHSA) states that substance use and abuse in older adults is often "overlooked and undertreated" (SAMHSA, 2022d, p. xi). The healthcare provider is reminded to self-assess for ageism, conscious bias, and unconscious bias that might inhibit the ability to evaluate substance disorders in the older adult.

Substance use disorder (SUD) guidance for the older adult population includes the following (SAMHSA, 2022d):
- Substance misuse disorders occur more in younger populations than elderly populations; however, this does not void the importance for assessment.
- Substance misuse in older adults increases physical injury and mortality.
- Illicit drug use in the older adult population is currently on the rise, as is dual diagnosis (co-occurring mental health and substance use disorders).
- Alcohol is the most abused substance by older adults.
- Caution is warranted for the older adult due to the commonality of multiple prescriptions and possible detrimental interactions with substances.
- Substance abuse symptoms can mimic cognitive deficits (normal or clinical).
- Avoid assumptions that older adults are unwilling to change or seek treatment.
- Multiple approaches have been found to be effective in the older adult population (screening, brief intervention, and referral to treatment; brief structured treatment; patient education; relapse prevention techniques; formal SUD treatment programs; and pharmacotherapy).

With alcohol being the most commonly misused substance by older adults, the healthcare worker must understand the risk factors contributing to increased alcohol consumption by the older adult. Older adults will experience numerous life stressors such as financial hardship, retirement or involuntary loss of job, living rearrangement, loss/grief/bereavement, trauma, or social isolation (SAMHSA, 2022d). Increased alcohol use and misuse can be detrimental to the older adult. Due to aging factors such as decreased metabolism and body fat storage, the older adult is more at risk for confusion, falls, injury, and exacerbated chronic conditions (SAMHSA, 2022d). The healthcare provider should assess tobacco product use presently or historically. Older adults who are lonely are at greater risk for smoking (Czaja et al., 2021). Smoking, vaping, or oral tobacco habits can be noted and assessed for intervention. Assessment of substance (legal or illegal), quantity, and frequency of use is critical for accurate assessment.

Barriers to older adults seeking treatment for substance misuse include the following (SAMHSA, 2022d):
- Negative beliefs and attitudes.
- Denial.
- Justification (caregivers accepting misuse due to the end of life).
- Decreased information on dangerous effects of substances and older age.
- False information about older adult treatment.

Protective factors for the older adult against substance misuse include the following (SAMHSA, 2022d):
- Healthy coping skills.
- Marriage or committed relationships.
- Social and family support.
- Autonomy and independent living.
- Accountable basic needs covered (food, shelter, safety).
- Positive self-esteem and self-image.
- Access to medical care and medications.
- Sense of purpose and belonging.

Person-centered care accounts for older age and lifestyle modifications, access to care, and quality of life considerations (SAMHSA, 2022d). The healthcare provider needs to consider the following for the older adult seeking treatment: physical disabilities to accommodate (mobility, hearing, vision), cognitive deficits that interfere (memory and attention), learning needs and preferences (slower pace and repeated information if needed), and respect for age and gender preferences for provider and group therapies.

Spirituality

The spiritual assessment of the older adult is documented in the social history section of the psychiatric evaluation. The healthcare worker is reminded that it is critical to maintain neutrality of stance while assessing the older adult's spiritual beliefs. Spirituality is a broader topic than religion. It is estimated that 80% of Americans practice some type of religion (APA, 2013). All healthcare workers will interact with the spiritual aspects of an older adult's beliefs, religion, or purpose of life while meeting their mental health needs. The inability to address spiritual involvement in an older adult's life can limit a client's recovery (Neathery et al., 2020). If the healthcare worker is reluctant or uncomfortable assessing an older adult's spirituality, a self-assessment to identify the barriers can be beneficial. Cultural awareness and acceptance are key for impartiality of assessment. Spirituality is a component of mental healthcare that is often woven into an older adult's lifestyle, guiding their adherence to medications and therapies (Rodgers et al., 2018). Proper understanding of an older adult's belief system, spirituality, and feeling of belonging is essential during assessment for relevant intervention and treatment.

Legal involvement

Legal history can be notable for the older adult client. The mental healthcare worker will assess for legal involvement or ramifications that could hinder treatment. A history of problematic behavior related to disregard for rules and remorse can be diagnostic for antisocial personality disorder (ASPD). ASPD is associated with younger populations; however, the presence of it historically must be taken into consideration, as it carries high rates of comorbidities, most commonly substance use disorders (Holzer et al., 2022). The healthcare worker can also assess for caregivers, friends, or family members who have any legal stake in the older adult's decision making.

Elder abuse (physical/emotional/sexual/financial)

According to statistics, abuse is reported for around 10% of those age 65 years and older (Sadock et al., 2015). The healthcare worker must understand definitions and classifications of abuse and assess for mistreatment in all older adults. The American Medical Association has three general definitions for elderly mistreatment: abuse (something that causes harm or the withholding of something to cause harm to the health and well-being of an elderly person), neglect (the inability to do good or provide needed services or basic needs [food, shelter, medical care] to an older adult), and exploitation (using an older adult's money for self-purposes) (National Research Council, 2003) The older adult is vulnerable to all generalized types of abuse: physical, emotional, sexual, and financial. Physical abuse is defined as "bodily harm by hitting, pushing, or slapping. This may also include restraining an older adult against his/her will, such as locking them in a room or tying them to furniture" (NIA, 2020). Emotional abuse, also called psychological abuse, includes "a caregiver saying hurtful words, yelling, threatening, or repeatedly ignoring the older adult. Keeping that person from seeing close friends and relatives is another form of emotional abuse" (NIA, 2020). Sexual abuse involves unwanted sexual acts or being forced to watch sexual acts (NIA, 2020).

Financial abuse happens when money or belongings are stolen from an older adult. It can include forging checks, taking someone else's retirement or Social Security benefits, or using a person's credit cards and bank accounts without their permission. It also includes changing names on a will, bank account, life insurance policy, or title to a house without permission (NIA, 2020).

Older adults most at risk for abuse are female, those without support systems, those with disabilities, and those who are cognitively inhibited or have dementia (NIA, 2020). The healthcare provider must assess for physical and verbal signs of abuse when interacting with the older adult.

Signs of abuse in the older adult include the following (NIA, 2020):

- Cessation of enjoyed activity.
- Unkempt appearance.
- Difficulty sleeping.
- Unexplained weight loss.
- Easily agitated or violent outbursts.
- Outward signs of trauma and regression (e.g., rocking back and forth).
- Unexplained bruises, burns, cuts, scars.
- Signs of physical altercation (such as broken eyeglasses).
- Bed sores or other preventable disorder or disease.
- Lack of medical aids needed for functioning (glasses, hearing aids, dentures, medications, etc.).
- Financial warnings (eviction notices, unpaid bills despite financial means).
- Report of unsafe living conditions (hazardous, unsanitary, or unsafe).

Long-term effects of elder abuse can lead to declining physical and psychological health, severed social support, financial loss, and early death (NIA, 2020). Elder abuse requires intervention. The healthcare worker must comply with state laws and authorized means of reporting elder abuse according to facility policy. Local, state, and national resources exist to report and/or stop elder abuse.

Self-Assessment Quiz Question #4

Abuse, a biopsychosocial consideration, in the older adult can lead to negative long-term effects; therefore, the healthcare worker recognizes the signs of elder abuse as all of the following EXCEPT:

a. Disheveled appearance.
b. Severed family ties.
c. Difficulty sleeping and easily agitated.
d. Unexplained bruises and bed sores.

CRISIS, LOSS, GRIEF, AND BEREAVEMENT IN THE OLDER ADULT

Older adults have lived through a multitude of challenges by the time the healthcare worker is assessing for intervention. Adaptation and change are inevitable. How the older adult has coped in the past is salient for how they will cope with present and future difficulties. The healthcare worker will see the older adult experience crisis, loss, grief, or bereavement; therefore, it is imperative to know the difference in presentation as well as the course of typical action and line of intervention.

Crisis

Prior to discussing loss, grief, and bereavement, it is prudent for the healthcare worker to understand crisis and its presentation to differentiate the state of being and possible intervention needed for the older adult. The definition of crisis is:

> A time-limited event that triggers adaptive or non-adaptive responses to maturational, situational, or traumatic experiences. A crisis results from stressful events for which coping mechanisms fail to provide adequate adaptive skills to address the perceived challenge or threat. (Boyd, 2017, p. 211)

Crisis is a crossroad. The direction taken in the context of crisis determines the positive or negative consequences of the outcome. If the older adult chooses to grow and strengthen from the crisis, positive outcomes are expected. However, if

the reverse is apparent or the client is incapable of coping, a negative and possible destructive outcome can occur such as self-harm or suicide. If an older adult in crisis has historically had difficulty coping, caution should be taken when assessing their safety. Depression and suicide are risks for clients who are unable to overcome a crisis (Boyd, 2017). Assessment for self-harm is paramount for the older adult in a crisis, regardless of past psychiatric history. A crisis should mitigate within four to six weeks (Boyd, 2017). When chronic crisis is not acknowledged, however, constant unrest is classified as chaos. The healthcare worker can note varying types of and reasons a client might be experiencing a crisis.

The healthcare worker assessing the older adult for mental health needs must be able to define crisis and understand the circumstances around the situations causing disequilibrium to psychological well-being. A crisis can cause feelings of being out of control, desperation, and/or fear (Boyd, 2017). There are three types of crises that an older adult can experience: developmental (a remarkable maturational event in life), situational (a specific event in a person's life that upsets the biopsychosocial equilibrium), and traumatic (due to an unknown incident) (Boyd, 2017). The older adult might experience a developmental crisis when their living situation changes dramatically, such as moving into a long-term care facility. A situational crisis can be an internal or external event for an older adult, such as disease progression or a new diagnosis. A natural disaster or a pandemic could affect the older adult and cause a traumatic crisis.

Differentiating a temporary crisis from acute stress disorder depends on the severity of distress and how it impairs social functioning. It will also depend on diagnostic criteria in the *Diagnostic and Statistical Manual of Mental Disorder* (*DSM-5*). Diagnostic inclusion for acute stress disorder requires "exposure to actual or threatened death, serious injury, or sexual violation" (not experienced through electronic media unless work related) (APA, 2013, p. 280). The healthcare worker must gather sufficient detail about the stressors and their causes in the older adult's life to offer appropriate intervention.

A healthcare worker often intercedes in times of crisis. Assessment for self-harm or harm to others is needed when an older adult is in crisis and will drive the immediate interventions. If harm is not a factor, the healthcare worker should focus their initial intervention on active listening (Corey & California State University, 2013). Allow the older adult the space to verbalize their feelings and experiences. The healthcare worker can meet these expressions with openness driving for acceptance. Feeling heard can help an older adult in crisis feel grounded (Corey & California State University, 2013). Stability in the midst of a crisis can help deescalate the extremes of emotions such as anger or sadness. Positive mental health support during a crisis opens the door for future intervention. Not all older adults who experience a crisis need mental healthcare. The necessity of crisis intervention will be determined by the ability or inability of the older adult to self-soothe and cope. It is worth understanding that the older adult may value feeling understood and supported during a crisis more than a healthcare worker's ability to solve the problem (Corey & California State University, 2013). Assessment of coping skills and previous crisis coping will provide the healthcare worker with a plan for present needs and intervention.

Loss, grief, and bereavement

Loss, grief, and bereavement are an expected part of life and will be seen in various presentations by the healthcare worker assessing the older adult. Statistical analysis suggests that 51% of women and 14% of men older than age 65 years will be widowed at least once in their lifetime (Sadock et al., 2015). The healthcare worker will assess the older adult suffering from loss, grief, and bereavement. Knowing the differences in terminology, the cycle of grief, and the risks to older adults unable to cope are crucial for the healthcare worker. The definition of loss according to the Merriam-Webster dictionary (2022) is "the act or fact of being unable to keep or maintain something or someone." Loss is synonymous with more than death. For example, the older adult can feel the loss of identity, loss of autonomy, or loss of functioning. The definition of bereavement is "the process of mourning and coping with the loss of a loved one" (Boyd, 2017, p. 213) This is synonymous with death. The definition of grief is:

> The anguish experienced after significant loss, usually the death of a beloved person. Grief is often distinguished from bereavement and mourning. Not all bereavements result in a strong grief response, and not all grief is given public expression. Grief often includes physiological distress, separation anxiety, confusion, yearning, obsessive dwelling on the past, and apprehension about the future. Intense grief can become life-threatening through disruption of the immune system, self-neglect, and suicidal thoughts. Grief may also take the form of regret for something lost, remorse for something done, or sorrow for a mishap to oneself. (APA, 2022e).

For the older adult, loss, grief, and bereavement are topics that are encountered over a lifetime. Loss can be felt over animate and inanimate objects. Older adults can experience loss over loved ones, driving privileges, jobs, and autonomy on many levels of health, home, and happiness. Cultures and societies have determined an acceptable amount of time to grieve loss. Typical American culture expects people to return to work or school after a few weeks of loss, find a new balance in a few months, and be adept in their coping to establish new relationships 6 to 12 months after the loss of a loved one (Sadock et al., 2015). The healthcare worker should assess and recognize that grief is an individual process each time it occurs. One notable framework for understanding grief in marked stages is by Kübler-Ross. However, the stages are not meant to be linear as they are written (Kübler-Ross & Kessler, 2005). Grief is felt uniquely by everyone but is often encountered with proportionally greater impact by the older adult than younger generations.

The Kübler-Ross and Kessler (2005) framework allows common terminology and an expression of information with the hopes of a better understanding of the psychological process occurring individually over loss. The stages are written sequentially but are not always experienced linearly. The stages can last minutes or hours, weeks or months. The stages are a response to loss that is seen and felt by many. There is no normal response to loss; all loss is different. Kübler-Ross and Kessler (2005) hoped by creating the stages it would create a space for grief to resolve, enabling a person to cope with the loss and carry on with their life.

Another view of grief comes from the dual process model. It provides the healthcare worker with a way of conceptualizing how an older adult can cope with loss over time. The exploration of this model can enable a healthcare worker to identify the coping mechanisms the older adult is utilizing in their journey of healing. The model has two processes working, sometimes simultaneously and other times not, and it focuses on the switch between loss-oriented coping and restoration-oriented coping as oscillation (Boyd, 2017). Both processes may take large amounts of time and effort, or one may take more or less. They are not mutually exclusive, but awareness of both is necessary for processing grief and loss. Loss-oriented coping is focused on the loss itself—the relationship—and restoration-oriented coping is focused on the burden felt from the responsibility from the loss (Boyd, 2017). The older adult might be consumed with thoughts of the loved one who has passed away and consumed with sadness by the void created in their life, thus exhibiting loss-oriented coping. Restoration-orientated coping can be scary and difficult for the older adult if the loss is accompanied with lifestyle changes, for example, related to finances.

Table 5. Five Stages of Grief: Denial Anger, Bargaining, Depression, and Acceptance	
Stage	**Characteristics**
Denial	• Frozen with shock or overcome with numbness. • Unconscious ability to manage strong emotions and feelings by slowly feeling them (this is a survival technique). • Feelings of grief varied to prevent mental overload (protection). • Nature's way of letting in only as much as we can handle.
Anger	• Does not have to make sense or be rooted in reality (also has no limits). • Anger surfaces once you are feeling safe enough to know you will probably survive what comes. • Needed for healing to process. • May be reoccurring visits with this emotion. • Can lead to an uneasy or hateful feeling toward spirituality/religion. • Contrary to its negative connotations is the strength it contains to solidify the idea of void and loss. • Difficulty in feeling it without causing damage to self or someone else. • Finding avenues of release such as exercise can help externalize and explore anger (decreases the chance of bottling it all up for a explosion). • Is an indication of the intensity of love. • Is a normal response to the unfairness of life and death. • Anger towards self is guilt; however, it is undeserved blame. • "Anger affirms that you can feel, that you did love, and that you have lost." (Kübler-Ross & Kessler, 2005, p. 16)
Bargaining	• Agreeing to anything to avoid loss prior to loss. • Agreement to anything after a loss can look like a temporary truce. • Understand if lost in the darkness of "what if." • Like anger, this stage can present guilt. • After a death, focus can futuristic.
Depression	This is a *DSM-5* clinical diagnosis as well as a Kubler-Ross and Kessler stage. It will be talked about with DSM-5 criteria later. Clinic depression can lead to worsening mental health if left untreated: • Feelings of nothing and emptiness take over. • A normal response to major loss. • Can feel heavy (like hitting the bottom) and lonely. • A natural way to protect the body's nervous system from overload by slowing it down or turning it off for processing. • A way toward healing. • Seeking a way out of depression can feel like being lost in a storm with no seeable way to escape (loss of hope). • Shift the view of depression from unwanted to invited (like a guest). • Allow the encounter with it even though it feels hard. • Use the opportunity to explore and renew self. • Society often seeks to rid someone of depression as quickly as possible. • Depression intervention can be necessary, but time can also heal if allowed an acceptable space. • Treating depression is seeking equilibrium. • View and feel sadness as an appropriate part of grief (balanced with quality of life and meeting needs). "Depression makes us rebuild ourselves from the ground up because it takes us to a deeper place in our soul that we normally would explore" (Kübler-Ross & Kessler, 2005, p. 24)
Acceptance	• Is not the notion of being all right or fine with what has happened (is about acknowledging all that has been lost and learning to that loss). • Healing looks like remembering–recollecting–reorganizing (RRR). • Not in a linear sequence; goal is not to arrive at acceptance (it is not a destination) rather, is a journey of healing to take, not a point. • Past cannot be altered; has been forever changed; therefore, readjust. • Slowly withdraw energy from the loss and begin to invest it in life. • Put loss into perspective. • What is lost cannot be replaced, but new connections, relationships, and interdependencies can be made. • Living begins again (but only if grief is given its time).
Note: From Kübler-Ross & Kessler (2005, pp. 7–28)	

Different types of grief can be experienced. The type of grief being felt can drive the responses and state of being for the older adult presenting to the healthcare worker. Uncomplicated grief is considered the normal and expected course of grief after major loss triggered by events other than death (Boyd, 2017). When initial news of loss is presented, physical symptoms are often felt such as shortness of breath, a feeling of choking, rapid heart rate, sickness in the stomach, and body weakness (Boyd, 2017). The healthcare worker can help assess and prompt the older adult to assemble their social support system. Although yearning over the loss can occur for two years, most people do not need clinical treatment (Boyd, 2017). Complicated grief can happen when a person cannot move beyond the loss and a degradation of functioning occurs; however, it is only experienced by about 10% to 20% of people (Boyd, 2017). If the older adult cannot move past the loss and is overwhelmed by the change, the healthcare worker needs to intervene.

Complicated grief occurs after six months of intense mourning; there is a feeling of being "stuck," deep yearning is expressed, trust toward other people is apparent, and life become

meaningless (Boyd, 2017). The healthcare worker will assess safety and the social support network to help the older adult overcome complicated grief. Grief that does not follow a normal response in the timing of symptoms can be documented as delayed grief. In delayed grief, there is a lack of initial symptoms of grief but they surface later (Sadock et al., 2015). The healthcare worker can explore the Kübler-Ross cycle of grief to assess for extended denial when the older adult appears stoic in presentation to acute loss. Cultural norms and awareness are cautioned as the healthcare provider works with the client to determine their definition of normal and what an appropriate response to loss and death are.

Another form of grief is prolonged grief, which is sometimes called traumatic grief because the loss was unforeseen. It is similar to persistent complex bereavement disorder. Persistent complex bereavement disorder is a clinical diagnosis that requires the deceased to have a significant connection to the mourner. In addition, there are intense feelings of yearning/sorrow/constant thoughts of the deceased/constant thoughts of the nature of death (one of those), and these difficulties interfere with functioning for more than a year after the death (APA, 2013). Traumatic grief is more difficult to cope with, thus leading to a longer recovery time. It often includes external circumstances such as violence, abruptness, and unanticipated or preventable death (Boyd, 2017). Traumatic grief is often termed prolonged grief due to extenuating forces and an anticipated loss. Therefore, the person experiencing the loss faces a longer period of change and adaptation.

Symptoms of traumatic grief/prolonged grief include the following (APA, 2013):

- Last all day (nearly every day) for at least one month.
- Disruption of self (feeling loss of self).
- Extended denial about the death.
- Inability to confront reminders of the deceased person (avoidance).
- Intense outward feelings (emotions such as anger).
- Constant struggle with moving forward with daily activities and social engagements.
- Empty feelings about life.
- Loneliness (feeling isolated and distant from others).

While considering the cycle of grief and the various types of grief an older adult may experience, the healthcare worker should consider the symptoms of grief and their interference with functioning and relationships, the risk of self-harm or harm to others, and the symptoms of clinical depression when presenting appropriate intervention. Most grief will resolve on its own accord without psychiatric intervention; however, a healthcare provider might be consulted for acute medical intervention. Sleep deficits can be addressed with short-term psychopharmacological agents; however, anxiolytics, antidepressants, and narcotics are not recommended for normal grief (Sadock et al., 2015). If therapy is warranted, the healthcare worker can provide options for treatment. Grief therapy (one-on-one or group sessions) and self-help groups have been found to be most beneficial for those mourning and unable to overcome grief, loss, or bereavement (Sadock et al., 2015). The healthcare worker can work with the client, family, and community to assess the availability of resources to support the older adult.

Case study: Ms. P

Ms. P. is a 68-year-old Caucasian female being seen by you in the mental health clinic. She recently lost her husband of 48 years. She barely talked at her appointment last week and has mostly been looking down at the floor avoiding eye contact. She reluctantly tells you that she overheard her children talking about housing options for her. She does not want to leave her home. Her husband drove her to all of her appointments and took care of all of her needs (groceries, medications, etc.). She has two married children who both live out of state. Her oldest daughter brought her to the visit today and is sitting in the lobby. Ms. P has a history of colon cancer (currently in remission), diabetes, hypertension, and depression. She takes oral medication for her elevated blood pressure, diabetes, and depression. Today she tells you that she feels empty, alone, and hopeless.

Question:
What stage of grief is Ms. P in and what assessment criteria supports this?

Discussion:
Ms. P is displaying signs that support the depression stage (Kübler-Ross & Kessler, 2005). She is stating that she feels empty, alone, and hopeless after the loss of her husband and loss of access to groceries, medications, and medical appointments. She is expressing concern that she might even be moved from her home. Depression is also a clinical diagnosis. Further assessment would be warranted to determine her safety risk and the need to intervene or treat. Ms. P's daughter is in the waiting area and can possibly provide clarity and insight into Ms. P's current and future mental health needs.

MENTAL HEALTH DIAGNOSES FOR THE OLDER ADULT

Neurocognitive disorders
Changes in cognition are statistically significant for the older adult population (Boyd, 2017). The healthcare worker must understand the differences in neurocognitive disorders for assessment, intervention, treatment, and when to refer to other disciplines and community resources. According to the APA (2013), the DSM-5 diagnosis of a neurocognitive disorder is a deficiency in the following: attention (distractibility with multiple stimuli), executive functioning (decision making, planning, and working memory), learning and memory (recollection and recognition), language (expressive, fluency, grammar, receptive), perceptual-motor (visual and motor perception), and social cognition deficits (emotion recognition, ability to relate to another). Differentiating cognitive regression and disruption can be difficult, especially when a baseline of functioning or collateral information is not available. The healthcare worker who assesses and/or treats older adults will encounter older adults with neurocognitive disorders.

Delirium

Delirium is a neurocognitive disorder that a healthcare worker will come across in the older adult population. Delirium is an acute cognitive impairment caused by an underlying medical culprit (Boyd, 2017). The healthcare worker needs sharp attention of its presence; however, treatment is often administered in the acute care setting by medical professionals. There are a multitude of risk factors and known causes for delirium in the older adult population.

Delirium risk factors for the older adult include the following (Boyd, 2017):

- Advanced age (65 years and older).
- Male.
- History of falls.
- Preexisting dementia.
- Functional dependence (long-term care facility residents).
- Endocrine and metabolic disorders.
- Fractures in bones.
- Medications (consider AGS 2019 BEERS criteria for potentially inappropriate medications in older adults).
- Vital sign changes (hypotension, hypo- or hyperthermic).
- Imbalances in intake (dehydration, renal failure, hyponatremia).
- Long-term care admission.
- Pain (acute or chronic).
- Stress (acute or chronic, notable risk during loss or bereavement).
- Substance use and alcohol withdrawal (alcohol is greatest offense).

Known causes that induce acute delirium include the following (Sadock et al., 2015):

- Seizures.
- Trauma (especially head trauma after a fall).
- Diabetes.
- Infection.
- Insufficient nutritional status.
- Uncontrolled pain.
- Medications (e.g., pain medication, antibiotics, antivirals, antifungals, steroids, anesthesia, cardiac medications, anticholinergics).
- Serotonin syndrome.
- Over-the-counter substances (e.g., herbs, teas, supplements).
- Cardiac disturbances (failure, arrhythmias, myocardial infarction).
- Disease (abnormality or failure in pulmonary, endocrine, renal, and hepatic systems).

Delirium can be life threatening but is usually reversible with treatment. The healthcare worker must be able to identify the signs of delirium. Key features of delirium include rapid and abrupt onset, decreased level of consciousness, altered attention, impaired cognitive functioning (can look like disorientation), and diminished memory (Sadock et al., 2015). It can present like other mental health disorders. A psychotic episode of schizophrenia, mania, or a factitious disorder can look like delirium upon the first encounter. Generally speaking, schizophrenia presents with better organization and a more stable level of consciousness; mania will be explained historically with a bipolar diagnosis or become apparent over time; and in a factitious disorder, inconsistencies will surface during examination or be easily revealed after an electroencephalography (Sadock et al., 2015). The healthcare worker can provide or request further examination of the older adult. Cognitive testing can be administered and compared to a baseline examination if available, along with laboratory studies looking for underlying causes of delirium. The treatment will often be dependent on the underlying cause of the delirium. Caution is needed for the older adult receiving treatment for psychosis. The AGS (2019) highly recommends avoidance of antipsychotic medications such as haloperidol (Haldol), risperidone (Risperdal), and quetiapine (Seroquel) due to their increased affiliation with tremors, fall risk, stroke, and death in patients with dementias. A refined assessment and understanding of underlying sequalae of psychosis are needed for treatment of delirium long term.

Mild cognitive impairment (MCI)

MCI lives in the space between normal age-related cognitive changes and dementia. Older adults with MCI are at greater risk for developing dementia or Alzheimer's disease (NIA, 2022f). The mental healthcare provider can note subjective data from the older adult or from caregivers, family, or friends (with consent). Data to note for older adults with suspicion of MCI: increased frequency of losing items; forgetting important dates, events, or appointments; and difficulty with word selection (NIA, 2022f). These symptoms can be concerning to the older adult. The NIA recommends tips to improve MCI. These suggestions can empower the older adult who feels embarrassed or saddened by their cognitive state. Recommendations for improving memory include the following (NIA, 2022f):

- Stick to a daily routine—predictability is key.
- Utilize tools such as calendars, to-do lists, notes, and reminders.
- Place daily objects in the same place in your house.
- Consider learning a new skill (check community resources).
- Volunteer time (give back to the local community).
- Increase time spent with friends and family.
- Ensure adequate sleep at night.
- Prioritize exercise and nutrition.
- Avoid alcohol (receive help if needed).

The older adult with MCI needs to be assessed regularly to recognize increased symptoms that would warrant intervention. The findings of MCI do not predict further impairment, do not necessitate treatment, and can cease without medical intervention (NIA, 2022f). Further evaluation by a neurologist or neuropsychologist can be provided if desired.

Dementia (vascular, lewy body, frontotemporal, Alzheimer's disease)

Dementia is a major neurocognitive disorder classified in the DSM-5 by severe impairment of memory, judgment, orientation, and cognition (APA, 2013). It is not part of normal aging and is common in older adults. Half of older adults age 85 years or older have a diagnosis of dementia (NIA, 2022c). Not all causes of dementia are known, and differentiating them can be challenging to the healthcare worker. If a specific dementia cannot be categorized but symptoms meet criteria, the diagnosis of general dementia will stand. Delirium and dementia are often confused, but they can be contrasted by several clinical features. The most distinguishable characteristic of delirium is the rapid onset of presentation and attention level. Delirium has an abrupt beginning and inconsistent level of attention, while most dementias occur over the course of time and maintain a consistent level of attention (Sadock et al., 2015).

Although vascular dementia, which is caused by a stroke, presents very similarly to delirium, it can be separated by clinical evaluation. Vascular dementia is one of the several subcategories of dementia. It is the second most common type behind Alzheimer's disease (NIA, 2022g). Those most at risk for developing vascular dementia are men, people with hypertension (especially uncontrolled), people with high cholesterol, and those who have other cardiovascular diseases (Sadock et al., 2015). The cognitive invasion of this type of dementia is a result of an infarcted plaque or emboli traveling to the brain. A diagnosis can be made after cognitive testing is performed, a medical history is taken, and brain imaging is completed (NIA, 2022g). One unfortunate truth about vascular dementia is the irreversibility of its damage. Treatment can include preventing further strokes by thinning the blood and lowering risk factors with lifestyle changes and medications (NIA, 2022g).

Another subtype of dementia is Lewy body disease (LBD). It presents similarly to Alzheimer's but it is distinguished by areas in the brain lumped with proteins known as alpha-synuclein and called Lewy bodies after the physician who discovered them (NIA, 2022e). The accumulation of Lewy bodies causes destruction and death of neurons and results in gradually decreasing brain activity (NIA, 2022e). There are two types of Lewy body dementia—dementia with Lewy bodies and Parkinson's disease dementia. The biggest difference between Lewy body and Parkinson's dementia is the timing and disruption in thought and movement.

Classification of dementia with Lewy bodies (NIA, 2022e):

> Problems with thinking, unpredictable change in attention and alertness, and visual hallucinations develop early in relation to movement symptoms, such as slow movement, difficulty walking, and muscle stiffness.

Classification of Parkinson's dementia (NIA, 2022e):

> Movement symptoms start first and are consistent with a diagnosis of Parkinson's disease. Later, problems with thinking and changes in mood and behavior develop.

Not everyone with Parkinson's disease will develop dementia. The evaluation of a person with either Lewy body or Parkinson's dementia will entail a physical exam, mental status examination, cognitive functioning evaluation, and brain imaging. LBD is neither preventable nor curable, and treatments focus on the patient's safety and quality of life (NIA, 2022e). Interventions can include many disciplines, especially case management. The mental healthcare worker can also offer community resources and nonprofit organizations as care options, dependent on their accessibility to the older adult.

Frontotemporal dementia (FTD), also known as Pick's disease, is named after a physician who described it and the "Pick bodies" seen in the brain postmortem (Sadock et al., 2015). FTD is a rare, progressive disease with an unknown etiology. It carries a life expectancy of 2 to 10 years after diagnosis and often requires full-time care (NIA, 2022d). It can present with notable personality and behavioral changes. Frontal lobe involvement can cause changes to behavior and movement; temporal lobe changes feature language and emotional changes (NIA, 2022d). FTD can have distinguishable symptoms. It can present with Klüver-Bucy syndrome: hypersexuality, placidity or complacency, and hyperorality or oral compulsions (Sadock et al., 2015). There is no cure and no way to prevent disease progression. Treatment focuses on symptom control (sometimes using antidepressants or antipsychotics) and quality of life. This disease can be distressing for family members and caregivers. The mental healthcare provider can refer all involved to resources and support groups.

The most common form of dementia is Alzheimer's disease. The mental healthcare worker will treat older adults with it or will see a family member affected by it. The NIA (2022b) states that over six million Americans, most 65 years and older, are diagnosed with Alzheimer's disease. It often presents as dementia. The causes of Alzheimer's disease remain unclear, but what has been discovered is brain atrophy and inflammation, genetic predispositions on chromosome 17, and environmental exposures such as aluminum toxicity (Sadock et al., 2015). Older adults or caregivers usually note the first symptoms as forgetfulness. The NIA (2022b) notes symptoms of Alzheimer's disease as difficulty finding words, struggles with vision and spatial perception, reduced reasoning and poor judgement, length of time it takes to complete ADLs, repetition of stories or questions, danger due to wandering and getting lost, losing common items, and change in mood and personality (usually more irritable).

There are three stages of Alzheimer's defined by the NIA (2022b):

- **Early-stage Alzheimer's**: When a person begins to experience memory loss and other cognitive difficulties, though the symptoms appear gradual to the person and their family. Alzheimer's disease is often diagnosed at this stage.
- **Middle-stage Alzheimer's**: Damage occurs in areas of the brain that control language, reasoning, sensory processing, and conscious thought. People at this stage may have more confusion and trouble recognizing family and friends.
- **Late-stage Alzheimer's**: A person cannot communicate, is completely dependent on others for care, and may be in bed most or all the time as the body shuts down.

Cognitive testing can be performed, as can brain scans. The mental healthcare worker can refer to neurology if needed. There is no cure, but the U.S. Food and Drug Administration (FDA) has approved medication to treat symptoms and slow the progression of invasion. The life expectancy with a diagnosis of Alzheimer's disease varies from 3 to 10 years (NIA, 2022b). The mental healthcare provider can prepare the older adult and family members for the future and focus treatment options on quality of care that is uniquely important to the older adult.

Sleep difficulties

Sleep is a crucial component of physical and mental health and warrants an assessment during every psychiatric mental health examination. Dementias, most notably Alzheimer's disease, can be a perpetuating cycle of negative sleep and interference with cognition (Boyd, 2017). Sleep changes are a natural part of advancing age but can contribute to worsening states of mental health if natural adaptations are not rendered or medications are improperly prescribed. With advancing age, restful sleep decreases and interruptions in the sleep pattern shorten, both of which contribute to a decreased quality of sleep. Rapid eye movement (REM) during sleep (the deepest and most restful part of sleep) becomes less frequent, as do circadian rhythms (Sadock et al., 2015). Falling asleep, staying asleep, and feeling rested become more difficult with advancing age. Sleep deficiencies can worsen cognitive functioning and can be magnified if the older adult has cognitive disorders. It's necessary to routinely assess the older adult's quality and quantity of sleep. Interventions for sleep difficulties will vary for the older adult. The safest sleep intervention is nonpharmacological. The healthcare worker can encourage and educate the older adult on healthy sleeping habits.

Nonpharmacological sleep interventions for the older adult include the following (Boyd, 2017):

- Use awareness for when to go to bed and go to bed when feeling tired.
- Create a routine and stick to it (it can take time).
- Use your bed only for intimacy or sleep.
- Decrease or eliminate stimulating foods after lunch (caffeine).
- Avoid naps.
- Add or increase physical exercise.
- Include relaxation techniques (simple relaxation, guided imagery, or distraction).

The use of pharmacological interventions needs further assessment and possible referral. The AGS (2019) notes possible dangers in prescribing medications that are potentially inappropriate for older adults: zolpidem (Ambien), zalepon (Sonata), eszopiclone (Lunesta), alprazolam (Xanax), lorazepam (Ativan), and diazepam (Valium). Sleep hygiene is the primary recommendation from the AGS (2019) for older adults. If the older adult is technologically savvy, the healthcare worker can suggest apps for healthy sleep regimen reminders, sleep logs, relaxation techniques, or medication reminders. Getting restful sleep is important for the health and well-being of the older adult.

Depression

The healthcare worker is likely to interact with an older adult experiencing depressive symptoms or suffering from a diagnostic depressive disorder. Depression is more common in people who suffer from illness or decreased functioning; 80% of older adults have at least one chronic health condition, and 50% have two or more (CDC, 2021b). Remembering ageism and bias is important as the healthcare worker assesses for depression. Depression is not part of the aging process, and not all older adults experience depression (CDC, 2021b). The healthcare worker must be able to identify risks for the older adult. The NIA (2021b) lists the risk factors for older adults as physical conditions (most notably stroke and cancer), genetics (familial history increases risk), stress (being a caregiver can cause greater stress), sleep difficulties (falling asleep or staying asleep), isolation and loneliness (assess the root cause of it if found and the subjective impact), sedentary lifestyle, limited physical functioning (struggling with ADLs), and alcohol addiction. Older adults can find themselves alone and socially disconnected. Loneliness can contribute to depression and heightens the risk of suicide for the older adult population (NIA, 2021b). Loneliness is a common feeling experienced by older adults and is an indication for further assessment to determine the level of distress.

The healthcare worker needs an understanding of the signs and symptoms of depression and can teach them to the older adult to empower them to speak up. Caregivers should also receive this intervention so that they can request early intervention when possible. Symptoms of depression include sad mood, persistent feelings of hopeless/worthless/helplessness, an inability to find pleasure in regular activities (including sex), a low energy level, markedly slow speech (noticed by others), cognitive struggles (difficulty concentrating/remembering/making decisions), problems sleeping (more or less than usual), changes in appetite (increased or decreased), and thoughts of death or suicide (NIA, 2021b). If multiple symptoms are found and last more than two

weeks, the healthcare worker (if allowed within scope of practice) can consider a clinical diagnosis of major depressive disorder (MDD) in line with the DSM-5 (APA, 2013). Recent loss, grief, bereavement, and culture must be taken into consideration prior to diagnosing. Untreated depression can lead to physical detriment for the older adult. Coping inappropriately with food can lead to obesity or geriatric anorexia (APA, 2022f). Depression can also alter cognitive clarity. Depressed older adults have a slower reaction time to stimuli, increasing the risk and dangers of driving, cooking, and self-care activities such as medicating (APA, 2022f). The healthcare worker can use a self-reporting scale when assessing. Geriatric-specific depression scales are available, but documentation and scope of practice should be discussed with your place of employment. A strength assessment can help the healthcare worker find the older adult's historical methods of coping and resilience. It can also highlight unhealthy coping mechanisms that can be discussed.

Questions for assessing an older adult's strength include the following (Boyd, 2017):

- How have you coped with depression or depressive symptoms in the past?
- What do you find relaxing?
- What brings you joy?

Treatments and recommendations for depression depend on the health status of the older adult and their living situation. Treatment may be necessary for older adults experiencing symptoms of depression that have a sustained impact on positive mental health: physical exertion, proper nutritional intake, regular restful sleep, social connection, and engagement in activities that bring satisfaction (NIA, 2021b). These recommendations can be individualized to fit the needs of the older adult and their circumstances. Case management and community engagement can be useful additions for support.

The APA has published treatment recommendations specific to age ranges. For initial treatment of the older adult with MDD, the APA (2019) recommends group-based cognitive-behavioral therapy (CBT) or interpersonal psychotherapy (IPT) in combination with pharmacotherapy. The APA recognizes that treatment options are dependent on social determinants. The following are recommended treatments for MDD if group CBT or IPT are unavailable for initial treatment: individual CBT with or without pharmacotherapy and problem-solving group therapy (APA, 2019). If the healthcare provider is considering psychopharmacological interventions, a review of the AGS list of potentially unsafe medications for the older adults is needed. The AGS (2019) lists two tricyclic antidepressants, amitriptyline (Elavil) and imipramine (Tofranil), as potentially inappropriate and encourages considering prescribing selective serotonin reuptake inhibitors (SSRIs) citalopram (Celexa) and sertraline (Zoloft) as well as bupropion (Wellbutrin) if possible. Treating depressive symptoms of MDD with medication can be accomplished but must be reviewed for the safest option that meets the needs of the older adult.

Suicidal risk

The older adult population has a particularly high rate of suicide. White men over the age of 65 have a risk that is five times higher than the general population, and older adult men account for 60% of all completed suicides (Sadock et al., 2015). The safety of the older adult is paramount for all healthcare workers in all settings. The recognition of risk factors coupled with appropriate intervention can save lives. Risk factors can be modifiable or nonmodifiable. The APA clinical practice guideline (2010) notes genetics, family history, and demographics as nonmodifiable risk factors. Knowing the older adult's risk factors can aid the healthcare worker in risk calculation but does not precisely predict attempts. The National Council on Aging (NCA) (2021) notes loneliness as the top reason for suicidal ideations, followed by suicidal intent caused by feelings of deep grief over a loved one, mourning the loss of autonomy and self-sufficiency, chronic illness and pain that decrease the quality of life, cognitive impairment and dementias, and financial stress that causes an inability to pay bills. The older adult's increased suicide risk is also consistent with a mental health diagnosis of depression, schizophrenia, posttraumatic stress disorder, substance use disorders, an inclusion of trauma, an experience of discrimination based on sexual identity, access to lethal means, and sleep disturbances (LeFevre & Force, 2014).

The suicidal older adult with access to lethal means should trigger the healthcare worker to immediately assess for safety. Statistics show that older adults plan more thoroughly for suicidal completion and are most likely to use lethal means (firearms) than younger populations (NCA, 2021). Reasons stopping or preventing the older adult from following through on suicidal thoughts, intent, and plans are called protective factors. Protective factors that apply to the older adult are cultural views, spiritual beliefs, coping skills, personality traits, social support systems, and past responses to stress/loss/bereavement (APA, 2010). Assessment can be completed during the psychiatric interview. The healthcare worker can use an informal format or systematic questioning to elicit safety responses. No formal training is needed to administer the brief suicide screener called the Columbia Suicide Severity Rating Scale (C-SSRS) (SAMHSA, 2022a). All healthcare workers can administer the C-SSRS. The tool probes the older adult about their intent, plan, and preparation for death. If the questions are answered honestly, it can indicate older adults who are at high risk of suicide completion (The Columbia Lighthouse Project, 2016).

To garner the greatest gains, the healthcare worker must utilize empathy to nurture an environment of trust within the therapeutic alliance with the older adult during this part of the assessment. The APA (2010) recognizes the use of a suicide contract commonly called a no harm contract between a mental healthcare provider and a patient. There is no evidence to prove its effectiveness in prevention and it is cautioned against as a replacement for a thorough suicide risk assessment. But it can be a useful method for discussing protective factors and a safety plan of action. The healthcare worker has decisions to make based on the level of risk verbalized by the older adult. The approach for intervention will depend on the severity of risk, workplace policy, and state legalities—especially related to breaching confidentiality. The healthcare worker will abide by the individualized plan of action for suicide prevention according to protocol and treatment setting.

Anxiety

Anxiety is commonly found in early or middle adulthood but can be seen after 60 years of age, although initial panic disorders are very rare (Sadock et al., 2015). The symptom profile for older adults experiencing anxiety is different than younger populations. Older adults tend to be less symptomatic, yet they are equally as troubled. The decreased symptoms have been attributed to a decreased autonomic nervous system (Sadock et al., 2015). Older adults have a vast life experience that can include change, transition, loss, and death. Upon assessment, loss, grief, and bereavement can look like anxiety. When assessing anxiety, it's necessary to establish the underlying etiology, length of symptom interference, and cultural considerations. A thorough psychiatric history is needed for clarity of diagnosis. Degrees of clinical anxiety are mild, moderate, severe, and panic (Boyd, 2017). Anxiety often accompanies depression. The older adult with depression is at a higher risk for suicide; therefore, anxiety symptoms coupled with depression need a critical safety assessment (Sadock et al., 2015).

There are medical conditions that can mimic anxiety symptoms in the elderly. Further assessment is needed to rule out stroke, multiple sclerosis, cardiac dysfunction, irritable bowel syndrome, hypoglycemia, hyperthyroidism, hepatic failure, vitamin B deficiencies (1, 6, and 12), and decreased folic acid (Subramanyam et al., 2018). Laboratory studies can also confirm

the presence of interference when considering the diagnosis of anxiety. If anxiety is found in the older adult, assessment for substance use and abuse is needed. Alcohol is often the drug of choice to self-medicate anxiety, but it is an inappropriate and ineffective method for anxiety treatment (Boyd, 2017). Treatment can be tailored to the individual needs of each patient. The AGS (2019) provides a list of potentially inappropriate medications for older adults, and it includes the benzodiazepines alprazolam (Xanax), lorazepam (Ativan), and diazepam (Valium) and offers alternatives for medicating anxiety with buspirone (Buspar) and SSRIs like citalopram (Celexa) and sertraline (Zoloft). Nonpharmacological approaches are plentiful for the treatment of anxiety in the older adult. The clinical practice guideline for geriatric anxiety recommends nonpharmacological methods of treatment: lifestyle modifications (sleep, diet, exercise, social support), behavioral therapy (relaxation), cognitive-behavioral therapy, mindfulness, yoga, art/dance/music therapy, or alternative therapies (Subramanyam et al., 2018). Knowing how the older adult has coped in the past is helpful when establishing strengths and weaknesses for current treatment focuses. The healthcare worker can assess for anxiety and offer treatment suggestions that are available and acceptable to the needs of the older adult.

Bipolar

Bipolar is a disease typically diagnosed earlier in life than older adulthood. The average age of onset is 25 years old and portends a short life expectancy (Sadock et al., 2015). Even though older adult onset is rare, bipolar is a diagnosis for life. Therefore, a healthcare worker would need knowledge of common bipolarity symptoms that can be found in bipolar I and bipolar II: mood lability, agitated and cyclic depression, episodic sleep irregularities, possible impulsivity (often involving high-stakes behavior like unsafe sexual activity, gambling, or substance use), deep depressive crashes (can coincide with suicidal ideations), and historical failure of antidepressant treatments (Sadock et al., 2015). Older adults with bipolar can still experience mania or hypomania, but the incidence decreases with age. Older adults with bipolar often suffer from multiple comorbidities such as cardiovascular disease, cancer, lung diseases associated with smoking, hypertension, diabetes, and substance use and abuse (Sajatovic et al., 2013).

The physical and mental health of the older adult can be quite compromised. More severe comorbidities are associated with poorer outcomes. A thorough psychiatric history of symptoms and treatments should be assessed. The assessment priority for the older adult with bipolar having a manic or depressive episode is safety. Interviewing family, friends, and caregivers can be helpful for addressing potentially harmful activities for the older adult. Immediate intervention can be taken if needed, in accordance with workplace policy or state law. The healthcare worker meeting the mental health needs of the older adult with bipolar is likely to see psychiatric mood-stabilizing medication. The most common pharmacological treatments for bipolar are lithium carbonate (Lithium), divalproex sodium (Depakote), and lamotrigine (Lamictal) (Boyd, 2017).

Successful past pharmacological treatment can be reviewed and taken into consideration for current treatment options. Since the older adult with bipolar is likely to have comorbidities, special considerations should be taken when prescribing or altering their medication regimen(s). Older adults metabolize, tolerate, and respond to medications differently than younger populations; therefore, lower doses of bipolar medications might be needed and are associated with good outcomes (Sajatovic et al., 2013). Lower rates of mood-stabilizing medication in elderly patients will also decrease side effects and possibly ease medication longevity. Recent findings for nonpharmacological approaches to bipolar treatment can be applied to the older adult population. A new treatment approach utilizes peer mentors who can provide support and hope (Sajatovic et al., 2013). The treatment settings and goals for the older adult with bipolar will depend on the current mental status of the patient.

Schizophrenia

Like bipolar, schizophrenia is a diagnosis expected to impact the remainder of life. Schizophrenia onset is typically in late adolescence to early adulthood, but an older adult diagnosis is possible (Boyd, 2017). Psychosis is classically associated with schizophrenia.

Definition of psychosis (APA, 2022h):

1. An abnormal mental state involving significant problems with reality testing It is characterized by serious impairments or disruptions in the most fundamental higher brain functions—perception, cognition and cognitive processing, and emotions or affect—as manifested in behavioral phenomena, such as delusions, hallucinations, and significantly disorganized speech.
2. Historically, any severe mental disorder that significantly interferes with functioning and ability to perform activities essential to daily living.

Psychosis requires immediate intervention and is handled according to workplace policy and state law for the healthcare worker. Older adults with schizophrenia usually have improved symptoms with age and experience fewer relapses (Boyd, 2017). The healthcare worker should be aware of common symptoms of schizophrenia. Schizophrenia symptoms are classified as positive, negative, and neurocognitive (Boyd, 2017):

- Positive symptoms happen in addition to regular functioning, most commonly as hallucinations (can involve any of the five sense) and delusions (unreasonable beliefs, involving thoughts only).
- Negative symptoms are an absence of regular functioning such as flat affect and diminished emotional expression and activity.
- Neurocognitive impairment is expressed as disorganized speech, thought, or behavior.

Prior to the diagnosis of schizophrenia, an assessment would include ruling out medical causes of schizophrenia symptoms, mainly psychosis. Underlying medical etiology can present as psychosis in the older adult. The top five psychosis-inducing medical conditions to check the older adult for are substance abuse, thyroid disorders, delirium cause by infection, dementia, and vitamin B12 deficiency (Gaddey & Holder, 2021). A thorough assessment of the older adult is prudent prior to an initial diagnosis of schizophrenia. If the older adult with a diagnosis of schizophrenia is exhibiting symptoms out of their ordinary, a sweep for known medical conditions that mimic psychosis is also warranted. A differential diagnosis of brief psychotic disorder, major depressive disorder (MDD), and posttraumatic stress disorder (PTSD) can also be considered for the older adult. Collateral information from family, friends, and caregivers would be prudent if given consent. Breaches of confidentiality would need to be reviewed if the older adult is a danger to self or others during an acutely psychotic episode. Many factors must be considered during the assessment of the older adult with schizophrenic symptoms or psychosis.

The healthcare worker can present psychosocial intervention and treatment modality options that fit the mental health needs of the older adult. The National Alliance on Mental Illness (NAMI) has found four types of psychosocial intervention that greatly improve self-esteem and quality of life for an older adult living with schizophrenia: CBT, functional adaptation skills training (FAST), vocational rehabilitation, and technology communication connection (e.g., it provides reminders for medications and appointments). FAST is a unique treatment approach for schizophrenia that seeks to build necessary life skills that can address social determinant barriers to mental healthcare (Cepla, 2014). For example, an older adult with schizophrenia who lacks personal transportation can be taught how to navigate public transportation. Enhancing transportation for the older adult can

address access to care issues and increase resource availability for items such as groceries, clothing, and medications. Psychosocial interventions strengthen the quality of care and life for an older adult living with schizophrenia.

Schizophrenia is treated pharmacologically with antipsychotic medications. First- and second-generation antipsychotics are most frequently seen as front-line treatment options, although third-generation antipsychotics are up and coming. Antipsychotic medications are used in patients with schizophrenia because they primarily block dopamine, a known cause of psychotic symptoms, and can alter other neurotransmitters (Sadock et al., 2015). Antipsychotic medications carry a difficult side effect risk profile. Sedation, postural hypotension, anticholinergic effects, extrapyramidal symptoms, and tardive dyskinesia are some of the most concerning side effects of antipsychotic medications (Boyd, 2017).

Definition of anticholinergic effects (APA, 2022a):

> Side effects are characteristic of anticholinergic drugs and are also associated with other agents (e.g., tricyclic antidepressants, monoamine oxidase inhibitors) that exert antagonist effects at muscarinic receptors. They include dry mouth, blurred vision, urinary hesitancy or retention, and constipation. Similar antagonistic effects may occur at nicotinic receptors as well. Depending on the specific receptors involved, these effects may also be called antimuscarinic effects or antinicotinic effects.

Definition of extrapyramidal symptoms (APA, 2022d):

> A group of adverse drug reactions attributable to dysfunction of the extrapyramidal tract, such as rigidity of the limbs, tremors, and other Parkinson-like signs; dystonia (abnormal facial and body movements); and akathisia (restlessness). Extrapyramidal symptoms are among the most common side effects of the high-potency antipsychotics and have also been reported with the use of other drugs (e.g., SSRIs). Also called extrapyramidal syndrome (EPS).

Definition of tardive dyskinesia (TD) (APA, 2022i):

> A movement disorder associated with the use of antipsychotics, particularly conventional antipsychotics that act primarily as dopamine- receptor antagonists. It is more common with prolonged use (months or years), and older patients, females, and patients with mood disorders are thought to be more susceptible. Symptoms include tremor; so-called choreoathetoid movements; and spasticity of muscle groups, particularly orofacial muscles and muscles in the extremities. Onset is insidious and may be masked by continued use of the antipsychotic, only appearing when the drug is discontinued or the dose lowered. Its incidence is estimated at up to 40% of long-term users of conventional antipsychotics; the incidence is lower with atypical antipsychotics. No effective treatment is known.

Older adults need special considerations for medications to treat schizophrenia. Older adults with schizophrenia often need adjustments to medication regimens with lower doses or divided doses throughout the day when possible (Sadock et al., 2015). The AGS releases and continually updates safety criteria to guide the treatment of the older adult population. The AGS (2019) recommends only patients with schizophrenia receive antipsychotic medication, which increases the risk of stroke, diminishes cognitive ability, and contributes to early death.

The healthcare worker should investigate all medications being taken by the older adult with acute notation of antipsychotics drugs and their known side effects. Table 6 is a snapshot of antipsychotic medication options and is presented to increase understanding of decreased dose ranges and the comparative difficulty of side effect risk profiles for antipsychotics in older adults.

Table 6. A Snapshot of Decreased Older Adult Dosing and Side Effect Risk Profiles

Drug	Adult Dosage (mg/day)	Geriatric Dosage (mg/day)	Sedation	Postural Hypotension	Anticholinergic Effects	EPS	TD
Clozaril (clozapine)	300–450	12.5–25	High	Moderate	High	Low	Low
Olanzapine (Zyprexa)	25–50	25	Moderate–high	Moderate	Moderate–high	Low	Low
Quetiapine (Seroquel)	150–750	50–200	Moderate	Moderate	High	Low	Low
Risperidone (Risperdal)	4–16	0.25–1.5	Low	Low	Low	Low	Low
Haloperidol (Haldol)	1–15	0.25–0.5	Low	Low	Low	Very high	Yes

Note: Information taken from https://www.Medscape.com

Neuroleptic malignant syndrome (NMS) is a life-threatening condition that can happen in response to antipsychotic medications. Early recognition and intervention are the most important things a healthcare worker can do for a patient experiencing NMS. The primary symptoms of NMS are mental status changes, severe muscle rigidity, and autonomic changes (historically presenting with high fever ranging between 101 and 103 degrees Fahrenheit, tachycardia, and fluctuating blood pressure) (Boyd, 2017). Emergency intervention is needed for NMS. The healthcare worker should intervene as workplace policy dictates to get the patient to appropriate medical care as soon as possible.

A delicate balance is needed to lessen problematic schizophrenic symptoms and antipsychotic medication side effect profiles, which can be dangerous to the older adult. The healthcare worker can help assess the older adult with schizophrenia and seek to find interventions and treatments that can be modified if needed. With an individualized plan of care and proactive planning, the healthcare worker can increase the quality of mental health services provided, in turn increasing the quality of life for the older adult living with schizophrenia.

Self-Assessment Quiz Question #5

The healthcare worker is assessing the older adult taking antipsychotic medication. What life-threatening condition warrants immediate attention?:

a. Postural hypotension.
b. Sedation.
c. Anticholinergic effects.
d. Neuroleptic malignant syndrome.

SERIOUS MENTAL ILLNESS (SMI)

The healthcare worker should be able to identify the older adult who suffers with serious mental illness so that the complexity of the accompanying intervention and treatment can be addressed. SMI is a significant functional impairment caused by one or more mental disorders (most commonly schizophrenia, bipolar, or MDD). Approximately 4.8% of older adults in the U.S. live with SMI (SAMHSA, 2022b). An older adult who suffers with SMI often needs greater medical and mental illness intervention than someone without SMI. The healthcare worker will need to assist with a comprehensive treatment plan. Older adults with SMI are likely to have comorbidities that complicate their quality of life and increase their risk of mortality (SAMHSA, 2021). The most common medical conditions contributing to earlier death are cardiovascular diseases, followed by diabetes, chronic obstructive pulmonary disease (COPD), obesity, and tobacco use (Bartels et al., 2020). Specific psychopharmacological interventions are individualized for the older adult with SMI and are chosen to best meet the specifics of their medical and mental illnesses. Older adults with SMI have better physical and mental health outcomes with psychosocial interventions that focus on improving independent living, teaching social skills, enhancing social support with peer mentors, and education about physical and mental illness management for better self-management lifestyles (Bartels et al., 2020). The healthcare worker can refer to case management or community resources, along with support from friends, family, and caregivers. Treatment options will be offered in accordance with appropriate care settings and social determinants for the older adult with SMI.

Psychosocial Interventions for the older adult with SMI include the following (Bartels et al., 2020):

- **Helping Older People Experience Success (HOPES)**: HOPES is a 12-month course that contains seven modules: Communicating Effectively, Making and Keeping Friends, Making the Most of Leisure Time, Healthy Living, Using Medications Effectively, and Making the Most of a Healthcare Visit. The courses are designed to meet weekly and teach a new skill set at every session. Weekly sessions provide active engagement for the older adult with SMI, and a wide range of potential tool sets offers the opportunity to meet a greater number of needs.
- **Cognitive Behavioral Social Skills Training (CBSST)**: CBSST individualizes training framed around personal functioning in a group setting. There are three modules that target self-management, communication techniques, and interpersonal problem solving. Each module meets weekly for one month. Unique goals are set for the older adult with SMI based on their needs and capabilities.
- **Health and Recovery Peer (HARP)**: HARP is a mental health program with peer support inclusion for the older adult with SMI that evolved from the chronic disease self-management program. The six topics it covers are illness self-management, exercise and physical activity, pain and fatigue management, healthy and affordable eating, medication management, and the importance of continuity of physical and mental healthcare. HARP helps older adults with SMI set short- and long-term goals for all topics covered.
- **Targeted Training in Illness Management (TTIM)**: TTIM is a combination focus for older adults with SMI and comorbid diabetes. This approach contains two sections. The first section has a nurse educator and peer mentor running weekly sessions for three months that address medication management, nutrition, exercise, substance use, problem-solving skills, engaging social support systems, and setting personal goals. The second half of the training is offered through telephone consultation with the goal of self-sustainment.

The healthcare worker meeting the mental health needs of the older adult will most likely be collaborating with a team to maximize the quality of care. Older adults with SMI are more likely to need acute care and premature permanent nursing home placement when compared to older adults without SMI; therefore, it is important to place greater emphasis on intervention and treatment options to increase autonomy (Bartels et al., 2020). A team approach between medical and psychiatric care is necessary for the healthcare worker addressing the mental health needs of the older adult with SMI.

RECOVERY PRINCIPLES AND HEALTHY AGING

Recovery and healthy aging should be initiated at the first psychiatric interview, systematically evaluated at every subsequent meeting, and adjusted as needed for the older adult with mental illness. Recovery is defined as the ability to overcome and adapt with positivity to any health disorder in order to reach one's potential and life goals (SAMHSA, 2022c). Striving toward prioritizing recovery and healthy aging brings mental healthcare in the direction of biopsychosocial interventions and functioning toward maximizing the quality of care for the older adult. This is an important goal of every mental health interaction and will be unique to each older adult client. Healthy aging is defined as healthy choices, connections, and prevention and management of health conditions that contribute to quality of life (HHS, 2022). There is more than one path to healthy aging and recovery. Deciding which practices and treatments (medications, therapies, community resources, etc.) are best suited for the older adult with mental illness will be a multifaceted assessment process, possibly including other healthcare disciplines. SAMHSA (2022c) classifies four major dimensions for recovery implementation, and HHS recognizes nine topics for healthy aging. Table 7 combines SAMSHA recovery dimensions and HHS healthy aging topics, and it highlights older adult considerations for the healthcare worker to address.

The healthcare worker can use recovery dimensions as factors for assessing an older adult. A review of an older adult's health, home, purpose, and community can signify protective factors or barriers to recovery, each able to alter the length of recovery. Recovery dimension barriers can be targets for intervention. In addition to recovery dimensions are recovery principles for the healthcare worker meeting mental health needs. The healthcare worker can view the 10 SAMSHA recovery principles and their applicability to the older adult in Table 8.

Table 7. SAMSHA Recovery Dimensions, HHS Healthy Ageing and Older Adult Considerations			
SAMSHA Recovery Dimension	**SAMSHA Dimension Definition**	**HHS Healthy Aging Topics**	**Older Adult Considerations**
Health	Living a lifestyle of healthy choices that minimize symptoms and positively contribute to physical and emotional welfare.	• Staying Active. • Nutrition for the Older adult. • Locating Benefits & finding care. • Managing medication & treatment. • Brain health.	• Living arrangement. • ADLs. • Transportation (driving safety). • Access to care (Medicare). • Access to resources like healthy food and medications. • Nutrition assistance (Meals on Wheels). • Food safety. • Access to healthcare. • Older adult specific treatment. • Physical exercise and activity. • Strengthening cognition and memory. • Ethical and legal implications
Home	Physical residence that includes safety.	• Staying connected to your community.	• Living arrangement. • Assisted living, long-term care, nursing home. • Fall prevention. • Family, friends, caregivers involved. • Access to support. • Lower risk of violence.
Community	The connection to others that provide comfort and support (friendship, love, intimacy, and hope).	• Staying connected to your community.	• Marital status. • Support network. • Group therapy. • Religious or spiritual considerations. • Sexual activity.
Purpose	Existential stability, sense of purpose and being, ability to find meaning and satisfaction in self and others.	• Learning about diseases, conditions, and injuries. • Understanding mental health.	• Developmental task completion. • Job(s). • Volunteer position(s). • Purposeful involvement. • Hobbies. • Cultural considerations. • Religious and spiritual inclusion.
Note: Information combined from SAMHSA (2022c) and HHS (2022)			

Table 8. SAMHSA Recovery Principles and Definitions with Older Adult Applicability		
SAMSHA Recovery Principle	**Recover Principle Definition**	**Older Adult Applicability**
Hope (The crux for recovery)	• Internalized drive. • Future focused. • Optimism.	• Hope can be instilled by self or others. • Hopelessness is a safety concern (assess for suicide).
Person-Driven	• Self-direction. • Taking responsibility.	• Focus on autonomy and incorporation for decision-making in life.
Many Pathways	• Personalization. • A nonlinear process.	• Based on personal strength, talent, capabilities, and coping skills
Holistic	• Whole life. • Mind, body, spirit, community.	• All recovery dimensions of health, home, purpose, and community.
Peer Support	• Sense of belonging. • Support.	• Peers can be family, friends, professionals. • Some psychosocial treatments include peer support.
Relational	• Connectedness. • Social networks. .	• Family, friends, caregivers, neighbors, faith groups, community groups and members. • Citizenship.
Culture	• Diversity inclusion. • Uniqueness.	• Cultural awareness. • Cultural sensitivity. • Culture humility.

Table 8. SAMHSA Recovery Principles and Definitions with Older Adult Applicability		
SAMSHA Recovery Principle	**Recover Principle Definition**	**Older Adult Applicability**
Addresses Trauma	• Verbal, physical, emotional, domestic violence, sexual, war, natural disaster, financial, substance.	• Assess past and present. • Establish trust. • Promote safe space. • Ethical and legal implications.
Strengths/Responsibility	• Resource availability for self and community. • Empowerment.	• Personal responsibility in recovery and resources. • Find barriers and protective factors.
Respect	• Acceptance. • Self-esteem.	• Eliminate discrimination and bias. • A sense of identity beyond the diagnosis. • Avoid labels.
Note: From SAMHSA (2012)		

Hope, the first listed SAMSHA recovery principles in Table 8, has been studied in the older adult population. Verbalized hope in older adults has been proven to have a positive correlation with better overall physical and mental health, as evidenced by decreased mortality, fewer chronic conditions, lower cancer rates, fewer sleep disturbance problems, decreased stress, improved sense of purpose, and increased life satisfaction (Hernandez & Overholser, 2021). The healthcare provider can assess for social connections and support in the older adult. Family, friends, caregivers, community members, and healthcare workers are all capable of instilling hope in the older adult. Hopelessness can be experienced after loss (Kübler-Ross & Kessler, 2005). Hopelessness can be a target for intervention in the older adult. Individual, group, and community hope-based treatments have been found to be effective for increasing hope, which in turn optimizes physical and mental health for the older adult (Hernandez & Overholser, 2021). Hope holds positivity for the older adult, yet is only one of 10 principles where the healthcare worker can assess and intervene.

Focusing on the recovery and healthy aging of the older adult, beginning with the initial interview, promotes a journey toward recovery as a fluid process with dimensions and principles to guide the healthcare worker. Healthy aging and recovery strategies can be preventive for mental health or goals set during any stage of mental health illness. Together, the healthcare worker and patient can maximize quality of life for the

Conclusion

Aging provides irrevocable changes and modifications to the human body, but it is not synonymous with mental health degradation. Theories of aging provide references for the healthcare provider who is assessing, intervening, and treating the older adult with mental health needs. Communication tailored to the older adult enhances the ability to build trust and rapport for the therapeutic relationship, the integral connection with the older adult. The healthcare worker might need to modify their communication with the older adult due to hearing, visual, or cognitive impairments. The healthcare worker is charged with considering the unique presentation of the older adult when assessing social determinants (protective factors or barriers) and biopsychosocial factors. Knowing risk factors, symptoms, and treatment options for older adults with mental health needs enables the healthcare worker to provide treatment options that maximize safety, recovery, and quality of life for the older adult

References

- American Bar Association & American Psychological Association (2008). *Assessment of older adults with diminished capacity*. https://www.apa.org/pi/aging/programs/assessment/capacity-psychologist-handbook.pdf
- American Geriatric Association. (2019). *Tip sheet: Alternatives for medications listed in the AGS Beers criteria® for potentially inappropriate medication use in older adults*. https://www.healthinaging.org/tools-and-tips/tip-sheet-alternatives-medications-listed-ags-beers-criteriar-potentially
- American Geriatric Association. (2020). *Tip sheet: The 5Ms of geriatric*. https://www.healthinaging.org/tools-and-tips/tip-sheet-5ms-geriatrics
- American Geriatric Association. (2022). *Caregiver guide: Problems of daily living*. https://www.healthinaging.org/tools-and-tips/caregiver- guide-problems-daily-living
- American Psychiatric Association. (2010). *Practice guideline for the assessment and treatment of patients with suicidal behaviors*. https://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/suicide.pdf
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association.
- American Psychiatric Association. (2018). *Best practices in videoconferencing-base telemental health*. https://www.psychiatry.org/File%20Library/Psychiatrists/Practice/Telepsychiatry/APA-ATA-Best-Practices-in-Videoconferencing-Based- Telemental-Health.pdf
- American Psychiatric Association. (2019). *Clinical practice guideline for the treatment of depression across three age cohorts*. https://www.apa.org/depression-guideline
- American Psychiatric Association. (2020). *Stigma, prejudice and discrimination against people with mental illness*. https://www.psychiatry.org/patients-families/stigma-and-discrimination
- American Psychiatric Association. (2022). Culture. *APA Dictionary of Psychology*. https://dictionary.apa.org/culture
- American Psychiatric Association. (2022a). Anticholinergic effects. *APA Dictionary of Psychology*. https://dictionary.apa.org/anticholinergic- effects
- American Psychiatric Association. (2022b). Capacity. *APA Dictionary of Psychology*. https://dictionary.apa.org/capacity
- American Psychiatric Association. (2022c). Culture. *APA Dictionary of Psychology*. https://dictionary.apa.org/culture
- American Psychiatric Association. (2022d). Extrapyramidal symptoms (EPS). *APA Dictionary of Psychology*. https://dictionary.apa.org/extrapyramidal-symptoms
- American Psychiatric Association. (2022e). Grief. *APA Dictionary of Psychology*. https://dictionary.apa.org/grief
- American Psychiatric Association. (2022f). *How to prevent depression as you age*. https://www.apa.org/topics/aging-older- adults/depression
- American Psychiatric Association. (2022g). Informed consent. *APA Dictionary of Psychology*. https://dictionary.apa.org/informed-consent
- American Psychiatric Association. (2022h). Psychosis. *APA Dictionary of Psychology*. https://dictionary.apa.org/psychosis
- American Psychiatric Association. (2022i). Tardive dyskinesia. *APA Dictionary of Psychology*. https://dictionary.apa.org/tardive-dyskinesia
- Ayalon, L., & Tesch-Romer, C. (2018). *Contemporary perspectives on ageism*. Springer. https://doi.org/10.1007/978-3-319-73820-8
- Bartels, S. J., DiMilia, P. R., Fortuna, K. L., & Naslund, J. A. (2020). Integrated care for older adults with serious mental illness and medical comorbidity: Evidence-based models and future research directions. *Clinical Geriatric Medicine*, *36*(2), 341-352. https://doi.org/10.1016/j.cger.2019.11.012
- Boyd, M. (2017). *Essentials of psychiatric nursing*. Wolters Kluwer.
- Carlat, D. J. (2017). *The psychiatric interview* (4th ed.). Wolters Kluwer. https://www.loc.gov/catdir/enhancements/fy1702/2016008384-d.html
- Centers for Disease Control and Prevention [CDC]. (2021a). *Challenges affecting health literacy of older adults*. https://www.cdc.gov/healthliteracy/developmaterials/audiences/olderadults/understanding-challenges.html
- Centers for Disease Control and Prevention [CDC]. (2021b). *Depression is not a normal part of aging*. https://www.cdc.gov/aging/depression/index.html
- Centers for Disease Control and Prevention[CDC]. (2021c). *Loneliness and social isolation linked to serious health conditions*. https://www.cdc.gov/aging/publications/features/lonely-older-adults.html
- Centers for Disease Control and Prevention[CDC]. (2022a). *Older adult drivers*. https://www.cdc.gov/injury/features/older-driver- safety/index.html
- Centers for Disease Control and Prevention[CDC]. (2022b). *What is health equity?* https://www.cdc.gov/healthequity/whatis/? CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcommunity%2Fhealth-equity%2Frace-ethnicity.html
Cepla, E. (2014). *Schizophrenia and getting older*. https://www.nami.org/About-NAMI/NAMI-News/2014/Schizophrenia-and-Getting-Older
- Chu, J. N., Kaplan, C., Lee, J. S., Livaudais-Toman, J., & Karliner, L. (2022). Increasing telehealth access to care for older adults during the COVID-19 pandemic at an academic medical center: Video visits for elders project (VVEP). *Jt Comm J Qual Patient Saf*, *48*(3), 173-179. https://doi.org/10.1016/j.jcjq.2021.11.006
- Conner, K. O., Copeland, V. C., Grote, N. K., Koeske, G., Rosen, D., Reynolds, C. F., 3rd, & Brown, C. (2010). Mental health treatment seeking among older adults with depression: The impact of stigma and race. *Am J Geriatr Psychiatry*, *18*(6), 531-543. https://doi.org/10.1097/JGP.0b013e3181cc0366
- Corey, G., & California State University. (2013). *Theory and practice of counseling and psychotherapy* (9th ed.). Brooks/Cole/Cengage Learning.
- Czaja, S. J., Moxley, J. H., & Rogers, W. A. (2021). Social support, isolation, loneliness, and health among older adults in the PRISM randomized controlled trial. *Front Psychol*, *12*, 728658. https://doi.org/10.3389/fpsyg.2021.728658
- Edemekong, P. F. Bomgaars., D. L.; Sukumaran, S. & Schoo, C. (2022). Activities of daily living. *StatPearls*. https://www.ncbi.nlm.nih.gov/books/NBK470404/
- Gaddey, H. L., & Holder, K. K. (2021). Unintentional weight loss in older adults. *Am Fam Physician*, *104*(1), 34-40. https://www.ncbi.nlm.nih.gov/pubmed/34264616
- Harandi, T. F., Taghinasab, M. M., & Nayeri, T. D. (2017). The correlation of social support with mental health: A meta-analysis. *Electron Physician*, *9*(9), 5212-5222. https://doi.org/10.19082/5212
- Hernandez, S. C., & Overholser, J. C. (2021). A systematic review of interventions for hope/hopelessness in older adults. *Clin Gerontol*, *44*(2), 97-111. https://doi.org/10.1080/07317115.2019.1711281

- Holzer, K. J., Vaughn, M. G., Loux, T. M., Mancini, M. A., Fearn, N. E., & Wallace, C. L. (2022). Prevalence and correlates of antisocial personality disorder in older adults. *Aging Ment Health*, *26*(1), 169-178. https://doi.org/10.1080/13607863.2020.1839867
- Jack, K., Ridley, C., & Turner, S. (2019). Effective communication with older people. *Nurs Older People*. https://doi.org/10.7748/nop.2019.e1126
- Johnson, D. S., Ling, A., & Melino, K. (2021). Exploring readiness for teleprecepting in psychiatric mental health nurse practitioner training. *J Am Psychiatr Nurses Assoc*, *27*(2), 169-173. https://doi.org/10.1177/1078390320948127
- Kübler-Ross, E., & Kessler, D. (2005). *On grief and grieving: Finding the meaning of grief through the five stages of loss*. Scribner. http://www.loc.gov/catdir/enhancements/fy0631/2005042694-d.html Table of contents only http://www.loc.gov/catdir/enhancements/fy0631/2005042694-t.html Sample text http://www.loc.gov/catdir/enhancements/fy0641/2005042694-s.html Contributor biographical information http://www.loc.gov/catdir/enhancements/fy0903/2005042694-b.html
- LeFevre, M. L., & Force, U. S. P. S. T. (2014). Screening for suicide risk in adolescents, adults, and older adults in primary care: U.S. preventive services task force recommendation statement. *Ann Intern Med*, *160*(10), 719-726. https://doi.org/10.7326/M14-0589
- Lundebjerg, N. E., Trucil, D. E., Hammond, E. C., & Applegate, W. B. (2017). When it comes to older adults, language matters: *Journal of the American Geriatrics Society* adopts modified American Medical Association Style. *J Am Geriatr Soc*, *65*(7), 1386-1388. https://doi.org/10.1111/jgs.14941
- Magpantay-Monroe, E. R. (2015). Exploring the emotional intelligence of Florence Nightingale. *Asia Pac J Oncol Nurs*, *2*(2), 107-111. https://doi.org/10.4103/2347-5625.157587
- Merriam-Webster. (2022). *Loss*. https://www.merriam-webster.com/dictionary/loss
- National Council of State Boards of Nursing. (2018). *A nurse's guide to professional boundaries*. https://www.ncsbn.org/ProfessionalBoundaries_Complete.pdf
- National Research Council. (2003). *Elder mistreatment: Abuse, neglect, and exploitation in an aging America*. National Academics Press. https://doi.org/10.17226/10406
- NCA. (2021). *Suicide and older adults: What you should know*. https://www.ncoa.org/article/suicide-and-older-adults-what-you-should-know
- Neathery, M., He, Z., Taylor, E. J., & Deal, B. (2020). Spiritual perspectives, spiritual care, and knowledge of recovery among psychiatric mental health nurses. *J Am Psychiatr Nurses Assoc*, *26*(4), 364-372. https://doi.org/10.1177/1078390319846548
- National Institude of Aging [NIH]. (2017). *Tips for improving communication with older adults*. https://www.nia.nih.gov/health/tips-improving- communication-older-patients
- National Institude of Aging [NIH] (2018). *Advanced care planning: Healthcare directives*. https://www.nia.nih.gov/health/advance-care- planning-health-care-directives
- National Institude of Aging [NIA]. (2020). *Elder abuse*. https://www.nia.nih.gov/health/elder-abuse
- National Institude of Aging [NIA]. (2021a). *Assessing cognitive impairment in older patients*. https://www.nia.nih.gov/health/assessing- cognitive-impairment-older-patients
- National Institude of Aging [NIA]. (2021b). *Depression and older adults*. https://www.nia.nih.gov/health/depression-and-older-adults
- National Institude of Aging [NIA]. (2022a). *Sexuality and intimacy in older adults*. https://www.nia.nih.gov/health/sexuality-and-intimacy- older-adults
- National Institude of Aging [NIA]. (2022b). *What is Alzheimer's disease?* https://www.alzheimers.gov/alzheimers-dementias/alzheimers- disease
- National Institude of Aging [NIA]. (2022c). *What is dementia?* https://www.alzheimers.gov/alzheimers-dementias/what-is-dementia
- National Institude of Aging [NIA]. (2022d). *What is frontotemporal dementia?* https://www.alzheimers.gov/alzheimers- dementias/frontotemporal-dementia
- National Institude of Aging [NIA]. (2022e). *What is Lewy body dementia?* https://www.alzheimers.gov/alzheimers-dementias/lewy-body- dementia
- National Institude of Aging [NIA]. (2022f). *What is mild cognitive impairment?* https://www.alzheimers.gov/alzheimers-dementias/mild- cognitive-impairment
- National Institude of Aging [NIA]. (2022g). *What is vascular dementia?* https://www.alzheimers.gov/alzheimers-dementias/vascular- dementia
- Office of Disease Prevention and Health Promotion. (2022). *Healthy People 2030: Social determinants of health*. https://health.gov/healthypeople/priority-areas/social-determinants-health
- Palmer, A. D., Newsom, J. T., & Rook, K. S. (2016). How does difficulty communicating affect the social relationships of older adults? An exploration using data from a national survey. *J Commun Disord*, *62*, 131-146. https://doi.org/10.1016/j.jcomdis.2016.06.002
- Promidor, A. (Ed.). (2019). *Clinicain's guide to assessing and counseling older drivers* (4th ed.). American Geriatric Society.
- Rhee, M. K., Mor Barak, M. E., & Gallo, W. T. (2016). Mechanisms of the effect of involuntary retirement on older adults' self-rated health and mental health. *J Gerontol Soc Work*, *59*(1), 35-55. https://doi.org/10.1080/01634372.2015.1128504
- Rodgers, J. E., Thudium, E. M., Beyhaghi, H., Sueta, C. A., Alburikan, K. A., Kucharska-Newton, A. M., Chang, P. P., & Stearns, S. C. (2018). Predictors of medication adherence in the elderly: The role of mental health. *Med Care Res Rev*, *75*(6), 746-761. https://doi.org/10.1177/1077558717696992
- Sadock, B. J., Sadock, V. A., & Ruiz, P. (2015). *Kaplan & Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry* (11th ed.). Wolters Kluwer.
- Sajatovic, M., Forester, B. P., Gildengers, A., & Mulsant, B. H. (2013). Aging changes and medical complexity in late-life bipolar disorder: Emerging research findings that may help advance care. *Neuropsychiatry (London)*, *3*(6), 621-633. https://doi.org/10.2217/npy.13.78
- Substance Abuse and Mental Health Services Administration [SAMHSA]. (2012). *SAMHSA's working definition of recovery*. https://store.samhsa.gov/product/SAMHSA-s-Working-Definition-of-Recovery/PEP12-RECDEF
- Substance Abuse and Mental Health Services Administration [SAMHSA]. (2019). *Older adults living with serious mental illness: The state of the behavioral health workforce*. https://store.samhsa.gov/sites/default/files/d7/priv/pep19-olderadults-smi.pdf
- Substance Abuse and Mental Health Services Administration [SAMHSA]. (2021). *Psychosocial interventions for older adults with serious mental illness*. https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP21-06-05-001.pdf
- Substance Abuse and Mental Health Services Administration [SAMHSA]. (2022a). *Columbia suicide severity rating scale (C-SSRS)*. https://www.samhsa.gov/resource/dbhis/columbia-suicide-severity-rating-scale-c-ssrs
- Substance Abuse and Mental Health Services Administration [SAMHSA] (2022b). *Living well with serious mental illness*. https://www.samhsa.gov/serious-mental-illness
- Substance Abuse and Mental Health Services Administration [SAMHSA]. (2022c). *Recovery and recovery support*. https://www.samhsa.gov/find-help/recovery
- Substance Abuse and Mental Health Services Administration [SAMHSA]. (2022d). *Treating substance use disorder in older adults*. https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP20-02-01-011%20PDF%20508c.pdf
- Stubbe, D. E. (2020). Practicing cultural competence and cultural humility in the care of diverse patients. *Focus (Am Psychiatr Publ)*, *18*(1), 49-51. https://doi.org/10.1176/appi.focus.20190041
- Subramanyam, A. A., Kedare, J., Singh, O. P., & Pinto, C. (2018). Clinical practice guidelines for geriatric anxiety disorders. *Indian J Psychiatry*, *60*(Suppl 3), S371-S382. https://doi.org/10.4103/0019-5545.224476
- The Columbia Lighthouse Project. (2016). *The Columbia protocol (C-SSRS)*. https://cssrs.columbia.edu/wp- content/uploads/Columbia_Protocol.pdf
- Tusaie, K. R., & Fitzpatrick, J. J. (2017). *Advanced practice psychiatric nursing: Integrating psychotherapy, psychopharmacology, and complementary and alternative approaches across the life span* (2nd ed.). Springer.
- United States Department of Health and Human Services [HHS]. (2022). *Healthy aging*. https://www.hhs.gov/aging/healthy- aging/index.html
- World Health Organization [WHO] (2021). *Ageism is a global challenge: UN*. https://www.who.int/news/item/18-03-2021-ageism-is-a-global- challenge-un
- World Health Organization [WHO]. (2017). *Mental health of older adults*. https://www.who.int/news-room/fact-sheets/detail/mental-health-of- older-adults

MENTAL HEALTH CONCERNS AND THE OLDER ADULT

Self-Assessment Answers and Rationales

1. The correct answer is A.

Rationale: Erik Erikson's eighth and final stage of psychosocial development is targeted at the older adult and called integrity versus despair. The main conflict in older age happens between integrity (the sense of satisfaction people feel reflecting on a life lived productively) and despair (the sense that life has little purpose or meaning).

2. The correct answer is D.

Rationale: The National Institute on Aging (2017) provides recommendations for improving communication with the older adult. They recommend using an older client's preference for being addressed; including their proper titles, such as Mr., Mrs., Ms., Dr.; and avoiding endearing terms such as honey and dear.

3. The correct answer is A.

Rationale: The U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion (ODPHP, 2022) in Healthy People 2030 names five areas related to social determinants of health: education access and quality, healthcare access and quality, neighborhood and built environment, social and community context, and economic stability. Healthcare access and quality includes telemental healthcare for the older adult with the ability and means to utilize the Internet to receive care electronically.

4. The correct answer is B.

Rationale: The National Institute of Aging (2020) lists signs of abuse in the older adult and recognizes that long-term health effects include decreased physical and psychological health, severed social support, financial loss, and early death.

5. The correct answer is D.

Rationale: Neuroleptic malignant syndrome is a life-threatening condition that can happen in response to antipsychotic medications. Early recognition and intervention are the most important things a healthcare worker can do for a patient experiencing NMS. The primary symptoms of NMS are mental status changes, severe muscle rigidity, and autonomic changes (historically presenting with high fever ranging between 101 and 103 degrees Fahrenheit, tachycardia, and fluctuating blood pressure) (Boyd, 2017).

Course Code: ANCCGA06MH

Nursing Assessment, Management and Treatment of Autoimmune Diseases

6 Contact Hours

Release Date: March 3, 2022

Expiration Date: March 2, 2025

Faculty

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Adrianne E. Avillion has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Reviewer: Mary C. Ross, PhD, RN, is an experienced nursing educator with substantial clinical experience in multiple areas of nursing including medical/surgical nursing and community health. She is a retired Air Force flight nurse and has extensive experience as an administrator and graduate faculty member, teaching advanced practice nurses.

Mary C. Ross has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Course objective

Almost 4% of the world's population is affected by one of more than 80 different autoimmune diseases. In the United States (US), as many as 50 million Americans are living with an autoimmune disease, at a cost of $86 billion a year (National Stem Cell Foundation [NSCF], 2021).

This education program provides information on autoimmune diseases with the purpose of adding to the nurse's ability to recognize, assess, and facilitate treatment of such diseases.

Learning objectives

Upon completion of this course, the learner should be able to:

- Discuss the incidence and prevalence of common autoimmune diseases.
- Describe the pathophysiology of common autoimmune diseases.
- Initiate appropriate assessment of patients affected by common autoimmune diseases.
- Explain diagnosis and treatment options for common autoimmune diseases.
- Identify nursing interventions important to the care of patients living with common autoimmune diseases.

How to receive credit

- Read the entire course online or in print which requires a 6-hour commitment of time.
- Complete the self-assessment quiz questions either integrated throughout or all at the end of the course. These questions are NOT GRADED. The questions are included to help affirm what you have learned from the course. The correct answer is shown after the question is answered. If the incorrect answer is selected, a Rationale for the correct answer is provided.
- Depending on your state requirements you will then be asked to complete either:
  - An affirmation that you have completed the educational activity.
  - A mandatory test (a passing score of 70 percent is required). Exam questions link content to the course learning objectives as a method to enhance individualized learning and material retention.
- If requested, provide required personal and payment information.
- Complete the MANDATORY Course Evaluation.
- Print your Certificate of Completion

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Activity director

Shirley Aycock, DNP, RN, Executive Director of Quality and Accreditation

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INTRODUCTION

Autoimmune diseases are typically chronic conditions that often present with non-specific symptoms. Therefore, it may be a good deal of time before patients are diagnosed and properly treated. Living with a chronic condition can be burdensome as providers and patients work together to find the optimal treatment and promote the ideal quality of life. As autoimmune conditions can present differently and patients may react in various ways to medication options, treatment plans vary from patient to patient. This education program provides information on autoimmune diseases with the purpose of adding to the nurse's ability to recognize, assess, and facilitate treatment of such diseases.

INCIDENCE AND PREVALENCE

An estimated four percent of the world's population is affected by one of more than 80 different autoimmune diseases. In the United States, autoimmune diseases are the third most common cause of chronic illness. The National Institutes for Health (NIH) reports that autoimmune diseases affect between five and eight percent of the population. The prevalence of autoimmune diseases is increasing. However, the reason for this increase is not yet known (NSCF, 2021).

About 50 million Americans are living with an autoimmune disease at a cost of $86 billion a year. Autoimmune diseases affect women three times as often as men. In fact, the Office of Research on Women's Health at the NIH has named autoimmunity a major women's health issue. These types of diseases are the fourth largest cause of disability in women in the US and they are the eighth leading cause of death for women between the ages of 15 and 64 (NSCF, 2021).

Self-Assessment Question 1

When discussing autoimmune diseases with a female patient, the nurse should explain that:

a. Autoimmune disease affects males and females equally.
b. In the US, autoimmune diseases are the third most common cause of chronic illness.
c. About 25 million Americans are living with an autoimmune disease.
d. Autoimmune diseases are the third largest cause of disability in males.

COMMON AUTOIMMUNE DISEASES

An autoimmune disease develops when the body's immune system mistakes its own healthy tissues as foreign substances and attacks these tissues. Most autoimmune diseases cause inflammation that can affect many parts of the body (National Cancer Institute, n.d.). Autoimmune diseases tend to run in families and affect various races and ethnicities differently (National Cancer Institute, n.d.; NSCF, 2021).

Autoimmunity appears to be increasing in the US according to scientists at the National Institutes of Health (2020) and their collaborators. The most common biomarker of autoimmunity was found to be increasing generally in the US, especially in males, non-Hispanic Whites, adults 50 years of age and older, and adolescents.

The reasons for these increases have not been definitely identified but they suggest a possible increase in future autoimmune diseases.

Some of the most common autoimmune diseases include the following (Messenger, 2021; NSCF, 2021):

- Alopecia Areata.
- Celiac Disease.
- Crohn's Disease.
- Diabetes Type 1.
- Multiple Sclerosis (MS).
- Rheumatoid Arthritis (RA).
- Lupus.
- Scleroderma.
- Psoriasis.
- Ulcerative colitis.
- Vitiligo.

Alopecia areata

Alopecia areata is a chronic disorder that affects anagen hair follicles and causes non-scarring hair loss. The disorder occurs throughout the world. Its estimated prevalence is about one in 1,000 people, with a lifetime risk of approximately two percent. The disorder occurs at similar rates in males and females and affects both children and adults. The mean age for diagnosis of alopecia areata is 32 years in males and 36 years in females (Messenger, 2021).

Pathophysiology

Alopecia areata is an autoimmune disease. Cells of the immune system surround and "attack" hair follicles, which causes the attached hair to fall out. The greater the number of hair follicles attacked by the immune system, the greater the loss of hair. Although hair loss occurs, hair follicles are rarely destroyed (American Academy of Dermatology Association (AAD), 2021a).

Anyone can develop alopecia areata. There are, however, some people who are at greater risk for its development (AAD, 2021a):

- An estimated 10% to 20% of people with alopecia areata have a family member with the disorder. The actual percentage may be much higher since many people try to hide hair loss.
- People who have asthma, hay fever, atopic dermatitis, thyroid disease, vitiligo, or Down syndrome are at higher risk for developing the disease.
- People with cancer who are being treated with various chemotherapeutic drugs are at risk for hair loss. Hair generally regrows after treatment is completed.

Assessment

Alopecia areata most typically causes discrete, smooth patches of hair loss on the scalp (see Figure 1). Hair loss may also occur in other areas of the body, such as eyebrows, eyelashes, beard, and extremities. Severe disease may lead to the loss of all scalp hair (alopecia totalis) or of all body hair (alopecia universalis; AAD, 2021a).

In addition to the physical findings, a complete health history needs to be obtained. Emphasis is on current state of health, medications being taken, and any risk factors that are in evidence. A mental health assessment is also an important part of any assessment process (AAD, 2021a).

Figure 1. Alopecia areata

Note. Andrzej. (2011). Alopecia areata.JPG https://commons.wikimedia.org/wiki/File:Allopecia_areata.JPG

Diagnosis and treatment

Diagnosis is based on patterns of hair loss, history, and physical findings. It is important to rule out other autoimmune disorders (AAD, 2021b).

Treatment in Persons Less than 10 Years of Age. Treatment depends on age, the amount of hair loss, and the location of the hair loss. In children 10 years of age and younger, treatment may be initiated to help hair regrowth. Pharmacological interventions include the following (AAD, 2021b):

- **Corticosteroids**: Prescription-strength corticosteroids may be applied to sites of hair loss. Corticosteroids may be applied once or twice a day. For children, corticosteroids alone may be effective in promoting hair growth.
- **Minoxidil**: Minoxidil (Rogaine) can help to maintain regrowth after corticosteroids are discontinued.

Treatment in Persons over 10 Years of Age. If there are only a few patches of alopecia areata, one or more of the following treatments may be initiated (AAD, 2021b):

- **Injection of corticosteroids**: Corticosteroids are injected into bald areas every 4 to 8 weeks.
- **Application of minoxidil (Rogaine)**: The medication is applied to bald spots once or twice a day as prescribed. It is useful when bald spots are over the scalp, beard area, and eyebrows.
- **Application of anthralin**: This medication is applied to bald spots, allowing it stay on the skin for as long as prescribed, and then it is washed off. Skin irritation is expected. Using anthralin in conjunction with minoxidil is prescribed for most effective results.

If eyelashes are affected, false eyelashes or wearing glasses helps to make hair loss less apparent. The use of bimatoprost or similar medications has been approved, in addition to glaucoma treatment, to help eyelashes grow longer (AAD, 2021b).

For eyebrow loss, "stick-on" eyebrows or semi-permanent tattoos may be used. A dermatologist may also inject intralesional corticosteroids in conjunction with the application of minoxidil (AAD, 2021b).

If hair loss is rapid and extensive, the following interventions may be used (AAD, 2021b):

- **Topical immunotherapy**: This intervention is designed to alter the immune system so that it stops attacking hair follicles. Treatment is typically implemented on a weekly basis.
- **Methotrexate**: This medication may be prescribed when other treatments fail to be effective.

Nursing consideration: Methotrexate is also used to treat leukemia and various malignancies including cancers of the breast, skin, head, neck, lung, or uterus. It is also used to treat severe psoriasis and rheumatoid arthritis in adults. Methotrexate can cause serious, even fatal, side effects (Entringer, 2020). Such side effects include bone marrow, liver, lung, and kidney toxicities, soft-tissue necrosis, osteonecrosis, severe bone marrow suppression, aplastic anemia, gastrointestinal toxicity, hemorrhagic enteritis, and intestinal perforation (Comerford & Durkin, 2021).

- **Corticosteroids**: Taking corticosteroids for about 6 weeks may help hair growth in the presence of widespread alopecia areata.
- **Janus kinase (JAK) inhibitors**: These types of medications may treat extensive hair loss. Examples include tofacitinib, ruxolitinib, and baricitinib.
- **Wigs, hairpieces, or scalp prosthesis**: Use of these items may cover up hair loss.

Nursing Interventions

Nurses are typically involved in patient/family education. They take a lead role in education regarding accurate medication administration, adherence to treatment regimen, and psychosocial support. In the case of patients who are dealing with alopecia areata, body image changes may have

psychological consequences, therefore, mental health is an aspect of care that nurses must assess.

Although the symptoms of alopecia areata typically do not cause physical pain, psychological pain may become a serious problem (National Alopecia Areata Foundation, n.d.).

Evidence-based practice! An analysis of U S hospitalizations found that alopecia areata patients are at risk for anxiety disorders, attention-deficit hyperactivity disorder, dementia, mood disorders, personality disorders, and suicide or intentionally self-inflicted injury. It was unclear if psychological stress might cause or exacerbate alopecia areata, or whether alopecia areata can lead to or worsen mental health disorders (Singam et al., 2018).

A diagnosis of alopecia areata in children can be just as, or even more, upsetting for parents. Parents of these children have reported that they feel a sense of "guilt" as though they had somehow contributed to the development of the disease or cannot stop its progression (National Alopecia Areata Foundation, n.d.).

Parents (and other caregivers) are urged to avoid being overly protective or permissive with their children. They should identify a support network to help them manage stress. Parents are also encouraged to speak directly to their children about their alopecia areata and urge the children to talk about their feelings about living with alopecia areata (National Alopecia Areata Foundation, n.d.).

Children with alopecia areata are at risk for emotional distress, anxiety, depression, and sadness. Children may not be able to describe their feelings, so it is important to teach parents and other family members/caregivers how to recognize depression and anxiety. Symptoms of depression in children include the following (National Alopecia Areata Foundation, n.d.):

- Sadness and/or irritability.
- Not wanting to participate in "fun" activities that were enjoyed in the past.
- Changes in eating patterns.
- Changes in sleep patterns.
- Changes in energy patterns.
- Having a hard time paying attention.
- Feelings of worthlessness, uselessness, and/or guilt.
- Exhibiting self-destructive behavior.

Symptoms of anxiety in children include the following (National Alopecia Areata Foundation, n.d.):

- Excessive fearfulness or worry.
- Irrational anger.
- Trouble sleeping.
- Physical symptoms including fatigue, headaches, and stomach aches.

Children are also at risk for bullying. Examples of bullying behaviors that affect children with alopecia areata include the following (National Alopecia Areata Foundation, n.d.):

- Pulling head coverings from the child's head.
- Verbalizing insults about the child's appearance.
- Telling others about the child's alopecia and making deliberate attempts to humiliate and embarrass the child.

Evidence-based practice! Results from a study of 80,000 students showed that 25% of participants reported having been bullied. Results also showed a significant disconnect between teachers' perceptions and what their students say is happening in their schools (Stringer, 2016).

To combat bullying, the National Alopecia Areata Foundation offers the following suggestions for parents and other caregivers as they work to help their children who are being bullied (National Alopecia Areata Foundation, n.d.):

- Help children to understand and identify bullying behaviors.
- Encourage open communication, check in with the children frequently, and listen/observe closely to what children are saying and doing.
- Encourage children to participate in enjoyable activities to foster confidence.
- Model treating other with kindness and respect.
- Speak to school officials and leaders of extra-curricular activities about bullying and how to stop it.
- Provide information about how to deal with bullying such as leaving the bullying situation if possible, telling the bully (calmly) to stop the bullying, controlling emotions (avoiding showing fear or anger, which may increase the bullying), and do not try to bully the person(s) who is doing the bullying (this only perpetuates the cycle of bullying).

When working with patients who are dealing with alopecia areata nurses have a responsibility to work with patients and families as they attempt to navigate the mental health issues that often accompany the disease. They should be prepared to discuss these issues and intervene effectively.

Case Study: Mr. Nathan Lacy

Nathan has recently been diagnosed with alopecia areata. He has a few patches of alopecia over his scalp and is distressed over his hair loss. There is no hair loss of eyebrows or other facial hair. At 28 years of age, Nathan says, "I never thought I'd be going bald at my age!" The nurse practitioner, who is Nathan's primary healthcare provider, assures him that there are treatment options for alopecia areata.

Question:
What treatment options are available to Nathan?

Discussion:
There are several treatment options for Nathan. Treatment varies according to age and the amount of hair loss. Nathan is over 10 years of age and has only a few patches of alopecia. Corticosteroids may be injected directly into the bald areas every 4 to 8 weeks. Topical medications that are available are minoxidil (Rogaine) and/or anthralin. Minoxidil is applied to the bald spots once or twice a day.

Anthralin is applied to bald spots and left on the skin for a prescribed amount of time, after which it is washed off. Patients should anticipate skin irritation when using anthralin. Treatment is most effective when these drugs are used together.

Nathan also needs to receive emotional support. He has already told his nurse practitioner that he is distressed about his hair loss. Research shows that people who have alopecia areata are at risk for a variety of mental health issues including anxiety disorders, mood disorders, and personality disorders. A mental health assessment is very important as is ongoing observation and professional mental health consultation as needed.

Celiac disease

Celiac disease, also referred to as celiac sprue or gluten-sensitivity enteropathy, is an immune reaction to eating gluten, which is a protein found in wheat, barley, and rye (Mayo Clinic, 2020a). An estimated one in 100 people throughout the world are affected by celiac disease. Two and one-half million Americans are undiagnosed and at risk for long-term health-related complications (Celiac Disease Foundation, 2018; Celiac Disease Foundation, 2021).

A recent meta-analysis and review of studies from throughout the world showed that the world-wide prevalence of celiac disease is an estimated 1.4% based on blood tests, and 0.7% based on the results of biopsies. The prevalence was higher in females than males and was significantly higher in children compared to adults (Celiac Disease Foundation, 2018).

Evidence-based practice! Research shows that celiac disease typically becomes evident between the ages of 6 and 18 months after gluten-containing foods are introduced into the diet (Meadows-Oliver, 2019). Therefore, parents should be taught to carefully observe their children for symptoms of the disease during this period of time.

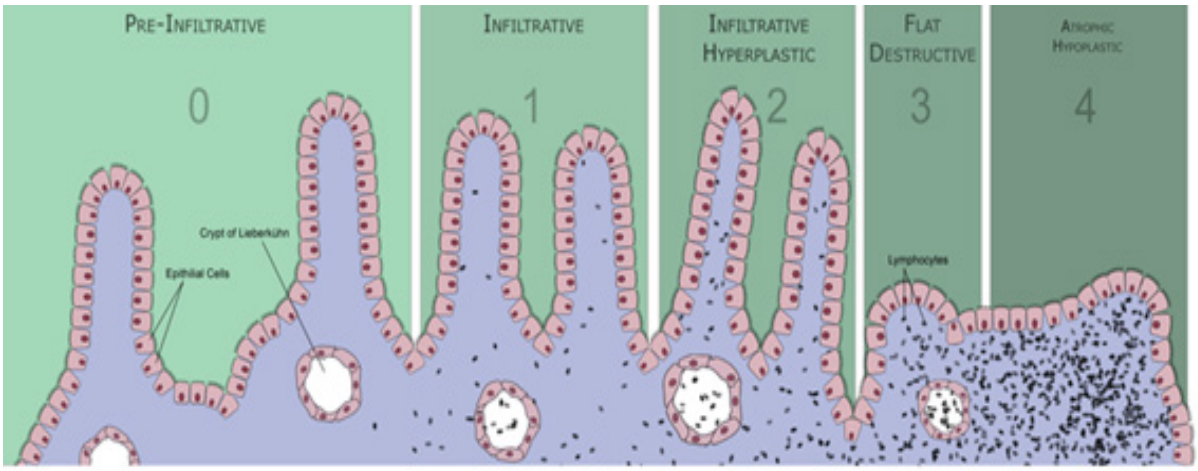
Pathophysiology
When people with celiac disease ingest gluten, the immune system responds and attacks the cells of the small intestine. Eventually the villi of the small intestine are damaged. Villi are the projections that line the small intestine and facilitate the absorption of protein (Celiac Disease Foundation, n.d.).

Nursing consideration: Celiac disease cannot be prevented, but adherence to a strict gluten-free diet may stop and reverse small intestine damage (My Health Alberta, 2021).

Figure 2 illustrates the various stages of celiac disease. These stages can be explained as follows (Celiac Disease Foundation, n.d.; Goebel, 2019):

- **Stage 1**: Pre-infiltrate. There is an increased percentage of intraepithelial lymphocytes (>30%).
- **Stage 2**: Infiltrative hyperplastic. This stage is characterized by the presence of inflammatory cells and crypt cell (which act as immunoglobulin receptors) proliferation while preserving the architecture of the villa.
- **Stage 3**: Flat destructive. Stage 3 is characterized by villous atrophy progressing from mild to total atrophy.
- **Stage 4**: Atrophic hypoplastic. Stage 4 is characterized by total mucosal hypoplasia.

Figure 2. Upper Jejunal Mucosal Immunopathology



Note. From Wikipedia Commons, 2020.

Nursing consideration: Dermatitis herpetiformis (DH) is an itchy, bumpy rash commonly found in people with celiac disease. DH causes blisters that resemble herpes, but they are associated with celiac disease. The antibody produced by the intestines in the presence of celiac disease, called IgA, can enter the bloodstream and accumulate in blood vessels under the skin. This causes the DH rash (Nazario, 2020).

Risk Factors. There several risk factors associated with celiac disease. These include the following (Mayo Clinic, 2020a):

- Having a family member with celiac disease or dermatitis herpetiformis.
- Having type 1 diabetes.
- Having Down syndrome or Turner syndrome.
- Having autoimmune thyroid disease.
- Having microscopic colitis.
- Having Addison's disease.

Complications. Celiac disease can lead to several complications, especially if it is untreated. These complications include the following (Mayo Clinic, 2020a):

- **Malnutrition**: Malnutrition occurs if the small intestine is unable to absorb adequate amounts of necessary nutrients. In children, untreated malnutrition can slow growth and shorten stature.
- **Weakening of bones**: Failure to absorb calcium and vitamin D may lead to osteomalacia (softening of the bone) in children. It may cause loss of bone density, referred to as osteopenia or osteoporosis.
- **Infertility and miscarriage**: Inability to absorb calcium and vitamin D may cause fertility issues and pregnancy complications.
- **Lactose intolerance**: The small intestine damage may cause abdominal pain and diarrhea after consuming dairy products that contain lactose.
- **Malignancy**: If persons affected by celiac disease fail to adhere to a gluten-free diet, they are at higher risk for the development of cancers such as intestinal lymphoma and small intestine malignancy.
- **Nervous system issues**: Celiac disease is associated with issues such as seizures or peripheral neuropathy.

Types of Celiac Disease that Fail to Respond to Treatment. There are two forms of celiac disease that do not respond to traditional treatment.

Nonresponsive Celiac Disease. Some patients do not respond to what they believe is a gluten-free diet. This problem is typically because patients continue to consume food and drink that contain gluten. A dietary consult is needed to help these types of patients completely eliminate gluten form their diets. People with nonresponsive celiac disease might have bacterial overgrowth in the small intestine, pancreatic insufficiency, irritable bowel syndrome (IBS), microscopic colitis, or trouble digesting sugars such as lactose, sucrose, and/or fructose (Mayo Clinic, 2020a).

Refractory Celiac Disease. In some rare cases, patients fail to respond to treatment even when adhering to a strict gluten-free diet. This failure is referred to as refractory disease. Those persons who still have signs and symptoms for 6 months to 1 year after following a gluten-free diet require further evaluation (Mayo Clinic, 2020a). The exact cause of this form of the disease is not yet known. It is believed that the body's immune system is involved, particularly T lymphocytes and intraepithelial lymphocytes (IEL), cytokines, and antigens (National Organization for Rare Disorders, 2021).

Assessment
A complete physical and mental health assessment is conducted. Symptoms related to the disease are an integral part of the patient assessment. However, signs and symptoms of celiac disease can vary significantly, and signs and symptoms may differ in children and adults (Mayo Clinic, 2020a).

Upon assessment, nurses should monitor for the presence of the following symptoms in adults (Mayo Clinic, 2020a):
- Abdominal pain.
- Bloating and gas.
- Constipation.
- Diarrhea.
- Fatigue.
- Nausea and vomiting.
- Weight loss.

According to the Mayo Clinic (2020a), more than 50% of adults with celiac disease have signs and symptoms that are unrelated to the digestive system. These types of signs and symptoms include the following:
- Anemia.
- Dermatitis herpetiformis.
- Fatigue.
- Headaches.
- Hyposplenism.
- Joint pain.
- Mouth ulcers.
- Symptoms related to the nervous system such as numbness and tingling of the extremities, impaired cognition, and problems with balance.
- Osteoporosis.

Children with celiac disease are more likely than adults to experience digestive problems such as the following (Mayo Clinic, 2020a):
- Abdominal distention.
- Chronic diarrhea.
- Flatulence.
- Nausea and vomiting.
- Pale, foul-smelling stools.

Nursing consideration: In children, celiac disease leads to an inability to absorb adequate amounts of nutrients. This may lead to failure to thrive in infants, weight loss, anemia, delayed puberty, short stature, and tooth enamel damage (Mayo Clinic, 2020a). Nurses must be aware of the potential for these types of complications when working with children who have celiac disease.

Long-Term Health Effects
People with celiac disease have a 2X greater risk of developing coronary artery disease (CAD) and a 4X greater risk of developing small bowel malignancies. Untreated celiac disease can lead to other autoimmune disorders such as Type 1 diabetes and multiple sclerosis (MS) as well as dermatitis herpetiformis, anemia, osteoporosis, infertility, miscarriage, and neurologic conditions such as epilepsy and migraines (Celiac Disease Foundation, 2021).

Diagnosis and Treatment
Diagnosis. In addition to the presence of relevant signs and symptoms, results from some diagnostic tests help to confirm the diagnosis. These include the following (Mayo Clinic, 2020a; Meadows-Oliver, 2019):
- Histologic changes observed on small-bowel biopsy specimens, which confirms diagnosis.
- Poor glucose absorption as evidenced by a glucose tolerance test.
- Decreases in albumin, calcium, sodium, potassium, cholesterol, and phospholipids.
- Possible decreases in hemoglobin and hematocrit levels, white blood cell (WBC) counts, and platelet counts.
- Immunologic assay screen is positive for celiac disease.
- Serology testing looks for the presence of specific antibodies that indicate an immune reaction to gluten.
- Genetic testing for human leukocyte antigens (HLA-DQ2 and HLA_DQ8) can be used to rule out celiac disease.
- High fat content in stool specimens.

Nursing consideration: It is important that patients be tested for celiac disease BEFORE trying a gluten-free diet. If gluten is eliminated from the diet before testing, the results may appear falsely normal (Mayo Clinic, 2020a).

If any of the preceding tests indicate the presence of celiac disease, it is most likely that the healthcare provider will order one of the following tests (Mayo Clinic, 2020a):
- **Endoscopy**: Conducted to enable a view of the small intestine and take a biopsy for analysis.
- **Capsule endoscopy**: The patient swallows a capsule that contains a minute wireless camera that takes pictures of the small intestine. As the capsule moves through the digestive tract thousands of pictures are taken. The pictures are transmitted to a recorder.

Treatment. The foundation of treatment is a strict, lifelong adherence to a gluten-free diet (Mayo Clinic, 2020a). Patients and families must be educated about what foods, besides wheat, contain gluten. These include the following (Mayo Clinic, 2020a; Meadows-Oliver, 2019):
- Barley.
- Bulgur.
- Durum.
- Farina.
- Graham flour.
- Malt.
- Rye.
- Semolina.
- Spelt (a form of wheat).
- Triticale.

Nursing consideration: A referral to a nutritionist is important. The nutritionist can help patients and families make informed choices and plan a suitable diet (Meadows-Oliver, 2019). A gluten-free diet helps to heal the villous atrophy and promotes symptom resolution. Following a gluten-free diet helps to prevent complications in the future, including malignancy development (Celiac Disease Foundation, 2021).

The recommended diet is a high-protein, low-fat, high calorie diet that includes corn and rice products, soy and potato flour, and fresh fruits. Additionally, infants may have breast milk or soy-based formula (Celiac Disease Foundation, 2021).

If the patient is anemic or severe nutritional deficiencies are present, healthcare providers might recommend that supplements be taken, including the following (Mayo Clinic, 2020a):
- Copper.
- Folate.
- Iron.
- Vitamin B-12.
- Vitamin D.
- Vitamin K.
- Zinc.

Nursing consideration: Supplements and vitamins are typically taken in pill form. However, if the digestive tract is not able to absorb prescribed supplements, they may need to be administered via injection (Mayo Clinic, 2020a).

If the small intestine has sustained severe damage, steroids may be prescribed to control inflammation. Steroids can help to reduce severe signs and symptoms. If the patient has refractory celiac disease the small intestine will not heal. Patients with refractory celiac disease should be evaluated in a specialized center. This disease can be very serious. To date, there is no proven effective treatment (Mayo, 2020a).

There are a significant number of foods that are allowed on a gluten-free diet. These include the following (Mayo Clinic, 2020a):
- Eggs.
- Fresh meats, fish, and poultry that have not been breaded, batter-coated, or marinated.

- Fruits.
- Lentils.
- Most dairy products, unless some of the products exacerbate symptoms.
- Nuts.
- Potatoes.
- Vegetables.
- Wine, distilled liquors, ciders, and spirits.

The grains and starches allowed on a gluten-free diet include the following (Mayo Clinic, 2020a):

- Amaranth.
- Buckwheat.
- Corn.
- Cornmeal.
- Gluten-free flours (rice, soy, corn, potato, bean).
- Pure corn tortillas.
- Quinoa.
- Rice.
- Tapioca.
- Wild rice.

Self-Assessment Question 2

Which of the following actions is acceptable for a person with celiac disease?

a. Incorporate farina into the diet.
b. Eliminate corn from the diet.
c. Reduce the amount of zinc ingested in the diet.
d. Include buckwheat in the diet

Nursing Interventions

Emotional support is critical for patients and their loved ones. Nurses, via education and empathy, must help patients and families to deal with a chronic disease that requires life-style changes for life. Ensuring a consult with a nutritionist is also critical. The complexities of diet for patients with celiac disease necessitate professional consultation and ongoing monitoring (Meadows-Oliver, 2019).

Patients and families should be educated to avoid packaged foods unless they are clearly labeled as gluten-free or have no gluten-containing ingredients such as emulsifiers. Reading labels is an essential skill when purchasing food. In addition to cereals, pastas, and baked goods, other packaged foods that can contain gluten include the following (Mayo Clinic, 2020a):

- Beers, lagers, ales, and malt vinegars.
- Candies.
- Gravies.
- Imitation meats and seafood.
- Processed luncheon meats.
- Rice mixes.
- Salad dressings and sauces, including soy sauce.
- Seasoned snack foods (e.g., potato chips).
- Seitan (a food made from gluten).
- Self-basting poultry.
- Soups.

Nursing consideration: Although pure oats are not harmful for the majority of patients with celiac disease, oats may be contaminated by wheat during growing and processing. Patients and families should consult with their healthcare providers regarding eating small amounts of pure oat products (Mayo Clinic, 2020a).

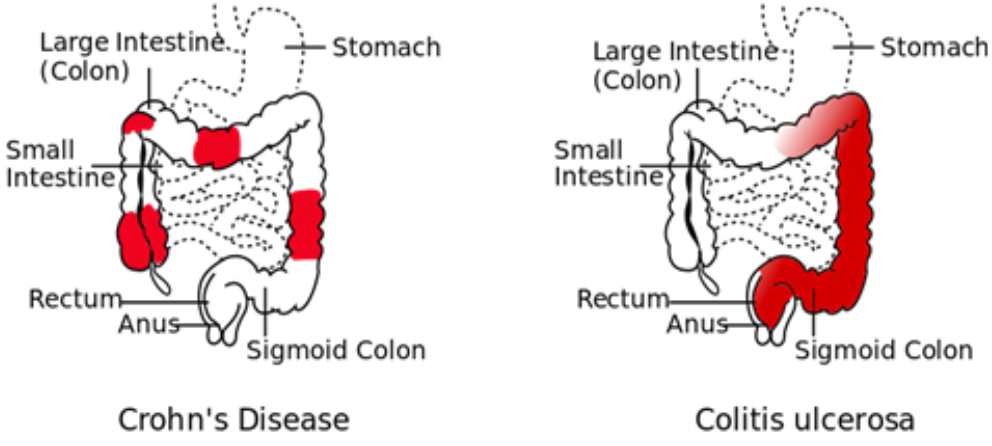
Patients and families may benefit from participating in a support group. Support resources include the following:

- National Celiac Association: 1-888-4-CELIAC https://nationalceliac.org/celiac-disease-support-groups/
- Gluten Intolerance Group: 1-253-833-6655 https://gluten.org/
- Hospitals, social services organizations, and healthcare providers can make recommendations regarding local support groups.

Crohn's disease

Crohn's disease is a chronic, idiopathic inflammatory bowel disease and is categorized under the spectrum of chronic idiopathic inflammatory bowel disease (IBD; Feuerstein & Cheifetz, 2017). The other most common type IBD is colitis ulcerose, which will be discussed later in this education program (Mayo Clinic, 2021d). The differences between Crohn's disease and colitis ulcerosa are shown in Figure 3.

Figure 3. Crohn's Disease vs Colitis Ulcerosa



Note. The red areas indicate the portions of the colon that are typically inflamed.
(Wikipedia Commons, 2021)v

Crohn's disease typically affects the distal ileum and colon but may occur in any part of the gastrointestinal (GI) tract. Effects of Crohn's disease can extend through all layers of the intestinal wall and may also involve regional lymph nodes and the mesentery (Gersch et al., 2017; Merck Manual, 2020a).

Evidence-based practice! Research shows that Crohn's disease peaks at two specific age ranges: between 15 and 30 and again at 60 to 70 years of age. Women are more often affected than men during the age range of 60-70 (Gersch et al., 2017). These age ranges should be considered when evaluating patients. The disease is most often diagnosed in adolescents and adults between the ages of 20 and 30 (Crohn's & Colitis Foundation, 2021b).

Pathophysiology and Assessment

Crohn's disease starts with crypt (glands of the intestinal lining) inflammation and abscesses, which evolve into tiny focal aphthoid ulcers (mucosal lesions). These lesions may advance into deep longitudinal and transverse ulcers accompanied by mucosal edema, which creates the characteristic cobblestoned appearance of the bowel (Merck Manual, 2020a).

Bowel thickening causes stenosis of the bowel, which can occur in any part of the intestine and cause varying degrees of intestinal obstruction (Rebar et al., 2019).

Abscesses are common. Fistulas frequently penetrate adjoining structures and may even extend into the skin of the anterior abdomen or flanks (Merck Manual, 2020a).

Evidence-based practice! Research shows that perianal fistulas and abscesses occur in 25% to 33% of cases of Crohn's disease. These complications can be the most problematic aspects of the disease (Merck Manual, 2020a).

- As the inflammation of Crohn's disease progresses, evident pathophysiology includes the following (Rebar et al., 2019):
- As lymph nodes enlarge the lymph flow in the submucosa is impeded.
- Lymph flow obstruction leads to edema, ulceration of the mucosa, fissures, abscesses, and, possibly, granulomas.
- Peyer's patches form. These patches are oval, elevated, closely packed lymph follicles.
- Fibrosis develops, causing further thickening of the walls of the bowel, stenosis, and/or narrowing of the lumen.
- Inflamed loops of the bowel adhere to not only other diseased portions of the bowel, but to healthy portions as well.
- The diseased parts of the bowel continue to thicken and narrow.

Complications. Anal fistula is the most common complication. Fistulas may develop to the bladder, vagina, or even in the area of an old scar. Additional complications include the following (Rebar et al., 2019):

- Intestinal obstruction.
- Nutrient deficiencies.
- Fluid and electrolyte imbalances.
- Peritonitis.

There is also a long-term risk of colorectal cancer (Merck Manual, 2020a). Patients and families should be taught to monitor for signs and symptoms of colorectal cancer and adhere to screening guidelines.

Risk factors. Crohn's disease appears to be initiated by alterations in intestinal microbes or alterations in the mucosa of the intestine. Gastrointestinal (GI) infections, nonsteroidal anti-inflammatory drugs, and antibiotics have been implicated in the development of inflammatory bowel disease (IBD). However, none of these types of associations have been substantiated with large epidemiological studies (Feuerstein & Cheifetz, 2017).

Cigarette smoking, the best-studied environmental risk factor, doubles the risk of developing Crohn's disease. It is important to note that the risk is increased in both current and former smokers (Feuerstein & Cheifetz, 2017).

Nursing consideration: Family history may be linked to an increased risk for the development of Crohn's disease. However, only 10% to 25% of patients with IBD have a first-degree relative with the disease. More than 200 genes have been associated with IBD development, making genetic specificity difficult (Feuerstein & Cheigetz, 2017).

Diagnosis and Treatment.

Diagnosis. Various conditions can mimic Crohn's disease. Examples of conditions that present with similar signs and symptoms include appendicitis, Behcet disease, and ulcerative colitis (Feuerstein & Cheifetz, 2017).

The diagnosis of Crohn's disease is made based on signs and symptoms and some diagnostic tests. It is important to know which part of the gastrointestinal tract is affected by the disease. Signs and symptoms may vary depending on what type of Crohn's disease a patient has (Crohn's & Colitis Foundation, 2021a)

Types of Crohn's disease based on affected part of the gastrointestinal tract are as follows (Crohn's & Colitis Foundation, 2021a):

- **Ileocolitis**: Ileocolitis is the most common type of Crohn's disease. It affects the terminal ileum and the colon. Symptoms associated with ileocolitis include cramps, diarrhea, and pain in the lower right abdominal quadrant.
- **Ileitis**: Ileitis affects only the ileum. Symptoms are the same as ileocolitis. If the disease is severe, complications may develop including fistulas or inflammatory abscesses in the right lower abdominal quadrant.
- **Gastroduodenal Crohn's Disease**: Gastroduodenal Crohn's disease affects the stomach and the duodenum. Symptoms may include nausea, vomiting, loss of appetite, and weight loss.
- **Jejunoileitis**: Characterized by patchy areas of inflammation of the jejunum, jejunoileitis may cause mild to intense abdominal pain and cramps after meals, diarrhea, and fistulas that may form in severe cases or after lengthy periods of inflammation.
- **Crohn's (Granulomatous) Colitis**: Crohn's colitis affects only the colon. Its symptoms may include diarrhea, rectal bleeding, and disease around the anus (e.g., abscess, fistulas, and ulcers). Skin lesions and joint pain are more common in this type of Crohn's disease than others.

Both types of IBD (Crohn's disease and ulcerative colitis) have similar symptoms but are not the same disease and affect different areas of the gastrointestinal tract. Differences include the following (Crohn's & Colitis Foundation, 2021a):

- **Crohn's Disease**: May affect any part of the gastrointestinal tract from mouth to anus. Can affect the entire thickness of the bowel wall.
- **Ulcerative Colitis**: Only the colon and rectum are affected. The disease affects the inner-most lining of the colon.

Nurses must be aware of these differences, which are important as part of the diagnostic and treatment process.

Self-Assessment Question 3

Which type of Crohn's disease affects the terminal ileum and the colon?

a. Ileitis.
b. Ileocolitis.
c. Jejunoileitis.
d. Gastrointestinal.

Various diagnostic test results support a diagnosis of Crohn's disease. These include the following (Rebar et al., 2019):

- **Fecal occult test**: Minute amounts of blood in the stool.
- **X-rays of the small intestine**: Irregular mucosa, ulceration, and stiffening.
- **Barium enema**: The string sign, which occurs when segments of stricture are separated by normal bowel. Fissures, ulceration, and narrowing of the bowel may be observed.
- **Sigmoidoscopy and colonoscopy**: Patchy areas of inflammation are observed. (This sign helps to rule out ulcerative colitis). The surface of the mucosa has a cobblestone appearance. Ulcers may be seen if the colon is affected.

Nursing consideration: Colonoscopy has been found to be more accurate than barium enema in assessing the degree of inflammation present (Rebar et al., 2017). Since repeated testing can be quite stressful, patients need to understand that a combination of these test are typically used since no one test is definitive.

Treatment. Lab tests should be conducted every 1 to 2 years to detect vitamin D and B12 deficiencies. Additional lab tests are conducted to screen for anemia, hypoalbuminemia, additional vitamin deficiencies, and electrolyte abnormalities. Any nutritional deficiencies may be treated with supplements and, possibly, dietary alterations (Merck Manual, 2020a).

Nursing consideration: In general, treatment requires drug therapy, lifestyle changes, and, possibly, surgery. When acute attacks occur, it is imperative that fluid and electrolyte balance is maintained. If patients are debilitated, parenteral nutrition is prescribed to ensure adequate caloric and nutrition intake while allowing the bowel to rest (Merck Manual, 2020a; Rebar et al., 2019).

General Treatment Interventions. For relief of cramps and diarrhea, oral loperamide, 2 to 4 mg or antispasmodic drugs can be taken up to four times a day, preferably before meals. These drugs are typically safe for patients. However, if the patient is suffering from severe, acute Crohn colitis (that may progress to toxic colitis and bowel obstruction), antidiarrheal and antispasmodic drugs are not used (Comerford & Durkin, 2021; Merck Manual, 2020).

Hydrophillic mucilloids such as methylcellulose are sometimes given to help prevent anal irritation by increasing the firmness of the stool. Patients should avoid dietary roughage in cases of structuring or active colonic inflammation (Merck Manual, 2020a).

Mild to Moderate Disease. Patients with mild to moderate disease are ambulatory, tolerate oral intake, and are without signs of toxicity, tenderness, masses, or obstruction. In mild to moderate disease cases, first-line treatment is 5-ASA (mesalamine). However, benefits from 5-ASA drugs appear to be limited. Several experts do not recommend using them in small-bowel Crohn disease (Comerford & Durkin, 2021; Merck Manual, 2020a). Antidiarrheals are used to control diarrhea, but not in patients who have significant bowel obstruction (Rebar et al., 2019).

Some experts prescribe antibiotics as first-line treatment, while others reserve antibiotics for patients not responding to 4 weeks of 5-ASA (Merck Manual, 2020a). The use of antibiotics is not definitive. Results from a 2019 study suggest that benefits provided by antibiotics in active Crohn's disease are probably very modest. The effects of antibiotics on preventing Crohn's disease relapse are uncertain. No definitive conclusions were drawn, and more research is needed to identify the risks and benefits of antibiotic therapy in Crohn's disease (Cochrane, 2019).

Moderate to Severe Disease. Patients are considered to have moderate to severe disease if they are without fistulas or abscesses but are in significant pain and have tenderness, fever, and/or vomiting, or patients who have been non-responsive to mild disease treatment interventions (Merck Manual, 2020a).

Administration of corticosteroids, either oral or parenteral, frequently provides swift relief of symptoms. Corticosteroids such as prednisone or prednisolone reduce diarrhea, pain, and bleeding by decreasing inflammation. If patients do not respond to corticosteroids, they must not be maintained on these types of drugs (Comerford & Durkin, 2021; Merck Manual, 2020a). Aminosalicylates such as sulfasalazine (Azulfidine) are also used to decrease inflammation (Rebar et al., 2019).

Immunosuppressants such as azathioprine (Azasan) and mercaptopurine (Purinethol) are prescribed to suppress the body's response to antigens (Rebar et al., 2019). These types of drugs have a positive impact for most patients. If immunosuppressant therapy does not work in patients who are not candidates for surgery, biologic agents such as vedolizumab may be used (Merck Manual, 2020a). If patients fail to respond to conventional treatment, an antitumor necrosis factor agent (infliximab) may be given (Rebar et al., 2019).

Bowel obstruction is managed with nasogastric suction and intravenous (IV) fluids. Obstruction in uncomplicated Crohn disease should resolve within a few days, However, failure to respond suggests a complication or other etiologies and immediate surgery is required (Merck Manual, 2020a).

Fulminant Disease, Abscesses, Fistulas. Fistulas are typically treated with metronidazole and ciprofloxacin. If patients fail to respond within 3 to 4 weeks they may receive an immunomodulator (e.g., azathioprine). Fistulas often relapse (Merck Manual, 2020a).

Patients who present with toxicity, high fever, persistent vomiting, or a tender or palpable mass must be hospitalized for administration of IV fluids and antibiotics. Abscesses must be drained either percutaneously or surgically (Merck Manual, 2020a).

Nursing consideration: Surgery is necessary in cases of bowel perforation, massive hemorrhage, fistulas unresponsive to medication, or acute intestinal obstruction. A colectomy with ileostomy may be performed in patients who have extensive disease of the colon and rectum (Rebar et al., 2019).

Lifestyle Changes. Lifestyle changes are an integral part of the treatment plan. Patients must try to reduce the stressors in their lives as well as reducing physical activity to allow the bowel to rest (Rebar et al., 2019).

Dietary changes are implemented to decrease bowel activity while still providing adequate nutrition. Suggestions for meal planning and intake include recommending the following actions for patients to implement (Crohn's & Colitis Foundation, 2021c):

- Eat four to six small meals daily rather than three large meals.
- Stay hydrated with water, broth, tomato juice, or a reduction solution.
- Drink beverages slowly. Avoid using a straw, which can cause the ingestion of air that leads to flatulence.
- Prepare meals in advance. Keep foods that are well tolerated on hand.
- Use simple methods to cook such as boiling, grilling, steaming, and poaching.
- Use a food journal to keep track of what is eaten and what foods cause or exacerbate symptoms.

The Crohn's and Colitis Foundation (2021c) suggests that patients avoid the following foods when experiencing a flare-up of the disease:

- Insoluble fiber foods that are difficult to digest including raw green vegetables, fruits with skin and seeds, whole nuts, and whole grains.
- Lactose, the sugar found in dairy products such as milk and cream.
- Non-absorbable sugars that are found in sorbitol, mannitol, sugar-free gum, candy, and ice cream.
- Foods that are high in sugar such as baked goods, candy, and juices.
- High-fat foods including butter, coconut, margarine, cream, and foods that are fatty, fried, or greasy.
- Alcohol and caffeinated beverages including beer, wine, liquor, coffee, and soda.

Nursing Interventions

Nurses have a great deal of responsibility to provide effective patient/family education. Education topics of particular importance include the following (Rebar et al., 2019):

- Medication.
- Stress reduction.
- Diet and nutrients.
- Emotional support and counseling.
- Lifestyle changes and how to implement them.

During hospitalization nurses should carefully monitor patients' intake and output and weight and monitor for signs of dehydration. It is important for patients to be monitored for fever and pain on urination, which may suggest the development of a bladder fistula. Abdominal pain, fever, and a hard distended abdomen are signals of an intestinal obstruction (Rebar et al., 2019).

If patients have an ileostomy, they must be able to demonstrate proper ostomy care and should have a consultation with an ostomy therapist. Patients should also be referred to support groups and counseling as needed (Rebar et al., 2019).

Type 1 diabetes

James Patten is a 25-year-old who has recently accepted his first position as a clinical engineer. He has worked hard to earn this job and is eager to excel. He has developed annoying symptoms over the past 4 weeks. These include severe thirst, extreme hunger, frequent urination, and unintentional weight loss. James' healthcare provider told him he has type 1 diabetes. His first response is, "That can't be right. Only kids get this kind of diabetes! You have made a mistake." James's response is not unusual. However, experts now know that type 1 diabetes can also develop in adults.

Type 1 diabetes (T1D) is an autoimmune disease that develops when the pancreas stops producing insulin. People can be diagnosed with T1D at any age, but it is the most common childhood endocrine disorder (Meadows-Oliver, 2019).

An estimated 1.6 million Americans are living with T1D, including about 200,000 youth (people less than 20 years of age) and 1.4 million adults (people 20 years of age and older; JDRF, n.d.).

Statistics that indicate the probable future development of T1D and its significance include the following (JDRF, n.d.):

- About 64,000 people in the US are diagnosed with T1D each year.
- It is expected that five million people in the US will have T1D by 2050, including almost 6,000,000 youth.
- In the US, there are $16 billion in T1D-associated healthcare costs and lost income annually.
- Less than 33% of people with T1D in the US are consistently achieving target blood-glucose control levels.

Pathophysiology

In T1D, the beta cells of the pancreas are destroyed or suppressed. The disease is divided into two types: idiopathic and immune-mediated. Idiopathic T1D causes a permanent insulin deficiency with no evidence of autoimmunity. In immune-mediated T1D there is an autoimmune attack on beta cells. This type of attack causes an inflammatory response known as insulitis (Rebar et al., 2019).

Evidence-based practice! Research shows that by the time signs and symptoms are evident, 80% of beta cells have been destroyed (Rebar et al., 2019).

Although signs and symptoms occur rather abruptly, it can take months or even years for enough beta cells to be destroyed before these signs and symptoms appear. Signs and symptoms, once evident, can be severe (Centers for Disease Control and Prevention (CDC)), (2021c).

Nursing consideration: Symptoms of T1D are similar to those of other health conditions. Nurses must encourage patients to immediately seek medical help if signs and symptoms develop. Untreated T1D can lead to severe, even fatal, health conditions (CDC, 2021c).

The development of T1D typically occurs in three stages (Lucier & Weinstock, 2021):

- **Stage 1**: Stage 1 is characterized by a lack of symptoms and a normal fasting glucose, normal glucose tolerance, and the presence of greater than, or equal to, two pancreatic autoantibodies.
- **Stage 2**: Stage 2 diagnostic criteria include the presence of greater than or equal to 2 pancreatic autoantibodies and dysglycemia (glucose of 100 to 125 mg/dl), impaired glucose tolerance (2-hour PG of 140 to 199 mg/dL), or a hemoglobin A1C between 5.7% to 6.4%. Patients remain asymptomatic.
- **Stage 3**: In Stage 3 the patient has hyperglycemia with clinical symptoms and two or more pancreatic autoantibodies.

Etiology. The exact cause of T1D is unknown. However, several risk factors and possible trigger factors have been identified, including the following:

- **Genetics**: Having a family history of T1D puts people at greater risk of developing the disease. However, the majority of diagnoses are found in people who have no family members with the disease (JDRF, n.d.).
- **Viral Infections**: Viral infections may be triggers for T1D development (JDRF, n.d.).
- **Geography**: The further away from the equator a person lives, the greater the incidence of T1D (Mayo Clinic, 2021c).
- **Age**: Although T1D can occur at any age, it seems to peak at two specific age ranges. The first peak appears in children between the ages of 4 and 7 years old. The second peak is in children between the ages of 10 and 14 years old (Mayo Clinic, 2021c).

Nursing consideration: Unlike type 2 diabetes, no dietary changes can be made to prevent the onset of T1D. Likewise, lifestyle factors such as exercise and weight do not contribute to T1D development (JDRF, n.d.). Some insulin regimens can be very expensive, so this should be discussed with patients to help them avoid skipping doses.

Complications. Maintaining a normal blood glucose level can significantly reduce the occurrence of complications. Such complications may be disabling or even fatal. Without insulin to facilitate the entry of glucose into the cells, blood glucose levels increase and complications may be likely (Mayo Clinic, 2021c).

Complications linked to T1D include the following (Mayo Clinic, 2021c):

- **Cardiac and vascular diseases**: T1D radically increases the risk of cardiovascular diseases such as coronary artery disease (CAD), angina, heart attack, stroke, atherosclerosis, and hypertension.
- **Neuropathy**: Excessive blood glucose levels may injure the capillaries that nourish the nerves. Symptoms of neuropathy include tingling, numbness, and burning or pain that typically starts at the tips of the toes or fingers and spreads gradually. If blood glucose levels are not controlled, all sensation may be lost in the affected limbs. If the nerves of the gastrointestinal tract are damaged, patients may suffer from nausea, vomiting, diarrhea, or constipation. In men, erectile dysfunction may occur.
- **Diabetic retinopathy**: If the blood vessels of the retina are damaged, the patient may go blind. Other conditions linked to diabetic retinopathy include cataracts and glaucoma.
- **Damage to the feet**: Nerve damage or reduced blood flow to the lower extremities increases the risk of complications to the feet. Without treatment, even minor cuts and blisters can become quite serious, leading to infections that may eventually require the amputation of toes, feet, or leg(s).
- **Skin and mouth issues**: Patients may be more vulnerable to skin and mouth infections including those caused by bacteria and fungi. Disease of the gums and dry mouth are also likely.
- **Pregnancy issues**: If the T1D is poorly controlled in pregnant females, the risk of miscarriage, stillbirth, and birth defects increases. The risk of diabetic ketoacidosis, retinopathy, pregnancy induced hypertension, and preeclampsia may also increase.

Diabetic ketoacidosis (DKA) is a serious, acute metabolic complication characterized by hyperglycemia, hyperketonemia, and metabolic acidosis. DKA is most common in patients with T1D and occurs when insulin levels are inadequate to meet the body's basic metabolic requirements. Hyperglycemia causes osmotic diuresis with severe fluid and electrolyte loss (Merck Manual, 2020b).

Signs and symptoms of DKA include nausea, vomiting, and (especially in children) abdominal pain. If untreated, significant decompensation can occur. Patients may display hypotension and tachycardia because of dehydration and acidosis. To compensate for acidemia, respirations increase in rate and depth (Kussmaul respirations). The patient's breath may have a fruity odor because of exhaled acetone (Merck Manual, 2020b).

Treatment consists of rapid intravascular volume repletion with 0.9% saline given IV, correction of hyperglycemia and acidosis, and prevention of hypokalemia. Treatment should take place in critical care settings because of the need for hourly clinical and laboratory assessments with necessary adjustments indicated by assessment results (Merck Manual, 2020b).

Assessment and Diagnosis

Patients are assessed for common symptoms of T1D. These include the following (Mayo Clinic, 2021c; Rebar et al., 2019):

- Increased thirst.
- Extreme hunger.
- Frequent urination.
- Unintended weight loss
- Fatigue.
- Weakness.
- Blurred vision.
- Irritability.
- Mood changes.
- In children, bed-wetting in those who did not previously wet the bed at night.

A thorough history and physical are conducted to help rule out other conditions. In addition to history, physical, and a review of signs and symptoms, several diagnostic tests are performed. These include the following (Mayo Clinic, 2021c; Rebar et al., 2019):

- **Glycated hemoglobin (A1C) test**: The A1C is a blood test that reports average blood glucose levels for the past 2 to 3 months. The test measures the percentage of blood glucose that is attached to the body's hemoglobin. The higher the glucose levels, the higher the percentage of hemoglobin with attached glucose. An A1C level of 6.5% or higher on two separate tests is an indicator of T1D.
- **Random blood glucose test**: This test requires that a blood sample be obtained at a random time and confirmed by repeat testing. A random blood glucose level of 200 mg/dL or higher suggests T1D, particularly if the patient has signs and symptoms of T1D.
- **Fasting blood glucose test:** The fasting blood glucose test requires that a blood sample be obtained following an overnight fast. A fasting blood glucose level of less than 100 mg/dL is normal. A level from 100-125 mg/dL is classified as prediabetes. A level of 126 mg/dL or higher on two separate tests is diagnostic for T1D.
- **Antibody test:** If a diagnosis of diabetes is made, the healthcare provider may order blood tests to check for antibodies that are common in T1D. Presence of antibodies helps to differentiate between T1D and type 2 diabetes when the diagnosis is uncertain.

Nursing consideration: Certain conditions such as pregnancy or having a hemoglobin variant may interfere with the accuracy of the A1C test. In these types of cases, the healthcare providers will rely on additional blood tests to determine an accurate diagnosis.

Self-Assessment Question 4

A young pregnant female is being evaluated for T1D. Which of the following statements are accurate in this situation?

a. Two separate fasting blood glucose tests with a result of 126 mg/dL are diagnostic for diabetes.
b. The A1C test is the best diagnostic test to determine T1D in pregnant females.
c. Random blood glucose tests are contraindicated for pregnant females.
d. The glycated hemoglobin test indicates the average blood sugar for the past 2 to 4 weeks.

Treatment

T1D is managed with a variety of insulins. Patients, families, and the healthcare team must work together to find the best treatment regimen. Types of insulin may include the following (JDRF, n.d.):

- **Rapid acting**: Starts working in about 15 minutes after injection. It peaks in about 1 hour and continues for about 2 to 4 hours after injection. Examples include aspart (Novolog), glulisine (Apidra), and lispro (Humalog).
- **Regular or short acting**: Starts working 30 minutes after injection, peaks from 2 to 3 hours after injection, and continues to work for about 3 to 6 hours. An example is Humulin R.
- **Intermediate acting**: Starts working 2 to 4 hours after injection. It peaks about to 12 hours later and lasts 12 to 18 hours. An example is Novolin N.
- **Long acting**: Long acting is often combined with rapid or short acting insulin. It starts to work several hours after injection and tends to lower glucose levels up to 24 hours. An example is Lantus.
- **Ultra-long lasting**: Starts to work in 6 hours, but it does not peak and lasts an estimated 36 hours. An example is Tresiba.

Insulin is administered in a variety of ways. Historically, insulin was administered via injection using a syringe. Today, other options are available including the following (CDC, 2021a; JDRF, n.d.):

- **Insulin pen**: Some pens use cartridges that are inserted into the pen while others are pre-filled and discarded after all insulin is used. The dose of insulin is dialed on the pen and the insulin is injected through a needle.
- **Insulin pump**: About the size of a small cell phone, insulin pumps provide a basal dose of short or rapid-acting insulin per hour. When blood sugar is high, the patient calculates the dose and the insulin in the pump delivers the bolus.
- **Artificial pancreas**: The artificial pancreas is a hybrid closed-loop system that requires minimal patient intervention. It is a combination of the technology of a pump with that of a continuous glucose monitor.
- **Inhaled insulin**: Inhaled insulin is taken by using an oral inhaler to deliver ultra-rapid-acting insulin at the start of meals. Inhaled insulin is used in conjunction with an injectable long-acting insulin.
- Additional treatment interventions include having personalized meal plans designed to meet nutritional needs, control blood glucose levels, and help patients maintain ideal body weight. With the guidance of healthcare providers, patients should participate in regular exercise. Patients should be cautioned that physical activity lowers blood glucose levels. Thus, blood glucose levels should be monitored frequently. Patients may need to adjust their meal plans or insulin to compensate for increased physical activity (Mayo Clinic, 2021c; Rebar et al., 2019).

Nursing Interventions

Nursing interventions focus on education and emotional support. Patients and families need education pertaining to meal planning, exercise, and insulin administration. Emotional support is also critical to the success of any treatment regimen (Rebar et al., 2019).

Patients and families also need information about potential complications, how to recognize them, and what to do if they occur. It is recommended that families pay special attention to the issue of complications. Teachers should be informed that a child is diabetic and they must be aware of emergency procedures. In some cases, patients experiencing complications (such as DKA) may not be able to articulate the need for help or describe their symptoms at the time. It is, therefore, absolutely essential that family members and other caretakers be able to intervene correctly in the event that complications occur (Rebar et al., 2019). DKA is a medical emergency and must be treated immediately.

Systemic lupus erythematosus

Systemic lupus erythematosus (commonly referred to as lupus) is a chronic, inflammatory, autoimmune disorder that affects the connective tissues (Rebar et al., 2019). The determination of incidence and prevalence of lupus is a challenge. There are several issues that make it difficult to collect accurate data. These include the following (Lupus Foundation of America, 2020; National Resource Center on Lupus, 2021):

- Difficulty in deciding what constitutes a case of lupus. There are multiple types of lupus and they have overlapping signs and symptoms.
- There is no specific test for the diagnosis of lupus. An estimated 40% of people with lupus report that their healthcare providers initially said that they had some disorder other than lupus.
- Twenty-three percent of patients were told that their problems were psychological, not physical.
- No two cases of lupus are the same, which makes it difficult to recognize and diagnosis the disease.

Nursing consideration: The Lupus Foundation of America estimates that 1.5 million Americans are living with a form of lupus (National Resource Center on Lupus, 2021). Nurses must support ongoing lupus research and be alert to the signs and symptoms that suggest the disease.

Lupus can affect anyone. It is diagnosed in women, men, children, and even newborns. It is much more common in women than in men. About 90% of diagnosed cases of lupus are women of reproductive age. Women are often diagnosed between the ages of 15 and 44. Lupus is also more prominent in certain ethnicities including African American, Hispanic, Asian, and Native American women compared to Caucasian women (Cleveland Clinic, 2021).

Pathophysiology

The exact etiology of lupus is unknown. However, experts believe that the primary cause is autoimmunity, along with environmental, hormonal, genetic, and (possibly) viral factors. In autoimmune diseases, the body produces antibodies against its own cells. A significant factor in the pathophysiology of lupus is the production of antibodies that attack various tissues of the body. These include red blood cells (RBCs), neutrophils, platelets, lymphocytes, or almost any organ or tissue (Rebar et al., 2019).

Risk Factors. The majority of people with lupus have a genetic predisposition for the disease (Rebar et al., 2019). Additional risk factors include the following (Cleveland Clinic, 2021; Mayo Clinic, 2021a):

- **Sex**: Lupus is more common in females.
- **Age**: Although lupus is diagnosed in all age groups, it is most often diagnosed between the ages of 15 and 45.
- **Race**: Lupus is more common in African Americans, Hispanics, and Asian Americans.
- **Environmental factors:** Although not specifically identified, environmental factors such as the amount of sunlight a person is exposed to, medications taken, stress, and viral infections are being investigated as contributing to the development of lupus.
- **Smoking**: A history of smoking may also increase risk of lupus.

Types of Lupus. Although systemic lupus erythematosus is the most common type of lupus, there are several additional types. These include the following (Cleveland Clinic, 2021):

- **Cutaneous lupus erythematosus**: This type of lupus affects the skin. It is characterized by various skin issues such as photosensitivity and rashes. Hair loss may also occur.
- **Drug-induced lupus**: Certain medications may cause lupus. Rather than being a chronic disease, drug-induced lupus is typically temporary. Usually, this type of lupus resolves after the medication is discontinued. However, in rare instances, symptoms continue even after the medications are stopped.
- **Neonatal lupus**: Neonatal lupus is quite rare. When it does occur, it is found in infants at birth. Infants born with neonatal lupus have antibodies that were passed to them from their mothers, who either had lupus at the time of pregnancy or developed the disease later in life.

Organs Affected by Lupus/Complications. Lupus can affect many different areas of the body, which can lead to complications of various degrees of severity. These include the following (Cleveland Clinic, 2021; Mayo Clinic, 2021a):

- **Blood and blood vessels**: Lupus may cause serious reductions in the number of red blood cells (RBCs), white blood cells (WBCs), and/or platelets. Blood vessel inflammation may also occur.
  These alterations in blood counts may lead to fatigue, anemia, serious infections, and/or easy bruising. Patients are also prone to deep vein thrombosis, pulmonary embolus, and stroke. Blood clot development may be linked to the production of antibodies. Note that patients may not have symptoms that suggest blood and blood vessel abnormalities.
- **Brain and central nervous system (CNS)**: Brain involvement is characterized by headaches, dizziness, behavior changes, vision problems, strokes, and seizures. Memory problems may become evident and patients may have trouble expressing themselves.
- **Heart**: Lupus may cause inflammation of the heart muscle, pericardium, and arteries.
- **Joints**: Arthritis is a common finding in patients who have lupus. Joint pain (with or without swelling) and stiffness are noted, especially in the morning after awakening. Arthritis may last for days or weeks or become permanent.
- **Kidneys**: Kidney complications are found in half of patients with lupus. In fact, kidney damage and kidney failure are one of the leading causes of death in patients with lupus. Kidney disease does not typically cause symptoms until the disease is in the advanced stages.
- **Lungs**: Lung involvement may cause pleural inflammation, pneumonia, and bleeding into the lungs.
- **Skin**: Skin problems are common in patients with lupus. These include a characteristic red rash over the cheeks and the bridge of the nose, plaques, skin rashes exacerbated by sunlight, hair loss, and mouth sores.

Other types of complications associated with lupus include the following (Mayo Clinic, 2021a):

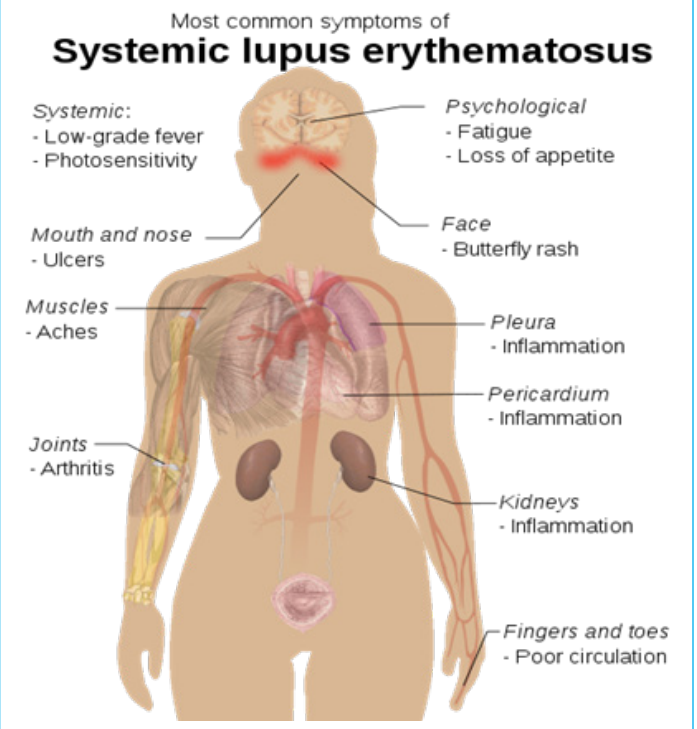
- **Infection**: Patients with lupus are more susceptible to infections because the disease and its treatments weaken the immune system.
- **Malignancies**: Having lupus leads to a small risk of increased vulnerability to malignancies.
- **Death of bone tissue**: When the bone's blood supply is reduced, tiny breaks in the bone may occur, leading to the collapse of the bones.
- **Complications of pregnancy**: Lupus increases the risk of miscarriage, pregnancy-induced hypertension, and preterm birth. Healthcare providers often recommend that women should delay pregnancy until the disease has been under control for at least 6 months.

Assessment and Diagnosis

Making a diagnosis of lupus is challenging because signs and symptoms vary considerably among patients and may change overtime. These signs and symptoms are also common to many other diseases (Mayo Clinic, 2021a).

Healthcare providers will conduct a thorough history and physical and carefully review patients' signs and symptoms. Detailed descriptions of signs and symptoms are found in the section on pathophysiology. As a summary, Figure 4 displays the most common signs and symptoms of lupus.

Figure 4. Most Common Symptoms of Lupus Erythematosus



Note. From Haggstrom, M., 2009

Laboratory Tests. Although no single test can diagnose lupus, several tests are used to help determine diagnosis. Tests include the following (Mayo Clinic, 2021a; Rebar et al., 2019):

- **Complete blood count (CBC)**: Results may show anemia and/or a reduced white blood count (WBC), both of which may occur in lupus.
- **Serum electrophoresis**: Serum electrophoresis may show hypergammaglobulinema.
- **Chest X-rays**: Chest X-rays may reveal pleurisy or lupus pneumonitis.
- **Kidney and liver assessment**: Blood tests may be ordered to help assess kidney and liver functioning.
- **Urinalysis**: Urinalysis may show elevated protein levels or the presence of RBCs in the urine.
- **Antinuclear antibody (ANA) Test**: A positive test for the presence of antibodies suggests a stimulated immune system. Most people with lupus have a positive ANA test. However, most people with a positive ANA test do not have lupus. A positive ANA test calls for more-specific antibody testing.
- **Echocardiogram**: Echocardiograms may show cardiac abnormalities.

Treatment

Lupus is a chronic condition that needs ongoing management. The overall goals of treatment are to promote remission of symptoms and limit the damage that the disease does to patients' organs (Cleveland Clinic, 2021).

Nursing consideration: Lupus is an unpredictable disease that can change with time. This means that treatment interventions may need to be changed to meet the current state of the disease (Cleveland Clinic, 2021

Medications are the foundation of treatment for lupus. Medications most often prescribed to treat lupus include the following (Cleveland Clinic, 2021; Mayo Clinic, 2021a; Rebar et al., 2019):

- **Corticosteroids**: Corticosteroids such as prednisone are prescribed to reduce the inflammatory process. Steroid creams can be applied directly to rashes. Steroid pills in low doses may be effective for patients with mild to moderate forms of the disease. High doses of steroids such as methylprednisolone (Medrol) are frequently used to control serious disease involving the kidneys and brain and other internal organs. Unfortunately, high doses of steroids often produce side effects. Side effects include weight gain, bruising easily, hypertension, diabetes, and bone diseases such as osteoporosis.

Nursing consideration: Initial prednisone doses of 60 mg or more are typical. Noticeable improvement of the patient's condition is usually apparent within 48 hours. After symptoms are controlled, the dosage is tapered gradually and then discontinued (Rebar et al., 2019).

- **Hydroxychloroquine (Plaquenil)**: Hydroxychloroquine is an antimalarial drug that has been prescribed to help keep lupus-related skin and joint disease under control. It has also been found to be effective in the treatment of fatigue and mouth sores.
- **Azathioprine (Imuran)**: An immunosuppressant, azathioprine (originally used to prevent transplanted organ rejection) is generally used to treat the more serious aspects of the disease.
- **Methotrexate (Rheumatrex)**: Methotrexate is an antineoplastic drug used to suppress the immune system. It has been found to be helpful in the treatment of lupus-related skin disease, arthritis, and other forms of the disease that are not life-threatening. This medication is used for patients who have not responded to drugs such as hydroxychloroquine or low doses of prednisone.
- **Cyclophosphamide (Cytoxan) and mycophenolate mofetil (CellCept)**: These are antineoplastic drugs that significantly reduce immune system activity. They are used to treat more severe forms of lupus, particularly if there is kidney involvement.
- **Belimumab (Benlysta)**: Belimumab is a monoclonal antibody used to reduce the activity of lymphocytes, which produce autoantibodies. Autoantibodies cause tissue damage and their suppression is the reason they are prescribed to treat lupus. Belimumab is used to treat lupus that does not involve the kidneys and has not responded to other interventions.
- **Rituximab (Rituxan)**: Rituximab is a monoclonal antibody that reduces lymphatic activity. It is occasionally used to treat lupus that has not responded to other types of treatments.

Some complementary treatments for lupus include the following (Cleveland Clinic, 2021):

- **Dehydroepiandrosterone (DHEA)**: Supplements that contain this hormone, in conjunction with conventional treatment, may help reduce the occurrence of flares of lupus. DHEA may cause acne in women.
- **Fish oil**: Fish oil supplements that contain omega-3 fatty acids may have some beneficial effects. Research is underway to identify specific effects and how these effects occur. Side effects of fish oil supplements include nausea, belching, and a "fishy" taste.
- **Acupuncture**: Acupuncture may help to ease the muscle pain that is associated with lupus.

Nursing Interventions

Patients may have a difficult time adjusting to a disease that is a life-long problem. Nurses should assess the effectiveness of patients' support systems, which are critical to the health and wellness of a patient with lupus (Mayo Clinic, 2021a; Rebar et al., 2019)

Feelings of helplessness, anger, fear, and frustration are common in patients who have lupus. They are at risk of mental health problems such as depression, anxiety, and low self-esteem. Patients' mental health should be monitored and referrals made to mental health professionals as needed (Mayo Clinic, 2021a).

Nurses are usually the members of the healthcare team who provide medication education to patients and families. Patients and families must demonstrate knowledge of what medications have been prescribed, route, dose, side effects, and what to do if side effects occur (Rebar et al., 2019).

Patients and families should learn all they can about their disease and how to monitor their signs and symptoms. Regular appointments with their healthcare providers are essential for ongoing monitoring and treatment adjustments (Rebar et al., 2019).

Self-Assessment Question 5

An antimalarial drug used to keep lupus-related skin and joint disease under control is:

a. Methotrexate.
b. Azathioprine.
c. Hydroxychloroquine.
d. Belimumab.

Multiple sclerosis (MS)

Multiple sclerosis (MS) is an immune-mediated disease in which an abnormal immune system response is directed against the central nervous system (CNS; National Multiple Sclerosis Society [MS], 2020a). MS is characterized by a progressive demyelination of the white matter of the brain and spinal cord, which can lead to widespread neurological dysfunction (Rebar et al., 2019).

An estimated 2.8 million people throughout the world live with MS. Prevalence of the disease has increased in every region of the world since 2013.The mean age at diagnosis is 32 years of age. Females are twice as likely to live with MS compared to males (Walton et al., 2020).

In the US, results from a recent study funded by the National MS Society confirmed that nearly one million people are living with the disease. This is double the estimate from an earlier study (National MS Society, 2020b).

The majority of people with MS have a relapsing-remitting disease course. These patients experience periods of new symptoms or exacerbations of previous symptoms that take place over days or weeks. Patients usually improve partially or completely after each relapsing period. Relapses are typically followed by periods of disease remission. Remissions can last for months or even years. Other persons may be diagnosed with primary-progressive MS, which is characterized by a steady progression of signs and symptoms without relapse (Mayo Clinic, 2020b).

Evidence-based practice! At least half of patients with relapsing-remitting MS eventually experience a steady progression of symptoms without periods of remission. This is referred to as secondary-progressive MS (Mayo Clinic, 2020b).

Pathophysiology

In MS the immune system destroys myelin (the fatty substance that coats and protects nerve fibers in the spinal cord and brain). Myelin is critical to the transport of electrical impulses to the brain for interpretation. The myelin sheath is a lipoprotein complex that is formed by glial cells. It protects the nerve axon (the neuron's long nerve fiber) similarly to the insulation on electrical wires. (Rebar et al., 2019).

Myelin can be damaged by hypoxemia, toxic chemicals, vascular insufficiency, or autoimmune responses such as those with MS. A summary of the pathological process that occurs when myelin is damaged is as follows (National MS Society, 2020a; Rebar et al., 2019):

- When myelin is damaged the myelin sheath becomes inflamed.
- Inflammation causes the membrane layers of the myelin sheath to break into smaller components.
- The smaller components become circumscribed plaques, which are filled with lymphocytes, microglial elements, and macroglia. This is referred to as demyelination.
- The damaged myelin sheath is unable to appropriately transport messages to the brain. Messages within the CNS are either altered or stopped completely.
- Damage to areas of the CNS produce various neurological symptoms that vary in type and severity.
- Damaged areas develop scar tissue. Areas are multiple, which leads to the name of the disease: multiple sclerosis.

Assessment and Diagnosis

To date, there are no signs, symptoms, physical findings, or laboratory tests that can make a definitive diagnosis of MS. Diagnosis is made based on the findings of a careful physical and mental examination/history, a neurologic exam, lab studies, and imaging studies (National MS Society, 2021).

Before MS can be diagnosed, other causes must be excluded since there are many causes of neurological signs and symptoms. For some people, the diagnostic process may be fairly rapid. For others, it may take quite a bit longer. Waiting for a diagnosis is stressful and frightening. It is crucial that a diagnosis be made as accurately and as quickly as possible so that patients can begin to adjust to the reality of having the disease and treatment can begin as early as possible (National MS Society, 2021).

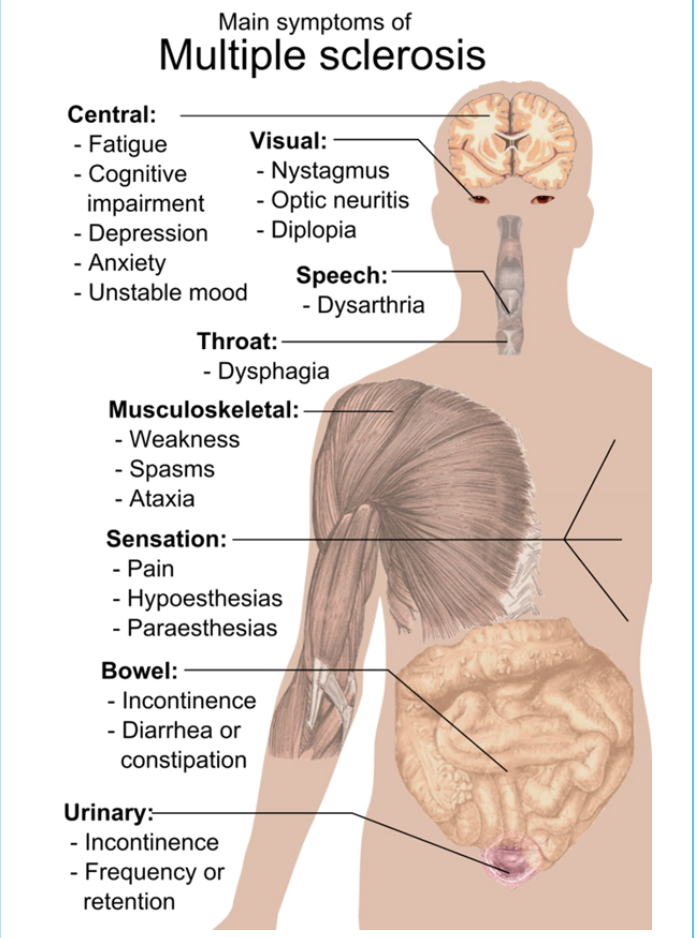
Signs and Symptoms. Assessment of signs and symptoms can be challenging because they are both unpredictable and hard for the patients to describe. Signs and symptoms may be transient or may last for hours or weeks. Typically, there are two general categories of initial symptoms: vision problems (because of optic neuritis) and sensory impairment such as paresthesia (Rebar et al., 2019).

Patients experience a variety of signs and symptoms including the following (Rebar et al., 2019):

- Vision issues such as blurred vision, scotoma, ophthalmoplegia.
- Emotional lability.
- Dysphagia.
- Poorly articulated speech.
- Muscle weakness.
- Muscle spasticity.
- Hyperreflexia.
- Urinary problems.
- Intention tremors.
- Ataxia.
- Bowel problems.
- Cognitive dysfunction.
- Fatigue.
- Varying degrees of paralysis.

Figure 5 provides an overview of the main symptoms of MS.

Figure 5. Main Symptoms of Multiple Sclerosis



Note. From Häggström, 2014

Blood and Imaging Tests. The following tests, while not definitive, can help to make the diagnosis of MS (Mayo Clinic, 2020b; Rebar et al., 2019):

- **MRI**: MRI is the most sensitive method to identify areas of MS lesions on the brain and spinal cord. It is also used to evaluate the progression of the disease.
- **Lumbar puncture**: A sample of cerebrospinal fluid can show elevated immunoglobulin G levels, but normal protein levels. This is significant only when serum gamma O levels are normal, and it reflects immune system hyperactivity because of chronic demyelination. The WBC count may be slightly elevated. Results of a lumbar puncture can help to rule out infections and other disorders with signs and symptoms similar to MS.
- **Evoked potential tests**: These tests record electrical activity produced by the CNS. CNS damage may cause slowing of electrical conduction.
- **Blood tests**: Blood tests help to rule out other disorders with signs and symptoms similar to those of MS. Blood tests may also be used to check for specific biomarkers associated with MS.

Diagnostic Criteria: The Revised McDonald Criteria, published in 2017 by the International Panel on the Diagnosis of Multiple Sclerosis, includes guidelines for using findings from MRIs and lumbar puncture. These can help to speed up the diagnostic process (National MS Society, 2021).

According to these criteria, in order to make a diagnosis of MS there must be (National MS Society, 2021):

- Evidence of damage in at least two separate areas of the CNS.
- Evidence that the damage occurred at different points in time.
- Elimination of all other possible diagnoses.

Risk Factors. There are a number of risk factors associated with MS that may be used in the diagnostic process. These include the following (Mayo Clinic, 2020b):

- **Age**: Although MS can occur at any age, its onset typically occurs around the ages of 20-40 years of age.
- **Certain autoimmune diseases**: A higher risk of MS is associated with people who have other autoimmune disorders such as thyroid disease, type 1 diabetes, or inflammatory bowel disease.
- **Certain infections**: Viral infections have been linked to MS development. An example is infection with the Epstein-Barr virus, which causes infectious mononucleosis.
- **Climate**: MS is more common in countries with temperate climates, including the northern US, Canada, New Zealand, Europe, and southeastern Australia.
- **Race**: Whites, especially those of Northern European ancestry, have the greatest risk of developing MS. People of Asian, African American, or Native American descent have the lowest risk.
- **Family history**: Risk increases if one's parents or siblings were diagnosed with MS.
- **Sex**: Research shows that women are more than two to three times as likely as men to have relapsing-remitting MS.
- **Smoking**: Research shows that smokers are more likely than non-smokers to have a second event that confirms a diagnosis of relapsing-remitting MS.
- **Vitamin D**: Low levels of vitamin D and low exposure to sunlight increases the risk of MS.

Complications. Complications associated with MS include the following (Mayo Clinic, 2020b):

- Muscle stiffness and spasticity.
- Paralysis.
- Bowel and bladder problems.
- Sexual dysfunction.
- Mental changes such as forgetfulness and/or mood swings.
- Depression.
- Epilepsy.

Treatment

Treatment goals are to shorten exacerbations, relieve neurologic deficits (if possible), and facilitate the maintenance of maximum health and wellness (Rebar et al., 2019). To date, MS treatment falls into three categories: abortive therapies, preventive therapies, and symptomatic therapies (Johns Hopkins Medicine, n.d.).

Abortive Therapies. An MS exacerbation is defined as "new or returning neurological symptoms that have evolved over at least 24-48 hours and have not been provoked by a metabolic cause, such as a fever" (Johns Hopkins Medicine, n.d.).

For acute exacerbations of symptoms, steroids may be prescribed to shorten both the duration and the intensity of the attack. The typical regimen involves intravenous administration of methylprednisolone once a day for 3 to 5days. Intravenous therapy may be followed with oral steroids such as oral prednisone. These oral steroid pills are given in tapering doses for an additional 1 to 2 weeks (Johns Hopkins Medicine, n.d.; Mayo Clinic, 2020b).

Plasma exchange (plasmapheresis) may also be used during acute attacks following steroid therapy. During plasmapheresis, blood plasma is removed from the body and separated from the blood cells. The blood cells are mixed with albumin and returned to the body. Plasmapheresis is most often used if patients' symptoms are new, severe, and have not responded to steroids (Johns Hopkins Medicine, n.d.; Mayo Clinic, 2020b).

Preventive Therapies. The Food and Drug Administration (FDA) has approved, to date, a number of preventive therapies to reduce the frequency and severity of exacerbations or to treat worsening MS (Johns Hopkins Medicine, n.d.).

The FDA-approved preventive therapies include the following (Johns Hopkins Medicine, n.d.; Rebar et al., 2019):

- **Interferon beta-1-a**: This beta interferon is given once a week by intramuscular (IM) injection or beta interferon administered via injection under the skin three times a week.

- **Interferon beta-1b**: This therapy may be administered via injection every other day. Frequency depends on specific therapy and patient needs.

Nursing consideration: Interferon betas have various side effects. In addition to redness and discomfort at the injection site, side effects include fever, chills, achiness, fatigue, depression, and changes in liver function. While patients are receiving interferon, they need to be monitored for changes in liver function on a regular basis. All interferons work by interfering with the immune system's ability to cause inflammatory processes (Johns Hopkins Medicine, n.d.).

- **Glatiramer acetate**: This drug is a synthetic protein that is similar to a component of myelin. Given subcutaneously, glatiramer acetate is believed to work by modifying the immune system so that it produces more anti-inflammation immune cells. Side effects include redness, swelling, and itching at the injection site. A small number of patients may experience a "post injection reaction," which is a brief period of flushing, racing of the heart, feeling faint, and shortness of breath.
- **Natalizumab**: Natalizumab is a monoclonal antibody administered intravenously once every 4 weeks. This drug is believed to work by preventing lymphocytes from entering the CNS. Natalizumab may produce a rare, but serious, possibly fatal, infection of the brain called progressive multifocal leukoencephalopathy (PML).
- **Mitoxantrone**: Mitoxantrone is a chemotherapeutic drug that is used for patients experiencing worsening forms of relapsing MS and secondary progressive MS. It is given intravenously every 3 months. The potential for toxicity is high, so patients may receive a limited number of doses throughout their lifespan. The drug is believed to work by suppressing the immune system to reduce the number of immune cells that might be causing inflammation. Mitoxantrone is associated with cardiotoxicity.

There are also a number of oral medications administered to reduce relapse rates. These include the following (Comerford & Durkin, 2021; Mayo Clinic, 2020b):

- **Fingolimod (Gilenya)**: This drug is taken once daily. The patient's heart rate and blood pressure are monitored for 6 hours after the first dose because there is the potential for reduction in heart rate. Additional side effects include infections, headaches, hypertension, and blurred vision.
- **Teriflunomide (Aubagio)**: This is an oral medication taken once daily to reduce relapse rates. Teriflunomide can cause liver damage and hair loss, when taken by men or women or birth defects in the infants of pregnant women . Contraception should be used while taking this medication and up to 2 years afterward.
- **Siponimod (Mayzent)**: Siponimod can help to reduce the rate of relapse and slow progression of MS. It is also approved for use in secondary-progressive MS. This drug is harmful to a developing fetus. Contraception is advised while taking this medication and for 10 days after the medication is discontinued. Associated side effects include viral infections, liver dysfunction, and low WBC counts. Changes in heart rate, headaches, and vision problems may also occur.
- **Cladribine (Mavenclad)**: Cladribine is usually prescribed as a second line treatment for patients with relapsing-remitting MS as well as for secondary-progressive MS. It is administered in two treatment courses spread over a 2-week period over a period of 2 years. This drug is contraindicated in patients who have chronic infections, cancer, or who are pregnant or breastfeeding. Both men and women should use contraception while taking this drug and for 6 months after the medication is stopped. Side effects include upper respiratory infections, headaches, tumors, serious infections, and reduced levels of WBCs.

Symptomatic Therapies. Certain medications may be administered to control symptoms. Such medications include drugs for bladder issues, antidepressants, vertigo, and fatigue (Rebar et al., 2019).

Medications are not the only treatment initiative for patients with MS. It is important that an interdisciplinary team approach be used in the treatment of patients. Additional treatment initiatives may include the following:

- Physical therapy.
- Occupational therapy.
- Speech-language therapy.
- Neuropsychology therapy.

Complementary Medicine. Many people with MS use various alternative or complementary therapies to help manage systems. Complementary therapies include the following (Mayo Clinic, 2020b):

- Exercise.
- Meditation.
- Yoga.
- Massage.
- Acupuncture.
- Relaxation techniques.

Research findings suggest that maintaining adequate levels of vitamin D may have a protective effect and may lower the risk of developing MS. Some experts consider vitamin D supplementation as a modifiable risk factor for MS development (Mayo Clinic, 2021e).

Daily intake of vitamin D3 of 2,000-5,000 international units daily is recommended for patients with MS (Mayo Clinic, 2020b). However, it is important to note that very large doses of vitamin D over a long period of time may lead to toxicity. Signs and symptoms of vitamin D toxicity include nausea, vomiting, constipation, reduced appetite, weakness, and weight loss. Toxicity can also cause increased levels of blood calcium, which, in turn, can cause kidney stones (Mayo Clinic, 2021e).

Nursing Interventions

As mentioned throughout this education program, nurses often take the lead in medication administration education. Patients and families both need education regarding medication administration. Nurses should emphasize the importance of adhering to the prescribed regimen and how to recognize and report side effects (Comerford & Durkin, 2021).

Providing emotional support is critical. Patients' mental health should be monitored and appropriate interventions and referrals to mental health professionals made.

Family members/caregivers should also be monitored for mental health issues since they, too, are under emotional stress (Rebar et al., 2017).

- Educate and support patients and family with the following recommendations (Mayo Clinic, 2021b).
- Encourage patients to maintain normal daily activities as able.
- Encourage patients to interact and maintain contact with family and friends, but to avoid those with infections or contagious diseases while taking immunosuppressing medications
- Encourage patients to pursue hobbies that they enjoy and are able to do.
- Facilitate connections with support groups.
- Encourage patients and families to discuss feelings and concerns regarding living with MS.
- Explain that it is important for patients and families to monitor signs and symptoms, what causes them to become worse, and what, if anything, helps to reduce the symptoms.
- Explain that patients and families should write down questions and concerns to ask the healthcare team in order to avoid forgetting important issues.
- Encourage patients to bring a family member or friend with them when they have appointments with healthcare team members.

Self-Assessment Question 6

A patient who has MS also has cardiac disease. Which of the following drugs would probably NOT be appropriate for this patient?

a. Mitoxantrone.
b. Teriflunomide.
c. Natalizumab.
d. Cladribine.

Psoriasis

Psoriasis is a chronic autoimmune skin disease characterized by an acceleration of the growth cycle of skin cells. Although psoriasis can be treated, there is no cure. A dermatologist is often the best healthcare provider to diagnosis psoriasis because it has been confused with other skin disease, such as eczema (CDC, 2020b).

Psoriasis is characterized by raised, red, itchy, scaly patches on various parts of the body. Psoriasis patches can range from a few spots of dandruff-like scaling to major plaques that cover large areas. The areas most commonly affected are the lower back, elbows, knees, legs, soles of the feet, scalp, face, and palms (Mayo Clinic, 2020c).

An estimated 125 million people throughout the world (two to three percent of the total population) have psoriasis. In the US, more than three percent of the adult population is affected by psoriasis; this translates to more than 7.5 million adults (National Psoriasis Foundation, 2021).

Figure 6 is a picture of the characteristic patches on the skin of a patient with psoriasis.

Figure 6. Psoriasis Skin Patches

Note. image from Unsplash opensource

Pathophysiology

Psoriasis is a complex disease that appears to be influenced by genetic and immune-mediated facets. The exact trigger or triggers of the disease are unknown, but experts believe that triggers may include an infectious episode, traumatic insult, or stressful life events. Once triggered, a substantial number of leukocytes gather at the dermis and epidermis, which leads to characteristic psoriatic plaques. Many patients, however, have no obvious trigger (Habashy, 2021).

Possible Triggers. Many patients who are vulnerable to the development of psoriasis may be free of signs and symptoms for years until the disease is triggered by various environmental factors (Mayo clinic, 2020c). Common triggers include the following (Mayo Clinic, 2020c):

- Infections such as bacterial or skin infections.
- The weather, particularly a cold, dry environment.
- Injury to the skin such as severe sunburn, lacerations, or bug bites.
- Stress.
- Smoking as well as exposure to second-hand smoke.
- Heavy alcohol consumption.
- Certain medications such as lithium, anti-hypertensive medications, and antimalarial drugs.
- Swift withdrawal of oral or systemic corticosteroids.

Psoriasis can develop in anyone. An estimated 33% of cases begin in the pediatric years. The following factors increase risk of psoriasis (Mayo Clinic, 2020c:.

- **Family history**: Having one parent with psoriasis increases risk. If both parents have psoriasis, the risk increases even higher.
- **Stress**: Since stress can impact the immune system, high levels of stress may increase the risk of disease development.
- **Smoking**: Smoking tobacco products increases risk and may also increase the severity of the disease. Smoking may even play a part in the initial development of the disease.

Complications. Psoriasis increases the risk of developing other diseases including the following (Mayo Clinic, 2020c):

- Eye conditions such as conjunctivitis and blepharitis.
- Obesity.
- Type 2 siabetes.
- Hypertension.
- Cardiovascular disease.
- Other autoimmune diseases such as inflammatory bowel disease.
- Mental health disorders such as depression.

Pathogenesis. The epidermis is infiltrated by large numbers of activated T cells. These T cells seem to be capable of causing keratinocyte proliferation. Psoriatic plaques reveal large amounts of T cells within the psoriasis lesions. An uncontrolled inflammatory process occurs. Important findings in the affected skin include vascular engorgement because of superficial blood vessel dilation and a changed epidermal cell cycle (Habashy, 2021).

Assessment and Diagnosis

Patients are assessed for characteristic signs and symptoms of the disease and possible other causes of these signs and symptoms are investigated. It is important to rule out other skin conditions before making a diagnosis of psoriasis (Habashy, 2021).

Signs and Symptoms. There are several types of psoriasis. During patient assessment, it is important to differentiate among the various psoriasis types. These include the following (Mayo Clinic, 2020c):

- **Plaque psoriasis**: Plaque psoriasis is the most common type of psoriasis. It is characterized by dry, raised, red skin patches that are covered with silver-looking scales. The most common sites affected are elbows, knees, lower back, and scalp.
- **Guttate psoriasis**: Guttate psoriasis typically affects children and young adults. It is often triggered by a bacterial infection (e.g., strep throat) and is characterized by small, scaling lesions shaped like drops that are located on the trunk, arms, or legs.
- **Inverse psoriasis**: Inverse psoriasis usually affects the skin folds of the groin, buttocks, and breasts. It is characterized by smooth, red patches of skin. These patches become worse with friction and sweating. It is suspected that fungal infections trigger inverse psoriasis.
- **Nail psoriasis**: Nail psoriasis is characterized by pitting, abnormal nail growth, and discoloration. Affected nails may loosen and separate from the nail bed (onycholysis). Severe cases of nail psoriasis may cause affected nails to crumble.

- **Psoriatic arthritis**: Psoriatic arthritis is characterized by swollen, painful joints that are the typical signs of arthritis. Symptoms range from mild to severe. Psoriatic arthritis can affect any joint and causes stiffness and progressive joint damage. The joint damage may be permanent.
- **Pustular psoriasis**: Pustular psoriasis is a rare form of the disease. It is characterized by well-defined lesions that are filled with pus. These lesions are widespread patches or occur in smaller areas on the palms of the hands or the soles of the feet.
- **Erythrodermic psoriasis**: This is the least common type of psoriasis. Erythrodermic psoriasis can cover the whole body with a red, peeling rash, which can burn or itch intensely.

Common, general signs and symptoms of psoriasis are (Mayo Clinic, 2020c):
- Red patches of skin that are covered with thick, silvery scales.
- Small scaling spots that are commonly seen in children.
- Skin that is dry and cracked, and may bleed.
- Itching, burning, or soreness.
- Thick, pitted, or ridged nails.
- Joints that are swollen and stiff.

Diagnostic Tests. Laboratory studies and findings for patients with psoriasis may include the following (Habashy, 2021):
- Rheumatoid factor (RF) to differential psoriatic arthritis from rheumatoid arthritis. It is negative in psoriasis.
- Erythrocyte sedimentation rate (RF) is negative .
- Uric acid level may be elevated, especially with pustular and erythrodermic psoriasis.
- Fluid from pustules is sterile with neutrophilic infiltrate.
- Fungal studies may show infection.

Various other tests may be ordered to identify psoriasis. A biopsy of the skin lesion may show basal cell hyperplasia, absence of normal cell maturation, and keratinization. A considerable number of activated T cells are found in the epidermis. Joint x-rays can hasten the diagnosis of psoriatic arthritis. Bone scans are used for the early recognition of joint involvement (Habashy, 2021).

Treatment

Treatment of psoriasis is individualized to each patient. The goals of treatment are to relieve pain, remove scales, reduce swelling, maintain joint functioning, and prevent additional damage to joints (National Psoriasis Foundation, n.d.).

Topicals. Topical medications are typically the first treatment recommended to someone who is newly diagnosed. Topical medications can be purchased over the counter or by prescription (National Psoriasis Foundation, n.d.).

The following is a summary of topical therapy medications (Comerford & Durkin, 2021; Mayo Clinic, 2020c; National Psoriasis Foundation, n.d.):
- **Corticosteroids**: Topical steroids are one of the most common topical treatments for psoriasis. They come in a variety of ranges from very strong to very weak. Corticosteroids are available as ointments, creams, lotions, gels, foams, sprays, and shampoos. Topical corticosteroids are typically applied once daily during exacerbations and on alternate days or weekends to maintain remission. Mild corticosteroid ointments (e.g., hydrocortisone) may be purchased over the counter. However, prescription creams or ointments may be needed. Examples of prescription corticosteroids include triamcinolone (Trianex) and clobetasol (Clobex).

Nursing consideration: Patients should be advised to apply only a small amount of the steroid on affected areas only; not to use a topical steroid for longer than 3 weeks without the approval of healthcare providers; not to abruptly discontinue a topical steroid because it may cause a psoriasis exacerbation; avoid using steroids in or around the eyes unless the medication is specifically for the eyes; know that the more potent the steroid, the more effective it is, but the risk of side effects is greater (National Psoriasis Foundation, n.d.).

- **Vitamin D analogues**: Synthetic forms of vitamin D are prescribed to slow skin cell growth.
- **Calcineurin inhibitors**: Calcineurin inhibitors (e.g., tacrolimus [Protopic]) reduce both inflammation and plaque build-up. These medications are particularly useful in treating delicate areas of thin skin such as around the eyes.
- **Coal tar**: Coal tar is given to reduce scaling, itching, and inflammation. It comes in over-the-counter and prescription formats such as shampoo, cream, and oil. Unfortunately, these products can cause skin irritation, stain clothing and bedding, and have a strong odor. Coal tar is contraindicated for pregnant women and for those who are breastfeeding.
- **Goeckerman therapy**: This is a combination of coal tar treatment and phototherapy (light therapy). This combined treatment is more effective than either of them alone.

Phototherapy. There are various types of phototherapies (light therapy) used in the treatment of psoriasis. The following list provides descriptions of some of the types of phototherapies used in the treatment of psoriasis:
- **Sunlight**: Brief, daily exposures to sunlight (heliotherapy) might improve psoriasis, but precautions should be taken. Before beginning treatment with sunlight, healthcare providers should be consulted about the most effective and the safest way to expose skin to the sun (Mayo Clinic, 2020c).
- **UVB phototherapy**: This treatment involves exposing affected skin to an artificial UVB light source for an established length of time or a regular basis. UVB phototherapy can be administered in the healthcare provider's office, outpatient clinic, or at home with a phototherapy unit (National Psoriasis Foundation, n.d.).
- **Psoralen plus ultraviolet A (PUVA)**: PUVA treatment involves taking a light-sensitizing medication (psoralen) before exposure to UVA light. This light penetrates deeper into the skin than does UVB light. Psoralen increases the skin's response to UVA exposure (Mayo Clinic, 2020c).
- **Excimer laser**: With this type of phototherapy, a strong UVB light specifically targets only the affected skin. Excimer laser therapy requires fewer treatment sessions than traditional phototherapy because a more powerful UVB light is used (Mayo Clinic, 2020c).

Oral or Injected Medications. If the patient has moderate to severe psoriasis that has not responded to other treatments, oral or injected medications may be prescribed. Severe side effects may occur, so these medications are only used for brief periods of time and might be alternated with other forms of treatment (Mayo Clinic, 2020c).

Oral and injected medications include the following (Comerford & Durkin, 2021; Mayo Clinic, 2020c; National Psoriasis Foundation, n.d.):
- **Steroids**: A few small and persistent psoriasis patches may be treated with a steroid injection directly into lesions.
- **Retinoids**: Retinoids are oral medications given to decrease skin cell production. These types of drugs are not recommended for females or for those who are breastfeeding.
- **Methotrexate**: Methotrexate is typically administered as a single oral dose. This drug works by decreasing skin cell production and suppressing inflammation. Both men and women should stop taking methotrexate at least 3 months before trying to conceive.
- **Biologics**: Biologics such as infliximab (Remicade) are used for patients who have moderate to severe psoriasis and have not responded to first-line therapies. They are usually given by injection. It is important that biologics be administered with caution. They may suppress the immune system to the point that increases the risk of serious infections. Patients must be screened for tuberculosis. Biologics are expensive and may or may not be covered by health insurance.

Alternative/Complementary Interventions. Several alternative therapies may be used to ease psoriasis signs and symptoms. None have been proved to be effective by scientific research, but they are generally safe and may reduce symptoms in patients with mild to moderate psoriasis (Mayo Clinic, 2020c).

Examples of alternative therapies include the following (Mayo Clinic, 2020c):

- **Aloes extract cream**: This cream may reduce redness, inflammation, scaling, and itching. Aloe extract cream is typically applied several times a day. Patients should know that it may take a month or more to notice improvement.
- **Fish oil supplements**: Fish oil supplements used in conjunction with UVB therapy may reduce the amount of skin that is affected. Typically, fish oil is applied to the affected skin and covered with a dressing for 6 hours a day for 4 weeks.
- **Essential oils**: Essential oils used for aromatherapy (e.g., lavender) have been associated with stress and anxiety reduction.

Nursing consideration: Patients must be cautioned that before adding alternative therapies to their treatment regimens they must consult with their healthcare providers.

Nursing Interventions

Nursing interventions include, as always, patient/family education regarding medication and other aspects of the treatment regimen. Nurses should assess the patients' support network. It is important that they have the support of family and friends (Rebar et al., 2019).

Patients also need to know that self-care measures are available. With the approval of the healthcare providers, nurses can explain the value of the following lifestyle and home remedies (Mayo Clinic, 2020c):

- **Daily baths**: Daily baths help to remove scales as well as calm inflamed skin. Bath oil, colloidal oatmeal, and Epsom salts can be added to the water, and patients should soak in this water for at least 15 minutes. Lukewarm water and mild soaps that have additional oils and fats are recommended.
- **Moisturizers**: After gently patting nearly dry, a heavy ointment-based moisturizer should be applied when the skin is still moist. If moisturizing has positive results, a moisturizer may be applied one to three times a day.
- **Overnight coverage**: An ointment-based moisturize should be applied to the affected skin and wrapped with plastic wrap before going to bed. Upon awakening, the plastic wrap is removed and scales are washed away.
- **Medicated ointments**: To reduce itching and inflammation, over-the-counter hydrocortisone creams may be applied to the affected skin.
- **Triggers**: Patients should identify personal triggers and make plans to avoid them. Infections, stress, and smoking can exacerbate signs and symptoms.
- **Alcohol**: Alcohol may interfere with the effectiveness of treatment regimens. Alcohol should be avoided.

Self-Assessment Question 7

A nurse is conducting a patient/family education session for a patient recently diagnosed with psoriasis. The topic of discussion is medication. Which of the following statements would be appropriate to tell the patient and family?

a. Vitamin D Analogues are prescribed to decrease itching.
b. Coal tar is contraindicated for pregnant women.
c. Biologics are prescribed for patients with mild psoriasis.
d. Methotrexate is typically administered daily for 6 weeks.

Rheumatoid arthritis (RA)

Rheumatoid arthritis is a chronic, systemic, inflammatory disorder that usually affects the joints, the cervical spine, and surrounding muscles, tendons, ligaments, and blood vessels (Rebar et al., 2019). In some people RA can damage a number of body systems, including the skin, eyes, lungs, heart, and blood vessels (Mayo Clinic, 2021b).

The annual incidence of RA on a global scale is about three cases per 10,000 population. The prevalence rate is about one percent. Prevalence increases with age, peaking between the ages of 35 and 50 years.

RA affects all populations but is thought to be more prevalent in some groups (e.g., Native Americans) and less prevalent in others (e.g., dark-skinned persons from the Caribbean region; Smith, 2021b).

In the US, various types of arthritis are quite prevalent. Osteoarthritis is the most common form of arthritis. Gout, fibromyalgia, and RA are other common rheumatic conditions in the US (CDC, 2021b).

The CDC (2021b) has compiled and published the following arthritis related statistics:

- From 2013-2015, an estimated 58.5 million US adults (22.7%) annually had ever been told by a doctor that they had some form of arthritis.
- Prevalence by age: From 2013 to 2015 in the US:
  - Of people aged 18 to 44 years, 7.1% ever reported doctor-diagnosed arthritis.
  - Of people aged 45 to 64 years, 29.3% ever reported doctor-diagnosed arthritis.
  - Of people aged 65 years or older, 49.6% ever reported doctor-diagnosed arthritis.
- From 2013 to 2015 in the US, 26% of women and 19.1% of men ever reported doctor-diagnosed arthritis.
- Adults aged 18 years or older who are overweight or obese report doctor-diagnosed arthritis more often than adults with a lower body mass index (BMI).
- More than 16% of under/normal weight adults report doctor-diagnosed arthritis.
- Almost 23% of overweight and 31% of obese US adults report doctor-diagnosed arthritis.
- In 2015, 15 million adults reported severe joint pain because of arthritis.
- Arthritis and other rheumatic conditions are a leading cause of work disability among US adults.
- One in 25 working-age adults aged 18 to 64 years face work limitations they attribute to arthritis.
- Arthritis limits the activities of 23.7 million US adults.
- Adults with arthritis were about 2.5 times more likely to have two or more falls and suffer a fall injury in the past 12 months compared with adults without arthritis.
- In 2013, the national costs of arthritis were $304 billion.

Regarding RA statistics in the US, it is estimated that RA affects between 1.28 and 1.36 million Americans. Women are affected more often than men, and its peak onset is highest in people in their sixties (Rebar et al., 2019).

Pathophysiology

Pathogenesis. The pathogenesis of RA is not completely understood, but infections, genetics, and endocrine factors may influence its development (Rebar et al., 2019). An external trigger such as cigarette smoking, infection, or trauma may set off an autoimmune reaction, which leads to synovial hypertrophy and chronic joint inflammation. There is also potential for extra-articular manifestations to develop in individuals who are genetically susceptible (Smith, 2021a). Susceptible people may develop abnormal or altered IgG antibodies. The person's immune system does not recognize these antibodies as "self" and forms an antibody (the rheumatoid factor) against the person's own antibodies.

The rheumatoid factor causes inflammation, which leads to cartilage damage (Rebar et al., 2019).

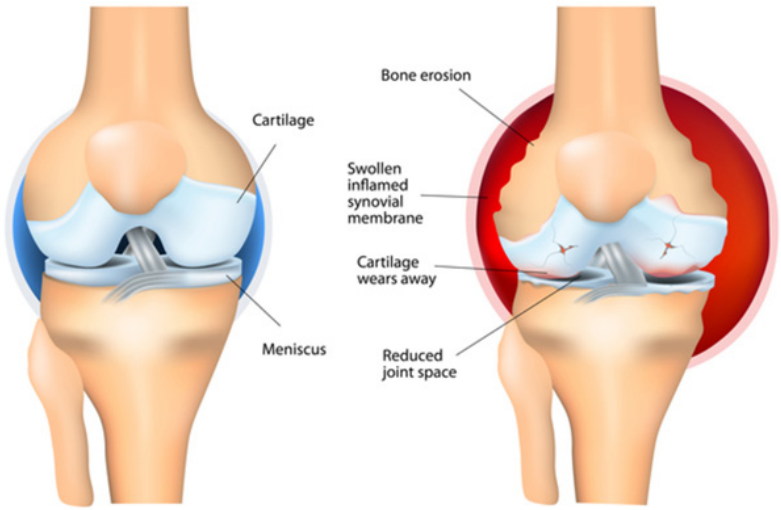
Joint inflammation occurs in four stages (Rebar et al., 2019; Smith, 2021a):

- **Phase 1**: Interaction occurs between genetic and environmental risk factors of RA. Initial inflammation in the joint capsule occurs in conjunction with swelling of the synovial tissue. This causes joint pain, swelling, and stiffness.
- **Phase 2**: RA antibodies are produced. Pannus (thickened layers of granulation tissue) covers and invades cartilage, eventually destroying the joint capsule and bone.

- **Phase 3**: This stage is characterized by arthralgia (joint stiffness), fibrous ankylosis, bone atrophy, and misalignment that causes visible deformities.
- **Phase 4**: This stage is characterized by fibrous tissue calcification, which leads to bony ankylosis (joint fixation). Pain, restricted joint movement, soft-tissue contractures, and joint deformities are evident.

Figure 7 shows the joint damage caused by RA.

Figure 7. Rheumatoid Arthritis



Note. From National Library of Medicine U.S., 2013.

Etiology. The exact cause of RA is not known. However, experts propose that genetic, environmental, hormonal, immunologic, and infectious factors may contribute to its development (Smith, 2021a).

The following descriptions show how contributing factors may contribute to RA development (Smith, 2021a):

- **Genetics**: Genetic factors account for 50% of the risk of developing RA. Various genes are thought to contribute to the development of RA.
- **Infectious agents**: Various infectious pathogens have been suggested to be possible causes of RA. These include the rubella virus and the Epstein-Barr virus (EBV). The proposal that infectious pathogens can be a cause of RA is supported by the following:
  - Reports of flulike illnesses before the start of RA.
  - The ability to produce RA in experimental animals using various bacteria.
  - The presence of bacterial products in patients' joints
- **Hormonal factors**: Sex hormones may play a part in the development of RA. Evidence to support this includes the disproportionate number of females with RA, improvement of signs and symptoms during pregnancy, and their recurrence after giving birth.
- **Lifestyle factors**: The main lifestyle contributory possible cause is the use of tobacco. Risk of developing RA is significantly higher in people who use tobacco.

Nursing consideration: Patients and families should be aware that in former smokers, the risk for RA may not return to the level of non-smokers for up to 20 years after ceasing to smoke (Smith, 2021a).

- **Immunologic factors**: The autoimmune response possibly triggers the formation of immune factors that activate the inflammatory process to a significantly greater degree than is normal.

Risk Factors. A number of risk factors are associated with the development of RA. These include the following (CDC, 2020a; Mayo Clinic, 2021b):

- **Sex**: New cases of RA are usually two to three times higher in women compared to men.
- **Age**: Although RA can begin at any age, occurrence increases with age. Onset of RA is highest among adults in their sixties.
- **Inherited traits**: People born with genes called human leukocyte antigen (HLA) class II genotypes are more likely to develop RA. These genes can also make RA worse. The risk may be highest when people with these genes are exposed to environmental factors such as tobacco use, or when the person is obese.
- **Smoking**: Tobacco use increases risk of developing RA and can also make the disease worse.
- **History of live births**: Women who have never given birth may be at greater risk for developing RA.
- **Exposures early in life**: Research suggests that some early life exposures may increase the risk of developing RA in adulthood. One study found that children whose mothers had smoked had twice the risk of developing RA as adults. Children of lower income parents also seem to be at increased risk of developing RA.
- **Obesity**: Research shows that the more overweight a person is, the greater the risk of developing RA.

Evidence-based practice! Research shows that women who have breastfed their infants have a decreased risk of developing RA (CDC, 2020a).

Self-Assessment Question 8

Which of the following people is most likely to develop RA?

a. A man in his sixties.
b. A woman who has given birth to three children.
c. A woman who smokes one pack of cigarettes per day.
d. A man who is underweight.

Complications. RA increases the risk of developing several complications. These include the following (Mayo Clinic, 2021b):

- **Osteoporosis**: RA and medications used to treat RA can increase the risk of osteoporosis.
- **Rheumatoid nodules**: These firm tissue nodules are usually found around pressure points. However, these nodules can form anywhere in the body, even in the heart and lungs.

- **Dry eyes and mouth**: RA increases the risk of developing Sjogren's syndrome, which is a disorder that decreases the amount of moisture in the eyes and mouth.
- **Infections**: RA and medications used in its treatment can impair the immune system, which leads to increased risk of infections. Patients are urged to get recommended vaccines such as influenza, pneumonia, shingles, and COVID-19.
- **Body composition**: The ratio of fat to lean body mass is often higher in people with RA. This is true even for persons who have a normal body mass index (BMI).
- **Carpal tunnel syndrome**: If RA affects the patient's wrists, the resulting inflammation can compress the nerves that serve the hands and fingers.
- **Cardiac issues**: RA increases the risk of atherosclerosis and arteriosclerosis. RA can also cause inflammation of the pericardium.
- **Lung disease**: People who have RA have an increased risk of inflammation and scarring of lung tissue. This can compromise respiratory status.
- **Lymphoma**: RA increases the risk of lymphoma.

Assessment and Diagnosis

Assessment. The primary characteristic of RA is persistent polyarthritis (synovitis) that affects any joint lined by a synovial membrane. In many patients, RA has an insidious onset (Smith, 2020a). Initially, patients may complain of non-specific symptoms that are seen in multiple disorders. These symptoms include fatigue, malaise, anorexia, low-grade fever, and weight loss. As the inflammatory process progresses, more specific symptoms develop (Rebar et al., 2019).

Nursing consideration: About 10% of patients with RA experience an abrupt onset with acute development of synovitis as well as extra-articular manifestations (Smith, 2021a).

During physical assessment patients are assessed for the following more specific signs and symptoms (Smith, 2020a):

- Stiffness.
- Tenderness.
- Pain with motion.
- Warmth of affected joints.
- Swelling.
- Deformity.
- Limitations of range-of-motion.
- Extra-articular manifestations.
- Rheumatoid nodules.
- Muscle atrophy.
- As joints and tendons are destroyed, deformities such as ulnar deviation, boutonniere deformation (the middle joint of the injured finger will not straighten, while the fingertip bends back), swan-neck deformity (flexion of the base of the finger, extension of the middle joint, and flexion of the outermost joint), hammer toe deformities (toe is bent at the middle joint, resembling a hammer), and, sometimes, joint ankylosis.

Symptoms usually occur bilaterally and symmetrically, typically involving fingers, wrists, elbows, knees, and ankles (Rebar et al., 2019). Many patients have muscle atrophy secondary to joint inflammation (Smith, 2021a).

Diagnostic Tests. No test specifically identifies RA. However, the following tests may be useful in making a diagnosis (Rebar et al., 2019):

- X-rays may show bone demineralization and soft tissue swelling.
- A rheumatoid factor is often positive in patients with RA. A positive test is indicated by a value of less than 60 units/ml.
- Analysis of synovial fluid shows an increase in volume and turbidity but decreased viscosity and complement levels. WBC count is often greater than 10,000/mm3.
- Serum protein electrophoresis may show an elevation in serum globulin levels.
- Erythrocyte sedimentation rate (ESR) is elevated in many patients with RA. The ESR helps in the monitoring of patients' response to therapy.

Treatment

There is no cure for RA. Research indicates that symptom remission is more likely when treatment begins early with disease-modifying antirheumatic drugs (DMARDs; Mayo Clinic, 2021b).

Medications. Medications are prescribed based on the severity of the symptoms and how long the patient has had RA. Medications include the following (Comerford & Durkin, 2021; Mayo Clinic, 2021b; Rebar et al., 2019):

- **Nonsteroidal anti-inflammatory drugs (NSAIDs)**: NSAIDs are administered to relieve pain and reduce inflammation. Over-the-counter options include ibuprofen (e.g., Advil) and naproxen sodium (Aleve). Stronger prescription NSAIDs such as celecoxib (Celebrex) may be given with caution. Side effects of prescription NSAIDs include stomach irritation, cardiac issues, and kidney damage.
- **Steroids**: Corticosteroids, such as prednisone, are taken to reduce inflammation and pain as well as to slow joint damage. Side effects of corticosteroids include osteoporosis, weight gain, and diabetes. Therefore, corticosteroids are typically given to quickly relieve symptoms and are gradually tapered off in an attempt to prevent or reduce side effects.
- **Conventional DMARDs**: DMARDs are taken to slow disease progression and to protect the joints and other body tissues from permanent damage. Examples of conventional DMARDs include methotrexate (Otexup), leflunomide (Arava), and hydroxychloroquine (Plaquenil). Side effects may include hepatic damage and severe respiratory infections.
- **Biologic agents**: Also known as biologic response modifiers, biologic agents are a new class of DMARDs. Examples include abatacept (Orencia), certolizumab (Cimzia), and rituximab (Rituxan).

Nursing consideration: Biologic DMARDs are typically most effective when paired with a conventional DMARD (Mayo Clinic, 2021b).

Targeted synthetic DMARDs: If conventional DMARDs and biologics are not effective, targeted synthetic DMARDs may be prescribed. An example is tofacitnib (Xeljanz).

Therapy. Physical and occupational therapies may be prescribed. In addition to keeping joints flexible, patients may be taught to use assistive devices that do not stress painful joints and make performing activities of daily living (ADLs) easier. For example, cutlery with hand grips make cooking and eating easier. Buttonhooks can help to make dressing easier (Mayo Clinic, 2021b).

Surgery. Various surgical procedures may be performed. These include the following (Mayo Clinic, 2021b; Rebar et al., 2019):

- **Synovectomy**: Synovectomy is the removal of the inflamed lining of joints (synovium). The goal of this surgery can help to reduce pain and improve flexibility of joints.
- **Tendon repair**: Inflammation and damage to the joints may cause tendons around the joints to rupture or loosen. Repair of the tendons may be possible with this type of procedure.
- **Joint fusion**: Joint fusion may be performed to stabilize or realign joints for the relief of pain. This procedure is generally performed when joint replacement is not an appropriate option.
- **Total joint Replacement**: This procedure involves the removal of damaged parts of joints and insertion of a prosthesis. Such prostheses are generally made of metal and plastic.

Nursing Interventions

Support for patients with a chronic, potentially disfiguring disease is critical. Nurses need to encourage patients to seek medical help as soon as possible, not only when symptoms first start, but if and when signs and symptoms change. Families must also be involved in and support healthcare visits (Rebar et al., 2019).

In conjunction with the primary healthcare provider and other members of the healthcare team, the following suggestions for symptom management may be provided by nurses (Mayo Clinic, 2020e):

- **Exercise**: Staying physically active is essential to strengthening muscles and keeping joints flexible. Physical therapists may be consulted for the recommendation of specific exercises. No exercise program should be initiated without the knowledge and consent of the primary healthcare provider.
- **Heat or cold therapy**: Warm baths, showers, and heating pads can help to ease pain and joint stiffness. In the event of periods of symptom exacerbation, cold packs rather than heat are recommended to reduce pain and inflammation.
- **Joint support**: Splints are typically used for joint support. Occupational and physical therapists can recommend the splint that is best suited to individual patient needs.
- **Self-help devices**: Several self-help devices may be used to facilitate movement and reduce joint stress. Examples include hand grips, long-handled shoehorns, and raised toilet seats.
- **Healthy lifestyle**: Patients should be encouraged to get enough rest and sleep, avoid tobacco products, adhere to medication regimens, and eat a healthy diet.

Scleroderma

Scleroderma is an autoimmune connective tissue and rheumatic disease. It is characterized by inflammation in the skin leading to patches of tight, hard skin. Scleroderma develops as the result of overproduction and accumulation of collagen in body tissues (Mayo Clinic, 2019). Scleroderma is not contagious, infectious, cancerous, or malignant (Scleroderma Foundation, 2021). Scleroderma can involve multiple body systems or just one area of the body (National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2020).

When scleroderma affects multiple body systems it is referred to as systemic scleroderma (National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2020)..

The estimated incidence of systemic scleroderma in the US is 20 cases per million population. Its prevalence is estimated at 276 cases per million population. Incidence and prevalence of systemic scleroderma in the US has been increasing in the last 50 years (Jimenez, 2020).

Systemic scleroderma is not particularly common. An estimated 75,000 to 100,000 people in the US have the disease. Most patients are women between the ages of 30 and 50 (American College of Rheumatology, 2019). Localized scleroderma is more common in children. Systemic scleroderma is more common in adults. However, scleroderma can develop in every age group from infants to older adults (Scleroderma Foundation, 2021).

Pathophysiology

There are two major classifications of scleroderma: localized scleroderma and systemic sclerosis (SSc). Each classification has its own characteristics and prognosis (Scleroderma Foundation, 2021).

Localized Scleroderma. The changes associated with localized scleroderma are found in only a few places on the skin or muscles. It rarely spreads elsewhere in the body. Usually, localized scleroderma is rather mild (Scleroderma Foundation, 2021).

There are two forms of localized scleroderma: morphea and linear scleroderma (Scleroderma Foundation, 2021).

Morphea. Morphea is characterized by waxy patches on the skin that vary in size, shape, and color. These patches may grow or shrink and may even disappear spontaneously. Skin underneath patches may thicken. Morphea typically develops between the ages of 20 and 50 but is often found in young children (Scleroderma Foundation, 2021).

Linear Scleroderma. This form of localized scleroderma often starts as a streak of hardened, waxy skin. It typically appears on the arm, leg, or forehead. It may form as a long crease on the head or neck that resembles a wound caused by a sword. Linear scleroderma usually involves the deeper layers of the skin as well as the surface layers of the skin. Linear scleroderma typically develops in childhood, and growth of affected limbs may be affected (Scleroderma Foundation, 2021).

Systemic Scleroderma (Systemic Sclerosis). Systemic scleroderma is characterized by changes in connective tissue that occur in many parts of the body. Systemic sclerosis can involve the skin, esophagus, gastrointestinal tract, lungs, kidneys, heart, and other internal organs. The disease can also affect blood vessels, muscles, and joints (Scleroderma Foundation, 2021). Affected tissues become hard and fibrous, leading to functional impairment. There are two major patterns that systemic scleroderma can take-- diffuse or limited patterns (Scleroderma Foundation, 2021).

- **Diffuse scleroderma**: In diffuse scleroderma thickening of the skin occurs at a rapid rate and involves more areas of the skin than the limited disease. People with diffuse scleroderma are at higher risk of developing sclerosis or fibrous hardening of the internal organs.
- **Limited scleroderma**: Limited scleroderma affects about 50% of persons who have scleroderma. It progresses more slowly and is a more benign illness than diffuse scleroderma. Internal issues may evolve, but they are typically less frequent and less severe compared to diffuse scleroderma. However, patients with limited scleroderma can develop pulmonary hypertension, which causes a narrowing of the blood vessels of the lungs, impaired blood flow to the lungs, and shortness of breath.

Risk Factors. Several factors may influence the risk of developing scleroderma. These include the following (Mayo Clinic, 2019):

- **Genetics**: It is possible that gene variations may be a risk factor for the development of scleroderma. A small number of cases of scleroderma seem to run in families. The disease also appears more often in certain ethnic groups. For example, Choctaw Native Americans are more likely to develop scleroderma that affects the internal organs of the body.
- **Environmental triggers**: Research findings indicate that scleroderma symptoms may be triggered by exposure to some viruses, medications, or drugs. Work exposure to harmful chemicals may also increase the risk of scleroderma development.
- **Immune system issues**: As an autoimmune disease, the body's immune system negatively impacts its own connective tissues. In about 15% to 20% of cases, someone who has scleroderma also has symptoms of another autoimmune disease such as lupus or rheumatoid arthritis.

Complications. Scleroderma complications range from mild to severe. These include the following (Mayo Clinic, 2019):

- **Raynaud's Disease**: A form of Raynaud's disease sometimes occurs with systemic scleroderma. Raynaud's disease in these patients can be so severe that impaired blood flow permanently damages fingertip tissue, leading to pits and/or skin sores. In some patients, fingertip tissue may die and amputation may be necessary.
- **Lungs**: If lung tissue is scarred, respiratory function can be impaired, leading to respiratory distress and possible pulmonary hypertension.
- **Kidneys**: If kidneys are impacted by scleroderma, hypertension may occur as well as increased protein levels in the urine. Kidney damage may also cause renal crisis that involves rapid kidney failure.
- **Cardiac**: If the tissue of the heart is scarred, arrhythmias, congestive heart failure, and pericarditis may occur.
- **Teeth**: If scleroderma causes severe facial skin tightening, the mouth may become smaller and narrower. If this occurs, it may be difficult for patients to brush their teeth or have dental work. Frequently, patients do not produce adequate amounts of saliva, which increases the risk of tooth decay.

- **Gastrointestinal system**: Digestive issues may cause heartburn and dysphagia. Cramps, bloating, constipation, or diarrhea may also occur.
- **Sexual dysfunction**: Men may experience erectile dysfunction. In women, sexual lubrication may decrease and the vaginal opening may narrow.

Assessment and Diagnosis

A complete history and physical is conducted. Assessment of patients for various signs and symptoms are a critical part of the assessment and diagnostic process

Signs and symptoms may include the following (Mayo, 2019):

- **Skin changes**: Almost all patients with scleroderma have a hardening and tightening of patches of skin. Patches present as ovals, straight lines, or wide areas that may cover the trunk and limbs. Skin may also appear shiny because it is so tight. There may be restriction of movement of affected areas.
- **Fingers or toes**: Raynaud's disease is one of the earliest signs of systemic scleroderma. The small blood vessels of the fingers and toes contract when exposed to cold temperatures or when patients experience emotional distress. Fingers and toes may turn blue or become painful or numb.
- **Gastrointestinal system**: Symptoms depend on what part of the gastrointestinal system is affected. For example, an affected esophagus may lead to heartburn or dysphagia. If intestines are affected, cramping, bloating, diarrhea, and/or constipation may occur. There may be problems with absorption of nutrients if intestinal muscles fail to move food through the intestines in an efficient manner.
- **Body systems**: Scleroderma can affect any body organ or tissue. There may be heart, lungs, or kidney problems. If not treated, life-threatening complications may develop.

Diagnostic Tests. Some diagnostic tests may be ordered to aid in diagnosis. These may include the following (American College of Rheumatology, 2019):

- **X-rays and computerized tomography (CT) scans**: These tests are ordered to look for abnormalities in the body.
- **Thermography**: Thermography can detect differences in skin temperature between affected and non-affected tissue.
- **Ultrasound and magnetic resonance imaging (MRI)**: These tests can help in the assessment of soft tissue.

Treatment

Signs and symptoms vary according to the severity of the disease and the areas of the body that are affected.

Medications. Various medications may be administered. These include the following (Gardner, 2020; Mayo Clinic, 2019):

- **Steroidal creams or pills**: Steroid preparations are administered to reduce swelling, pain, and inflammation. Steroids may also loosen tight, stiff skin and slow the progression of new skin changes.
- **Nonsteroidal anti-inflammatory drugs (NSAIDs)**: NSAIDs are given to reduce pain and swelling.
- **Anti-hypertensive medications**: These medications help to dilate blood vessels and increase circulation. They may help in the prevention of lung and kidney issues and treat Raynaud's disease.
- **Acid reducers**: Medications (e.g., protein pump inhibitors) reduce gastric acid to help to relieve heartburn.
- **Immune system suppressants**: Medications given to suppress the immune system (such as those taken after organ transplants) may help with symptom reductions.
- **Analgesics**: Analgesics are taken to reduce pain.
- **Gastrointestinal stimulants**: These drugs increase motility of the gastrointestinal muscle. They work to move the contents of the gastrointestinal tract more rapidly without acting as a purgative.

Therapies. Physical and occupational therapies may be ordered. These therapies are designed to help patients manage pain, improve their strength and mobility, and maintain independence with ADLs (Mayo Clinic, 2019).

Surgery. Surgery is typically considered to be a last resort to use for severe scleroderma complications. Amputation may be necessary if Raynaud's disease has progressed to the point of tissue death. Lung transplants may be indicated for patients with severe respiratory system issues (Mayo Clinic, 2019).

Nursing Interventions

In addition to typical patient/family education initiatives such as medication education, nurses are also viewed as healthcare professionals who provide much-needed emotional support. A chronic disease with potentially serious complications leads to stress and anxiety. Patients and families may benefit from joining support groups and obtaining mental health counseling (American College of Rheumatology, 2019; Rebar et al., 2019).

Nurses should be instrumental in helping patients to lead a healthy lifestyle. Patients are encouraged to (Mayo Clinic, 2019):

- **Stay active**: Exercise helps to maintain flexibility, improve circulation, and relieve stiffness. Patients should be taught to perform self-range-of-motion exercises to help keep skin and joints flexible. Before starting an exercise program, the primary healthcare provider should be consulted.
- **Protect their skin**: Patients should avoid hot baths and showers and avoid using strong soaps, which can dry out the skin and cause further damage. Sunscreen should be used to protect the skin as well.
- **Avoid tobacco products**: Nicotine causes blood vessel contraction, which can worsen Raynaud's disease. Smoking can also cause permanent narrowing of blood vessels and lead to or exacerbate lung issues.
- **Manage heartburn**: Patients should avoid spicy foods and beverages. They should be taught to identify and avoid other foods and beverages that trigger heartburn. Late night meals should be avoided as well. Sleeping with the head of the bed elevated helps to prevent gastric acid from backing up into the esophagus. Antacids or protein pump inhibitors may be suggested to relieve symptoms of heartburn.
- **Protect from cold**: Mittens should be worn anytime hands are exposed to cold, even when reaching into a freezer. If outside in cold weather several layers of warm clothing are recommended, and the face and head should be covered as much as possible.

Self-Assessment Question 9

A form of scleroderma that affects 50% of persons with the disease and is a more benign form of scleroderma is:

a. Morphea.
b. Linear scleroderma.
c. Diffuse scleroderma.
d. Limited scleroderma.

Ulcerative colitis

Ulcerative colitis is a chronic inflammatory bowel disease (IBD). An autoimmune disease, ulcerative colitis causes inflammation and ulcerations of the mucosa in the colon. Ulcerative colitis affects the innermost lining of the colon and rectum (Mayo Clinic, 2021d; National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], n.d.; Rebar et al., 2019).

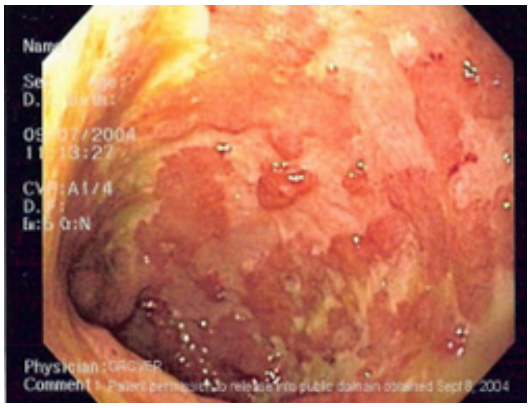
Ulcerative colitis can develop at any age, but peak occurrence is between the ages of 15 and 30 and between 50 and 70. The disease is slightly more prevalent in men compared to women. An estimated 238 per 100,000 adults in the US may have ulcerative colitis (Rebar et al., 2019).

Pathophysiology

The exact cause of ulcerative colitis is not known but is likely linked to an abnormal immune response in the gastrointestinal tract (Rebar et al., 2019). Ulcerative colitis typically begins in the rectum, where it may remain localized (ulcerative proctitis) or extend proximally, progressing to involve the entire colon. Inflammation affects the mucosa and submucosa. There is a distinct border between normal and affected tissue (Merck Manual, 2020c). Figure 8 shows a picture of damage that occurs as the result of the disease.

Nursing consideration: Stress does not cause ulcerative colitis. However, stress can increase the severity of the attack (Rebar et al., 2019). Patients should take steps to reduce stress whenever possible.

Figure 8 Ulcerative Colitis



Note. Wikimedia Commons., 2006.

Early in the course of the disease, the mucous membrane is erythematous and finely granular. There is a loss of normal vascular pattern often accompanied by scattered hemorrhagic areas. Severe disease is characterized by large mucosal ulcers with copious purulent exudate. Fistulas and abscesses do not occur (Merck Manual, 2020c).

A summary of the disease progression is as follows (Rebar et al., 2019):

- The disease typically originates in the rectum. It may progress to involve the entire colon.
- The colon's mucosa develops diffuse ulceration with hemorrhage, congestion, edema, and exudative inflammation.
- Large mucosal ulcers form and drain purulent pus and become necrotic.
- Sloughing of the mucosa occurs, leading to bloody, mucous-filled stools.

Progression of the disease may cause intestinal obstruction, dehydration, and significant fluid and electrolyte imbalances. Malabsorption is common and anemia may develop because of blood loss in the stools (Rebar et al., 2019).

Ulcerative colitis is often classified according to its location. Types of ulcerative colitis include the following (Mayo Clinic, 2021d):

- **Ulcerative proctitis:** Inflammation is confined to the area that is closest to the anus. Rectal bleeding may be the only sign of the disease.
- **Proctosigmoiditis**: Inflammation involves the rectum and sigmoid colon. Bloody diarrhea, abdominal cramps and pain, and constipation are signs and symptoms of proctosigmoiditis.
- **Left-sided colitis**: Inflammation extends from the rectum through the sigmoid and descending colon. Signs and symptoms include bloody diarrhea, abdominal cramping and pain on the left side, and an urgent need to defecate.
- **Pancolitis**: The entire colon is affected, causing bloody diarrhea that may be severe, abdominal cramping and pain, fatigue, and weight loss.

Risk Factors. There are several risk factors associated with the development of ulcerative colitis. These include the following (Mayo Clinic, 2021d):

- **Age**: Ulcerative colitis typically begins before the age of 30. However, it can occur at any stage in life. Some patients may not develop the disease until after the age of 60.
- **Race or ethnicity**: Whites develop the disease most often, although it can occur in any race or ethnicity. The risk is even higher if someone is of Ashkenazi Jewish descent.
- **Family history/Gemetocs**: Risk increases if a parent, sibling, or child has the disease.

Complications. Complications that may occur with ulcerative colitis. These include the following (Mayo Clinic, 2021d):

- Hemorrhage.
- Perforated colon.
- Severe dehydration.
- Osteoporosis.
- Skin, joint, and eye inflammation.
- An increase in the risk for colon cancer.
- Toxic megacolon.
- Increased risk of blood clots.

Assessment and Diagnosis

In order to diagnose ulcerative colitis, a complete history and physical is performed, family history obtained, symptoms reviewed, and some diagnostic tests ordered (NIDDK, n.d.).

Signs and Symptoms. Patients are assessed for the following symptoms, which vary depending on the severity of the disease and its location. Signs and symptoms may include the following (Mayo Clinic, 2021d):

- Diarrhea, often containing blood or pus.
- Abdominal pain and cramping.
- Rectal pain.
- Rectal bleeding.
- Urgency with defecation.
- Unable to defecate despite urgency feelings.
- Weight loss.
- Malaise.
- Fever.
- In children, failure to grow.

Most people with ulcerative colitis have mild to moderate symptoms. Additionally, the course of the disease may vary from person-to-person, and some patients have long periods of remission (Mayo Clinic, 2021d).

Diagnostic Tests. Stool cultures for enteric pathogens should be done to identify a pathogenic cause of the disease. In women who are using oral contraceptives, contraception-induced colitis is possible. This type of ulcerative colitis usually resolves spontaneously after hormone therapy is stopped (Merck Manual, 2020c).

Additional diagnostic tests include the following (Mayo Clinic, 2021d; Merck Manual, 2020c):

- **Flexible sigmoidoscopy**: Flexible sigmoidoscopy is used to visually confirm the diagnosis and allows direct sampling of stool or mucous for culture and microscopic evaluation. If the sigmoid colon is severely inflamed, a flexible sigmoidoscopy may be performed instead of a full colonoscopy.
- **Colonoscopy**: Colonoscopy allows visualization of the entire colon. Tissue samples are obtained for laboratory analysis, which is necessary to make an accurate diagnosis.
- **X-rays**: If patients have severe symptoms an X-ray of the abdominal area can help to rule out serious complications, such as a perforated colon.
- **CT scan**: A CT scan is typically used if complications are suspected. It can also show how much of the colon is inflamed.
- **Computerized tomography (CT) enterography and magnetic resonance imagery (MRI)**: These non-invasive tests may be performed to exclude inflammation of the small intestine.

Treatment

Treatment goals are to control inflammation, replace lost nutrients and blood, and prevent complications. General supportive initiatives include bed rest, IV fluid replacement, and, if needed, blood transfusions (Rebar et al., 2019).

Medications. Several classifications of drugs are used in the treatment of ulcerative colitis. Medications prescribed depend on the severity of the disease and need to be individualized to each patient (Mayo Clinic, 2021d; Rebar et al., 2019). Drugs include the following:

- **Corticosteroids**: Corticosteroids such as prednisone are used to control inflammation when the patient does not

respond to other treatments. They are usually used in patients who have moderate to severe ulcerative colitis. Corticosteroids are not given long-term and must be tapered off, not abruptly discontinued.

- **Aminosalicylates**: These medications (e.g., mesalamine [Asacol]) are taken to reduce inflammation.
- **Anti-diarrheal medications**: These are prescribed for patients who have frequent, troublesome diarrhea and whose ulcerative colitis is otherwise under control.
- **Immune system suppressors**: In addition to reducing inflammation, immune system suppressors suppress the immune response that initiates the inflammation process.
- **Iron supplements**: Iron supplements are given to correct anemia.
- **Biologics**: Biologics target proteins manufactured by the immune system. These drugs (e.g., infliximab [Remicade]) help to heal the intestinal lining and, hopefully, to induce remission.
- **Antispasmodics**: Antispasmodics are given to help reduce cramping.
- **Pain relievers**: For mild pain, acetaminophen (Tylenol) may be taken. However, ibuprofen (e.g., Advil, Motrin) is contraindicated since it can exacerbate symptoms and increase disease severity.

Diet. Patients may find that limiting or eliminating dairy products may help to improve issues such as diarrhea. Patients affected by severe disease may need total parenteral nutrition (TPN) and to take nothing by mouth. Patients with moderate disease may benefit from supplemental drinks. A low-residue diet may be ordered for patients who have mild disease (Rebar et al., 2019).

Surgery. If massive dilation of the colon (toxic megacolon) occurs, surgery may be indicated. The most common surgical procedure is proctocolectomy with colostomy or ileostomy (Rebar et al., 2019).

Nursing Interventions

In addition to facilitating adherence to treatment regimens, nurses need to help patients modify their lifestyles to help reduce symptoms and increase quality of life. Diet modifications may be of significant help. Keeping a food diary is recommended. Patients should keep track of what they eat and how they feel after eating. By doing this, patients may be able to identify what foods exacerbate their symptoms and learn to avoid them (Mayo Clinic, 2021d).

Rather than eating two or three large meals, eating five or six small meals a day may help to reduce symptoms. Patients should also be encouraged to drink plenty of fluids. Water is the beverage of choice. Alcohol and beverages containing caffeine stimulate the intestines, which can exacerbate diarrhea. Carbonated drinks may cause flatulence and increase cramping (Mayo Clinic, 2021d; Rebar et al., 2019).

Stress reduction is important. Stress can worsen symptoms and trigger disease flare-ups. To help control stress patients may find the following interventions helpful (Mayo Clinic, 2019d):

- **Exercise**: Exercise can help to reduce stress, relieve depression, and restore some normalcy to bowel functioning. Patients should consult their healthcare providers before beginning exercise programs.
- **Biofeedback**: Biofeedback helps to reduce muscle tension and reduce heart rate. The goal of biofeedback is to achieve a relaxed state so that stress is reduced.
- **Relaxation and breathing exercises**: Relaxation breathing, yoga, and meditation may help to reduce stress and alleviate symptoms.

Vitiligo

Vitiligo is a painless autoimmune skin disorder that causes the skin to lose its color. It typically begins with a few small white patches that may gradually spread over the body over a period of several months (Cleveland Clinic, 2020). Vitiligo can affect the skin on any part of the body as well as the hair and the inside of the mouth (Mayo Clinic, 2020d).

Vitiligo occurs in about one percent of the world's population. The disease affects all races equally, but it is more visible in people whose skin is darker. Vitiligo affects men and women equally (Cleveland Clinic, 2020). Vitiligo is not life-threatening nor is it contagious. However, the obvious loss of pigment can be stressful and reduce self-esteem. It may even lead to patients being teased or bullied (Mayo Clinic, 2020d).

Vitiligo can develop at any age. It appears most often in people 10 to 30 years of age. The disease seldom appears in the very young or the very old (Cleveland Clinic, 2020).

Nursing consideration: Treatment may restore color to the affected skin in persons with vitiligo. However, it does not prevent continued loss of skin color or a recurrence of the disease (Mayo Clinic, 2020d).

Pathophysiology

Vitiligo occurs when the body's melanocytes are destroyed by the body's immune system. Smooth white areas on the skin are called macules if less than 5 mm, or patches if they are larger than 5mm (Cleveland Clinic, 2020). There are several types of vitiligo that are classified by the extent and location of the pigment loss, as follows (Cleveland Clinic, 2020; Mayo Clinic, 2020d):

- **Universal vitiligo**: This type of vitiligo is characterized by a loss of color over nearly all (more than 80%) skin surfaces.
- **Generalized vitiligo**: This is the most common form of vitiligo. Generalized vitiligo is characterized by discolored patches (loss of pigmented skin) that generally progress symmetrically on corresponding body parts.
- **Segmental vitiligo**: Only one side or part of the body is affected. This type of vitiligo usually occurs at a younger age, progresses for a year or two, then stops.
- **Localized vitiligo**: Localized (focal) vitiligo affects one or only a few areas of the body.
- **Acrofacial vitiligo**: This form of vitiligo is characterized by a loss of pigment on the face and hands, and around body openings such as the eyes and nose.
- **Mucosal vitiligo**: Mucosal vitiligo affects mucous membranes of the mouth and/or the genitals.
- **Trichome vitiligo**: This type of vitiligo is characterized by a white or colorless center, an area of lighter pigmentation, and then an area of normally colored skin.

Predicting the progress of the disease is difficult. The patches may stop forming without treatment. In most people, pigment loss spreads, eventually involving most of the skin (Mayo Clinic, 2020d). Figure 9 shows how a loss of pigmentation looks.

Figure 9. Vitiligo

Note. Heilman, 2015.

Nursing consideration: Patients have varying amounts of skin affected by vitiligo. Some people have few depigmented areas, while others experience widespread loss of skin color (Cleveland Clinic, 2020).

Etiology. The exact cause of vitiligo is unknown. However, experts propose several theories about why it develops, including the following (Cleveland Clinic, 2020):

- **Autoimmunity**: Autoimmunity is the destruction of melanocytes by the body's immune system.
- **Genetics**: About 30% of vitiligo cases run in families.
- **Neurogenics**: A substance toxic to melanocytes may be released at nerve endings in the skin.
- **Self-sestruction**: A defect in the melanocytes causes them to self-destruct.

Complications. Because of the lack of melanocytes, affected skin is more sensitive to the sun's rays than normal skin and will burn easily instead of tan. People with vitiligo may have retinal abnormalities that cause inflammation of the retina or iris, but vision is typically not affected. Patients with vitiligo may be more likely to develop other autoimmune diseases. Finally, changes in appearance caused by vitiligo may cause embarrassment and anxiety. Patients may face bullying or rude questions. Such factors may lead to anxiety, excessive stress, and depression (Cleveland Clinic, 2020).

Assessment and Diagnosis

The disease is often recognized from its physical appearance. A history and physical is performed, and a skin biopsy may be taken to confirm diagnosis or to differentiate vitiligo from other skin conditions (Mayo Clinic, 2020d).

Healthcare providers will also assess presenting signs and symptoms to make a diagnosis. Signs include the following (Mayo Clinic, 2020d):

- Patchy loss of skin color that usually first appears on the hands, face, and areas around body openings and genitalia.
- Premature whitening or graying of hair on the scalp, eyelashes, eyebrows, or beard.
- Loss of color in the mucous membranes of the mouth.

Treatment

There is no cure for vitiligo. The goal of treatment is to create a uniform skin tone by either repigmentation or by eliminating remaining color (depigmentation). The goal can be achieved by the following methods:

- **Camouflage therapy**: This therapy involves using sunscreen with an SPF of 30 or higher. Use of sunscreens minimizes tanning, thus limiting the contrast between normal and affected skin. Makeup can help to camouflage depigmented areas. Hair dyes can be used if the disease affects the hair. Depigmentation therapy with the medication monobenzone can be used to treat extensive disease. The medication is applied to pigmented patches of skin to turn them white to match affected areas of skin (Cleveland Clinic, 2020).
- **Medications**: Corticosteroids can be used in oral or topical forms to promote repigmentation. It may take up to 3 months to show results. Topical vitamin D analogs may also be helpful. Topical immunomodulators may be useful for treating small areas of pigmentation. However, there may be a possible link between these kinds of drugs and lymphoma and skin cancer (Mayo Clinic, 2020d).
- **Light therapy**: Phototherapy with narrow band ultraviolet B may stop or slow progression of the disease. Effectiveness might be enhanced when used with corticosteroids or calcineurin inhibitors. Light therapy is administered two to three times a week. It may take 1 to 3 months before any change is noticed. However, there is a possible risk of skin cancer with the use of calcineurin inhibitors (Mayo Clinic, 2020d).
- **Depigmentation**: For widespread vitiligo that has not been treated successfully with other options, a depigmenting agent is applied to unaffected areas of skin. The skin is gradually lightened so that it blends with discolored areas. This type of therapy is done once or twice a day for 9 months or longer (Cleveland Clinic, 2020).

If medications and light therapy do not work, surgery may be performed. Possible procedures include the following (Mayo Clinic, 2020d):

- **Skin grafting**: Small sections of healthy, pigmented skin are grafted to affected areas. Risks include infection, scarring, a cobblestone appearance, spotty color, and failure of the area to recover.
- **Blister grafting**: Blisters are creating on pigmented skin and then the tops of the blisters are transplanted to affected areas. Risks include scarring, a cobblestone appearance, and failure of the area to recover.
- **Cellular suspension transplant**: Tissue is taken from pigmented skin, cells from the skin are placed into solution, and then are transplanted onto affected areas. Results start to show within 4 weeks.

Self-Assessment Question 10

A nurse is providing education to a patient newly diagnosed with vitiligo. The nurse should tell the patient that:

a. Vitiligo often causes mild to moderate pain.
b. Vitiligo appears most often in people over 65 years of age.
c. The most common form of vitiligo is universal vitiligo.
d. Corticosteroids are used to promote repigmentation.

Nursing Interventions

Nurses need to teach patients and families about lifestyle modifications and home remedies. These include the following (Mayo Clinic, 2020d):

- Skin must be protected from the sun and artificial sources of UV light. A broad-spectrum, water-resistant sunscreen with an SPR of at least 30 is recommended.
- Makeup and self-tanning products can help to reduce differences in skin color. If a self-tanner is used, one should be chosen that contains the Food and Drug Administration (FDA) approved ingredient dihydroxyacetone.
- Patients should not get tattoos. Any skin damage may cause new patches of vitiligo to appear.
- Patients should seek emotional support in the form of family and friend support, vitiligo support groups, and/or professional counseling.

Conclusion

Autoimmune diseases can cause a wide range of effects from mild to serious and, in some cases, life-threatening. Nurses and other members of the healthcare team must work together to provide a coordinated approach to patient care and help patients attain the best possible outcomes. To do this, the healthcare team must keep abreast of the effects of autoimmune diseases, how to recognize them, and treatment advances.

References

- American Academy of Dermatology Association (AAD). (2021a). Hair loss types: Alopecia areata causes. https://www.aad.org/public/diseases/hair-loss/types/alopecia/causes
- American Academy of Dermatology Association (AAD). (2021b). Hair loss types: Alopecia areata diagnosis and treatment. https://www.aad.org/public/diseases/hair-loss/types/alopecia/treatment
- American College of Rheumatology. (2019). Scleroderma. https://www.rheumatology.org/I-Am-A/Patient-Caregiver/Diseases-Conditions/Scleroderma
- American College of Rheumatology. (2021). Rheumatoid arthritis. https://www.rheumatology.org/I-Am-A/Patient-Caregiver/Diseases-Conditions/Rheumatoid-Arthritis
- Andrzej. (2011). Alopecia areata.JPG https://commons.wikimedia.org/wiki/File:Allopecia_areata.JPG
- Celiac Disease Foundation. (n.d.a). Diagnosis (celiac disease). https://celiac.org/about-celiac-disease/screening-and-diagnosis/diagnosis/
- Celiac Disease Foundation. (n.d.b). What is celiac disease? https://celiac.org/about-celiac-disease/what-is-celiac-disease/
- Celiac Disease Foundation. (2018). Global prevalence of celiac disease. https://celiac.org/about-the-foundation/featured-news/2018/08/global-prevalence-of-celiac-disease/
- Celiac Disease Foundation. (2021). Celiac disease. https://celiac.org/
- Centers for Disease Control and Prevention (CDC). (2020a). Rheumatoid Arthritis (RA). https://www.cdc.gov/arthritis/basics/rheumatoid-arthritis.html
- Centers for Disease Control and Prevention (CDC). (2020b). What is psoriasis? https://www.cdc.gov/psoriasis/index.htm
- Centers for Disease Control and Prevention (CDC). (2021a). 4 ways to take insulin. https://www.cdc.gov/diabetes/basics/type-1-4-ways-to-take-insulin.html
- Centers for Disease Control and Prevention (CDC). (2021b). Arthritis related statistics. https://www.cdc.gov/arthritis/data_statistics/arthritis-related-stats.htm
- Centers for Disease Control and Prevention (CDC). (2021c). What is type 1 diabetes? https://www.cdc.gov/diabetes/basics/what-is-type-1-diabetes.html
- Cleveland Clinic. (2020). Vitiligo. https://my.clevelandclinic.org/health/diseases/12419-vitiligo
- Cleveland Clinic. (2021). Lupus (systemic lupus erythematosus). https://my.clevelandclinic.org/health/diseases/4875-lupus
- Cochrane. (2019). Antibiotics for the treatment of Crohn's disease. https://www.cochrane.org/CD012730/IBD_antibiotics-treatment-crohns-disease
- Comerford, K. C. & Durkin, M. T. (Eds.). (2021). Nursing 2021 drug handbook. Wolters Kluwer.
- Crohn's & Colitis Foundation. (2021a). Overview of Crohn's disease. https://www.crohnscolitisfoundation.org/what-is-crohns-disease/overview
- Crohn's & Colitis Foundation. (2021b). Overview of ulcerative colitis. https://www.crohnscolitisfoundation.org/what-is-ulcerative-colitis/overview
- Crohn's & Colitis Foundation. (2021c). What should I eat? https://www.crohnscolitisfoundation.org/diet-and-nutrition/what-should-i-eat
- Entringer, S. (2020). Methotrexate. https://www.aad.org/public/diseases/hair-loss/types/alopecia/treatment
- Feuerstein, J. D. & Cheifetz, A. S. (2017). Crohn disease: Epidemiology, diagnosis, and management. https://www.mayoclinicproceedings.org/article/S0025-6196(17)30313-0/fulltext
- Gardner, S. (2020). Scleroderma. https://www.webmd.com/skin-problems-and-treatments/scleroderma
- Gersch, C., Heimgartner, N. M., Rebar, C. R., & Willis, L. M. (Clinical Eds.). (2017). Medical-surgical nursing made incredibly easy. Wolters Kluwer.
- Goebel, S. U. (2019). Celiac disease (sprue) workup. https://emedicine.medscape.com/article/171805-workup#cL
- Habashy, J. (2021). Psoriasis. https://emedicine.medscape.com/article/1943419-overview#a1
- Haggstrom, M. (2009). Most common symptoms of systemic lupus erythematosus. (All used images are in the public domain.) https://commons.wikimedia.org/wiki/File:Symptoms_of_SLE.svg
- Heilman, J. (2015). Vitiligo. https://commons.wikimedia.org/wiki/File:Vitiligo2.JPG Permission is granted to copy, distribute, and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation.
- JDRF. (n.d.a.). Insulin types and usage. https://www.jdrf.org/t1d-resources/about/insulin/
- JDRF. (n.d.b.). Type 1 diabetes facts. https://www.jdrf.org/t1d-resources/about/facts/
- JDRF. (n.d.c.). Type 1 diabetes treatments. https://www.jdrf.org/t1d-resources/about/treatment/
- JDRF. (n.d.d.). What is the cause of diabetes type 1? https://www.jdrf.org/t1d-resources/about/causes/
- Jimenez, S. A. (2020). What is the prevalence of scleroderma in the U.S.? https://www.medscape.com/answers/331864-163573/what-is-the-prevalence-of-scleroderma-in-the-us
- Johns Hopkins Medicine. (n.d.). Treating multiple sclerosis (MS). https://www.hopkinsmedicine.org/neurology_neurosurgery/centers_clinics/multiple_sclerosis/conditions/multiple_sclerosis_treatments.html
- Lucier, J. & Weinstock, R. S. (2021). Diabetes mellitus type 1. https://www.ncbi.nlm.nih.gov/books/NBK507713/
- Lupus Foundation of America. (2020). What is lupus? https://www.lupus.org/resources/what-is-lupus#
- Mayo Clinic. (2019). Scleroderma. https://www.mayoclinic.org/diseases-conditions/scleroderma/symptoms-causes/syc-20351952
- Mayo Clinic. (2020a). Celiac disease. https://www.mayoclinic.org/diseases-conditions/celiac-disease/symptoms-causes/syc-20352220
- Mayo Clinic. (2020b). Multiple sclerosis. https://www.mayoclinic.org/diseases-conditions/multiple-sclerosis/symptoms-causes/syc-2035026
- Mayo Clinic. (2020c). Psoriasis. https://www.mayoclinic.org/diseases-conditions/psoriasis/symptoms-causes/syc-20355840
- Mayo Clinic. (2020d). Vitiligo. https://www.mayoclinic.org/diseases-conditions/vitiligo/symptoms-causes/syc-20355912
- Mayo Clinic. (2020e). 6 steps to manage rheumatoid arthritis symptoms. https://www.mayoclinic.org/diseases-conditions/rheumatoid-arthritis/in-depth/6-tips-to-manage-rheumatoid-arthritis-symptoms/art-20486824
- Mayo Clinic. (2021a). Lupus. https://www.mayoclinic.org/diseases-conditions/lupus/symptoms-causes/syc-20365789
- Mayo Clinic. (2021b). Rheumatoid arthritis. https://www.mayoclinic.org/diseases-conditions/rheumatoid-arthritis/symptoms-causes/syc-20353648
- Mayo Clinic. (2021c). Type 1 diabetes. https://www.mayoclinic.org/diseases-conditions/type-1-diabetes/symptoms-causes/syc-20353011
- Mayo Clinic. (2021d). Ulcerative colitis. https://www.mayoclinic.org/diseases-conditions/ulcerative-colitis/symptoms-causes/syc-20353326
- Mayo Clinic. (2021e). Vitamin D and MS: Is there any connection? https://www.mayoclinic.org/diseases-conditions/multiple-sclerosis/expert-answers/vitamin-d-and-ms/faq-20058258
- Meadows-Oliver, M. (Clinical Ed.). (2019). Pediatric nursing made incredibly easy (3rd ed.). Wolters Kluwer.
- Merck Manual. (2020a). Crohn disease. https://www.merckmanuals.com/professional/gastrointestinal-disorders/inflammatory-bowel-disease-ibd/crohn-disease
- Merck Manual. (2020b). Diabetic ketoacidosis (DKA). https://www.merckmanuals.com/professional/endocrine-and-metabolic-disorders/diabetes-mellitus-and-disorders-of-carbohydrate-metabolism/diabetic-ketoacidosis-dka
- Merck Manual. (2020c). Ulcerative colitis. https://www.merckmanuals.com/professional/gastrointestinal-disorders/inflammatory-bowel-disease-ibd/ulcerative-colitis
- Messenger, A. G. (2021). Alopecia areata: Clinical manifestations and diagnosis. https://www.uptodate.com/contents/alopecia-areata-clinical-manifestations-and-diagnosis#H953523891
- My Health Alberta. (2021). Celiac disease: Care instructions. https://myhealth.alberta.ca/Health/aftercareinformation/pages/conditions.aspx?hwid=abp7938
- National Alopecia Areata Foundation. (n.d.). Alopecia areata and emotional wellness. https://www.naaf.org/emotional-wellness
- National Cancer Institute. (n.d.). Autoimmune disease. https://www.cancer.gov/publications/dictionaries/cancer-terms/def/autoimmune-disease
- National Institute of Arthritis and Musculoskeletal and Skin Diseases. (2020). Scleroderma. https://www.niams.nih.gov/health-topics/scleroderma
- National Institute of Diabetes and Digestive and Kidney Diseases. (n.d.). Ulcerative colitis. https://www.niddk.nih.gov/health-information/digestive-diseases/ulcerative-colitis/all-content
- National Institutes of Health (NIH). (2020). Autoimmunity may be rising in the United States. https://www.nih.gov/news-events/news-releases/autoimmunity-may-be-rising-united-states
- National Library of Medicine U.S. (2013). Rheumatoid-arthritis.png. https://commons.wikimedia.org/wiki/File:Rheumatoid-Arthritis.png. This file has been identified as being free of known restrictions under copyright law, including all related and neighboring rights.
- National Multiple Sclerosis Society. (2020a). Definition of MS. https://www.nationalmssociety.org/What-is-MS/Definition-of-MS
- National Multiple Sclerosis Society. (2020b). Prevalence of MS more than doubles estimate. https://www.nationalmssociety.org/About-the-Society/MS-Prevalence
- National Multiple Sclerosis Society. (2021). How MS is diagnosed. https://www.nationalmssociety.org/Symptoms-Diagnosis/Diagnosing-MS#section-0
- National Organization for Rare Disorders. (2021). Refractory celiac disease. https://rarediseases.org/rare-diseases/refractory-celiac-disease/
- National Psoriasis Foundation. (n.d.). Treatments for psoriatic disease. https://www.psoriasis.org/treatments-for-psoriatic-disease/
- National Psoriasis Foundation. (2021). About psoriasis. https://www.psoriasis.org/about-psoriasis/
- National Resource Center on Lupus. (2021). Why it's difficult to determine exactly how many people are living with lupus in the U.S. https://www.lupus.org/resources/how-many-people-are-living-with-lupus-in-united-states-us
- National Stem Cell Foundation (NSCF). (2021). Autoimmune disease. https://nationalstemcellfoundation.org/glossary/autoimmune-disease/
- Nazario, B. (2020). Dermatitis herpetiformis. https://www.webmd.com/skin-problems-and-treatments/what-is-dermatitis-herpetiformis
- Rebar, C. R., Heimgartner, N. M., & Gersch, C. J. (Clinical Eds.). (2019). Pathophysiology made incredibly easy. (6th ed.). Wolters Kluwer.
- Scleroderma Foundation. (2021). What is scleroderma? https://www.scleroderma.org/site/SPageServer/?pagename=patients_whatis
- Singam, V., Patel, K. R., Lee, H. H., Rastogi, S., & Silverberg, J. (2018). Association of alopecia areata with hospitalization for mental health disorders in US adults. Journal of the American Academy of Dermatology, 80(3), 792-794. https://doi.org/10.1016/j.jaad.2018.07.044.
- Smith, H.R. (2021a). Rheumatoid arthritis (RA). https://emedicine.medscape.com/article/331715-overview#a1
- Smith, H. R. (2021b). What is the global prevalence of rheumatoid arthritis (RA) among different age groups and ethnicities? https://www.medscape.com/answers/331715-5335/what-is-the-global-prevalence-of-rheumatoid-arthritis-ra-among-different-age-groups-and-ethnicities
- Stringer, K. (2016). 80,000 kids just replied to a survey about bullying. Here's what surprised their educators most. https://www.the74million.org/article/80000-kids-just-replied-to-a-survey-about-bullying-heres-what-surprised-their-educators-most/
- Walker N. P. (2010). Scleroderma. https://commons.wikimedia.org/wiki/File:An_introduction_to_dermatology_(1905)_scleroderma.jpg This media file is in the public domain in the United States.
- Walton, C., King, R., Rechtman, L., Kaye, W., Leray, E., Marnie, R.A., Robertson, N., La Rocca, N., Uitdehaag, B., van der Mei, I., Wallin, M., Helme, A., Napier, C. A., Rijke, N., & Baneke, P. (2020). Multisclerosis, 26(14), 1816-1821. https://doi.org/10.1177/1352458520970841
- Wikimedia Commons. (2006). Ulcerative colitis. https://commons.wikimedia.org/wiki/File:Ulcerative_colitis.jpg. Endoscopic image of ulcerative colitis affecting the left side of the colon, released with permission of patient into public domain, Sept. 8, 2004.
- WikipedianProlific. (2006). Coeliac Disease.png: Upper jejunal mucosal immunopathology. https://commons.wikimedia.org/wiki/File:Coeliac_Disease.png
- Yakovlev, M. (n.d.). Psoriasis. Royalty-free stock photo https://www.dreamstime.com/photos-images/psoriasis.html

NURSING ASSESSMENT, MANAGEMENT AND TREATMENT OF AUTOIMMUNE DISEASES

Self-Assessment Answers and Rationales

1. The correct answer is B.
Rationale: An estimated four percent of the world's population is affected by one of more than 80 different autoimmune diseases. In the United States, autoimmune diseases are the third most common cause of chronic illness.

2. The correct answer is D.
Rationale: There are various grains and starches allowed on a gluten-free diet. These include buckwheat.

3. The correct answer is B.
Rationale: Ileocolitis is the most common type of Crohn's disease. It affects the terminal ileum and the colon.

4. The correct answer is A.
Rationale: The A1C is a blood test that reports average blood glucose levels for the past 2 to 3 months. However, certain conditions such as pregnancy or having a hemoglobin variant may interfere with the accuracy of the A1C test.

5. The correct answer is C.
Rationale: Hydroxychloroquine is antimalarial drug that has been prescribed to help keep lupus-related skin and joint disease under control. It has also been found to be effective in the treatment of fatigue and mouth sores.

6. The correct answer is A**.**
Rationale: Mitoxantrone is a chemotherapeutic drug that is used for patients experiencing worsening forms of relapsing MS and secondary progressive MS. It is given intravenously every 3 months. The potential for toxicity is high, so patients may receive a limited number of doses throughout the lifespan. Mitoxantrone is associated with cardiotoxicity.

7. The correct answer is B.
Rationale: Over-the-counter and prescription formats such as shampoo, cream, and oil, unfortunately, can cause skin irritation, stain clothing and bedding, and have a strong odor. Coal tar is contraindicated for pregnant women and for those who are breastfeeding.

8. The correct answer is C.
Rationale: Women are diagnosed with RA more frequently than men. Tobacco use is associated with a significant increase in risk for the development of RA.

9. The correct answer is D.
Rationale: Limited scleroderma affects about 50% of persons who have scleroderma. It progresses more slowly and is a more benign illness than diffuse scleroderma. Internal issues may evolve, but they are typically less frequent and less severe compared to diffuse scleroderma.

10. The correct answer is D.
Rationale: Corticosteroids can be used in oral or topical forms to promote repigmentation. It may take up to 3 months to show results.

Course Code: ANCCGA06AD

Stroke Management in the Acute Care Setting

5 Contact Hours

Release Date: May 3, 2022

Expiration Date: May 3, 2025

Faculty

Norma D. McNair, PhD, RN, CNRN, SCRN, ACNS-BC, FAHA, is an accomplished clinical nurse specialist with a focus in brain injury, including traumatic brain injury and stroke. She earned her bachelor's degree from California State University, Sacramento; a certificate in neuroscience nursing from the National Hospital for Nervous Diseases in London, England; her master's degree from Yale University School of Nursing; a post-master's nurse practitioner certificate from California State University, Long Beach; and her PhD from UCLA School of Nursing. She has held a variety of positions including staff nurse, charge nurse, interim director of evidence-based practice, and clinical nurse specialist. She has published in peer reviewed journals and is a frequent presenter at local, national, and international conferences that focus on the care of neuroscience patients.

Norma D. McNair has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Reviewer: Jennifer L. Bauman, RN, BSN, CCRN, MSN, AGACNP-BC, has devoted her nursing career to specializing in critical care medicine. She spent 6 years as a medical intensive care unit nurse, completed her master's degree, and is practicing as a nurse practitioner in multiple ICU settings including cardiac, medical, surgical, and neurological intensive care units. In addition to receiving her educational degrees from Marquette University in Milwaukee, Wisconsin, she currently works at her alma mater as part time faculty for their Adult-Gerontology Acute Care Nurse Practitioner program.

Jennifer L. Bauman has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Course overview

The purpose of this educational offering is to provide nurses and other healthcare providers with the latest information about stroke including updates in anatomy, assessment, and management of the patient with a stroke who is in the acute care setting.

Learning objectives

Upon completion of the course, the learner should be able to:

- Describe stroke epidemiology, demographics, and risk factors.
- Review anatomy and physiology related to stroke.
- Recognize stroke signs and symptoms.
- Explain the management of acute stroke from prehospital to acute care up until discharge.
- Describe the trajectory of care for patients with stroke.
- Understand the social determinants of health and the risk of bias in the care of the patient with a stroke.
- Implement a stroke plan of care appropriate for location of care.
- Understand end-of-life/supportive care for those with catastrophic strokes.
- Describe the requirements for stroke center certification by The Joint Commission.

How to receive credit

- Read the entire course online or in print which requires a 5-hour commitment of time.
- Complete the self-assessment quiz questions which are at the end of the course or integrated throughout the course. These questions are NOT GRADED. The correct answer is shown after you answer the question. If the incorrect answer is selected, the rationale for the correct answer is provided. These questions help to affirm what you have learned from the course.
- Depending on your state requirements you will be asked to complete either:
  - An affirmation that you have completed the educational activity.
  - A mandatory test (a passing score of 70 percent is required). Test questions link content to learning objectives as a method to enhance individualized learning and material retention.
- If requested, provide required personal information and payment information.
- Complete the MANDATORY Course Evaluation.
- Print your Certificate of Completion.

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Activity director

Shirley Aycock, DNP, RN, Executive Director of Quality and Accreditation

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Course verification

All individuals involved have disclosed that they have no significant financial or other conflicts of interest pertaining to this course. Likewise, and in compliance with California Assembly Bill No. 241, every reasonable effort has been made to ensure that the content in this course is balanced and unbiased.

INTRODUCTION

Stroke is described as neurological dysfunction caused by a focal event (Sacco et al., 2013). In addition, stroke is more broadly described as pathological, radiological evidence of clinical ischemic injury in a defined vascular distribution that lasts greater than 24 hours (Morgenstern et al., 2021; Sacco et al., 2013). The focus of this definition of stroke is on the injury to the tissue of the central nervous system and not solely on clinical symptoms (Morgenstern et al., 2021).

According to the American Heart Association/American Stroke Association (AHA/ASA), stroke is the fifth leading cause of death in the United States (US). It is estimated that someone experiences a stroke every 40 seconds, and every 4 minutes someone dies as a result of a stroke. Each year, approximately 795,000 individuals in the United States will suffer a stroke (Virani et al., 2021). Approximately 610,000 are new strokes and 185,000 are recurrent (Center for Disease Control and Prevention, n.d.). Of all strokes, ischemic strokes are the most common (87%) and hemorrhagic strokes are least common (10%). The financial burden of stroke on the healthcare system, medication costs, and missed days of work is significant, at approximately $48 billion each year (Center for Disease Control and Prevention, n.d.).

There are also important cultural considerations related to stroke care. For example, African Americans have a higher risk of stroke and also a higher mortality rate because of strokes. Additionally, the Hispanic population currently is an at-risk population, with a trend of increased mortality rates from 2013 to the present time. In 2009, 34% of patients hospitalized for stroke were less than 65 years of age (Center for Disease Control and Prevention, n.d.). The geographic distribution of stroke in the United States shows that several southern states (North Carolina, South Carolina, Georgia, Tennessee, Mississippi, Alabama, Louisiana, and Arkansas) have higher incidences of stroke than the rest of the country, so much so that it has become known as the "stroke belt." The overall mortality for these states is at least 30% higher than other regions of the US, and the states of North Carolina, South Carolina, and Georgia have mortality rates that are 40% higher (Virani et al., 2021).

Globally, stroke is the second leading cause of death and there are 10.3 million new strokes annually with higher disability rates in the lower- and middle-income countries. Disparities between high- and low-income countries have increased in both the incidence and burden of the costs of care and disability associated with stroke (Katan & Luft, 2018; Pandian et al., 2018).

Nursing Consideration: Because of the number of strokes that occur every minute in the United States, nurses need to educate the public on prevention strategies and the early recognition and treatment of stroke symptoms (Wilson & McPeak, 2020).

Mrs. Rodriguez and her granddaughter Liliana were having breakfast and enjoying a conversation about how Liliana was doing in high school and what her plans were for college. Liliana asked her grandmother a question and her grandmother was unable to respond. Liliana noticed that her grandmother had a right sided facial droop and she had dropped her utensil from her right hand. Liliana had received training at school about how to recognize a stroke and she knew that she needed to call 911 immediately. Emergency services arrived within minutes, performed an assessment, recognized that Mrs. Rodriguez was having a stroke, and quickly took her to the nearest stroke center.

Evidence-based practice alert! Research has shown that patients have better outcomes with early recognition of symptoms and transfer to a facility that can provide care to stroke patients, such as a certified primary or comprehensive stroke center (Man et al., 2018; Shkirkova et al., 2019).

Mr. Smith is a 65-year-old male admitted to the hospital after a motor vehicle crash. He sustained multiple rib fractures and a left femur fracture. The femur fracture has not yet been repaired and the patient is in traction. He has had an uneventful hospital course and has been having coherent conversations with the healthcare team and with visitors. On a routine assessment, Mr. Smith has an altered mental status and left sided weakness. The nurse recognizes that Mr. Smith may have had a stroke (because of a fat embolus) and initiates a Code Stroke. The stroke team arrives within minutes and Mr. Smith is taken to the computed tomography (CT) scanner emergently.

Evidence-based practice alert! Between 4% and 17% of strokes occur in the hospital. Research has shown that there may be delays in recognition of stroke, lower use of thrombolytics, and a greater risk for death and disability for those who have an in-hospital stroke (Del Brutto et al., 2019; Jasne et al., 2020). Patients may have strokes in patient care areas that are not stroke related and thus nurses may not readily recognize stroke symptoms. Education of nursing staff throughout the hospital is necessary as is the development of a rapid response team to treat stroke (Del Brutto et al., 2019; Jasne et al., 2020).

Table 1: Signs and Symptoms of Stroke

Anatomical Location	Symptoms	
Left hemisphere (dominant)	• Right hemiparesis. • Right hemisensory deficits. • Right visual field deficit. • Acalculia (loss of ability to perform simple calculations).	• Agraphia (inability to communicate through writing). • Aphasia (expressive, receptive, or global). • Apraxia of left limbs (inability to perform purposeful actions such as dressing). • Left gaze preference.
Right cerebral hemisphere	• Left hemiparesis. • Left hemisensory deficits. • Left visual field deficit. • Neglect of left side (lack of awareness to the left).	• Dysarthria (difficult or unclear articulation of speech). • Flat affect. • Right gaze preference.
Brain stem/cerebellum	• Diplopia (double vision). • Hemiparesis or quadriparesis. • Hemisensory deficits or sensory deficits in all four limbs or face. • Dysmetria (lack of coordination of movement; may over- or under-shoot intended position).	• Locked-in syndrome (patient is aware but unable to communicate because of paralysis of nearly all voluntary muscles; able to move eyes and blink). • Nausea and vomiting. • Oralpharyngeal weakness. • Vertigo and tinnitus.
Anterior cerebral artery	• Contralateral sensory and motor deficits with deficits greater in the leg or foot than arm or face. • Urinary incontinence. • Rigidity. • Abulia (slow to react). • Lack of initiative.	• Perseveration. • Cognitive impairment. • Distractibility. • Personality changes. • Apraxia (inability to perform purposeful actions).

Middle cerebral artery	• Contralateral motor and sensory deficits with deficits greater in the arm than the leg.
	• Contralateral motor deficits in the face.
	• Contralateral visual field deficits.
	• Dominant hemisphere:
	  ○ Aphasia.
	  ○ Agraphia.
	  ○ Acalculia.
	  ○ Dyslexia (difficulty reading or interpreting words).
		• Nondominant hemisphere:
		  ○ Deficits of spatial relationships.
		  ○ Apraxia (dressing and constructional).
		  ○ Autotopagnosia (inability to localize body parts on a person or in a picture).
		• Decrease in level of consciousness or coma in large infarcts.

Posterior cerebral artery	• Visual changes (ipsilateral visual field deficit). • Contralateral paralysis if motor tracts involved. • Hemisensory deficits.	
Vertebral-Basilar syndrome	• Ataxia. • Vertigo. • Nausea. • Dysarthria. • Dysphagia. • Dysmetria. • Diplopia.	• Nystagmus. • Facial weakness. • Tinnitus. • Deafness. • Syncope. • Drop attacks. • Transient global amnesia.

Note. Livesay & Keigher, 2020.

Risk factors

There are two categories of risk factors for stroke: modifiable and non-modifiable. Addressing the modifiable risk factors may lead to decreased risk for stroke.

Non-modifiable risk factors:

- **Age**: Those older than 55 are at higher risk for stroke. Stroke can occur at any age, but the risk grows higher with age. It is anticipated that stroke will increase in women, especially in the elderly, as women tend to live longer than men (Virani et al., 2021). Children and young adults also experience stroke (Felling et al., 2017).
- **Gender**: 55,000 more women than men have a stroke each year. The lifetime risk for stroke in women is 27% compared to 17% for men. More than 50% of deaths from stroke occur in women. Early menopause (age < 42) leads to twice the risk

for stroke. In addition, preeclampsia, pregnancy, and the use of oral contraceptives put women at a higher risk (Kapral & Bushnell, 2021; Virani et al., 2021).

- **Race**: When compared to Whites, African Americans have a two to three times higher risk of death and disability. Hispanics are likely to have a stroke at a younger age (< 67) compared to age ≥ 80 in Whites. American Indians and Alaska Natives are two times more likely to have a stroke (Virani et al., 2021).
- **History of a prior stroke**: Recurrence of stroke is 3%–10% in the first 30 days after the initial stroke. The recurrence rate in the first year is 4%–14% (Kolmos et al., 2021).
- **Family history of a stroke and/or a prior transient ischemic attack (TIA)**: Those who have had a stroke are at a higher risk for a second event. In a meta-analysis, the annual stroke risk was 0.77% (95% CI, 0.45%–1.10%) for fatal stroke and 2.92% (95% CI, 2.22%–3.62%) for nonfatal stroke (Hickey & Livesay, 2020).

Modifiable risk factors

Modifiable risk factors can be sub-divided into physiological and behavioral. Physiological factors include the following:

- **Hypertension (HTN)**: Elevated blood pressure is associated with 77% of strokes and is present in 60%–70% of those age 60 and older. Hypertension is defined as systolic blood pressure (SBP) > 140 mmHg and diastolic blood pressure (DBP) > 90 mmHg. It is suggested by some research that an SBP of < 130 mmHg is beneficial in decreasing the risk of stroke by as much as 20% (Virani et al., 2021; Whelton et al., 2018).
- **Hypercholesterolemia**: Total cholesterol (TC) has been implicated in stroke but seems to be a risk factor for those between the ages of 40 and 59 (Virani et al., 2021). It appears that a higher high-density lipoprotein (HDL) has a protective effect for stroke whereas a higher low-density lipoprotein (LDL) is a risk factor for stroke (ischemic and hemorrhagic; Virani et al., 2021).
- **Diabetes**: Diabetes, both types I and II, doubles the risk for stroke. Elevated blood glucose accelerates large artery stenosis. Those with asymptomatic elevated glucose have a 1.5–2.5 times higher risk for stroke. Females with diabetes mellitus (DM) have a 27% greater relative risk for stroke when baseline differences in other major cardiovascular risk factors are taken into account. Diabetes is an independent risk factor for recurrent stroke and may lead to death more frequently, especially in women and young adults (Virani et al., 2021).
- **Hypercoagulopathy**: Hypercoagulopathy occurs with sickle cell disease, high red blood cell count, cancer, and pregnancy (Kleindorfer et al., 2021). Hypercoagulability changes the viscosity of blood, making it more difficult to freely circulate without causing an occlusion.
- **Cardiac disease**: Atrial fibrillation is an independent risk factor and increases the risk of stroke five-fold in all age groups. The percentage of strokes that are due to atrial fibrillation increases significantly as individuals age, with approximately 23% occurring in 80 to 89-year-old individuals (Virani et al., 2021). Heart failure leads to stroke in about 9% of patients and there is higher mortality, longer hospital length of stay, and more severe neurological deficits in these cases (Kim & Kim, 2018). A history of myocardial infarction (MI) also increases the risk of stroke with a 30-fold increase in ischemic stroke within the first 30 days (Merkler et al., 2018).

Behavioral risk factors are those that may be more easily modified with interventions and include the following:

- **Cigarette smoking**: Smoking is an independent risk factor for stroke, doubling the risk for ischemic stroke and it has a two to four times risk for subarachnoid hemorrhage. It is believed that cigarette smoking increases mortality by 12%– 14% and leads to the development of atherosclerosis (Pandian et al., 2018).
- **Alcohol intake**: Heavy drinkers (> 21 drinks/week or > 60 g of alcohol/day) are at higher risk for stroke, whereas light to moderate drinkers (1–6 drinks/week or < 12 g of alcohol/day) may be protected from stroke (Pandian et al., 2018). Alcohol may be protective only in acute ischemic stroke (AIS) and may contribute to hemorrhagic stroke. Alcohol contributes to hypertension and atrial fibrillation, thus increasing alcohol intake in an effort to prevent stroke is not recommended.
- **Oral contraceptive use (especially when combined with smoking)**: Current oral contraceptives (low dose) alone do not appear to add an increased stroke risk but when combined with smoking and other risk factors, the risk for stroke increases (Pandian et al., 2018).
- **Physical inactivity**: Physical inactivity is associated with the development of HTN, diabetes, cardiac disease, and stroke. Active men and women have a 25%–30% decrease in the risk of stroke when compared to less active people (Pandian et al., 2018).
- **Obesity**: Persons with a body mass index (BMI) of 25–29.9 kg/m2 are classified as overweight, and those with a BMI ≥ 30 kg/m2 are classified as obese. Abdominal obesity is increasingly being recognized as a risk factor for stroke. Abdominal obesity is defined by a waist circumference ≥ 102 cm (40 in.) in men and 88 cm (35 in.) in women. Weight reduction is recommended to decrease this risk (Pandian et al., 2018).
- **Soda intake**: An increased intake of sweetened drinks can lead to a 13% increased risk of stroke; low-calorie or diet soda is associated with a 7% increase in ischemic stroke and a 27% increased risk of hemorrhagic stroke (Mossavar-Rahmani et al., 2019).
- **Illicit drug use**: Cocaine, amphetamines, and heroin are risk factors for ischemic and hemorrhagic stroke because they cause an increase in blood pressure, vasoconstriction, increased blood viscosity, and platelet aggregation (Pandian et al., 2018).

To prevent stroke, it is important to address these modifiable risk factors, as each one that is untreated increases the risk for stroke (Hickey & Livesay, 2020).

ANATOMY AND PHYSIOLOGY

In order to identify and localize the symptoms of a stroke, a working knowledge of anatomy is important. The brain is composed of the cerebrum, cerebellum, deep brain structures, and the brain stem.

Nursing Consideration: Patients and family members may be confused when it is explained that the patient had a right or left hemisphere stroke. The symptoms that they observe are opposite to what they have been told. Be sure to explain how the right side of the brain affects the left side of the body and vice versa (Littlejohns & Slazinski, 2016; Livesay & Keigher, 2020).

The cerebrum

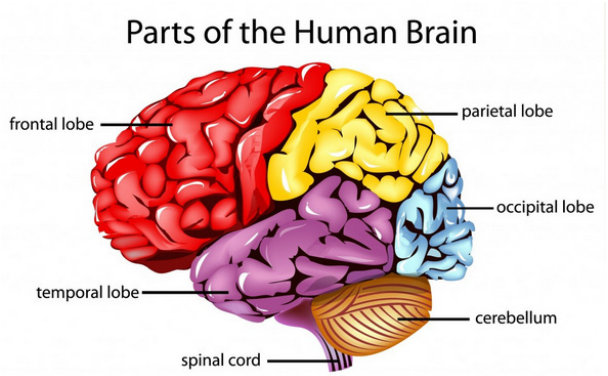
The two cerebral hemispheres consist of gyri and sulci, white and gray matter. The cerebral cortex is responsible for language, reasoning, learning, and memory. There are six lobes in each hemisphere:

- The **frontal lobe** provides regulation of personality, affect, judgment, tact, abstract thinking, and the ability to plan for the future. In addition, the precentral gyrus (motor strip) and motor speech occur here.
- The **temporal lobe** provides hearing, memory, learning, and receptive language.
- The **parietal lobe** contains the sensory strip on the post-central gyrus. Interpretation of pain, temperature, light touch, vibration, and proprioception occur here.

- The **occipital lobe** is responsible for vision and interpretation of visual information including macular and peripheral vision.
- The **limbic lobe/system** is connected to other structures and includes the cingulate gyrus and parahippocampal gyrus. The functions of this area are learning, forming new memories, and expressing emotions. The limbic system is responsible for initiating basic drives such as hunger, sleep, aggression, and emotional and sexual arousal. If the limbic system is not controlled and moderated by other cortical areas of the brain, a person may experience periods of uncontrollable rage.
- The **insular lobe** is considered the fifth lobe of the brain; it is situated under the frontal, temporal, and parietal lobes and surrounded by a dense vascular system. The insular lobe is implicated in motivation and reward, and cognitive, emotional, and executive function. Perception of bodily states such as heart rate, blood pressure, and the gastric system integrate in the insular cortex. The insular cortex is thought to control autonomic function (Evrard, 2019).

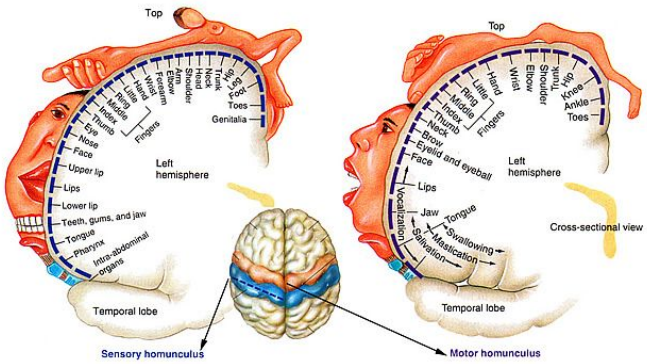
The figures below show the hemispheres and lobes and the distribution of the sensory and motor strips over the cortex. The homunculus is a visual tool to assist in identification of the location of an injury, such as a stroke. Knowledge of the hemispheres and their functions will assist the clinician in localizing symptoms (Livesay & Keigher, 2020).

Figure 1: The Cerebral Hemispheres



Source: Human+Brain.png - Wikimedia Commons

Figure 2: The Homunculus



Source: The Homunculus - Wikimedia Commons

The cerebellum

- The cerebellum has three parts: two hemispheres with the vermis (or midline) connecting them. The three lobes of the cerebellum are the anterior lobe (muscle tone), the posterior lobe (coordination of voluntary movement), and the flocculonodular lobe (vestibular regulation of posture and eye movement; Livesay & Keigher, 2020).

The brain stem

- The brain stem consists of the midbrain, the pons, and the medulla oblongata. The midbrain contains cranial nerves III (oculomotor) and IV (trochlear), motor and sensory tracts, and the reticular formation (regulates consciousness and processes visual and auditory data).
- The pons contains cranial nerves V (trigeminal), VI (abducens), VII (facial), and VIII (vestibulocochlear). Motor and sensory tracts and the reticular formation are in this area. In addition to the above, the reticular formation and pons relay information to the cerebellum and regulate sleep, chewing, swallowing, bladder function, and wakefulness.
- The medulla oblongata has the nuclei for cranial nerves IX (glossopharyngeal), X (vagus), XI (spinal accessory), and XII (hypoglossal). The control of ventilation, chemoreceptors, and the reticular formation are also in the medulla (Livesay & Keigher, 2020). Autonomic functions of blood pressure, heart rate, and respiratory rate are also regulated by the medulla.

Basal ganglia

- The basal ganglia consist of multiple areas of gray matter deep within the brain. The basal ganglia modulates the motor tracts and assists with movement and emotional regulation. The basal ganglia are made up of nuclei (caudate, putamen, globus pallidus, substantia nigra, and the subthalamic nucleus). The basal ganglia are often affected when the patient has an intracerebral hemorrhage because of high blood pressure.

The thalamus and hypothalamus

- The thalamus is the "relay station" of the brain. Impulses travel through the thalamus and the thalamus works to fine- tune information received including sensory and motor signals and sleep and wakefulness.
- The hypothalamus controls visceral activity and emotions and plays an important role in hormone release. The hypothalamus has neurological and endocrine components and thus exerts influence through the circulatory system and the nervous system (Livesay & Keigher, 2020).

Nursing Consideration: Knowledge of the cerebral vasculature is important to understanding the deficits that a patient presents with. For example, knowing that the middle cerebral artery (MCA) distribution covers half of the hemisphere on the outside of the brain, the nurse will know that the patient will have motor and sensory deficits primarily in the arm, face, and hand (Livesay & Keigher, 2020).

Vascular supply to the brain

The brain is perfused by four arteries (two internal carotid and two vertebral arteries). They travel through the neck and the base of the skull to reach the brain structures. The Circle of Willis is the anastomotic system that supplies the blood to various locations.

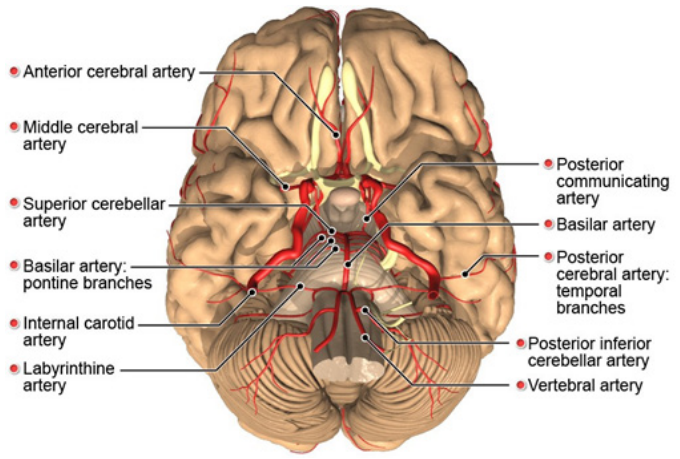
Anterior circulation

- The anterior cerebral artery (ACA) branches from the internal carotid artery (ICA) and supplies the corpus callosum and the medial surfaces of the frontal and parietal lobes.
- The MCA supplies the bulk of the cerebral hemispheres and is derived directly from the ICA. There are several segments that supply blood to the basal ganglia, insula, and the lateral cortical surface of the brain.

Posterior circulation

- The vertebral arteries enter through the base of the skull and join at the pons to become the basilar artery. Figure 3 identifies the major arteries and their distribution.

Figure 3: Major Arteries and Distribution



Source: Primal Pictures, licensed by Colibrigroup.

Figure 4 shows the distribution of the major arteries to the brain and the areas that they supply. Knowledge of the vascular distribution will assist in identifying the location of a stroke.

Figure 4: Distribution of Major Arteries of the Brain

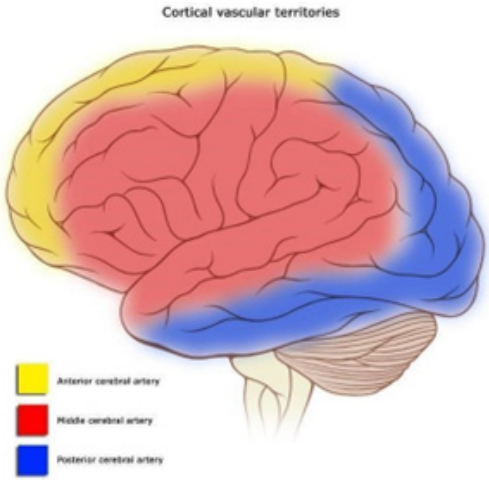


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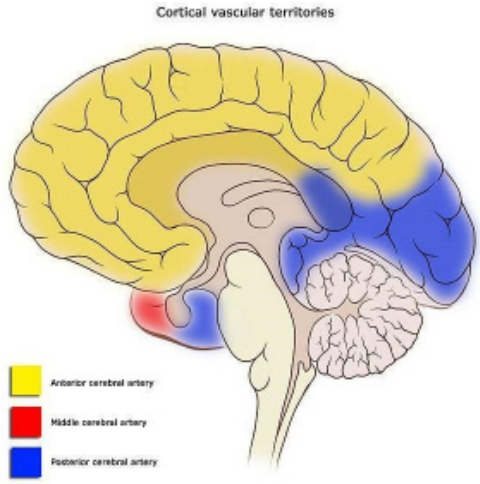
Figure 4: Distribution of Major Arteries of the Brain



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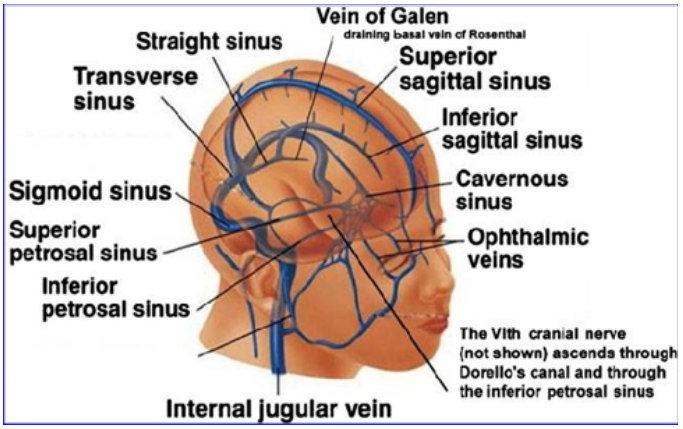
The venous system

- Drainage of blood from the brain is through the venous system. See Figure 5.

Figure 5: Venous System of the Brain



Source: The venous system of the brain – Wikimedia common

PATHOPHYSIOLOGY

Nursing Consideration: TIAs can lead to a higher risk of stroke over the ensuing months to a year. Patients and families need to be educated that any further symptoms require an immediate emergency department (ED) visit (Amarenco et al., 2016).

Transient Ischemic Attack

- Transient Ischemic Attack (TIA) is seen as a precursor to a stroke. Individuals who have a TIA are at a higher risk of stroke at 1 year (Amarenco et al., 2016). TIAs are defined as ". . . a brief episode of neurologic dysfunction caused by focal brain or retinal ischemia, with clinical symptoms typically lasting less than one hour, and without evidence of acute infarction" (Albers et al., 2002; Clissold et al., 2020).
- Symptoms correlate with the affected blood vessel and the territory of the brain that the vessel supplies.

Ischemic stroke

- An acute ischemic stroke (AIS) is defined as "an abrupt and dramatic development of a focal neurological deficit caused by an interruption of blood flow to the brain" (Hinkle et al., 2016; Phipps & Cronin, 2020).
- Etiologies of AIS
  - Thrombus formation: The thrombus can be a result of atherosclerosis, inflammation of vessel walls, mechanical constriction of a blood vessel, hypotension, or hypercoagulability.
  - Embolic: Emboli break off from other areas of the body and travel to the cerebral vessels where they lodge and cause blockage of blood flow. Sources of emboli include cardiac (atrial fibrillation, patent foramen ovale, valvular disease), carotid plaque, fat emboli, and air emboli.
  - Lacunar: These strokes are caused by HTN and affect the arm, leg, and face equally.
- Pathophysiology of AIS
  - Once the blood flow to an area of the brain stops, a dense ischemic core develops and is surrounded by tissue that may be marginally perfused (penumbra). In addition, there is a decrease in energy supply that leads to sodium and potassium pump failure, anaerobic metabolism and lactic acid production, promotion of free radicals, and cell death.

- Clinical Features of AIS
  - Left hemisphere stroke: aphasia, right visual field cut, right hemiparesis, and right sensory deficits.
  - Right hemisphere stroke: extinction (neglect of the left), left visual field deficit, left hemiparesis, and left sensory deficits.
  - Brain stem: hemiparesis or quadriparesis, sensory deficits, hearing changes, movement difficulties in all four limbs and the face, diplopia, dysarthria, and oropharyngeal weakness, dizziness, vertigo, and changes in eye movement.
- Proximal Large Vessel Occlusion (PLVO)
  - Carotid artery: contralateral hemiparesis, facial asymmetry, sensory deficits, visual field cuts, and aphasia (dominant hemisphere).
  - ACA: contralateral sensory and motor loss in the leg and foot greater than arm or face, urinary incontinence, lack of initiative, distractibility, cognitive impairment, and personality changes.
  - MCA: contralateral motor or sensory deficits greater in the arm than the leg, contralateral weakness in the lower face, and visual field deficits. Large infarctions may lead to coma or death.
  - Posterior cerebral artery: ipsilateral field deficits, cortical blindness, and contralateral paralysis.
  - Vertebral–basilar syndrome: ataxia, nausea, vertigo, dysarthria, dysphagia, visual disturbances, and cranial nerve palsies (Hickey & Livesay, 2020; Hinkle et al., 2016; Seagraves & Livesay, 2016).
- Distal, Medium Artery Occlusion (DMVO)
  - Affects smaller vessels off of the main cerebral arteries.
  - Vessels are more distant, tortuous, and smaller than the main arteries.
  - Common cause of AIS (25% to 40%).
  - Substantial cause of morbidity and mortality.
  - Can occur because of emboli and fragmentation of the clot during endovascular therapy (EVT; Saver et al., 2020).
- Hemorrhagic Stroke
  - Intracerebral hemorrhage (ICH),
    - The primary cause of ICH is HTN. Chronic HTN is thought to contribute to deterioration of blood vessels. Another cause is cerebral amyloid angiopathy (amyloid deposits weaken the vessels) and occurs mainly in those over 70 years of age.
    - ICH is classified based on etiology, location, or hematoma size. The primary lesion is the hematoma. The hematoma causes mass effect, which irritates surrounding brain tissue and compresses adjacent structures.
  - Subarachnoid Hemorrhage (SAH)
    - SAH is the result of the rupture of a blood vessel causing blood to leak out into the brain tissue. The hemorrhage extends into the subarachnoid space. SAH is a medical emergency as delay in treatment could lead to poor outcomes.
    - SAH can be caused by trauma (dissection of an artery) or a ruptured aneurysm.
    - The risk of rupture of an unsecured aneurysm is 0% to 2.3% per year. The risk of rupture varies based onage, gender, location, size, and previous history (Neifert et al., 2021).
    - Patients present with the sudden onset of the "worst headache of my life," which may also be described as a thunderclap headache. Symptoms include altered mental status, focal neurological deficits (cranial nerves or hemiplegia/paresis), stiff neck, or coma.
    - Vascular malformations also lead to ICH but are less common. Typical malformations are arteriovenous malformations (AVMs), and patients present with hemorrhage, seizure, or headache (Derdeyn et al., 2017; Hickey & Livesay, 2020; King, 2016; Neifert et al., 2021).
    - Other causes include oral anticoagulant use, hemorrhage into a tumor, hemorrhagic conversion after alteplase or tenecteplase administration, vasculitis, and Moya-Moya disease (Casper & Graves, 2016).

Nursing Consideration: One of the main mimics of stroke is hypo/hyperglycemia. A quick blood glucose at point of care testing will provide information regarding glucose levels and appropriate treatment can begin (Moulin & Leys, 2019).

- Stroke mimics
  - It is important in the evaluation of stroke to rule out conditions that may mimic a stroke. These include psychogenic causes, seizures, migraine, infectious processes, drug toxicity, hypo/hyperglycemia, tumors, and encephalopathy (Moulin & Leys, 2019). Additional mimics include peripheral neuropathy, neuromuscular disorder, and syncope.

ASSESSMENT

The nurse should undertake a thorough neurological assessment at the time of admission and at designated periods depending on the designated level of care of the patient and interventions received. The purpose of the assessment is to establish a baseline examination, follow trends, and detect abnormalities as soon as possible. Assessment is also used to identify location of lesions such as a stroke, direct patient management, and identify patient and family teaching needs. Types of assessment include comprehensive, focused, and limited. The comprehensive assessment is not realistic in the acute care setting as it is time consuming and bedside clinicians may not be trained in a comprehensive examination, so it is often only seen in neurology consultation notes. The focused assessment examines a particular function or anatomical location, such as coma assessment, whereas the limited assessment (also known as a screening assessment) provides an overview of the neurological system but is not detailed or focused (Baumann et al., 2016).

Careful documentation of the patient's medical history is an important part of the assessment. For those with a stroke or TIA, the assessment would include past medical history, medications, family history, and history of the present problem (what brought them to the hospital). For patients with a stroke, assessment should also include history of any risk factors including HTN, previous stroke, and any medications taken such as anticoagulants, antihypertensives, or insulin. Information on the time symptoms began is vital in determining eligibility for interventions.

Nursing Consideration: The National Institutes of Health Stroke Scale (NIHSS) is routinely used during emergency care and on stroke units to assess the severity of the stroke. Nurses have to be trained and certified to be able to perform this examination correctly. (National Institutes of Health, n.d.)

The neurological assessment consists of level of consciousness (LOC), mental status, cranial nerve function, motor and sensory examination, muscle tone, and reflexes (Casper & Graves, 2016).

National Institutes of Health Stroke Scale

The NIHSS was developed to measure function and correlate that to stroke severity and is used in the assessment of AIS. The NIHSS is scored 0–42 with higher numbers indicating more severe stroke. One of the limitations of the NIHSS is that providers need to be trained in the exam. There are specific questions that need to be asked and tasks that need to be performed in order to obtain an accurate assessment. The NIHSS should be performed on admission and at time intervals per unit

protocol. At a minimum, the scoring should be performed every shift. Use of the NIHSS can be tapered as the patient stabilizes. Table 2 shows the components of the NIHSS.

Table 2: National Institutes of Health Stroke Scale		
Item Tested	**Response**	**Score**
1a. LOC	0 = Alert. 1 = Drowsy. 2 = Obtunded. 3 = Coma/unresponsive.	
1b. Orientation	0 = Answers both correctly. 1 = Answers one correctly. 2 = Answers none correctly.	
1c. Response/ commands	0 = Performs both correctly. 1 = Performs one correctly. 2 = Performs none correctly.	
2. Gaze	0 = Normal horizontal movements. 1 = Partial palsy. 2 = Complete gaze palsy.	
3. Visual fields	0 = No visual field defect. 1 = Partial hemianopia. 2 = Complete hemianopia. 3 = Bilateral hemianopia.	
4. Facial movement	0 = Normal. 1 = Minor facial weakness. 2 = Partial facial weakness.	
5. Motor function (arm) a. Left arm b. Right arm	0 = No drift. 1 = Drift before 5 seconds. 2 = Falls before 10 seconds. 3 = No effort against gravity. 4 = No movement	
6. Motor function (leg) a. Left leg b. Right leg	0 = No drift. 1 = Drift before 5 seconds. 2 = Falls before 10 seconds. 3 = No effort against gravity. 4 = No movement	
7. Limb ataxia	0 = No ataxia. 1 = Ataxia in one limb. 2 = Ataxia in two limbs.	
8. Sensory	0 = No sensory loss. 1 = Mild sensory loss. 2 = Severe sensory loss.	
9. Best language	0 = Normal. 1 = Mild aphasia. 2 = Severe aphasia. 3 = Mute or global aphasia.	
10. Articulation	0 = Normal. 1 = Mild dysarthria. 2 = Severe dysarthria.	
11. Extinction or inattention	0 = Absent. 1 = Mild (loss of one sensory modality). 2 = Severe (loss of two modalities).	
Total NIH Score		0-42
Source: National Institutes of Health, n.d.		

Glasgow Coma Scale (GCS)

The Glasgow Coma Scale (GCS) has evolved from a tool that provides an objective measure of coma status in traumatic brain injury to an assessment that is used on all patients at all levels of care. While it is a valid and reliable assessment tool (Teasdale & Jennett, 1974), it may not be the best tool for scoring all neurological assessments. The tool assesses eye opening, motor response, and verbal response. It has been recommended that scoring each area separately and then adding them together may provide more information about the patient's status rather than just a summed score. For example, E2V3M2 = 7. Scores range from 0–15 with 15 being the best score and 0 the worst. Table 3 shows the components of the GCS.

Table 3: Glasgow Coma Scale		
		Score
Eye opening (best response)	1 = No eye opening. 2 = Eye opening to pain. 3 = Eye opening to sound. 4 = Eye opening spontaneously.	
Verbal response (best response)	1 = No verbal. 2 = Incomprehensible sounds. 3 = Inappropriate words. 4 = Confused. 5 = Oriented.	
Motor response (best response)	1 = No motor response. 2 = Abnormal extension to pain. 3 = Abnormal flexion to pain. 4 = Withdrawal to pain. 5 = Localizing pain. 6 = Obeys commands.	
Total Score		0-15
Source: Jain et al., 2019; Teasdale & Jennett, 1974.		

The Modified Rankin Score

The Modified Rankin Score (mRS; Table 4) is used to assess the level of disability or dependence in activities of daily living (ADLs) in a patient after a stroke or other neurological disorder. It is more commonly used to assess the patient for placement after the acute care hospital stay and is routinely used in rehabilitation assessments (Broderick et al, 2017).

Table 4: The Modified Rankin Score	Score
0 = No symptoms at all.	
1 = No significant disability despite symptoms; able to carry out all usual duties and activities.	
2 = Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance.	
3 = Moderate disability; requiring some help, but able to walk without assistance.	
4 = Moderately severe disability; unable to walk and attend to bodily needs without assistance.	
5 = Severe disability; bedridden, incontinent, and requiring constant nursing care and attention.	
6 = Dead	
Source: Broderick et al., 2017	

Hemorrhage scales

Scales that assess hemorrhagic stroke are used to classify the hemorrhage and not the neurological status of the patient. Table 5 outlines the components of the ICH score.

Table 5: Intracerebral Hemorrhage (ICH) Score

Components	ICH Score
GCS score:	
3–4	2
5–12	1
13–15	0
ICH volume (ml):	
≥ 30	1
< 30	0
Infratentorial origin:	
Yes	1
No	0
Age:	
≥ 80	1
< 80	0
Total ICH score	0-6

Source: Hemphill et al., 2001.

Additional scales for SAH severity include the Hunt and Hess scale and the modified Fisher scale. A scale used for assessing severity of AVMs is the Spetzler-Martin scale (Censullo et al., 2016). See Tables 6 through 8.

Table 6: Hunt and Hess Grading Scale for Subarachnoid Hemorrhage

Grade 1 • Asymptomatic or minimal headache and slight neck stiffness.	70% survival.
Grade 2 • Moderate to severe headache; neck stiffness; no neurologic deficit except cranial nerve palsy.	60% survival.
Grade 3 • Drowsy; minimal neurologic deficit.	50% survival.
Grade 4 • Stuporous; moderate to severe hemiparesis; possibly early decerebrate rigidity and vegetative disturbances.	20% survival.
Grade 5 • Deep coma; decerebrate rigidity; moribund.	10% survival.

Source. Roland & Gaillard, n.d.

Table 7: Modified Fisher Scale

Grade 0 • No subarachnoid hemorrhage (SAH). • No intraventricular hemorrhage (IVH). • Incidence of symptomatic vasospasm: 0%.
Grade 1 • Focal or diffuse, thin SAH. • No IVH. • Incidence of symptomatic vasospasm: 24%.
Grade 2 • Thin focal or diffuse SAH. • IVH present. • Incidence of symptomatic vasospasm: 33%.
Grade 3 • Thick focal or diffuse SAH. • No IVH. • Incidence of symptomatic vasospasm: 33%.
Grade 4 • Thick focal or diffuse SAH. • IVH present. • Incidence of symptomatic vasospasm: 40%.
Note: Thin SAH is < 1 mm thick and thick SAH is > 1 mm in depth.
Source. Carroll & Gaillard, n.d.; Roland & Gaillard, n.d.

Table 8: Spetzler-Martin Scale for Classifying Arteriovenous Malformations

Components	ICH Score
Size of lesion or nidus	1—Small (less than 3 cm). 2—Medium (3–6 cm). 3—Large (more than 6 cm).
Eloquence of adjacent tissue	0—Non-eloquent. 1—Eloquent.
Venous drainage	0—Superficial. 1—Deep venous.

Source: Bell & Gaillard, n.d.

Nursing Consideration: Patients may have never had a procedure of any kind before admission to the hospital. It is important to educate the patient and family regarding what to expect for each examination, especially examinations that are loud (MRI) or invasive (angiography, transesophageal echocardiogram; Keiser & Wilkerson, 2020).

DIAGNOSTICS

Diagnostic tests for stroke evaluation include the following:

- **Computerized Tomography (CT) scan**: Non-contrast CT is a noninvasive test that is fast and provides quick information to the healthcare team to assist in decision-making. Hemorrhage is readily identifiable on the CT scan but ischemia is not. Edema, loss of differentiation of grey/white matter, and herniation of brain tissue are easily identified on the non-contrast CT.
- **CT angiogram (CTA)**: CTA is a CT scan with the addition of intravenous (IV) contrast. This noninvasive test provides information about the cerebral vessels including occlusions of large vessels. With 3D reconstruction, information about aneurysms, turbulent flow, and occlusions of medium sized vessels may also be identified.
- **CT perfusion**: The CT perfusion scan uses contrast and calculates cerebral blood flow, blood volume, mean transit time, and time to peak. These values identify ischemic stroke or other vascular abnormalities.
- **Magnetic resonance imaging (MRI)**: MRI is a noninvasive examination that uses radiofrequency waves and magnetic fields. These waves and fields determine the hydrogen protons in tissue and images of tissue densities are produced. Gadolinium is the contrast medium used in MRI and it enhances images and identifies blood-brain

barrier disruption. Multi-modal MRI examinations provide a thorough evaluation of the cerebral structures.

- **Magnetic resonance angiography (MRA)**: MRA is used to detect arterial dissection, vasculitis, arterial flow, and high-grade atherosclerotic lesions. MR venograms are used to assess venous flow and to evaluate the presence of thrombosis or malformations.
- **Cerebral angiography (CA)**: Angiography is an invasive procedure that assesses the cerebral vasculature. A catheter is inserted into the femoral artery and radiopaque contrast is injected. The femoral artery or the brachial artery may be used. There are risks with CA because of its invasive nature. Damage to blood vessels through a puncture or clot formation at the injection site can occur. Assessment of the extremity is necessary to identify early compromise. Patients are sedated or receive general anesthesia for the procedure and thus require monitoring of airway and blood pressure during and after the procedure.
- **Transthoracic echocardiogram (TTE)**: TTE is a noninvasive ultrasound procedure to detect cardiac abnormalities that may have caused a stroke, such as thrombus, myxoma, patent foramen ovale (PFO), or vegetation on valves.
- **Transesophageal echocardiogram (TEE)**: This test is an invasive test where a probe is placed in the esophagus. The TEE provides better information than the TTE as there is direct visualization of the cardiac structures without obstruction by other organs. It is also possible to visualize the back of the heart with a TEE. A TEE is often performed when suspicion for embolic stroke is high and the TTE is unrevealing of a disease process that would cause the vascular distribution pattern found.
- **Carotid duplex/Doppler ultrasound**: This noninvasive test is used to evaluate the carotid arteries for stenosis or dissection. This test can be used for screening for stenosis but may overestimate the stenosis, so confirmatory angiography is needed.
- **Transcranial Doppler (TCD)**: TCD is a noninvasive test that evaluates blood flow velocity through the cerebral arteries. It is mainly used for assessment of vasospasm after SAH. Routine TCD provides information about worsening or improvement of vasospasm.

(Keiser & Wilkerson, 2020)

Diagnostic testing is critical in the care of the patient admitted with a stroke. Knowledge of these test results will allow the nurse to educate the patient and family and to provide post-procedure care.

Nursing Consideration: Administration of thrombolytic therapy is the responsibility of the bedside nurse with assistance from the pharmacist. Nurses need to be aware of the dosing and administration of IV alteplase or tenecteplase. There are multiple situations where IV thrombolytics cannot be given (explained below) and the nurse needs to have ready access to this information in order to prevent giving a patient IV alteplase inappropriately (Powers et al., 2018).

INTERVENTIONS

Thrombolytic therapy

Thrombolytic therapy has changed the care of patients admitted with stroke. Currently, tissue plasminogen activator (t-PA) is the only drug approved by the Food and Drug Administration (FDA) for the treatment of stroke. There are two medications currently used: alteplase and tenecteplase. It is recommended that IV alteplase be administered within 3 hours of the onset of symptoms or when the patient was last known to be well. Some studies have indicated that alteplase is safe up to 4.5 hours after the onset of symptoms in certain patients. There are multiple exclusions (See Table 9) for the use of IV alteplase and the physician/health team members must review these before administration (Powers et al., 2018).

IV alteplase is dosed at 0.9 mg/kg with a 10% bolus given over 1 minute, with the rest infused over 60 minutes. The maximum dose is 90 mg. Patients receiving thrombolysis need to be monitored for bleeding. Any invasive devices such as IVs or catheters should be inserted before the administration of IV alteplase to decrease the risk of bleeding (Rodgers et al., 2021). IV tenecteplase is given in a single dose of 0.4 mg/kg (Powers et al., 2018). Studies have shown that tenecteplase is not inferior to alteplase and its use is increasing, likely because of ease of use.

After thrombolytic therapy the patient will be admitted to the neurological intensive care unit (ICU) or designated stroke unit for monitoring. Symptoms such as headache, change in LOC, or worsening neurological examination warrant an immediate notification of the stroke team. Blood pressure should be maintained at SBP < 180 mmHg or DBP < 105 mmHg. Patients may require antihypertensive medication to support this goal (Rodgers et al., 2021).

Table 9: Exclusion Criteria For Thrombolytic Therapy

Medication	Exclusion Criteria
Alteplase (Powers et al., 2019)	**Absolute Exclusion Criteria:** • CT scan demonstrating intracranial hemorrhage. • CT exhibits extensive regions (>1/3 MCA Territory on CT) of clear hypoattenuation. • Unable to maintain BP. • Severe head trauma within last 3 months. • Active internal bleeding. • Arterial puncture at non-compressible site within last 7 days. • Infective endocarditis. • Gastrointestinal or genitourinary bleeding within last 21 days or structural GI malignancy. • Intracranial or spinal surgery within last 3 months. • Blood glucose < 50 mg/dL. • INR >1.7. • Platelet count < 100,000/mm3, PT > 15 sec, aPTT >40 sec. • Full dose low molecular weight heparin (LMWH) within last 24 hours (patients on prophylactic dose of LMWH should NOT be excluded). Received novel oral anticoagulant (DOAC) within last 48 hours (assuming normal renal metabolizing function). • Commonly prescribed DOACs: apixaban (Eliquis), dabigatran (Pradaxa), rivaroxaban (Xarelto), edoxaban (Savaysa).

Table 9: Exclusion Criteria For Thrombolytic Therapy	
Medication	**Exclusion Criteria**

Alteplase
 	
(Powers et al., 2019)
	Consideration for Exclusion:
	• Mild stroke with non-disabling symptoms.
	• Pregnancy.
	• Major surgery or major trauma within 14 days.
	• Seizure at onset and postictal impairment without evidence of stroke.
	• Myocardial infarction within last 3 months.
	• Acute pericarditis.
	• Lumbar puncture within 7 days.
	• Ischemic stroke within last 3 months.
	• Any other condition or history of bleeding diathesis that would pose significant bleeding risk to patient.
	• History of intracranial hemorrhage.
	• Presence of known intracranial conditions that may increase risk of bleeding (arteriovenous malformation, aneurysms >10mm, intracranial neoplasm).
	• High likelihood of left heart thrombus (e.g., mitral stenosis with atrial fibrillation).
	• Blood glucose > 400 mg/dL (however should treat with IV alteplase if stroke symptoms persist after glucose normalized).
	• Improvement to a mild stroke such that any remaining deficits seem nondisabling. The following typically should be considered disabling deficits:
	  ○ Complete hemianopsia (≥2 on NIHSS question 3) or severe aphasia (≥2 on NIHSS question 9).
	  ○ Visual or sensory extinction (≥1 on NIHSS question 11).
	  ○ Any weakness limiting sustained effort against gravity (≥2 on NIHSS question 6 or 7).
	  ○ Any deficits that lead to a total NIHSS score >5.
	  ○ Any remaining deficit considered potentially disabling in the view of the patient and the treating practitioner. Clinical judgment is required.

Tenecteplase (Warach et al., 2020)	**Absolute Exclusion Criteria:** • Ischemic stroke or severe head trauma in the previous 3 months. • Previous intracranial hemorrhage. • Intra-axial intracranial neoplasm. • Gastrointestinal malignancy or hemorrhage in the previous 21 days. • Intracranial or intraspinal surgery within the prior 3 months. • Symptoms suggestive of subarachnoid hemorrhage. • Persistent blood pressure elevation (systolic ≥ 185 mmHg or diastolic ≥ 110 mmHg). • Active internal bleeding. • Presentation consistent with infective endocarditis. • Stroke known or suspected to be associated with aortic arch dissection. • Acute bleeding diathesis. • Platelet count < 100,000/mm^3. • Current anticoagulant use with INR > 1.7 or PT > 15 seconds or aPTT > 40 seconds.Therapeutic doses of low molecular weight heparin received within 24 hours (e.g., to treat VTE and ACS); this exclusion does not apply to prophylactic doses (e.g., to prevent VTE).

Endovascular treatment/mechanical thrombectomy

Patients should receive IV thrombolysis even if thrombectomy is being considered. Patients who are considered for thrombectomy need to meet the following criteria:

- A mRS of 0–2.
- Occlusion of the internal carotid or the first segment of the MCA.
- Age ≥ 18 years.
- NIHSS ≥ 6.
- Can be treated within 6 hours of onset of symptoms.

The goal is to reestablish blood flow to the affected area. There are several options for this including intra-arterial alteplase, stent retrieval, and angioplasty. A study published in 2013 showed that use of a stent retriever had better outcomes than a clot retrieval device (Broussalis, 2013). Stent retrievers have improved over the years and trials have included the Solitaire and the Trevo stent retrievers. The Trevo stent retriever is currently the only device that is FDA approved for use up to 24 hours after a stroke. The retrievers are meant for large vessel occlusions but improvements in technology may allow use in smaller vessels in the future (Rodgers et al., 2021).

Reversal of anticoagulation

Patients who are fully anticoagulated are at higher risk for hematoma expansion. Any patient with an international normalized ratio (INR) over 1.4 should receive emergent treatment to reverse the effects. Vitamin K antagonists such as warfarin can be reversed with the administration of fresh frozen plasma or vitamin K (Kuramatsu et al., 2019). More recently, prothrombin complex concentrates (PCCs) have been used. PCCs are plasma-derived factors; have a high concentration of factors II, VII, IX, and X; and quickly normalize INR (Casper & Graves, 2016). Immediate reversal with PCCs is recommended to normalize INR < 1.3 within 4 hours, reducing SBP to < 140 mmHg and avoiding hypotension (Dhakal et al., 2017; Kuramatsu et al., 2019). There is no laboratory test available to identify efficacy for patients taking direct oral anticoagulants (DOAC) that inhibit factor-Xa (apixaban, edoxaban, rivaroxaban) and the direct thrombin-inhibitor dabigatran.

One drug, Ciraparantag, is currently in phase II trials to determine its effectiveness in ICH but it has not advanced to FDA approval. To reverse dabigatran, studies have shown that idarucizumab has been effective. The combination of the two drugs is nonreversible thus anticoagulation is reversed (Kuramatsu et al., 2019). The drug is administered in two

IV doses (2 × 2.5 g) within 15 minutes and has been FDA approved. Andexanet alfa was FDA approved in 2018 to reverse anticoagulant activity of both direct and indirect factor-Xa-inhibitors (apixaban, edoxaban, rivaroxaban). The drug is very expensive per dose ($24,000–$48,000) and may be less likely to be used because of cost.

Glucose management

Elevated glucose increases the infarction size related to edema in acute and chronic hyperglycemia. Persistent hyperglycemia (> 200 mg/dl) within the first 24 hours is an independent predictor of expansion of the volume of stroke and poorer outcomes. Elevated glucose is common after stroke and may be caused by unrecognized diabetes or influence of stress hormones (cortisol and norepinephrine) released at the time of the event. The goal is to achieve a blood glucose between 140 and 180 mg/dl while avoiding hypoglycemia (< 60 mg/dl; Powers et al., 2018). Studies have also shown that hyperglycemia leads to increased length of stay (LOS), increased cost, and increased mortality at 30 days (Green et al., 2021). Frequent monitoring of blood glucose (every 1–4 hours) and institution of IV insulin therapy may be warranted. Patients who have received thrombolysis may require more frequent monitoring because of increased risk for ICH. It is recommended that nurses follow their institutional protocol for IV insulin (Green et al., 2021).

Blood pressure management

Nursing Consideration: Management of blood pressure at the time of a stroke can be difficult. While the goal is to bring blood pressure down, it is imperative not to allow the blood pressure to drop too low. Decreased blood flow to the affected area will lead to further ischemia that may become irreversible. At the time of the stroke, autoregulation in the brain is lost, thus the brain relies on the blood pressure for delivery of blood flow to the affected area.

Patients admitted with AIS or ICH are prone to elevated blood pressure. This may be a compensatory state in order to assure that blood flow reaches the ischemic area because of the loss of autoregulation where blood flow is dependent on blood pressure. Current guidelines recommend treating blood pressure until it reaches 180/105 mmHg or lower without causing hypotension. In order to administer IV thrombolytics, the blood pressure goal is less than 185/110 mmHg. This can be achieved with antihypertensives such as IV labetalol, IV nicardipine, IV clevidipine, or IV hydralazine. If this goal cannot be met, IV thrombolytics should not be given. For patients who receive reperfusion therapy, blood pressure (BP) should be monitored every 15 min for 2 hours from the start of thrombolytic therapy, then every 30 min for 6 hours, and then every hour for 16 hours (Powers et al., 2018). If BP is refractive to treatment IV nitroprusside can be considered. Ongoing BP management can be undertaken using the same medications as for initial BP control and according to institutional protocols. In situations where the patient is hypotensive, careful evaluation of neurological and volume status is needed. Patients may receive colloids or crystalloids to improve volume status. Hypotension can lead to worsening neurological deficits because of decreased perfusion to the ischemic area (Powers et al., 2018; Rodgers et al., 2021).

Temperature management

Fever has been associated with worse outcomes after stroke. Patients with temperatures < 37° C or > 39° C (<98.6° F or >102.2° F) have poorer outcomes including in-hospital death. Patients with temperature > 38° C (>100.4°F) should be treated with antipyretics to normalize temperature. Physical cooling measures such as ice packs, cooling blankets, or cooling sleeves should be implemented after the shivering phase of fever. Shivering increases metabolism and oxygen consumption and these interventions also induce shivering (Green et al., 2021). Induced hypothermia treatment has not been shown to improve outcomes in patients with stroke, so it is not recommended except in the context of a clinical trial. Moreover, induced hypothermia can lead to pneumonia and other infections (Green et al., 2021; Kuczynski et al., 2019; Powers et al., 2018).

Surgical intervention

Patients with SAH or ICH are likely to require surgical intervention. There are several options for each. In SAH, clipping of the aneurysm is considered the standard of care but interventions such as coil embolization are gaining favor. Surgical treatment requires a craniotomy and insertion of a titanium clip at the neck of the aneurysm. Endovascular treatment of aneurysms involves placing an intra-arterial catheter and directing the catheter to the opening of the aneurysm. Coils are introduced into the aneurysm until the blood flow is obliterated. This method is especially successful in larger aneurysms. In smaller aneurysms, there may not be complete obliteration of blood flow, thus there is a risk of further hemorrhage (Chung et al., 2021). Patients with AVMs require endovascular, stereotactic radiation, or surgical intervention. Endovascular procedures introduce a glue-like material into the malformation in an effort to decrease blood flow. Endovascular interventions may also assist in decreasing the blood flow through the AVM before surgery. Stereotactic radiation is directed toward the AVM. The intent is to cause sclerosis of the AVM and its thrombus over time. One of the disadvantages of stereotactic radiation is the delay in the results, which may be 2–4 years after treatment (Solomon & Connolly, 2017). Resection of the AVM requires microsurgery and careful surgical technique to remove the AVM en bloc. This may be difficult and there may be residual neurological deficits. Research has shown that patients with unruptured AVMs have a better outcome than those with ruptured AVMs. Any of these interventions should be performed by competent physicians at centers that perform a large volume of these procedures (Solomon & Connolly, 2017).

MANAGEMENT OF COMPLICATIONS

Nursing Consideration: Infections can lead to a change in neurological status and may be confused with a new onset stroke, especially in the elderly. Nurses need to be vigilant in assessing for infection, especially pneumonia and urinary tract infections (UTIs). Pneumonia can be caused by aspiration or immobility. Monitoring the patient for swallowing ability and getting the patient out of bed and active are important components of pulmonary hygiene (Green et al., 2021; Marin et al., 2018). Urinary tract infections can be caused by indwelling urinary catheters. It is important to remove catheters as soon as possible or avoid inserting them at all. Urinals exist for men and women and external devices have been developed for women who are incontinent (Green et al., 2021; Saint et al., 2016).

Pneumonia/respiratory failure

Patients with stroke are at risk for pneumonia or respiratory failure because of decreased LOC, dysphagia, or dysarthria. The patient is unable to clear the airway and may present with cough, abnormal breath sounds, and cognitive or perceptual impairment (Hinkle et al., 2016). Nursing interventions include the following:

- Assessment of oxygenation status and maintaining oxygen saturation > 94%. For patients who are not hypoxic, oxygen therapy is not recommended (Green et al., 2021).
- Chest physiotherapy may be required to maintain a clear airway.
- Maintain head of bed > 30° to prevent aspiration which may lead to pneumonia.
- Nothing by mouth (NPO) until swallow assessment has been completed. A swallow screen may be performed on admission by the bedside nurse. If the patient fails the bedside screen, the patient will need a thorough swallow assessment by a speech-language pathologist (SLP).
- Mobilize the patient out of bed as soon as possible (Hinkle et al., 2016).
- Oral care per hospital protocols.

Urinary tract infection (UTI)

Patients with stroke are at risk for UTI. Women seem to be more susceptible to UTI because of their urinary tract anatomy. In a meta-analysis, it was found that UTI is a common complication post-stroke; factors that predicted UTI were being female, older age, and higher mRS and post-void residual (PVR) ≥ 100 ml (Yan et al., 2018). Guidelines recommend that routine urinary catheterization should not be performed (Powers et al., 2018). A study that was conducted in 2016 found that the majority of UTIs were present on admission rather than hospital acquired (Bogason et al., 2017). These results indicated that the patient was likely to be older (> 81 years) and admitted from a nursing home (Bogason et al., 2017). Guidelines for the care of patients to prevent UTI include the following:

- Clear indication for the insertion of an indwelling catheter: acute obstruction, need for accurate intake and output in a critically ill patient, certain selected surgeries including urological/gynecological, comfort care, continuous bladder irrigation, immobilization required because of a medical condition, management of urinary tract blood clots, management of neurogenic bladder, prevention of worsening of pressure injury (Bogason et al., 2017; Galiczewski & Shurpin, 2017).
- Strict aseptic technique at the time of insertion.
- Assess for voiding 4–6 hours after removal of the catheter.
- Check PVR using a bladder scanner. If < 300 ml, monitor voiding. If PVR > 500 ml, perform intermittent catheterization and continue to monitor with the bladder scanner.
- In women, evaluate alternatives to urinary catheterization using devices such as PrimaFit or PureWick external urinary devices. For men, an external device such as a condom catheter should be considered as an alternative to an indwelling catheter.

For additional information visit:

- American Nurses Association: ANA CAUTI Prevention Tool: https://www.nursingworld.org/practice-policy/work-environment/health-safety/infection-prevention/ana-cauti-prevention-tool/
- Centers for Disease Control and Prevention: Catheter-Associated Urinary Tract Infections: https://www.cdc.gov/infectioncontrol/guidelines/cauti/index.html
- Society of Urologic Nurses and Associates https://www.suna.org/resource/suna-supported-ana-catheter-associated-urinary-tract-infection-prevention-tool

Cerebral edema and increased intracranial pressure

Patients who have experienced an acute stroke may develop cerebral edema and associated increased intracranial pressure (ICP). All patients with stroke are at risk for cerebral edema but patients with large hemisphere strokes or posterior fossa strokes may be even more at risk. Patients with hemorrhagic strokes may develop peri-hematoma edema. Patients with SAH are at risk for acute and delayed edema. Cerebral edema can lead to increased ICP, pressure on brain structures, and herniation of brain tissue. Cerebral edema is an abnormal accumulation of intracellular and/or extracellular water, which causes an increase in intracranial volume. Cerebral edema peaks within 2–4 days after insult and astute monitoring of the patient's neurological status is needed to identify subtle changes (Rodgers et al., 2021).

ICP monitoring may be used in patients with cerebellar stroke and those with hemorrhagic stroke. Generally, patients with AIS do not require ICP monitoring. Treatment of cerebral edema is with osmotic diuresis using mannitol or hypertonic saline (2%–23.5%) (Guhwe et al., 2016). Any patient receiving osmotic therapy needs to be monitored for changes in electrolytes and fluid status. Fluid restriction is not recommended, nor is hyperventilation.

Surgical interventions include suboccipital craniotomy for hemorrhage in the posterior fossa or decompressive hemicraniectomy for large MCA infarcts or hemorrhage. Even with decompressive hemicraniectomy, patients often have residual neurological deficits as their stroke is usually severe (Guhwe et al., 2016).

Venous thromboembolism (VTE) prevention

Immobility of patients with stroke is a known risk factor for development of VTE. Intermittent compression devices and subcutaneous heparin or low molecular weight heparin (LMWH) may be ordered. VTE is associated with increased mortality and morbidity. Patients with ICH have a higher risk than patients with AIS. One of the major concerns with VTE is the risk of pulmonary embolism, especially in patients who are asymptomatic. Patients should be started on prophylaxis upon admission. Patients who receive thrombolytic therapy should not be started on heparin or LMWH for a full 24 hours after administration. Patients with hemorrhagic stroke should be started on prophylaxis 3–4 days after the event as long as bleeding has stopped. Research indicates that a combination of mechanical and pharmacological intervention provides better outcomes (Green et al., 2021). VTE is treated with IV unfractionated heparin and bridged to warfarin. LMWH dosing is weight-based for 5–7 days with bridging to warfarin. Disadvantages of warfarin are the required regular laboratory studies to assure that the INR is within range. An advantage of warfarin is its low cost. Direct acting oral anticoagulants (DAOC), such as rivaroxaban, do not require ongoing laboratory monitoring but only certain medications can reverse the effects and the cost is high (Green et al., 2021; Guhwe et al., 2016).

Fall prevention

Patients with stroke need a multi-factorial and individualized approach to fall prevention, with particular focus on the patient's neurological deficits (Quigley, 2016). The prevention of falls is an interdisciplinary responsibility. General risk factors for falls include age, lower extremity weakness, orthostasis, neuropathy, anemia, medications, or other chronic medical disorders. Stroke-

specific risk factors include neglect, cognitive deficits (judgment and impulsivity), visual field cuts, balance problems, hemiparesis/plegia, or hemisensory loss. Standard fall risk assessment tools do not take into consideration the deficits that may be present with stroke (Quigley, 2016). Assessment of the patient with stroke should include the three types of falls: anticipated physiological, unanticipated physiological, and accidental. Anticipated physiological falls are those caused by known intrinsic (neurological deficits) and extrinsic (medication or difficulty with mobility equipment) factors. Unanticipated physiological falls result from a sudden change in the patient's condition such as a new stroke, cardiac event, or seizure. Accidental falls are usually caused by a trip hazard in a cluttered bedside environment or inadequate adaptive equipment (Quigley, 2016).

The interdisciplinary team needs to be aware of the type of stroke, its location, and the patient's current deficits. The nurse should know what type of deficits are to be expected based on the location of the stroke. This knowledge will assist the nurse and the team in developing a fall prevention strategy that is individualized to the patient (Quigley, 2016). Areas of attention should focus on the potential deficit that the patient may have. In addition, patients with stroke do not want to give up their independence and may believe that they are able to do more than they can. Education of the patient and family in this area is an important strategy in fall prevention (Guhwe et al., 2016).

Seizures

Seizures may be a presenting symptom in hemorrhagic stroke, especially in patients with AVMs. Seizures may also be a complication after stroke. Approximately 10% of patients with stroke will have seizures, more commonly after hemorrhagic stroke. Post-stroke seizures are associated with longer LOS, increased hospitalization costs, and poorer functional outcomes. Risk factors for post-stroke seizures include large lesions, lesions from cardioembolic events, cortical lesions, and dementia before ICH (Biffi et al., 2016). Early onset seizures are thought to be caused by altered brain metabolism rather than a change in brain tissue. Later onset of seizures after stroke may lead to epilepsy (Guhwe et al., 2016). Treatment of early onset seizures is likely to be preventative and short-term (7 days). Should patients have late onset seizures, evaluation will be performed to assess the need for long-term anti-epileptic drugs (AEDs). It is not recommended to place patients with stroke on prophylactic AEDs (Censullo et al., 2016; Powers et al., 2018).

Nursing Consideration: Patients with SAH are at risk for vasospasm and delayed cerebral ischemia. Astute nursing assessment will identify changes in neurological exam early and allow for early intervention, which may limit any further neurological deficits (Francoeur & Mayer, 2016).

Delayed cerebral ischemia (DCI)

A serious complication of subarachnoid hemorrhage is vasospasm, which may or may not lead to DCI. Delayed cerebral ischemia affects up to 30% of patients with SAH, leaving patients with neurological deficits and a poor quality of life. The extent of hemorrhage in the ventricles and cisterns is a risk factor for DCI. Additionally, a poor neurological status after full resuscitation (fluid, BP management, etc.) is an indicator of a poor prognosis. It was thought that vasospasm in large arteries leads to DCI, but current thought is that DCI develops from a number of complex factors such as microthrombus, cortical spreading depression, early brain injury, and microcirculatory dysfunction that leads to loss of autoregulation (Francoeur & Mayer, 2016).

In order to prevent or detect DCI, nurses must have astute neurologic assessment skills. In patients who are of a lower grade (good neurological status) and can follow commands, simple assessment based on the GCS and number counting may identify early DCI. In patients with higher grade SAH (poor neurological status), other assessments must be undertaken.

Treatment of DCI has three levels. The initial level is induced HTN with a bolus of saline and vasopressors. Nimodipine is also administered at the dose of 60 mg every 4 hours for 21 days. Hypotension can be a problem with nimodipine so the dosage can be adjusted in an effort to prevent it. The second level moves to endovascular therapy with balloon angioplasty or the administration of intra-arterial vasodilators. Additional interventions include augmentation of cardiac output and hemoglobin. The third level includes therapeutic hypothermia, IV vasodilators, and use of the intra-aortic balloon pump. Multi-modality monitoring including ICP monitoring, brain tissue oxygenation, and continuous electroencephalogram (EEG) monitoring can provide early warning of pending DCI, which can then be treated before neurological deficits are present (Censullo et al., 2016).

Hydrocephalus

Hydrocephalus can occur after hemorrhagic stroke, especially SAH or intraventricular hemorrhage (IVH). Hydrocephalus results from blood in the subarachnoid space blocking reabsorption of cerebrospinal fluid (CSF) by the arachnoid villi (King, 2016). Evidence of hydrocephalus may be seen in a change in LOC or observed on a brain CT scan. Initial treatment requires placement of an intraventricular catheter to drain CSF. Hydrocephalus may persist, requiring the placement of a ventriculo-peritoneal (VP) shunt. Generally, hydrocephalus develops in patients with a higher grade (poor neurological status) SAH and the patient will likely require multi-modality monitoring (King, 2016). Nursing care requires careful attention to neurological status and avoiding infection at the insertion site of the intraventricular catheter.

Hyponatremia

Low sodium commonly occurs after SAH. Cerebral salt wasting (CSW) and syndrome of inappropriate antidiuretic hormone (SIADH) may occur. Hyponatremia occurs in up to 35% of patients after hemorrhage. Hyponatremia is defined as a serum sodium < 135 mEq/L. Severe hyponatremia is a serum sodium of < 131 mEq/L (Censullo et al., 2016). Identification of the cause of hyponatremia is important as the treatments differ. CSW is a loss of sodium that leads to a loss of free water, leading to hypovolemic hyponatremia. Syndrome of inappropriate antidiuretic hormone is the result of inappropriate ADH secretion leading to a euvolemic hyponatremia and decreased urine output (King, 2016).

Table 9: Cerebral Salt Wasting versus Syndrome of Inappropriate ADH Secretion

	Cerebral Salt Wasting	SIADH
Urine osmolality	↑	↑
Urine sodium concentration	↑	↑
Extracellular fluid volume	↓	↑
Fluid balance	Negative	Neutral to slightly +
Sodium balance	Negative	Neutral to slightly +

Treatment of hyponatremia includes administration of hypertonic saline (3% sodium chloride) and/or salt tablets. Supplementation with fludrocortisone can also be helpful in raising the sodium level. Hyponatremia can lead to changes in neurological status, permanent deficits, or death if it is not recognized and treated promptly. The nurse's responsibility is to monitor sodium levels before and after initiation of treatment.

Delirium

Delirium is defined as an acute onset of confusion and fluctuating symptoms of inattention, disturbance of consciousness, or disorganized thinking. It is important to remember that the onset is rapid. The patient may experience hallucinations, disorientation, impaired memory, and disturbances in sleep. Delirium may lead to an increased LOS and has been associated with poorer functional outcomes (Qu et al., 2018). Studies have identified that age, history of dementia, history of previous stroke, severity of stroke, and left cortical stroke are associated with delirium (Qu et al., 2018). Patients who have been in the ICU have additional factors that may influence the development of delirium including ICP monitors, ventilator use, sedation, and the ICU environment (King, 2016).

Assessment of delirium needs a valid and reliable instrument such as the Confusion Assessment Method (CAM) or the CAM-ICU (Ely et al., 2001; Inouye et al., 1999). These assessment tools are easy to use and do not take a lot of time to perform. Delirium is initially treated with nonpharmacologic interventions such as reorientation and assuring that all possible metabolic causes of delirium are addressed, such as infection. Additional interventions include normalization of day and night with increased activity and lighting during the day and minimal interventions and darkened environment at night. Medication for delirium is primarily done with psychotropic drugs or neuroleptic medication on a short-term basis. It is important to note that assessment of delirium and treatment with medication is not enough to help the patient. The underlying cause of the delirium needs to be identified and addressed (Kowalska et al., 2020).

Dysphagia

Dysphagia is a common sequela to a stroke and occurs in 42%–57% of patients. Half of the patients who present with dysphagia aspirate and one-third of those patients develop pneumonia (Guhwe et al., 2016). Silent aspiration (aspiration without cough) increases the risk for pneumonia even more. Because patients have difficulty swallowing, they are at risk for dehydration, malnutrition, increased LOS, and death. Injury to the cerebral hemispheres (MCA distribution) as a result of a stroke impairs voluntary control over swallowing because of contralateral weakness of the face, lip, and tongue. Injury to the frontal lobes may lead to abulia (inability to act decisively) leading to pocketing of food and increased aspiration risk. Brainstem strokes can change the sensation in the mouth and affect the timing of the swallow because of injuries to cranial nerves.

Tools are available for screening patients for swallowing difficulties, but no tool is recommended as superior to another. A tool that is valid and reliable and assesses the risk for aspiration and whether oral feeding is appropriate is important. The swallow screen should be a pass/fail screen and provide information regarding the need for additional testing and intervention by an SLP. The three ounces bedside water swallow screen can be easily done by the bedside clinician. If the patient fails the screen, the patient is NPO until evaluated by the SLP. In addition, the patient should remain NPO until the screen and evaluation are completed (Green et al., 2021; Guhwe et al., 2016; Joundi et al., 2017). Evaluation by the SLP may include a fiberoptic endoscopic evaluation of swallow (FEES) or a modified barium swallow (Smith et al., 2018). Patients who fail a swallowing evaluation are at higher risk for needing a feeding tube, longer hospital LOS, and likelihood of transfer to a long-term care facility after discharge from the acute hospital (Marin et al., 2018). Interventions for dysphagia include modification of the diet (liquid and viscosity modifications), upright positioning for feeding, placement of an enteral feeding tube, and treatment by an SLP that might include oral exercises, stimulation of the oropharynx, and olfactory stimulation (Guhwe et al., 2016). The bedside clinician is in an opportune position to observe and screen patients with stroke and institute interventions that prevent aspiration and its associated sequelae.

Depression

Depression after stroke may affect up to 30%–50% of patients (Guhwe et al., 2016). In addition, racial and ethnic disparities exist. Hispanics have a higher risk of post-stroke depression (PSD) compared to African Americans or Whites. Puerto Ricans have a 4.5 times higher risk of PSD compared to Whites, and other Hispanics have a three times higher risk of PSD (Fei et al., 2016). The pathophysiology of PSD is not well understood. It is thought that there are multiple neurological influences in addition to psychological influences that lead to PSD. Some of the theories include disruption of brain pathways in the frontal cortex and basal ganglia. Early onset of PSD may be related to disruption of the networks that support emotion (Guhwe et al., 2016). Other evidence suggests that pro-inflammatory cytokines and tumor necrosis factor alpha causes the reduction of serotonin after the stroke (Robinson & Jorge, 2016; Towfighi et al., 2017). Others suggest that the physical impairment and psychological (cognitive issues) manifestations of stroke lead to PSD (Robinson & Jorge, 2016).

Assessment for PSD should begin in the acute setting. For bedside clinicians a depression screen needs to be reliable, sensitive, and easy to use (Mitchell, 2016). Examples of screening tools used in the acute setting include Patient Health Questionnaire (PHQ-2 or PHQ-9), a single question screen, a 15 or 30 question Geriatric Depression Scale, and the Montgomery-Asberg Depression Rating Scale. One concern for the bedside clinician is the time needed to administer some of these tests. Ideally, the nurse could ask a few questions and determine if further intervention is required. Screening tools that meet these criteria are the PHQ and the single question screen (Mitchell, 2016). The one question screen asks "Do you often feel sad or depressed?" (Watkins et al., 2007). The PHQ asks up to nine questions related to sleep, activity, and other dimensions by asking the patient to reflect on the past 2 weeks (Ginkel et al., 2012). There is also a two-question version of the PHQ that takes less than 5 minutes to administer.

Treatment of PSD is multifactorial and includes the administration of antidepressants and psychotherapy. Various types of antidepressants have been studied in PSDw. These include selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs). There is not one class of drug that has been shown to be superior in the treatment of PSD. The decision to start antidepressants should be based on the symptoms, side effects, previous treatment of depression, and any other medications that the patient is taking (Guhwe et al., 2016). TCAs may be used in those who do not respond to SSRIs, but the muscarinic and anticholinergic effects may limit their use.

Psychotherapy is an important adjunct to antidepressants and can be very helpful. Unfortunately, psychotherapy is costly and time intensive (Guhwe et al., 2016) and not always available in the acute setting. SSRIs have been shown to improve functional recovery. Patients may not show evidence of PSD until 3 months or more after stroke, thus family members and caregivers need

to be educated to be observant of changes that might indicate PSD. Another area of consideration is that of depression in the caregivers for those who have had a stroke. Caregiving can be a burden and depression is common (Robinson & Jorge, 2016).

IN-HOSPITAL STROKE

In-hospital stroke occurs in approximately 35,000 – 75,000 patients each year in the US. In-hospital strokes usually occur in patients who are admitted for another reason, such as cardiac surgery or diagnostic testing. Stroke may be missed in these patients because of the assumption that changes in condition are related to sedation or anesthesia (Nouh et al., 2022). Patients who have a stroke while hospitalized often have more comorbidities, and are more likely to have poorer conditioning and cardioembolic events. Patients who are in the hospital for TIA and who have had to stop antithrombotic medication are also at risk for an in-hospital stroke.

Approximately half of in-house code strokes are ultimately determined to be a stroke mimic such as altered mental status. Other stroke mimics were previously described (Moulin & Leys, 2019; Nouh et al., 2022) Time from recognition to treatment of an in-house stroke tends to be longer than with strokes that are identified in the community, thus it is important for all staff to be able to identify a possible stroke. Patients with an in-house stroke may have worse outcomes likely because of premorbid conditions, not receiving care on a designated stroke unit, and severity of stroke. Imaging and the use of thrombolysis may help to decrease stroke severity (Nouh et al., 2022).

Recommendations for recognition and treatment of in-house stroke include education of all staff on stroke symptoms, clear process for calling a "code stroke", written protocols to expedite treatment, identification of barriers to treatment or to transfer to a stroke center, and quality improvement initiatives (Nouh et al., 2022).

Prevention of a second stroke

Secondary stroke prevention consists of multiple interventions which will be further discussed here (Bridgwood B et al., 2018; Caprio & Sorond, 2019; Kleindorfer et al., 2021):

- **Treatment of HTN**: Patients should have a BP of ≤ 140/90 mmHg. This is accomplished through the use of antihypertensive medications, diet, and exercise.
- **Treatment of dyslipidemia**: Patients should be discharged from the acute care setting on a statin with lipid lowering ability to a goal of LDL-C < 100 mg/dl.
- **Glucose management**: Patients with a potential for diabetes should be screened with fasting glucose, hemoglobin A1C (Hgb A1C), or a glucose tolerance test. Hgb A1C provides better information regarding glucose status over time. Patients should be started on appropriate diabetes medication and lifestyle modification.
- **Obesity**: Patients should be screened for obesity and associated lifestyle modifications should be recommended.
- **Physical activity**: Patients who are inactive but willing to increase physical activity should be referred to a program that will provide behavioral and comprehensive care.
- **Nutrition**: Patients should be counseled to eat a low-salt Mediterranean diet.
- **Sleep apnea**: There is a high prevalence of sleep apnea in patients with stroke and referral to a sleep center should be considered. Continuous positive airway pressure (C-PAP) has shown good outcomes in patients with sleep apnea and should be used.
- **Atrial fibrillation**: warfarin, apixaban, or dabigatran are all appropriate interventions for non-valvular atrial fibrillation after the risk score has been evaluated (Vitali et al., 2019). The type of medication prescribed is based on patient tolerance of side effects and other considerations like cost. Warfarin requires ongoing laboratory monitoring. For patients who have had a TIA and are unable to take anticoagulation, aspirin is recommended.
- Additional recommendations are outlined in "2021 Guideline for the Prevention of Stroke in Patients with Stroke and Transient Ischemic Attack" (Kleindorfer et al., 2021).

EQUITY IN HEALTHCARE

It is estimated that approximately 28% of Americans are racial and ethnic minorities. This is expected to increase to nearly 40% by 2030. Hispanic Americans are the largest growing group in the United States and account for about 15% of the population. African Americans represent about 12%. It is anticipated that the percentage of racial/ethnic minorities will double by 2050 (Day, 1996). Healthcare providers need to be aware of the diversity of the population and assure that patients receive care needed at the time of a stroke. Research has shown that racial/ethnic disparities exist in healthcare (Cruz-Flores et al., 2011; Gardener et al., 2020; Skolarus et al., 2020).

Social determinants of health

The World Health Organization (WHO) has defined social determinants of health (SDOH) as the conditions in which people are born, grow, work, live, and age in the context of a set of forces and conditions that affect daily life (Solar & Irwin, 2010) A variety of factors have been shown to influence cerebrovascular disease, particularly stroke. These factors include economic, physical environment, education, community, and food (Wang et al., 2020). These factors have been associated with utilization of healthcare facilities, particularly emergency departments, increased readmission rates, and increased odds of hospitalization. Research has shown that socioeconomic status (SES), education, employment income, environmental factors, and food insecurity contribute to poorer outcomes for those with cerebrovascular disease (Wang et al., 2020). In one study, individuals that had an increased number of SDOH also had a 2.5 times higher risk of stroke when compared to those with no SDOH (Reshetnyak et al., 2020).

Healthy People 2030 has emphasized the need to address SDOH in order to improve health for all. It describe the following key components of SDOH: economic stability, education, social and community context, health and healthcare, and neighborhood and built environment (US Department of Health and Human Services, 2020). Each of these have sub- categories that need to be considered such as employment, early childhood education, civic participation, access to healthcare, and access to food that supports healthy eating (US Department of Health and Human Services, 2020).

Risk of bias in stroke care

Clinical decision making involves two methods, implicit and explicit decisions. Implicit decisions are unconscious and based on intuition while explicit decisions are based on scientific evidence and logic (Bhat et al., 2021). Bias makes assumptions about groups based on age, race, gender, SES and health literacy. These biases can lead to unintended inequality and disparities in the provision of healthcare in general and stroke care specifically (Bhat et al., 2021). While the focus recently has been on racial bias, other biases exist and the healthcare provider needs to understand their own biases as they provide care. These biases include age, gender, weight, gender identity, religion, SES, disability status, and others (Stamps, 2021).

Narayan describes the effects of implicit bias in healthcare and these include inadequate patient assessment, inadequate diagnosis and treatment, less time providing patient care, and discharge with inadequate follow-up (Narayan, 2019). It is possible to identify implicit bias in oneself and one way to do that is to take an assessment. One website that can be accessed for this is called Project Implicit (https://implicit.harvard.edu/implicit/education.html). The website offers 14 tests to identify one's biases. The tests take approximately 10 minutes and cover many areas, including race. These tests are readily accessible and free.

In a systematic review, the authors identified that implicit bias is as prevalent in healthcare professionals as it is in the general population. In addition, implicit bias affects relationships with patients and biases may influence treatment decisions and levels of care. More research is needed in this area, especially in the care of patients with stroke (FitzGerald & Hurst, 2017).

END-OF-LIFE CARE

Not all patients survive their stroke. For patients that have a devastating ischemic or hemorrhagic stroke, the goal of care is a comfortable death. In general, stroke is a disease of older individuals, but since stroke can occur at any age, it is important that patients and families know the prognosis and can make informed decisions. Research has shown that patients at higher risk for death include those with multiple comorbidities, higher NIHSS scores on admission, atrial fibrillation (or other cardioembolic source), and those who require mechanical ventilation and placement of a gastric feeding tube (Guhwe et al., 2016). Patients with stroke who die in the hospital usually do so because of the size and location of the stroke. Large MCA strokes with edema or brainstem strokes are two etiologies of early hospital death.

Evidence-based practice alert! Families are unprepared for a stroke event. Research has shown that family presence in the ICU, conversations about goals of care, and shared decision-making are critical during the ICU stay (Davidson et al., 2017; Kon et al., 2016b).

Because stroke is a sudden and acute event, families are often not prepared for the drastic change in the patient. They are coping with the sudden admission to the hospital, the various lines and tubes, and the ICU environment. The bedside nurse is in an ideal position to explain all that is happening to the patient, but the bedside nurse is responsible for the care of the patient and, if the patient is critically ill, may not have enough time to address family needs.

Families may not have had any discussions regarding the patient's wishes and thus may feel overwhelmed. Guidelines for patients in the ICU recommend family presence in the ICU, family support, communication with family members, and consultations specific to the needs of the family (Davidson et al., 2017).

Another intervention is shared decision-making. Shared decision-making centers around medical information about the patient, deliberation, and making a treatment decision (Kon et al., 2016a). Ideally, the patient and the legally authorized representative (LAR) are able to discuss treatment options and determine a plan of care. This is not always possible because of the condition of the patient. Often, the LAR or the clinician will be the decision maker based on the situation. It is important to come to consensus on the treatment plan. The discussion regarding patient prognosis needs to be detailed and will likely occur away from the patient's bedside. Ideally, the bedside nurse will be part of that discussion and will be able to support the family as they discuss treatment options.

One area that is often overlooked or delayed is consultation by the palliative care team. The palliative care team is a resource to patients, families, and staff to set goals of care and determine appropriate interventions. The responsibilities of the palliative care team include education, support, and providing orders for patient comfort (Kon et al., 2016b). The nurse's role is to assure that the needs of the patient and family are heard. Family members are under stress at the time of the event and may not make rational decisions. Families should not feel pressured to make decisions but be given a reasonable period of time to consider all of the information presented to them (Braun et al., 2016; Gao et al., 2021). For patients that are placed on comfort care measures, they are often transferred to an acute medical-surgical or stroke unit for their final care. Families are often reluctant to transfer because they have developed a relationship with the ICU nurses. Nurses on general medical units have a higher patient load and may have difficulty meeting the needs of the family. Consults from social services and chaplaincy can assist the nurse in meeting these needs. Comfort care is not "no care." Patients should be turned and suctioned as needed, and pain issues should be addressed. Family members need education that the nurse is providing appropriate care for the comfort of the patient.

Patient and family education

Patients and family members are often overwhelmed at the time of discharge from an acute care hospital. Education includes information on the purpose, dosage, and side effects of any medications, especially if newly prescribed. Personalized information about stroke risk factors and lifestyle modification using the teach-back method will assist in reinforcing any information provided. Knowing when to call 911 for stroke symptoms is very important. One way for patients and family members to remember symptoms of a stroke is using FAST (Face, Arms, Speech, Time). Retrieved from: https://www.stroke.org/en/life-after-stroke/preventing-another-stroke.

The AHA/ASA has patient education regarding all of these topics and more at their website: https://www.stroke.org/en/about-stroke/effects-of-stroke.

Rehabilitation

While the scope of this educational offering is on the patient with an acute stroke, nurses need to be aware of potential destinations upon discharge. Patients may go to an acute rehabilitation facility, long-term acute care, skilled nursing facility, home, or hospice. The bedside nurse should be aware of the offerings and purpose of each facility. For patients going home, the caregiver may need in-hospital education before discharge. Caregivers also need information regarding resources available in the community (Suarez, 2016). Additional information about rehabilitation can be found in "Guidelines for Adult Rehabilitation and Recovery" (Winstein et al., 2016).

STROKE SYSTEMS OF CARE

A system of care is a healthcare model that covers the continuum of services for a specific population of patients. These systems are developed over a geographic area at the state and regional level. The Institute for Healthcare Improvement (IHI) has developed a program called the Triple Aim for Populations. The framework describes an approach to optimizing health system performance to simultaneously improve care, improve population health, and reduce costs per capita (http://www.ihi.org/Topics/TripleAim/Pages/Overview.aspx).

Stroke systems of care contribute to uniformity of care across any health system. The overall goal of establishing stroke systems of care is to improve patient care from the time they enter a facility with stroke-like systems, through treatment, and also through the rehabilitation phase.

The AHA/ASA developed guidelines for stroke systems of care that outline different levels of care and the responsibilities of personnel at each level.

Certification of centers of care is performed by The Joint Commission, Det Norske Veritas, Healthcare Facilities Accreditation Program, and state health departments. Each of these have requirements that must be met to declare that the hospital is certified to care for stroke patients. Uniformity of care across health systems by developing stroke systems of care also assists in data collection across systems to continue to improve patient care (Adeoye et al., 2019).

Stroke centers of care:

- **Acute Stroke-Ready Hospital (ASRH)**: Approximately 50% of stroke patients do not live in a geographical location that is amenable to rapid treatment and transfer of patients with stroke (> 60 miles away). The ASRH is a small, often rural, hospital. The ASRH should be able to supply care with components of the primary stroke center, including the ability to administer t-PA. Minimal staffing would be a physician and a nurse with stroke training who are on call 24/7 and can get to the hospital within 15 minutes. Other elements include written stroke protocols, emergency medical system (EMS), an ED, laboratory studies, brain imaging, and emergent therapies (blood pressure management, IV t- PA, and reversal of coagulopathy; Alberts et al., 2013). The ASRH should provide initial treatment and then transfer to a Primary Stroke Center (PSC) or comprehensive stroke center (CSC).
- **Primary Stroke Center (PSC)**: The PSC is a hospital that can provide care for the patient with a stroke upon admission through the ED. The patient is not transferred to another facility. Recommendations include an acute stroke team that can be at the bedside within 15 minutes, EMS for transport to the nearest facility, ED services that can identify and initially treat a patient presenting with stroke, an acute stroke unit with multi-channel monitoring capability, and nursing staff who are educated on the management of the patient with stroke (Alberts et al., 2011). Additional recommendations are the presence of laboratory services, imaging, administrative support, and certification of the center as a PSC (Alberts et al., 2011).
- **Thrombectomy-Capable Stroke Center (TSC)**: This is a new level of care and is somewhat controversial. The TSC is a center that has the ability to provide thrombectomy but is not a CSC. For hospitals that can provide thrombectomy but are not near a CSC, the designation of TSC seems reasonable. For communities where there is a CSC, the recommendation is to transfer the patient to the facility that provides the highest level of care (Adeoye et al., 2019).
- **Comprehensive Stroke Center (CSC)**: In the United States there are approximately 1500 PSCs and 200 CSCs. CSCs are frequently in tertiary and quaternary hospitals. CSCs see the most complex patients with stroke and provide critical care, neurosurgery, endovascular treatment, and multiple imaging techniques. Because of the volume of patients seen, these centers are able to provide high level quality care with good outcomes (Adeoye et al., 2019).
- **Mobile Stroke Units (MSU)**: The first MSU was developed in Houston, TX. MSUs had been in use in Germany but had not been introduced in the United States, likely because of the complexity of developing such a program. MSUs are able to provide high-level medical care while the patient is enroute to the hospital. MSUs contain a CT scanner, medications, laboratory capability, and are staffed with a registered nurse and a vascular neurologist (Fatima et al., 2020). Thrombolysis can be started in the MSU, thus decreasing the time for administration that might exist if waiting until arrival at the ED (Fatima et al., 2020).

(Hundt & Belmont, 2020)

The Joint Commission provides a table for comparison of the four levels of stroke care. It can be found at: https://www.jointcommission.org/certification/advanced_certification_comprehensive_stroke_centers.aspx

Quality measures

Quality measures assist in identifying areas for improvement and for success and include the following.

Get with the Guidelines-Stroke (GWTG-S)
The AHA developed the GWTG-S program in 2003. The goals are to improve in-hospital stroke care by adhering to the latest scientific evidence. This is a comprehensive program to support quality stroke care. The AHA provides tools, a registry, education, and up-to-date information regarding stroke care.

The following is a list of outcome measures for this program:

- **IV Thrombolysis**: arrive by 3.5 hours, treat by 4.5 hours: Percent of acute ischemic stroke patients who arrive at the hospital within 210 minutes (3.5 hours) of time last known well and for whom thrombolysis was initiated at this hospital within 270 minutes (4.5 hours) of time last known well. Corresponding measure available for inpatient stroke cases.
- **Early antithrombotics**: Percent of patients with ischemic stroke or TIA who receive antithrombotic therapy (e.g., low dose aspirin, clopidogrel, dipyridamole) by the end of hospital day two. Corresponding measures available for observation status only and inpatient stroke cases.
- **VTE prophylaxis**: Percent of patients with ischemic stroke, hemorrhagic stroke, or stroke not otherwise specified who receive VTE prophylaxis the day of or the day after hospital admission.
- **Antithrombotic**: Percent of patients with an ischemic stroke or TIA prescribed antithrombotic therapy at discharge. Corresponding measures available for observation status only and inpatient stroke cases.
- **Anticoagulation for A-Fib/A-flutter**: Percent of patients with an ischemic stroke or TIA with atrial fibrillation/flutter discharged on anticoagulation therapy. Corresponding measures available for observation status only as well as inpatient stroke cases.
- **Smoking cessation**: Percent of patients with ischemic or hemorrhagic stroke, or TIA with a history of smoking cigarettes, who are, or whose caregivers are, given smoking cessation advice or counseling during hospital stay. Corresponding measures available for observation status only and inpatient stroke cases.

- **Intensive statin**: Percent of ischemic stroke or TIA patients who are discharged on intensive statin therapy. Corresponding measures available for observation status only as well as inpatient stroke cases.

The list below includes the GWTG-S comprehensive measures:

- **Door to arterial puncture time**: Time from arrival to arterial puncture for ischemic stroke patients treated at the hospital with intra-arterial catheter-based treatment.
- **Median time to INR reversal (comprehensive)**: Median time to INR reversal in patients treated with procoagulant reversal agent for warfarin related ICH.
- **Median time to procoagulant treatment for ICH (comprehensive)**: Median time to treatment with a procoagulant reversal agent for warfarin related ICH.
- **Thrombolysis in cerebral infarction (TICI) post-treatment reperfusion grade (comprehensive)**: Patients grouped by TICI post-treatment reperfusion grade.

Hospitals provide their data online and are recognized at the bronze, silver, or gold levels by the AHA/ASA:

- **Bronze** recognizes performance of 90 consecutive days.
- **Silver** recognizes performance of 12 consecutive months.
- **Gold** recognizes performance of 24 consecutive months or more.

https://www.heart.org/en/professional/quality-improvement/get-with-the-guidelines/get-with-the-guidelines-stroke

The Joint Commission (TJC) quality measures

Note that the numbers are not sequential, and some numbers may be omitted because of revision of the measures. The following are the Stroke Core (STK) measures:

- STK-1 Venous Thromboembolism (VTE) Prophylaxis.
- STK-2 Discharged on Antithrombotic Therapy.
- STK-3 Anticoagulation Therapy for Atrial Fibrillation/Flutter. STK-4 Thrombolytic Therapy.
- STK-5 Antithrombotic Therapy by End of Hospital Day Two. STK-6 Discharged on Statin Medication.
- STK-8 Stroke Education.
- STK-10 Assessed for Rehabilitation.

For CSCs, there are 10 measures specific to CSC certification plus the eight core measures listed above.

The following are the 10 Comprehensive Stroke (CSTK) measures required for discharges on or after January 1, 2018:

- CSTK-01 National Institutes of Health Stroke Scale (NIHSS) Score Performed for Ischemic Stroke Patients.
- CSTK-02 Modified Rankin Score (mRS) at 90 Days.
- CSTK-03 Severity Measurement Performed for SAH and ICH Patients.
- CSTK-04 Procoagulant Reversal Agent Initiation for Intracerebral Hemorrhage (ICH).
- CSTK-05 Hemorrhagic Transformation.
- CSTK-06 Nimodipine Treatment Administered.
- CSTK-08 Thrombolysis in Cerebral Infarction (TICI) Post-Treatment Reperfusion Grade.
- CSTK-09 Arrival Time to Skin Puncture.
- CSTK-10 Modified Rankin Score (mRS) at 90 Days: Favorable Outcome.
- CSTK-11 Rate of Rapid Effective Reperfusion from Hospital Arrival.
- CSTK-12 Rate of Rapid Effective Reperfusion from Skin Puncture.

https://www.jointcommission.org/performance_measures_for_comprehensive_stroke_centers

Evidence-based practice alert! The outcome measures outlined above are based on research. The bedside clinician is part of the team that assists in assuring that these outcome measures are met. Interventions such as VTE prophylaxis, dysphagia screening, and stroke education are the purview of the bedside nurse and can have a significant impact on outcome (Howard, 2018; Ormseth, 2017).

Conclusion

This overview of acute stroke has included information essential to the care of the patient in the hospital setting. The trajectory of stroke continues after discharge from the hospital to the rehabilitation facility and eventually to home. Patients and families need a great deal of support to deal with the changes that have occurred because of the stroke. Nurses are in the best position to do this.

References

- Adeoye, O., Nyström, K. V., Yavagal, D. R., Luciano, J., Nogueira, R. G., Zorowitz, R. D., Khalessi, A. A., Bushnell, C., Barsan, W. G., Panagos, P., Alberts, M. J., Tiner, A. C., Schwamm, L. H., & Jauch, E. C. (2019). Recommendations for the establishment of stroke systems of care: A 2019 update. *Stroke*, *50*(7), e187-e210. https://doi.org/10.1161/STR.0000000000000173
- Albers, G. W., Caplan, L. R., Easton, J. D., Fayad, P. B., Mohr, J., Saver, J. L., & Sherman, D. G. (2002). Transient ischemic attack—proposal for a new definition. *New England Journal of Medicine*, *347*(21), 1713-1716.
- Alberts, M. J., Latchaw, R. E., Jagoda, A., Wechsler, L. R., Crocco, T., George, M. G., Connolly, E. S., Mancini, B., Prudhomme, S., Gress, D., Jensen, M. E., Bass, R., Ruff, R., Foell, K., Armonda, R. A., Emr, M., Warren, M., Baranski, J., & Walker, M. D. (2011). Revised and updated recommendations for the establishment of primary stroke centers. *Stroke*, *42*(9), 2651-2665. https://doi.org/10.1161/STROKEAHA.111.615336
- Alberts, M. J., Wechsler, L. R., Jensen, M. E. L., Latchaw, R. E., Crocco, T. J., George, M. G., Baranski, J., Bass, R.
- R., Ruff, R. L., Huang, J., Mancini, B., Gregory, T., Gress, D., Emr, M., Warren, M., & Walker, M. D. (2013). Formation and function of acute stroke-ready hospitals within a stroke system of care: Recommendations from the Brain Attack Coalition. *Stroke*, *44*(12), 3382-3393. https://doi.org/10.1161/STROKEAHA.113.002285
- Amarenco, P., Lavallée, P. C., Labreuche, J., Albers, G. W., Bornstein, N. M., Canhão, P., Caplan, L. R., Donnan, G. A., Ferro, J. M., Hennerici, M. G., Molina, C., Rothwell, P. M., Sissani, L., Školoudík, D., Steg, P. G., Touboul, P.-J., Uchiyama, S., Vicaut, É., & Wong, L. K. S. (2016). One-year risk of stroke after transient ischemic attack or minor stroke. *New England Journal of Medicine*, *374*(16), 1533-1542. https://doi.org/10.1056/NEJMoa1412981
- Bell, D. J. & Gaillard, F. (n.d.). Spetzler-Martin arteriovenous malformation grading system. Retrieved August 8, 2019, from https://radiopaedia.org/articles/spetzler-martin-arteriovenous-malformation-grading-system-2?lang=us
- Benjamin, E. J., Muntner, P., Alonso, A., Bittencourt, M. S., Callaway, C. W., Carson, A. P., Chamberlain, A. M., Chang, A. R., Cheng, S., Das, S. R., Delling, F. N., Djousse, L., Elkind, M. S. V., Ferguson, J. F., Fornage, M., Jordan, L. C., Khan, S. S., Kissela, B. M., Knutson, K. L., . . . Virani, S. S. (2019). Heart disease and stroke statistics-2019 update: A report from the American Heart Association. *Circulation*, *139*(10), e56-e528. https://doi.org/10.1161/CIR.0000000000000659
- Bhat, A., Mahajan, V., & Wolfe, N. (2021). Implicit bias in stroke care: A recurring old problem in the rising incidence of young stroke. *Journal of Clinical Neuroscience*, *85*, 27-35. https://doi.org/10.1016/j.jocn.2020.12.017
- Biffi, A., Rattani, A., Anderson, C. D., Ayres, A. M., Gurol, E. M., Greenberg, S. M., Rosand, J., & Viswanathan, A. (2016). Delayed seizures after intracerebral haemorrhage. *Brain*, *139*(10), 2694-2705. https://doi.org/10.1093/brain/aww199
- Bogason, E., Morrison, K., Zalatimo, O., Ermak, D. M., Lehman, E., Markley, E., & Cockroft, K. (2017). Urinary tract infections in hospitalized ischemic stroke patients: Source and impact on outcome. *Cureus*, *9*(2), e1014-e1014.
- Braun, L. T., Grady, K. L., Kutner, J. S., Adler, E., Berlinger, N., Boss, R., Butler, J., Enguidanos, S., Friebert, S., Gardner, T. J., Higgins, P., Holloway, R., Konig, M., Meier, D., Morrissey, M. B., Quest, T. E., Wiegand, D. L., Coombs- Lee, B., Fitchett, G., . . . Roach, W. H. (2016). Palliative care and cardiovascular disease and stroke: A Policy Statement from the American Heart Association/American Stroke Association. *Circulation*, *134*(11), e198-e225. https://doi.org/10.1161/CIR.0000000000000438
- Bridgwood B, Lager KE, Mistri AK, Khunti K, Wilson AD, & Modi, P. (2018). Interventions for improving modifiable risk factor control in the secondary prevention of stroke. *Cochrane Database of Systematic Reviews* (5 Art. No.: CD009103). https://doi.org/10.1002/14651858.CD009103.pub3
- Broderick, J. P., Adeoye, O., & Elm, J. (2017). Evolution of the Modified Rankin Scale and its use in future stroke trials. *Stroke*, *48*(7), 2007-2012. https://doi.org/doi:10.1161/STROKEAHA.117.017866
- Campbell, B. C. V., Mitchell, P. J., Churilov, L., Yassi, N., Kleinig, T. J., Dowling, R. J., Yan, B., Bush, S. J., Dewey, H. M., Thijs, V., Scroop, R., Simpson, M., Brooks, M., Asadi, H., Wu, T. Y., Shah, D. G., Wijeratne, T., Ang, T., Miteff, F., . . . Davis, S. M. (2018). Tenecteplase versus alteplase before thrombectomy for ischemic stroke. *New England Journal of Medicine*, *378*(17), 1573-1582. https://doi.org/10.1056/NEJMoa1716405
- Caprio, F. Z. & Sorond, F. A. (2019). Cerebrovascular disease: Primary and secondary stroke prevention. *Medical Clinics of North America*, *103*(2), 295-308.
- Carroll, D. & Gaillard, F. (n.d.). Cerebral vasospasm following subarachnoid hemorrhage. Retrieved August 8, 2019, from https://radiopaedia.org/articles/cerebral-vasospasm-following-subarachnoid-haemorrhage?lang=us
- Casper, C. L. & Graves, A. M. (2016). Intracerebral hemorrhagic stroke. In J. V. Hickey & S. L. Livesay (Eds.), *The continuum of stroke care: An interprofessional approach to evidence-based care* (pp. 116-140). Wolters Kluwer.
- Censullo, J. L., Harris, C., Keigher, K. M., & Livesay, S. (2016). Hemorrhagic stroke. In M. K. Bader, L. R. Littlejohns, & D. M. Olson (Eds.), *AANN core curriculum for neuroscience nursing* (pp. 247-266). American Association of Neuroscience Nurses.
- Centers for Disease Control and Prevention. (n.d.). *Stroke Facts*. Retrieved March 25, 2022 from https://www.cdc.gov/stroke/facts.htm
- Chung, D. Y., Abdalkader, M., & Nguyen, T. N. (2021). Aneurysmal subarachnoid hemorrhage. *Neurologic Clinics*, *39*(2), 419-442.
- Clissold, B., Phan, T. G., Ly, J., Singhal, S., Srikanth, V., & Ma, H. (2020). Current aspects of TIA management. *Journal of Clinical Neuroscience*, *72*, 20-25.
- Cruz-Flores, S., Rabinstein, A., Biller, J., Elkind, M. S. V., Griffith, P., Gorelick, P. B., Howard, G., Leira, E. C., Morgenstern, L. B., Ovbiagele, B., Peterson, E., Rosamond, W., Trimble, B., & Valderrama, A. L. (2011). Racial-ethnic disparities in stroke care: The American experience. *Stroke*, *42*(7), 2091-2116. https://doi.org/doi:10.1161/STR.0b013e3182213e24
- Davidson, J. E., Aslakson, R. A., Long, A. C., Puntillo, K. A., Kross, E. K., Hart, J., Cox, C. E., Wunsch, H., Wickline, M. A., Nunnally, M. E., Netzer, G., Kentish-Barnes, N., Sprung, C. L., Hartog, C. S., Coombs, M., Gerritsen, R. T., Hopkins, R. O., Franck, L. S., Skrobik, Y., . . . Curtis, J. R. (2017). Guidelines for family-centered care in the neonatal, pediatric, and adult ICU. *Critical Care Medicine*, *45*(1), 103-128. https://doi.org/10.1097/ccm.0000000000002169 Day, J. C. (1996). *Population projections of the United States by age, sex, race, and Hispanic origin: 1995 to 2050.* (P25-1130). Washington, DC: U.S. Government Printing Office
- Del Brutto, V. J., Ardelt, A., Loggini, A., Bulwa, Z., El-Ammar, F., Martinez, R. C., Brorson, J., & Goldenberg, F. (2019). Clinical characteristics and emergent therapeutic interventions in patients evaluated through the in-hospital stroke alert protocol. *Journal of Stroke and Cerebrovascular Diseases*, *28*(5), 1362-1370.
- Derdeyn, C. P., Zipfel, G. J., Albuquerque, F. C., Cooke, D. L., Feldmann, E., Sheehan, J. P., & Torner, J. C. (2017). Management of brain arteriovenous malformations: A scientific statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*, *48*(8), e200-e224. https://doi.org/10.1161/STR.0000000000000134
- Dhakal, P., Rayamajhi, S., Verma, V., Gundabolu, K., & Bhatt, V. R. (2017). Reversal of anticoagulation and management of bleeding in patients on anticoagulants. *Clinical and AppliedThrombosis/Hemostasis*, *23*(5), 410-415. https://doi.org/10.1177/1076029616675970
- Ely, E. W., Inouye, S. K., Bernard, G. R., Gordon, S., Francis, J., May, L., Truman, B., Speroff, T., Gautam, S., Margolin, R., Hart, R. P., & Dittus, R. (2001). Delirium in mechanically ventilated patients: Validity and reliability of the Confusion Assessment Method for the Intensive Care Unit (CAM-

ICU). *Journal of the American Medical Association, 286*(21), 2703-2710. https://doi.org/10.1001/jama.286.21.2703
- Evrard, H. C. (2019). The organization of the primate insular cortex [Review]. *Frontiers in Neuroanatomy, 13*. https://doi.org/10.3389/fnana.2019.00043
- Fatima, N., Saqqur, M., Hussain, M. S., & Shuaib, A. (2020). Mobile stroke unit versus standard medical care in the management of patients with acute stroke: A systematic review and meta-analysis. *International Journal of Stroke, 15*(6), 595-608. https://doi.org/10.1177/1747493020929964
- Fei, K., Benn, E. K. T., Negron, R., Arniella, G., Tuhrim, S., & Horowitz, C. R. (2016). Prevalence of depression among stroke survivors. *Stroke, 47*(2), 512-515. https://doi.org/10.1161/STROKEAHA.115.010292
- Felling, R. J., Sun, L. R., Maxwell, E. C., Goldenberg, N., & Bernard, T. (2017). Pediatric arterial ischemic stroke: Epidemiology, risk factors, and management. *Blood Cells, Molecules, and Diseases, 67*, 23-33. https://doi.org/10.1016/j.bcmd.2017.03.003
- FitzGerald, C. & Hurst, S. (2017). Implicit bias in healthcare professionals: A systematic review. *BMC Medical Ethics, 18*(1), 19. https://doi.org/10.1186/s12910-017-0179-8
- Francoeur, C. L. & Mayer, S. A. (2016). Management of delayed cerebral ischemia after subarachnoid hemorrhage. *Critical Care, 20*(1), 277. https://doi.org/10.1186/s13054-016-1447-6
- Galiczewski, J. M. & Shurpin, K. M. (2017). An intervention to improve the catheter associated urinary tract infection rate in a medical intensive care unit: Direct observation of catheter insertion procedure. *Intensive and Critical Care Nursing, 40*, 26-34. https://doi.org/https://doi.org/10.1016/j.iccn.2016.12.003
- Gao, L., Zhao, C. W., & Hwang, D. Y. (2021). End-of-life care decision-making in stroke. *Frontiers in Neurology, 12*, 702833-702833. https://doi.org/10.3389/fneur.2021.702833
- Gardener, H., Sacco, R. L., Rundek, T., Battistella, V., Cheung, Y. K., & Elkind, M. S. V. (2020). Race and ethnic disparities in stroke incidence in the Northern Manhattan Study. *Stroke, 51*(4), 1064-1069. https://doi.org/doi:10.1161/STROKEAHA.119.028806
- Ginkel, J. M. D., Gooskens, F., Schepers, V. P. M., Schuurmans, M. J., Lindeman, E., & Hafsteinsdóttir, T. B. (2012). Screening for poststroke depression using the Patient Health Questionnaire. *Nursing Research, 61*(5), 333–341. https://doi.org/10.1097/NNR.0b013e31825d9e9e
- Green, T. L., McNair, N. D., Hinkle, J. L., Middleton, S., Miller, E. T., Perrin, S., Power, M., Southerland, A. M., & Summers, D. V. (2021). Care of the patient with acute ischemic stroke (posthyperacute and prehospital discharge): Update to 2009 comprehensive nursing care Scientific Statement: A Scientific Statement from the American Heart Association. *Stroke, 52*(5), e179-e197. https://doi.org/doi:10.1161/STR.0000000000000357
- Guhwe, M., Chioffi, S. M., & Blessing, K. (2016). Management of stroke-related complications. In J. V. HIckey & S. L. Livesay (Eds.), *The continuum of stroke care: An interprofessional approach to evidence-based care* (pp. 183-258). Wolters Kluwer.
- Hemphill, J. C., Bonovich, D. C., Besmertis, L., Manley, G. T., & Johnston, S. C. (2001). The ICH score. *Stroke, 32*(4), 891-897. https://doi.org/10.1161/01.STR.32.4.891
- Hickey, J. V. & Livesay, S. L. (2020). Intracerebral hemorrhagic stroke. In J. V. HIckey & A. L. Strayer (Eds.), *The clinical practice of neurological and neurosurgical nursing* (8th ed., pp. 557-571). Wolters Kluwer.
- Hinkle, J. L., Morrison, K., & Siewart, L. (2016). Ischemic stroke. In M. K. Bader, L. R. Littlejohns, & D. M. Olson (Eds.), *AANN core curriculum for neuroscience nursing* (6th ed., pp. 229-246). American Association of Neuroscience Nurses.
- Hundt, B. & Belmont, J. (2020). Systems and quality. In K. M. Keigher, S. L. Livesay, & J. L. Wessol (Eds.), *Comprehensive review for stroke nursing* (2nd ed., pp. 317-344). American Association of Neuroscience Nurses.
- Inouye, S. K., van Dyck, C. H., Alessi, C. A., Balkin, S., Siegal, A. P., & Horwitz, R. I. (1999). Clarifying Confusion: The Confusion Assessment Method A New Method for Detection of Delirium. *Annals of Internal Medicine, 113*(12), 941- 948.
- Jain, S., Teasdale, G. M., & Iverson, L. M. (2019). *Glasgow Coma Scale*. StatPearls Publishing.
- Jasne, A. S., Chojecka, P., Maran, I., Mageid, R., Eldokmak, M., Zhang, Q., Nystrom, K., Vlieks, K., Askenase, M., Petersen, N., Falcone, G. J., Wira, C. R., Lleva, P., Zeevi, N., Narula, R., Amin, H., Navaratnam, D., Loomis, C., Hwang, D. Y., & Sharma, R. (2020). Stroke code presentations, interventions, and outcomes before and during the COVID-19 pandemic. *Stroke, 51*(9), 2664–2673. https://doi.org/10.1161/str.0000000000000347
- Joundi, R. A., Martino, R., Saposnik, G., Giannakeas, V., Fang, J., & Kapral, M. K. (2017). Predictors and outcomes of dysphagia screening after acute ischemic stroke. *Stroke, 48*(4), 900-906. https://doi.org/10.1161/STROKEAHA.116.015332
- Kapral, M. K. & Bushnell, C. (2021). Stroke in women. *Stroke, 52*(2), 726-728. https://doi.org/doi:10.1161/STROKEAHA.120.033233
- Katan, M. & Luft, A. (2018). Global burden of stroke. *Seminars in Neurology, 38*(02), 208-211.
- Keiser, M. & Wilkerson, M. (2020). Stroke diagnostics. In K. M. Keigher, S. L. Livesay, & J. L. Wessol (Eds.), *Comprehensive review for stroke nursing* (2nd ed., pp. 135-165). American Association of Neuroscience Nurses.
- Kim, W. & Kim, E. J. (2018). Heart failure as a risk factor for stroke. *Journal of Stroke, 20*(1), 33-45. https://doi.org/10.5853/jos.2017.02810
- King, M. L. (2016). Subarchnoid hemorrahge. In J. V. Hickey & S. L. Livesay (Eds.), *The continuum of stroke care: An interprofessional approach to evidence-based care* (pp. 141-182). Wolters Kluwer.
- Kleindorfer, D. O., Towfighi, A., Chaturvedi, S., Cockroft, K. M., Gutierrez, J., Lombardi-Hill, D., Kamel, H., Kernan, W. N., Kittner, S. J., Leira, E. C., Lennon, O., Meschia, J. F., Nguyen, T. N., Pollak, P. M., Santangeli, P., Sharrief, A. Z., Smith, S. C., Turan, T. N., & Williams, L. S. (2021). 2021 Guideline for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack: A Guideline From the American Heart Association/American Stroke Association. *Stroke, 52*(7), e364-e467. https://doi.org/doi:10.1161/STR.0000000000000375
- Kolmos, M., Christoffersen, L., & Kruuse, C. (2021). Recurrent ischemic stroke – A systematic review and meta- analysis. *Journal of Stroke and Cerebrovascular Diseases, 30*(8), 105935.
- Kon, A. A., Davidson, J. E., Morrison, W., Danis, M., & White, D. B. (2016a). Shared decision-making in intensive care units. Executive Summary of the American College of Critical Care Medicine and American Thoracic Society policy statement. *American Journal of Respiratory and Critical Care Medicine, 193*(12), 1334-1336. https://doi.org/10.1164/rccm.201602-0269ED
- Kon, A. A., Davidson, J. E., Morrison, W., Danis, M., & White, D. B. (2016b). Shared decision making in ICUs: An American College of Critical Care Medicine and American Thoracic Society policy statement. *Critical Care Medicine, 44*(1), 188-201. https://doi.org/10.1097/ccm.0000000000001396
- Kowalska, K., Droś, J., Mazurek, M., Pasińska, P., Gorzkowska, A., & Klimkowicz-Mrowiec, A. (2020). Delirium post- stroke: Short- and long-term effect on depression, anxiety, apathy and aggression (Research Study-Part of PROPOLIS Study). *Journal of Clinical Medicine, 9*(7). https://doi.org/10.3390/jcm9072232
- Kuczynski, A., Marzoughi, S., Sultan, A. S. A., Goyal, M., Demchuk, A., & Almekhlafi, M. A. (2019). Abstract 83: Therapeutic Hypothermia in Patients With Acute Ischemic Stroke a Systematic Review of Prospective Controlled Studies. *Stroke, 50*(Suppl_1), A83-A83. https://doi.org/doi:10.1161/str.50.suppl_1.83
- Kuramatsu, J. B., Sembill, J. A., & Huttner, H. B. (2019). Reversal of oral anticoagulation in patients with acute intracerebral hemorrhage. *Critical care (London, England), 23*(1), 206-206. https://doi.org/10.1186/s13054-019-2492-8
- Littlejohns, L. & Slazinski, T. (2016). Anatomy of the nervous system. In M. K. Bader, L. R. Littlejohns, & D. M. Olson (Eds.), *AANN core curriculum for neuroscience nursing* (6th ed., pp. 19-56). American Association of Neuroscience Nurses.
- Livesay, S. L. & Keigher, K. M. (2020). Anatomy and physiology. In K. M. Keigher, S. L. Livesay, & J. L. Wessol (Eds.), *Comprehensive review for stroke nursing* (2nd ed., pp. 1-34). American Association of Neuroscience Nurses.
- Man, S., Zhao, X., Uchino, K., Hussain, M. S., Smith, E. E., Bhatt, D. L., Xian, Y., Schwamm, L. H., Shah, S., Khan, Y., & Fonarow, G. C. (2018). Comparison of acute ischemic stroke care and outcomes between comprehensive stroke centers and primary stroke centers in the United States. *Circulation: Cardiovascular Quality and Outcomes, 11*(6), e004512. https://doi.org/10.1161/circoutcomes.117.004512
- Marin, S., Serra-Prat, M., Ortega, O., & Clavé, P. (2018). Cost of oropharyngeal dysphagia after stroke: protocol for a systematic review. *BMJ Open, 8*(12), e022775. https://doi.org/10.1136/bmjopen-2018-022775
- Merkler, A. E., Diaz, I., Wu, X., Murthy, S. B., Gialdini, G., Navi, B. B., Yaghi, S., Weinsaft, J. W., Okin, P. M., Safford, M. M., Iadecola, C., & Kamel, H. (2018). Duration of heightened ischemic stroke risk after acute myocardial infarction. *Journal of the American Heart Association, 7*(22), e010782. https://doi.org/doi:10.1161/JAHA.118.010782
- Mitchell, P. H. (2016). Nursing assessment of depression in stroke survivors. *Stroke, 47*(1), e1-e3. https://doi.org/10.1161/STROKEAHA.115.008362
- Morgenstern, L. B., Zahuranec, D. B., Lim, J., Shi, X., Brown, D. L., Kerber, K. A., Meurer, W. J., Skolarus, L. E., Adelman, E. E., Campbell, M. S., Case, E., & Lisabeth, L. D. (2021). Tissue-based stroke definition impacts stroke incidence but not ethnic differences. *Journal of Stroke and Cerebrovascular Diseases, 30*(6), 105727.
- Mossavar-Rahmani, Y., Kamensky, V., Manson, J. E., Silver, B., Rapp, S. R., Haring, B., Beresford, S. A. A., Snetselaar, L., & Wassertheil-Smoller, S. (2019). Artificially sweetened beverages and stroke, coronary heart disease, and all-cause mortality in the Women's Health Initiative. *Stroke, 50*(3), 555-562. https://doi.org/doi:10.1161/STROKEAHA.118.023100
- Moulin, S. & Leys, D. (2019). Stroke mimics and chameleons. *Current Opinion in Neurology, 32*(1), 54-59. https://doi.org/10.1097/wco.0000000000000620
- Narayan, M. C. (2019). Addressing implicit bias in nursing: A review. *AJN The American Journal of Nursing, 119*(7). https://journals.lww.com/ajnonline/Fulltext/2019/07000/CE__Addressing_Implicit_Bias_in_Nursing__A_Review.27.aspx
- National Institutes of Health. (n.d.). NIH Stroke Scale. In National Institutes of Neurological Disorders and Stroke (Ed.): Department of Health and Human Services.
- Neifert, S. N., Chapman, E. K., Martini, M. L., Shuman, W. H., Schupper, A. J., Oermann, E. K., Mocco, J., & Macdonald, R. L. (2021). Aneurysmal subarachnoid hemorrhage: The last decade. *Translational Stroke Research, 12*(3), 428-446. https://doi.org/10.1007/s12975-020-00867-0
- Nouh, A., Amin-Hanjani, S., Furie, K. L., Kernan, W. N., Olson, D. M., Testai, F. D., Alberts, M. J., Hussain, M. A., & Cumbler, E. U. (2022). Identifying best practices to improve evaluation and management of in-hospital stroke: A Scientific Statement From the American Heart Association. *Stroke, 0*(0), STR.0000000000000402. https://doi.org/doi:10.1161/STR.0000000000000402
- Pandian, J. D., Gall, S. L., Kate, M. P., Silva, G. S., Akinyemi, R. O., Ovbiagele, B. I., Lavados, P. M., Gandhi, D. B. C., & Thrift, A. G. (2018). Prevention of stroke: A global perspective. *The Lancet, 392*(10154), 1269-1278.
- Phipps, M. S. & Cronin, C. A. (2020). Management of acute ischemic stroke. *BMJ, 368*, l6983. https://doi.org/10.1136/bmj.l6983
- Powers, W. J., Rabinstein, A. A., Ackerson, T., Adeoye, O. M., Bambakidis, N. C., Becker, K., Biller, J., Brown, M., Demaerschalk, B. M., Hoh, B., Jauch, E. C., Kidwell, C. S., Leslie-Mazwi, T. M., Ovbiagele, B., Scott, P. A., Sheth, K. N., Southerland, A. M., Summers, D. V., & Tirschwell, D. L. (2018). 2018 guidelines for the early management of patients with acute ischemic stroke: A guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke, 49*(3), e46-e99. https://doi.org/10.1161/STR.0000000000000158
- Powers, W. J., Rabinstein, A. A., Ackerson, T., Adeoye, O. M., Bambakidis, N. C., Becker, K., Biller, J., Brown, M., Demaerschalk, B. M., Hoh, B., Jauch, E. C., Kidwell, C. S., Leslie-Mazwi, T. M., Ovbiagele, B., Scott, P. A., Sheth, K. N., Southerland, A. M., Summers, D. V., & Tirschwell, D. L. (2019). Guidelines for the early management of patients with acute ischemic Stroke: 2019 update to the 2018 Guidelines for the early management of acute ischemic stroke: A guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke, 50*(12), e344-e418. https://doi.org/10.1161/STR.0000000000000211
- Qu, J., Chen, Y., Luo, G., Zhong, H., Xiao, W., & Yin, H. (2018). Delirium in the acute phase of ischemic stroke: Incidence, risk factors, and effects on functional outcome. *Journal of Stroke and Cerebrovascular Diseases, 27*(10), 2641-2647. https://doi.org/10.1016/j.jstrokecerebrovasdis.2018.05.034
- Quigley, P. A. (2016). Redesigned fall and injury management of patients with stroke. *Stroke, 47*(6), e92-e94. https://doi.org/10.1161/STROKEAHA.116.012094
- Reshetnyak, E., Ntamatungiro, M., Pinheiro, L. C., Howard, V. J., Carson, A. P., Martin, K. D., & Safford, M. M. (2020). Impact of multiple social determinants of health on incident stroke. *Stroke, 51*(8), 2445-2453. https://doi.org/doi:10.1161/STROKEAHA.120.028530
- Robinson, R. G. & Jorge, R. E. (2016). Post-Stroke depression: A review. *American Journal of Psychiatry, 173*(3), 221-231. https://doi.org/10.1176/appi.ajp.2015.15030363
- Rodgers, M. L., Fox, E., Abdelhak, T., Franker, L. M., Johnson, B. J., Kirchner-Sullivan, C., Livesay, S. L., & Marden, F.A. (2021). Care of the patient with acute ischemic stroke (endovascular/intensive care unit-postinterventional therapy): Update to 2009 comprehensive nursing care Scientific Statement: A Scientific Statement From the American Heart Association. *Stroke, 52*(5), e198-e210. https://doi.org/doi:10.1161/STR.0000000000000358
- Roland, R. & Gaillard, F. (n.d.). Subarachnoid hemorrhage. Retrieved August 8, 2019, from https://radiopaedia.org/articles/subarachnoid-haemorrhage?lang=us
- Sacco, R. L., Kasner, S. E., Broderick, J. P., Caplan, L. R., Connors, J. J., Culebras, A., Elkind, M. S. V., George, M.G., Hamdan, A. D., Higashida, R. T., Hoh, B. L., Janis, L. S., Kase, C. S., Kleindorfer, D. O., Lee, J.-M., Moseley, M. E., Peterson, E. D., Turan, T. N., Valderrama, A. L., & Vinters, H. V. (2013). An updated definition of stroke for the 21st century. *Stroke, 44*(7), 2064-2089. https://doi.org/10.1161/STR.0b013e318296aeca
- Saint, S., Greene, M. T., Krein, S. L., Rogers, M. A. M., Ratz, D., Fowler, K. E., Edson, B. S., Watson, S. R., Meyer- Lucas, B., Masuga, M., Faulkner, K., Gould, C. V., Battles, J., & Fakih, M. G. (2016). A Program to prevent catheter- associated urinary tract infection in acute care. *New England Journal of Medicine, 374*(22), 2111-2119. https://doi.org/10.1056/NEJMoa1504906
- Saver, J. L., Chapot, R., Agid, R., Hassan, A. E., Jadhav, A. P., Liebeskind, D. S., Lobotesis, K., Meila, D., Meyer, L., Raphaeli, G., Gupta, R., Amista', P., Andsberg, G., Cagnazzo, F., Isalberti, M., Karabegovic, S., Kollia, K., Mangiafico, S., Mis, M., . . . Zamaro, J. (2020). Thrombectomy for distal, medium vessel occlusions. *Stroke, 51*(9), 2872-2884. https://doi.org/doi:10.1161/STROKEAHA.120.028956
- Seagraves, K. B. & Livesay, S. L. (2016). Ischemic stroke. In J. V. Hickey & S. L. Livesay (Eds.), *The continuum of stroke care: An interprofessional approach to evidence-based care* (pp. 93-115). Wolters Kluwer.
- Shkirkova, K., Wang, T. T., Vartanyan, L., Liebeskind, D. S., Eckstein, M., Starkman, S., Stratton, S., Pratt, F. D., Hamilton, S., Kim-Tenser, M., Conwit, R., Saver, J. L., & Sanossian, N. (2019). Quality of acute stroke care at primary stroke centers before and after certification in comparison to never-certified hospitals. *Frontiers in Neurology, 10*, 1396. https://doi.org/10.3389/fneur.2019.01396
- Skolarus, L. E., Sharrief, A., Gardener, H., Jenkins, C., & Boden-Albala, B. (2020). Considerations in addressing social determinants of health to reduce racial/ethnic disparities in stroke outcomes in the United States. *Stroke, 51*(11), 3433- 3439. https://doi.org/doi:10.1161/STROKEAHA.120.030426
- Smith, E. E., Kent, D. M., Bulsara, K. R., Leung, L. Y., Lichtman, J. H., Reeves, M. J., Towfighi, A., Whiteley, W. N., & Zahuranec, D. B. (2018). Effect of dysphagia screening strategies on clinical outcomes after stroke: A systematic review for the 2018 guidelines for the early management of patients with acute ischemic stroke. *Stroke, 49*(3), e123- e128. https://doi.org/10.1161/STR.0000000000000159
- Solar, O. & Irwin, A. (2010). *A conceptual framework for action on the social determinants of health*. Geneva, Switzerland: WHO Press
- Solomon, R. A. & Connolly, E. S. (2017). Arteriovenous malformations of the brain. *New England Journal of Medicine, 376*(19), 1859-1866. https://doi.org/10.1056/NEJMra1607407
- Stamps, D. C. (2021). Nursing leadership must confront implicit bias as a barrier to diversity in health care today. *Nurse Leader, 19*(6), 630-638.
- Suarez, L. (2016). Post-stroke reintegration into the community. In J. V. Hickey & S. L. Livesay (Eds.), *The continuum of stroke care: An interprofessional approach to evidence-based care* (pp. 304-325). Wolters Kluwer.
- Teasdale, G. & Jennett, B. (1974). Assessment of coma and impaired consciousness: A practical scale. *The Lancet, 304*(7872), 81-84.
- US Department of Health and Human Services. (2020). Healthy People 2030. Retrieved 12 February 2022, from www.healthypeople.gov
- Virani, S. S., Alonso, A., Aparicio, H. J., Benjamin, E. J., Bittencourt, M. S., Callaway, C. W., Carson, A. P., Chamberlain, A. M., Cheng, S., Delling, F. N., Elkind, M. S. V., Evenson, K. R., Ferguson, J. F., Gupta, D. K., Khan, S. S., Kissela, B. M., Knutson, K. L., Lee, C. D., Lewis, T. T., . . . Tsao, C. W. (2021). Heart disease and stroke statistics- 2021 update: A Report From the American Heart Association. *Circulation, 143*(8), e254-e743. https://doi.org/10.1161/cir.0000000000000950
- Vitali, F., Serenelli, M., Airaksinen, J., Pavasini, R., Tomaszuk-Kazberuk, A., Młodawska, E., Jaakkola, S., Balla, C., Falsetti, L., Tarquinio, N., Ferrari, R., Squeri, A., Campo, G., & Bertini, M. (2019). CHA2DS2-VASc score predicts atrial fibrillation recurrence after cardioversion: Systematic review and individual patient pooled meta-analysis. *Clinical Cardiology, 42*(3), 358-364.
- Wang, A, Kho, A. N. & French, D. D. (2020). Association of the Robert Wood Johnson Foundations' social determinants of health and Medicare hospitalisations for ischaemic strokes: a cross-sectional data analysis. *Open Heart, 7*(1), e001189. https://doi.org/10.1136/openhrt-2019-001189
- Warach, S. J., Dula, A. N., & Milling, T. J. (2020). Tenecteplase thrombolysis for acute ischemic stroke. *Stroke, 51*(11), 3440-3451. https://doi.org/doi:10.1161/STROKEAHA.120.029749
- Watkins, C. L., Lightbody, C. E., Sutton, C. J., Holcroft, L., Jack, C. I. A., Dickinson, H. A., van den Broek, M. D., & Leathley, M. J. (2007). Evaluation of a single-item screening tool for depression after stroke: A cohort study. *Clinical Rehabilitation, 21*(9), 846-852. https://doi.org/10.1177/0269215507079846
- Whelton, P. K., Carey, R. M., Aronow, W. S., Casey, D. E., Collins, K. J., Himmelfarb, C. D., DePalma, S. M., Gidding, S., Jamerson, K. A., Jones, D. W., MacLaughlin, E. J., Muntner, P., Ovbiagele, B., Smith, S. C., Spencer, C. C., Stafford, R. S., Taler, S. J., Thomas, R. J., Williams, K. A., . . . Wright, J. T. (2018). 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Journal of the American College of Cardiology, 71*(19), e127- e248. https://doi.org/10.1016/j.jacc.2017.11.006
- Wilson, S. E. & McPeak, M. M. (2020). Preventative care. In K. M. Keigher, S. L. Livesay, & J. L. Wessol (Eds.), *Comprehensive review for stroke nursing* (2nd ed., pp. 35-96). American Association of Neuroscience Nurses.
- Winstein, C. J., Stein, J., Arena, R., Bates, B., Cherney, L. R., Cramer, S. C., Deruyter, F., Eng, J. J., Fisher, B., Harvey, R. L., Lang, C. E., MacKay-Lyons, M., Ottenbacher, K. J., Pugh, S., Reeves, M. J., Richards, L. G., Stiers, W., & Zorowitz, R. D. (2016). Guidelines for Adult Stroke Rehabilitation and Recovery. *Stroke, 47*(6), e98-e169. https://doi.org/doi:10.1161/STR.0000000000000098
- Yan, T., Liu, C., Li, Y., Xiao, W., Li, Y., & Wang, S. (2018). Prevalence and predictive factors of urinary tract infection among patients with stroke: A Meta-analysis. *American Journal of Infection Control, 46*(4), 402-409. https://doi.org/10.1016/j.ajic.2017.10.001

STROKE MANAGEMENT IN THE ACUTE CARE SETTING

Self-Assessment Questions

1. Hemorrhagic stroke can be a devastating stroke. What are expected interventions for a patient with a hemorrhagic stroke?
   a. Thrombolytic therapy.
   b. Anticoagulation therapy.
   c. Surgery to address the cause.
   d. Reversal of anticoagulant therapy.
2. Strokes that occur in the hospital have all of the following characteristics except:
   a. Rapid response team can implement treatment.
   b. Non-neurologists may be the primary medical doctor (MD).
   c. Quickly recognized.
   d. Patients are cared for on a variety of units.
3. Thrombolytic therapy has changed outcomes for patients with stroke. Which of the following is false regarding thrombolysis?
   a. There is no time limit to IV thrombolysis.
   b. Only IV alteplase is approved by the Food and Drug Administration (FDA) for use in stroke.
   c. The risk of hemorrhage after IV alteplase is low.
   d. IV alteplase is administered over 2 hours.
4. It is recommended that smoking cessation education occurs in the hospital. Which of the following is the best general answer for a healthier lifestyle?
   a. Patients may be more willing to change habits after a serious event.
   b. Nurses believe that no one should smoke.
   c. Smoking can contribute to many diseases including stroke.
   d. Smoking is frowned upon by the general public.
5. Which lobe of the brain contains the sensory strip?
   a. Occipital.
   b. Temporal.
   c. Frontal.
   d. Parietal.
6. Education of the public has improved time to the hospital and early intervention for stroke.
   a. True.
   b. False.
7. The basilar artery supplies which part of the brain?
   a. Cerebral hemispheres.
   b. Occipital lobe.
   c. Basal ganglia.
   d. Frontal lobe.
8. Family members of patients admitted for a stroke are under duress because of the suddenness of the stroke. Which of the following are appropriate interventions for family members visiting their loved one?
   a. Maintain strict visiting hours so the patient can rest.
   b. Decision-making is shared between the team and the patient/family.
   c. Only the medical doctor (MD) provides communication regarding the patient.
   d. Ask the family to make an early decision regarding care.
9. A thrombectomy-capable stroke center can do all of the following except:
   a. Early thrombolysis.
   b. Stent retrieval.
   c. See the most acutely ill patients.
   d. Emergency imaging.
10. Prevention of a second stroke includes which of the following?
    a. Maintaining the patient's current diet.
    b. Maintaining the patient's current activity level.
    c. Risk factor modification.
    d. Maintaining the patient's current weight.

STROKE MANAGEMENT IN THE ACUTE CARE SETTING

Self-Assessment Answers and Rationales

1. The correct answer is D.
Rationale: Reversal of anticoagulant therapy is necessary. Patients who are fully anticoagulated are at a higher risk for hematoma expansion and any patient with an international normalized ratio INR over 1.4 should receive emergent treatment to reverse the effects. Vitamin K antagonists, such as warfarin, can be reversed with the administration of prothrombin complex concentrates (PCCs) or vitamin K. Newer anticoagulants may or may not have an effective reversal agent (Bower, 2019; Kuramatsu et al., 2019).

2. The correct answer is C.
Rationale: In-hospital strokes may not be recognized in a timely manner as these patients are often housed on non-stroke units where knowledge of stroke may be limited. Delay in diagnosis of a stroke leads to delay in treatment (Nouh et al., 2022).

3. The correct answer is B.
Rationale: IV alteplase and IV tenecteplase are approved for thrombolysis in acute stroke. Tenecteplase has been evaluated in studies and has been shown to be non-inferior to alteplase treatment (Campbell et al., 2018).

4. The correct answer is C.
Rationale: Smoking is an independent risk factor for stroke. Smoking doubles the risk for ischemic stroke and has a two to four times risk for subarachnoid hemorrhage. It is believed that cigarette smoking increases mortality by 12%–14% and leads to the development of atherosclerosis (Goldstein et al., 2011). One could argue that any of the answers could be true, but C is the best answer (Pandian et al., 2018).

5. The correct answer is D.
Rationale: The parietal lobe contains the sensory strip.

6. The correct answer is B.
Rationale: Research has shown that education of the public has increased the knowledge of the public regarding stroke symptoms and what to do. Research has not shown that the public follows through on the information learned at the time of a stroke (Mellon, 2015).

7. The correct answer is B.
Rationale: The basal artery supplies the occipital lobe.

8. The correct answer is B.
Rationale: Shared decision-making has shown to be promising in that all the members of the team and the family have come to a consensus on the care that needs to be provided and what the patient might have wished (Davidson et al., 2017; Kon et al., 2016b).

9. The correct answer is C.
Rationale: Thrombectomy-capable stroke centers are generally not equipped to care for the sickest stroke patients who need to be at a comprehensive stroke center (Mack, 2018).

10. The correct answer is C.
Rationale: Ideally the patient will be motivated to establish new habits including weight loss, smoking cessation, healthy diet, and management of glucose (Bridgwood et al., 2018; Kernan et al., 2014)

Using Evidence in Clinical Nursing Practice, 2nd Edition

3 Contact Hours

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Faculty

Robin McCormick, DNP, MSN, RN, is a registered nurse with a research background focused on vulnerable populations, maternal-child outcomes, and adult health. She has clinical nursing experience working in medical-surgical nursing and critical care and spent many years as a hospital-based educator implementing evidence-based practice in clinical settings. She received a BSN from Troy University, an MSN from the University of South Alabama, and a Doctor of Nursing Practice from Troy University. She is the assistant ASN coordinator for Troy University, where she also works as an assistant professor, teaching concepts of evidence-based practice to undergraduate nursing students.

Robin McCormick has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Peer reviewer:
Brenda Williams, PhD, MBA, RN, is an RN with over 35 years' experience in multiple nursing areas. She holds an Executive MBA and has been involved in new start-ups, re-vamps, and old established businesses. Dr. Williams' PhD dissertation is a qualitative transcendental phenomenological study titled: "An Exploration of Bullied Nurses, Witnesses, and a Hospital's Bottom Line". Dr. Williams serves as a Research Chair for a DBA program at Indiana Wesleyan University and facilitates classes at the Bachelor and Master level at Ohio Christian University, in addition to writing curriculum. She also serves as a Subject Matter Expert (SME) for the American Association of Kidney Patients (AAKP).

Brenda Williams has disclosed that she has no significant financial or other conflicts of interest pertaining to this course.

Course overview

Evidence-based practice (EBP) relies on scientific research findings to modify or develop policies and procedures that incorporate the latest evidence into clinical practice. The purpose of this course is to help nurses incorporate nursing research findings into their practice for the maximum benefit of patients and the facilitation of professional growth and development.

Learning objectives

After completing this course, the learner will be able to:

- Apply nursing research methods and evidence-based practice (EBP) to nursing practice.
- Choose appropriate EBP models for the implementation of EBP.
- Employ concepts of nursing research when implementing EBP.
- Design an EBP project based on the nursing research process.
- Discuss how to translate evidence into practice.
- Identify barriers to implementing EBP and strategies to reduce them.
- Describe the staff nurse's role in promoting EBP and research.

How to receive credit

- Read the entire course online or in print which requires a 3-hour commitment of time.
- Complete the self-assessment quiz questions which are at the end of the course or integrated throughout the course. These questions are NOT GRADED. The correct answer is shown after you answer the question. If the incorrect answer is selected, the rationale for the correct answer is provided. These questions help to affirm what you have learned from the course.
- Depending on your state requirements you will be asked to complete either:
  - An affirmation that you have completed the educational activity.
  - A mandatory test (a passing score of 70 percent is required). Test questions link content to learning objectives as a method to enhance individualized learning and material retention.
- If requested, provide required personal information and payment information.
- Complete the MANDATORY Course Evaluation.
- Print your Certificate of Completion.

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Nursing, Provider #50-4007; Florida Board of Nursing, Provider #50-4007; Georgia Board of Nursing, Provider #50-4007; Kentucky Board of Nursing, Provider #7-0076 (valid through December 31, 2023; CE Broker Provider #50-4007); Michigan Board of Nursing, Provider #50-4007; Mississippi Board of Nursing, Provider #50-4007; New Mexico Board of Nursing, Provider #50-4007; North Dakota Board of Nursing, Provider #50-4007; South Carolina Board of Nursing, Provider #50-4007; and West Virginia Board of Registered Nurses, Provider #50-4007. This CE program satisfies the Massachusetts States Board's regulatory requirements as defined in 244 CMR5.00: Continuing Education.

Activity director

June D. Thompson, DrPH, MSN, RN, FAEN, Lead Nurse Planner

Disclosures

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Course verification

All individuals involved have disclosed that they have no significant financial or other conflicts of interest pertaining to this course. Likewise, and in compliance with California Assembly Bill No. 241, every reasonable effort has been made to ensure that the content in this course is balanced and unbiased.

INTRODUCTION

The following three situations describe practice scenarios in which the use of evidence-based practice (EBP) could make a significant contribution to safe, effective patient care.

Scenario 1
Maria is the surgical intensive care unit (ICU) representative to the Nursing Research Council. She proposes the design of a research study that focuses on the correlation between nursing burnout and patient outcomes. Maria and her colleagues believe that if they are required to take 30-minute meal breaks, with two 15-minute rest breaks off the nursing unit each shift, the hospital should provide a nurse to cover these breaks. By doing so, patient care would be more efficient and effective and patient outcomes would improve. They want to determine if there is evidence to justify these beliefs. They also agree to abide by the evidence obtained from a review of the literature and a well-designed nursing research project.

Scenario 2
Aaliyah is a nurse practitioner who works in a neurological rehabilitation center. Many of her patients are dealing with the effects of a stroke. One of the center's physiatrists (specialists in physical medicine and rehabilitation) recently published an article in a medical journal contradicting the center's protocol for bladder retraining in stroke patients. The article is based primarily on his personal preferences and not on scientific research findings. This physician has considerable power in the community and expects the rehabilitation center leaders to support his decisions and comply with his requests.

Even though patient outcomes about bladder retraining have been excellent, the center's administrators encourage the rehabilitation team to consider changing the protocol based on this physician's opinions, not on available evidence. Aaliyah, a nursing department representative on the Evidence-Based Practice Council, has been asked to respond to administrative concerns. Aaliyah is asking for the council's support in gathering evidence to justify the current practice.

Scenario 3
Various nursing councils are being established as part of a community medical center's pursuit of Magnet accreditation. The councils include nursing research and evidence-based nursing practice councils. The formation of these councils has triggered both enthusiasm and resistance. Many nurses look forward to having more input into nursing practice within their organization. They want to participate in research that helps, not only to facilitate EBP, but also to improve nursing practice and enhance patient outcomes.

Some nurses, however, are not as eager to participate in research and formalized EBP. They are concerned about learning about the nursing research process and fear that formalizing EBP will create more work without enhancing practice. They also question if the amount of time and effort necessary to achieve and maintain Magnet accreditation is worthwhile. They state that nursing turnover and staffing shortages are too high to be able to work on improving practice when the nurses are already experiencing high rates of burnout.

* * * * *

These three scenarios illustrate some of the strengths of EBP and some of the barriers to its implementation. Scenario 1 shows how research is necessary to the implementation of EBP. Maria and her colleagues ponder a change in a protocol they hope will ultimately enhance patient outcomes. They do not request or attempt to initiate such a change without objective evidence to support their beliefs. Such evidence is obtained from a review of relevant studies in the healthcare literature and well-designed nursing research projects. Note that Maria and her colleagues agree to abide by objective findings. One of the hallmarks of EBP is that its practitioners support the concept to improve patient outcomes.

Scenario 2 is a bit more complicated and moves into an area where nurses and other healthcare professionals are all too familiar. In this scenario, an influential physician is proposing protocol changes without the benefit of objective evidence. Physicians are not the only persons who can wield influence.

Any member of the healthcare team may use influence to control, or attempt to control, healthcare practices. In this scenario, a nurse practitioner is seeking help to gather evidence to determine which is the best approach to bladder re-training. However, additional actions may be necessary. It may be helpful to talk to the physician about concerns regarding the current protocol and why his proposed changes would be beneficial. It may also be essential to find evidence to support the physician's viewpoint. Findings may indicate the need for further investigation, including a literature review and more research. It is crucial to keep an open mind about new or different ideas. Another hallmark of EBP is the willingness to continually evaluate practice inpatient outcomes.

Scenario 3 describes one of the barriers to implementing EBP (and to nursing research). The establishment of nursing councils that focus on EBP and nursing research necessitates changes in practice. As the scenario describes, these changes can trigger both enthusiasm and resistance, typical responses to change. There will be those who embrace change as an opportunity for career advancement and those who resist it. Why is there so much resistance to change, even when it is designed to improve patient outcomes? Fear of the unknown, concern that the change will increase workload, high levels of burnout, and apprehension about acquiring the skills and knowledge necessary to adhere to EBP and promote nursing research contribute to dissatisfaction and resistance.

EBP is no longer a new initiative. It is the foundation of nursing practice. This education program provides information about the EBP process, the nursing research process, and how to implement an EBP nursing practice successfully.

DEFINITION OF TERMS

Nurses use research as a scientific basis for nursing practice. An increasing number of research studies have been conducted to translate evidence effectively into practice (Chein, 2019).

Evidenced-based care promotes quality health outcomes for individuals, families, communities, and healthcare. Research and EBP are intertwined. For nurses to conduct nursing research and use findings to establish EBP, they must first know terms related to both research and EBP.

Nursing research

Nursing research is a systematic, rigorous, critical investigation conducted for answering questions regarding nursing phenomena. Nursing research follows the steps of scientific inquiry (Polit & Beck, 2022).

Quantitative research

Quantitative, or empirical, research is a structured way of collecting and analyzing data to investigate research questions or hypotheses that describe phenomena, evaluate relationships, determine differences, and explain cause-and-effect relationships between variables and evaluate the effectiveness of interventions. Quantitative research uses computational, statistical, and mathematical tools to obtain results (Melnyk & Fineout-Overholt, 2019; Polit & Beck, 2022).

There are four approaches to quantitative research (Center for Innovation in Research and Teaching, n.d; Melnyk & Fineout-Overholt, 2019):

1. Descriptive design.
2. Correlational design.
3. Quasi-experimental design.
4. Experimental design.

Descriptive design
This type of quantitative research is performed to describe the status of a variable (a measurable characteristic that varies) or phenomenon. The research does not start with a hypothesis, but one is formulated after data collection. Data collection is typically observational. An example of this type of research is a description of men's attitudes towards male contraception interventions.

Correlational design
A correlational design explores relationships between variables by using statistical analysis. It does not look for cause and effect. The data collection process is primarily observational. An example of correlational design is a study of the relationship between verbal abuse and clinical depression.

Quasi-experimental design (causal-comparative)
This form of quantitative research is designed to identify a cause-effect relationship between two or more variables. Control groups are identified and exposed to a variable. Results are compared to groups not exposed to the variable. An example of this type of research is a study of the development of compassion and emotional intelligence in nursing students (Teskereci et al., 2021).

Experimental design (true experimentation)
The experimental design uses the scientific method to establish a cause-and-effect relationship among a group of variables. The researchers try to control all variables except the variable that is being manipulated (independent variable). An example of experimental design is a study of

efficacy of the treatment with dapagliflozin and metformin compared to metformin monotherapy for weight loss in patients with class III obesity (Ferreira-Hermosillo, 2020).

Qualitative research

Qualitative research is conducted if the question to be addressed is regarding a better understanding of the meaning of a human experience, such as grief or hope. Qualitative research is discovery-oriented and uses words and descriptions, not numbers, to discover or explain phenomena (Polit & Beck, 2022).

The following are types of qualitative research (Polit & Beck, 2022; Rashid, et al., 2019):

- **Ethnography**: Ethnography entails describing and interpreting a culture (the way a group of people lives) and behaviors associated with a particular culture according to values and norms. An example of ethnography in healthcare is using an ethnographic approach to study newly licensed nurses' experience caring for patients with Coronavirus Disease 2020.
- **Phenomenology**: Phenomenology is used to describe and understand everyday life experiences. Phenomenology researchers investigate subjective phenomena obtained through in-depth conversations with research participants. The sample size is generally small, often ten people or fewer. Data are reported as vivid, detailed, in-depth descriptions organized into key themes. The overall goal is to help readers enrich their understanding of specific life experiences. An example of a phenomenology study in healthcare is the experiences of parents living with terminally-ill children.
- **Grounded theory**: Grounded theory is conducted to comprehend the social and psychological processes that characterize an event or a situation. The grounded theory tries to explain people's actions from the perspectives of those involved in the event or situation. An example of a grounded theory research project is to explore new graduates' perceptions of workplace readiness when entering nursing practice in an Intensive Care Unit.
- **Case study**: A case study is an in-depth study of a single case example or a minimal number of cases. An individual, a family, or another type of social unit may be the focus of the study. A case study focuses on understanding why an individual thinks, behaves, or progresses in a particular way.

An example of a case study is a focus on how several nurses interact with a female patient who was diagnosed with terminal breast cancer.

- **Critical theory**: A critical theory researcher is concerned with a critique of society. Researchers conducting a critical theory study hope to identify ways to improve society. Thus, it is action oriented. Critical theory aims to "make people aware of contradictions and disparities in social practices and become inspired to change them" (Polit & Beck, 2022, p. 169). An example of a critical theory study is to follow patients whose income is below the poverty line and determine their ability to adhere to medication regimens. Findings would be disseminated in a way that fosters awareness of problems and stimulates action to correct them.
- **Feminist theory**: Feminist theory is similar to critical theory. The focus, however, is on "gender domination and discrimination within patriarchal societies" (Polit & Beck, 2022, p. 169). Researchers conduct research that helps to facilitate an end to women's unequal position in society compared to men's position.
- **Participatory action research**: Participatory action research is focused on researchers and participants working together to understand a problematic situation and change it for the better. The goal is to "produce not only knowledge but also action, empowerment, and consciousness raising" (Polit & Beck, 2022, p. 170). An example of this type of research is developing a community plan to tackle maternal and neonatal health problems in rural West Virginia.

Self-Assessment Quiz Question #1

A nurse wants to research the experience of grief in parents who have lost a child to cancer. This type of research is:
a. Quantitative.
b. Critical Appraisal.
c. Qualitative.
d. Quality Improvement.

EVIDENCE-BASED PRACTICE (EBP)

EBP is the process of collecting, evaluating, and integrating valid research evidence (combined with clinical expertise and knowledge of patient and family values, preferences, and beliefs) to improve clinical practice, the work environment, or patient outcomes. EBP aims to close the gap between what is known to be effective and what is being done in healthcare settings (Polit & Beck, 2022).

Quality improvement
Quality improvement (QI) is the formal, systematic data analysis for monitoring and improving patient care. QI uses currently available knowledge and evidence to improve patient outcomes, enhance the safety of healthcare systems, and improve job performance (Melnyk & Fineout-Overholt, 2019; Polit & Beck, 2022).

Critical appraisal
Critical appraisal involves evaluating the strengths and weaknesses of research evidence by using existing standards to identify the merit and validity of the research for use in clinical practice. *Critical appraisal* is also known as a research or evidence critique (Melnyk & Fineout-Overholt, 2019; Polit & Beck, 2022).

Validity
Validity is the extent to which assumptions made in a research study are accurate and well-founded. When validity is used to describe a research tool, it means the extent to which that tool measures what it was intended to measure (Melnyk & Fineout-Overholt, 2019; Polit & Beck, 2022).

Reliability
Reliability refers to the extent to which a measurement is free from measurement error. In other words, it is the extent to which study results are the same for repeated measurements. It refers to the ability to count on research findings to make a difference when clinicians apply them to practice (Melnyk & Fineout-Overholt, 2019; Polit & Beck, 2022).

Nursing consideration: Nurses must be able to appraise the steps of the research process, read the research literature critically, and make informed clinical decisions based on the validity and reliability of research findings to successfully and knowledgeably implement EBP (Polit & Beck, 2022).

Self-Assessment Quiz Question #2

The formal, systematic analysis of data for monitoring patient outcomes is:
a. Quality improvement.
b. Quantitative research.
c. Qualitative research.
d. EBP.

Using models to implement EBP in nursing

EBP in nursing is a problem-solving approach to clinical decision-making in healthcare settings. It depends on three components (Newhouse et Al., 2007):

1. The best available scientific research evidence.
2. The best available clinical expertise.
3. Patient and family values and preferences.

To successfully implement EBP, nurses must consider both internal and external influences on practice. For example, internal influences might be the support of nurse managers who provide adequate staffing levels to initiate nursing research. External factors might be health-related community issues, such as an influenza epidemic or a significant trauma event requiring immediate care for numerous victims. All factors that impact a community and its healthcare facilities affect EBP (Melnyk & Fineout-Overholt, 2019).

To date, several EBP models serve as frameworks to guide the translation of evidence into practice. The following are examples of EBP models.

The Johns Hopkins Nursing Evidence-Based Practice Model
The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model is dedicated to the advancement of EBP and to the support of nurses who work to improve patient care outcomes by translating evidence into practice (Dang et al., 2022).

The revised JHNEBP model is composed of three interrelated components (Dang et al., 2022):

1. **Inquiry** launches the EBP process. The inquiry focuses on the efforts of the nurse to question, examine, and collect information about a problem, issue, or concern.
2. **Practice** reflects the translation of what nurses know into what they do. Practice is the range of nursing activities that define patient care.
3. **Learning** involves both the individual as a learner and the organization as a learning culture. A learning culture not only improves learning but also increases employee satisfaction, promotes creativity, and encourages problem-solving.

Implementation of the JHNEBP model is a 20-step process that occurs in three phases, described by the acronym **PET** (Dang et Al., 2022):

1. **P**ractice question.
2. **E**vidence.
3. **T**ranslation.

Practice question
The first phase involves the practice question. The practice question identifies an answerable question regarding a practice issue or concern that needs to be addressed. Nurses

must consider how the topic under discussion correlates with organizational and departmental goals and priorities when formulating the question. Such correlation is essential if nurses expect to obtain the support of the organization's leadership (Dang et al., 2022; Melnyk & Fineout-Overholt, 2019).

Evidence

Evidence, the second phase, addresses the "search for, appraisal of, and synthesis of best available evidence. Based on these results, the team makes recommendations regarding practice changes" (Dang et al., 2022).

Translation

During the third phase, translation, it is determined whether changes to practice are feasible, appropriate, and a good fit for the organizational setting. If so, an action plan is created, implemented, and evaluated. The results are communicated to appropriate persons within and outside of the organization (Dang et al., 2022).

The Iowa Model of Evidence-Based Practice

The Iowa Model of Evidence-Based Practice focuses on guiding clinicians at all levels of practice through a team-based, multiphase process according to the following phases (Iowa Model Collaborative, 2017):

- Identify triggers, issues, or opportunities.
- State the question or purpose.
- Interprofessional team formation.
- Evidence review, critique, and synthesis.
- Change implementation through piloting.
- Identify and sustain practice change.
- Outcome dissemination.

The Iowa model identifies the following "triggers" for an EBP endeavor (Melnyk & Fineout-Overholt, 2019):

- Clinical or patient-identified issue.
- Organization, state, or national initiative.
- Data or new evidence.
- Accrediting agency requirements and regulations.
- Philosophy of care.

These triggers activate paths that include decision points with evaluative feedback loops when identifying and implementing practice changes.

The Stetler model

The Stetler model was initially developed to focus on research utilization. The model has been updated and refined to fit into the EBP paradigm, emphasizing helping nurses assess how research findings can help guide and improve clinical practice. The focus is on practitioner expertise, context, and evidence, as well as on the translation of evidence into practice (Melnyk & Fineout-Overholt, 2019; National Collaborating Centre for Methods and Tools, n.d.).

The Stetler model consists of the following five phases (Melnyk & Fineout-Overholt, 2019; National Collaborating Centre for Methods and Tools, n.d.):

1. **Preparation** includes purpose, relative assessment, and the search for sources of evidence.
2. **Validation** of evidence involves validating evidence found in sources, such as the subject literature and quality improvement data.
3. **Comparative evaluation/decision making** involves critiquing, synthesizing, and deciding to use the evidence while considering internal factors, such as organizational practices and expertise of individual EBP clinicians, and external factors, such as research protocols and organizational standards.
4. **Refinements** guide the translation of evidence into clinical practice.
5. **Evaluation** involves assessing the impact of change, including outcomes met and the degree to which the practice change was implemented.

Star Model of Knowledge Transformation

The Star Model of Knowledge Transformation depicts the relationship between different stages of knowledge as newly discovered knowledge is moved into practice (School of Nursing UT Health Science Center San Antonio, 2015).

The five stages of the model are referred to as *star points* (School of Nursing UT Health Science Center San Antonio, 2015):

- **Star Point 1: Discovery research**: Star Point 1 is the knowledge-generating stage. New knowledge is discovered through scientific inquiry and traditional research investigations.
- **Star Point 2: Evidence summary**: Evidence summary is also a knowledge-generating stage during which research knowledge is synthesized into a single meaningful statement of the state of the science. The evidence summary reduces large amounts of information into a manageable format.
- **Star Point 3: Translation to guidelines**: Transformation requires translating evidence into practice recommendations and integrating these recommendations into practice. The goal of translation is to provide useful and relevant summarized evidence for clinicians and clients.
- **Star Point 4: Practice integration**: Practice Integration involves changing individual and organizational practices through formal and informal methods. Important concepts addressed in this stage are factors that impact the individual and organizational rate of implementing changes in practice.
- **Star Point 5: Outcome evaluation**: Outcome evaluation is the final stage in knowledge transformation. Factors to be evaluated are the impact of EBP on patient health outcomes, provider and patient satisfaction, efficacy, efficiency, economic analysis, and health status impact. As new knowledge progresses through the five stages, the final desired outcome is evidence-based quality improvement of healthcare.

Advancing Research and Clinical Practice Through Close Collaboration (ARCC) model

The ARCC model was developed to provide healthcare organizations with an organized conceptual framework for guiding systemwide implementation and sustaining EBP. The ultimate goal is to facilitate the achievement of quality outcomes.

The ARCC model emphasizes sustainability throughout the organization and consists of the following five steps (Melnyk & Fineout-Overholt, 2019):

1. Assessment of the organizational culture and preparedness to implement practice changes.
2. Identification of organizational strengths as well as barriers to implementation of the EBP.
3. Identification of EBP mentors.
4. Implementation of the evidence into organizational practice.
5. Evaluation of outcomes because of practice change.

Nursing consideration: The ARCC model emphasizes the importance of mentors and EBP for organizational effectiveness. Nurses who use this model of EBP must be willing to work with mentors and incorporate organizational culture as part of practice change (Melnyk & Fineout-Overholt, 2019).

Promoting Action on Research Implementation in Health Services Framework (PARiHS)

The PARiHS framework is often used as an "organizing or conceptual framework to help both explain and predict why the implementation of evidence into practice is or is not successful" (Harvey & Kitson, 2016).

The PARiHS framework emphasizes the need for appropriate facilitators trained in implementing the framework. Effective facilitation increases the likelihood of successful implementation (Harvey & Kitson, 2016).

The PARiHS framework was developed and revised over several years by several authors. The framework consists of several vital constructs (Harvey & Kitson, 2016; Melnyk & Fineout-Overholt, 2019).

The first element is evidence, constituting sources of knowledge obtained from various resources. When assessing the evidence, factors to be assessed include research, clinical experience, patient experience, and local data. The second element is ***context***, which refers to the characteristics of the setting in which PARiHS is implemented. Under context, the culture of the setting, leadership's role, and how services are evaluated are examined. The third element is ***facilitation***. Facilitation is described as a way to help people change and acquire new knowledge and skills. Facilitators must understand their roles and purpose and have the necessary skills and attributes.

In summary, there are numerous models and frameworks for EBP. Organizations should choose one that best fits their respective philosophies, priorities, and goals. Successful implementation of EBP in nursing requires enthusiasm, commitment, and skill. Continuing education endeavors should include updates on EBP and how it impacts patient care and job performance.

Self-Assessment Quiz Question #3

The EBP model that focuses on problem-focused and knowledge-focused triggers to question nursing practice is:
a. Johns Hopkins Nursing Evidence-Based Practice model.
b. The Iowa Model of Evidence-Based Practice.
c. The Stetler model.
d. The Star Model of Knowledge Transformation.

Self-Assessment Quiz Question #4

As part of the implementation of EBP, the nursing department is assigning mentors to help nurses develop EBP skills. The model that overtly emphasizes the importance of mentors is:
a. ARCC.
b. PARiHS.
c. CStar Model of Knowledge Transformation.
d. The Iowa Model.

EBP impact on patient care and job performance

EBP is essential to the enhancement of quality and safety in healthcare. Without EBP, healthcare professionals do not implement patient care consistently. They are at risk for variations in care that could negatively impact patient outcomes (Kerr & Rainey, 2021).

Unfortunately, healthcare organizations across the United States continue to struggle with applying EBP. Organizational factors such as lack of time to find, appraise, implement, and evaluate evidence are key barriers to the EBP process, along with nurses lacking the authority to change care procedures in practice. Nurses in the clinical environment use organizational policies and protocols to guide best practices and tend to do it the way it was always done. Many nurses find it challenging to interpret research findings because of the jargon used in the statistical presentation of research results (Kerr & Rainey, 2021).

Experts suggest that to focus on EBP, organizations must take the following steps (Melnyk & Fineout-Overholt, 2019):
- Develop the right organizational culture.
- Provide continuing education regarding EBP.
- Encourage nurses to take the lead in EBP, promote the professional nursing practice, and focus on EBP.
- Adopt EBP models and frameworks.
- Promote an interprofessional approach.

The right organizational culture
The "right" culture identifies EBP as an organizational imperative. Organizational leadership must identify EBP as a top priority and provide the resources to educate all staff members in its implementation. Implementation of EBP should be part of employees' performance evaluations (Henry et al., 2017).

Ideally, EBP in nursing is a patient-centered, holistic approach to patient care. The organizational culture must support nurses' and other healthcare professionals' ability to utilize research to close the gap between theory and clinical practice. Effective implementation of EBP has been shown to decrease errors, injuries, and adverse patient outcomes (Melnyk & Fineout-Overholt, 2019).

Provide continuing education regarding EBP
Nurses make up the largest workforce in the US healthcare system. They practice in all types of healthcare settings, and nursing provides 24 hours per day patient care in inpatient and outpatient settings. Implementation of EBP relies on their ability and willingness to establish EBP environments.

A gap exists between education and practice. As part of undergraduate education, nursing students are exposed to EBP and taught that EBP is necessary for safe, quality patient care and job performance. After graduation, as they become part of the "real world" of licensed nursing practice, newly licensed nurses must deal with the culture of the organizations that employ them. Some cultures embrace EBP; others do not. Nurses must be competent in the implementation of EBP to promote its implementation. Such competency cannot be achieved and maintained without ongoing continuing education (Li et al., 2021).

Covid-19 has undoubtedly changed many aspects of nursing care and practice. Nurses do not practice by the same standards they did 15 years ago or even 3 years ago, in some instances (Duncan et al., 2021). Continuing education provides nurses with up-to-date information to apply to their practices to improve patient outcomes and professional job performance.

Demonstration of competency has been part of nursing performance evaluations for several years. Competency in EBP should be part of the job performance evaluation for all healthcare professionals. Competency cannot be attained without education, and education will not be effective unless nurses genuinely want to learn about and support EBP (Fu et al., 2020).

Any EBP competency must be aligned with the EBP process and be part of the ongoing evaluation of the nurse's job performance evaluation. The ultimate goal of EBP continuing education is to ensure that EBP is the standard of care delivered by healthcare professionals across the country and around the world (Melnyk & Fineout-Overholt, 2019).

EBP and professional nursing practice
As previously noted, nurses comprise the largest workforce in healthcare practice in the United States. Nurses should thus take the lead in promoting and implementing EBP (Melnyk & Fineout-Overholt, 2019).

The National Academies of Sciences, Engineering, and Medicine (the National Academies)—formerly known as the Institute of Medicine (IOM)—has consistently called on nurses to take on a more significant role in America's healthcare system (Wolters Kluwer, 2018).

In 2008, The Robert Wood Johnson Foundation (RWJF) and the National Academies launched a 2-year initiative to assess and facilitate the transformation of the nursing profession. The initiative has four key points (Wolters Kluwer, 2018):
- Nurses should practice to the full extent of their education and training.
- Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression.
- Nurses should be full partners with physicians and other healthcare professionals in redesigning healthcare in the United States.
- Effective workforce planning and policymaking require better data collection and information infrastructure.

These goals correlate with the EBP initiatives. By using the scientific inquiry that forms the foundation of EBP, nurses can and should take leadership roles not only in EBP, but also in all aspects of the country's healthcare delivery systems.

Adopt EBP Models and Frameworks
EBP is often viewed as a theoretical concept that is difficult to apply in the "real world," making it challenging to promote and use. Adopting and implementing a model or framework of EBP throughout an organization can help apply evidence at the point of patient care. Implementation of EBP should also be part of organizational and departmental goals. By using models or frameworks and identifying EBP goals and objectives, clinicians and scholars can work together to use EBP to improve patient care delivery. The goals and objectives should also include clear expectations that EBP is an interdisciplinary approach to be conducted in a collaborative fashion, not as individual departmental strategies (Melnyk & Fineout-Overholt, 2019). For example, the intensive care unit employees may be working on an EBP goal to reduce the incidence of delirium development in their patient population. Employees from nursing, occupational therapy, physical therapy, pharmacy, clinical nutrition, and other departments would be involved in reducing delirium cases by working together as an interdisciplinary team.

Promote an interprofessional approach
Successful implementation of EBP requires a vibrant interdisciplinary team vision in conjunction with clear expectations (including goals and objectives) from organizational leaders that EBP is the basis of all delivered patient care. EBP should be an essential part of the organization's vision, mission, and values statements, as well as in the strategic plan. The organization should also make interprofessional continuing education regarding EBP a part of the orientation process and ongoing education for all employees (Melnyk & Fineout-Overholt, 2019).

The following are suggestions for implementing EBP.

When applying evidence (research findings) to clinical practice, nurses and their interdisciplinary colleagues should use a problem-solving approach to patient care (Melnyk & Fineout-Overholt, 2019):

- Ask a clinical question.
- Gather the latest and most relevant research to answer the question.
- Analyze the evidence.
- Incorporate personal clinical experience, patient's situation, available resources, and patient's preferences and values.
- Evaluate the results.
- Apply the evidence to the delivery of patient care.

Henry et. al (2019) developed a model for the swift implementation of EBP. Their model is called *Evidence Scanning for Clinical, Operational, and Practice Efficiencies* (E-SCOPE) and involves four steps:

1. Conduct quarterly evidence searches to identify newly published scientific evidence.
2. Decide which evidence-based practices to implement with input from the interdisciplinary team.
3. Support implementation of selected practices. Specific responsibility for implementation should be given to qualified individuals.
4. Monitor progress. The progress of implementation should be monitored and regularly evaluated, usually each quarter but more often if needed.

Experts in all fields emphasize the importance of applying EBP across the continuum of care. EBP must be established as the basis of healthcare in all settings and by all members of the interdisciplinary team.

NURSING RESEARCH

The language of critical appraisal and research

Before further discussing EBP and nursing research, it is necessary to define a few essential terms related to research. The following list is not all-inclusive, but it does provide a basis for discussions concerning EBP and nursing research:

- **Validity**: The extent to which assumptions made in a research study are accurate and well-founded. When validity is used to describe a research tool, it means the extent to which that tool measures what it is intended to measure (Polit & Beck, 2022).
- **Reliability**: The extent to which a measurement is free from measurement error. In other words, it is the extent to which study results are the same for repeated measurements (Polit & Beck, 2022).
- **Risk**: The probability of harm or injury (physical, psychological, social, or economic) as a result of participating in a research study (UCI Office of Research, 2019).
- **Outcome**: The conclusions investigators reach as the result of the research(Polit & Beck, 2022)

In addition to understanding the preceding concepts, nurses must be familiar with additional terms essential to the critical analysis of research articles. The following is a sampling of these terms (Polit & Beck, 2022):

- **Abstract**: A brief, comprehensive summary of a research study that appears at the beginning of an article.
- **Case study**: A research method that involves a thorough, in-depth assessment of an individual, group, or another social unit.
- **Cause and effect**: A relationship in which one event (the cause) makes another event happen (the effect).
- **Conceptual framework**: The structure of concepts or theories that serves as the foundation for a study.
- **Consent**: Permission given by a competent person to participate in a research study. *Consent* is also referred to as informed consent and is an ethical obligation of the researcher. The researcher must obtain voluntary informed consent from research participants after telling them about both the potential benefits and the possible risks of participating in the study.
- **Control group**: A group in a research study that consists of participants who do not receive the treatment or intervention under investigation. The outcomes of participants in the control group are compared to those of the participants who receive the treatment or intervention under investigation to establish its effectiveness or ineffectiveness.
- **Double-blind study**: Neither the researchers nor the participants know the specific details of the experiment. This type of study is used to safeguard against experimental bias. An example of a double-blind study involves a medication trial where trial medications and placebos are administered. At the time of administration, neither group nor the investigators know which group received the placebo and which group received the medication.
- **Experimental research group**: A group of randomly selected participants from the research group who will receive the experimental treatment, medication, or variable.
- **Hypothesis**: An educated prediction about the relationship between two or more variables.
- **Mean**: The average score between two variables or scores. It is the arithmetic average of all scores.
- **Random selection**: A selection process in which each member of the identified population has an equal and independent chance of being included in the sample.
- **Randomization**: A method of choosing a sample in which each member of the population has an equal and independent chance of being selected to either the experimental group or the control group.
- **Risk**: The possible negative consequences of participation in a research study.
- **Sample**: A sample is a subset of a population that is used to represent an entire group.
- **Single-blind study**: A study in which the researchers know specific details of the study, but the participants do not.

- **Theoretical framework**: The theoretical rationale for the hypothesis. It serves as the structure that supports the theory of a research investigation.
- **Theory**: An idea or set of interrelated concepts and propositions intended to explain and make predictions regarding phenomena.
- **Variable**: An intervention or action that is being studied to observe its effect on the research group.

Self-Assessment Quiz Question #5

A study in which neither the researchers nor the participants know the specific details of the experiment is a/an:
a. Double-blind study.
b. Experimental study.
c. Control group study.
d. Random selection study.

Developing the clinical (research) question

Scenario 4
Mai works in the stroke rehabilitation unit of a large teaching hospital. She has recently been promoted to Clinical Nurse II and she is very proud of her achievements. As part of her new role, Mai has been appointed to serve as a member of the hospital's Nursing Research Council.

Mai and her colleagues are concerned about an increase in the incidence of delirium among their patients. They believe that sleep deprivation is increasing this incidence. The standard on the unit is that patients are awakened for vital signs at 6 a.m. They are also bathed before 9:30 a.m. before physical and occupational therapy sessions begin. The nurses are proposing to delay taking vital signs and to bathe patients on a timetable that coincides with their habits at home before the stroke, including helping patients to bathe in the evening rather than early morning. They want to decrease sleep interruptions and promote adequate rest. They have found that patients who suffer from episodes of delirium have longer lengths of stay and poorer patient outcomes. Mai and her colleagues wonder what interventions can prevent delirium and ultimately lead to better patient outcomes.

Their initial proposed changes in clinical interventions will require changes in staffing routines and the cooperation of the interdisciplinary team. Mai's colleagues urge her to consult the members of the Nursing Research Council for help in determining if these changes are in alignment with available evidence and if a research study might help identify and implement practice changes. They also need help in formulating the clinical research question.

With the help of experts on the Nursing Research Council, an initial plan is developed:
- *Develop a focused clinical question to help focus on the relevant issues.*
- *Perform a literature search.*
- *Critically appraise relevant research articles.*
- *Identify other sources of evidence.*
- *Gather non-research data from the rehabilitation unit, including the incidence of delirium, characteristics of the affected population, and the effect of delirium on patient outcomes.*

In Scenario 4, Mai and her colleagues have some genuine concerns and ideas about improving practice. However, they need to define what they want to investigate. This means that it is necessary to develop a focused and structured question that will serve as a basis for the literature review and the identification of relevant external evidence.

The PICO format
Many nurses rely on the PICO format to formulate EBP research questions. The question itself will serve as a guide for literature review and the gathering of evidence (Polit & Beck, 2022).

- **"P" Stands for Population**
  What patient population/patient problem is being investigated? In this case, Mai's patient population consists of adult (18 years of age and older) stroke patients who suffer from delirium in the intensive care unit. However, the nurses also need to evaluate the need for further population specifications. For example, do clinical findings show that delirium occurs primarily in patients within a specific age range in their clinical setting? If so, that is the age range on which they will focus. For another example, is it necessary to eliminate patients from the study population who have received a diagnosis of dementia, which can be mistaken for delirium? Does the severity of stroke seem to predispose patients to delirium? Should they concentrate on a population with a certain degree of impairment caused by stroke? Findings from the literature, quality improvement data, and input from nurses who have clinical expertise in stroke rehabilitation will be used as evidence. Defining a particular population is a critical initial step that must be considered carefully.
- **"I" Stands for Intervention**
  What is going to be done for or to the identified patient population? What potential interventions should be considered to increase the amount of rest and sleep the patients receive? Mai and her colleagues propose changing the time vital signs are taken and when activities such as bathing are performed. They also want to show that ultimately getting more rest and potentially decreasing delirium will positively impact patient outcomes. Mai and her colleagues need to refine their focus. They may be looking at two issues: Does adequate sleep and rest decrease the incidence of delirium in stroke rehabilitation patients? Does a decrease in delirium lead to an increase in the achievement of desired patient outcomes? Can the two issues be combined into one literature review or research study? Mai and her colleagues have some work to do before choosing the interventions. Interventions depend on the research question, and the question must be carefully developed.
- **"C" stands for Comparison**
  What is the alternative to the planned intervention? Mai and her colleagues are thinking of using a control group of patients who continue to have vital signs taken and will be assisted to bathe at the current times. This will provide a comparison to those patients whose sleep will not be interrupted for vital signs and bathing. However, if the question focuses on decreasing the incidence of delirium and improving patient outcomes, there needs to be a more evident determination of what the interventions will be, as well as who will comprise the control group.
- **"O" Stands for Outcome**
  What are the desired outcomes? Outcomes require that nurses clearly state what they are hoping to achieve.

The preceding questions should help Mai and her colleagues to determine what they want to investigate. As they work with nurse researcher colleagues, they will refine and identify their clinical research question.

Nursing consideration: Developing and refining a clinical research question is not an easy task. Consulting nurses with research expertise will help to accomplish this task and conduct a successful critical appraisal of relevant literature.

Review of the literature and critical appraisal of EBP research articles

After the research question is refined and clarified, a literature review is necessary. A literature review (or critical appraisal) is an organized, systematic process for evaluating research studies in a given field. The reviewer uses a set of standardized criteria

to objectively establish the strength, quality, quantity, and consistency of evidence provided by the studies. The goal of the literature review is to determine the applicability of the research under review to clinical practice (Polit & Beck, 2022).

Nursing consideration: Evidence gathered from the critical appraisal of the literature—as well as patient care data, clinical experience/expertise, and patient and family preferences and values—are all used to justify changes in clinical practice. This evidence can also support the current practice or trigger additional research. Nurses must be prepared to objectively evaluate all types of evidence to provide the best possible patient care.

The literature review helps narrow the researcher's focus and establish a foundation and theoretical basis for the research project. A review of the literature should achieve the following (Polit & Beck, 2022):

- Identify appropriate areas for investigation.
- Provide credible initiatives for patient care.
- Define appropriate concepts.
- Explain the proposed relationship between concepts.
- Provide evidence for clinical practice initiatives.

The literature review involves critiquing the evidence and putting the results of the review in writing. How findings from the literature review are presented can persuade organizational leadership to accept or reject proposed changes in clinical practice or support or block proposed nursing research studies. Thus, nurses must be able to prepare a clear and concise written essay of their literature review findings.

Here are some recommendations for reading and critiquing a research article (Polit & Beck, 2022):

- **Authors**: Who conducted the research? Do their titles and credentials indicate expertise in the research?
- **Bias**: Is the article free of bias? Were the researchers paid to conduct the research? If so, did this interfere with the ability of the researchers to conduct scientific, objective research and report the findings without bias? Was there any evidence of researcher bias in the data collection or analysis?
- **Title**: Does the title accurately describe the article? A good title is intriguing and triggers interest. However, before spending time reading the article, it is best to critically review the title. An appropriate title should communicate key concepts, methods, and variables. For instance, the keywords of the investigator's research question should appear, to some extent, in the titles of the article they are critiquing. Reading the abstract helps to determine if the title accurately describes the article.
- **Abstract**: Does the abstract accurately convey the key concepts of the article? A good abstract contains the purpose of the study; the pertinent research question or questions; and a brief overview of methodology, results, and conclusions. The abstract should help the nurse decide if the article is worthy of being included in their literature review. Abstracts should typically be from 250-500 words in length.
- **Introduction**: Does the introduction make the purpose of the article clear?
- **Problem statement**: Is the problem clear? Is it properly explained?
- **Purpose of the study**: Has the researcher clearly explained the purpose of the study?
- **Research questions**: Are the research questions clearly stated? Is there a null hypothesis, if appropriate?
- **Theoretical framework**: Is the theoretical framework described? If there is no theoretical framework, should there be one?
- **Literature review**: Is the literature relevant to the study? Is it thorough? Does it include recent research (within the last 5 years, although 3 years is preferred)? Does the literature review support the need for the study?
- **Methods**: Is the research design appropriate for the study? Does the sample correlate with the research design and is the size adequate? Was a data collection instrument used? If so, was it relevant to the study? How were data collected? Were methods, instruments, and surveys reliable and valid?
- **Analysis**: Is the analytical approach consistent with the study questions and research design?
- **Results**: Are the results presented clearly in the text of the article? Are there tables or figures? If so, are they clear and relevant to the study? Are the statistics clearly explained?
- **Discussion**: Are the results explained in relation to the theoretical framework and research questions? Is the significance to nursing explained?
- **Limitations**: Are limitations identified? Are the implications of the limitations discussed?
- **Conclusion**: Are there recommendations for nursing practice, future research, and policymakers?

All literature reviews should include the following (Melnyk & Fineout-Overholt, 2019):

- **Introduction**: Describes the general state of the literature on the identified topic.
- **Methodology**: Provides a concise narrative of how the literature search was conducted, including what terminology was used to initiate the search, so that it is reproducible by other investigators.
- **Findings**: Provides a summary of the major findings of the critical analysis of the literature review.
- **Discussion**: Presents a more detailed description of findings from broader studies to more focused studies.
- **Conclusion**: Provides the overall state of the research; implications for clinical practice; and, if indicated, suggestions for additional research.

When reviewing the literature, nurses are cautioned to avoid the following (Melnyk & Fineout-Overholt, 2019):

- Stating personal opinions, unless the review includes evidence that supports such opinions.
- Stating what they think nurses should do, unless the review includes evidence that supports such assertions.
- Providing long descriptions of the topic under review without referencing research studies.
- Providing numerous lengthy definitions, signs and symptoms, and treatment initiatives of a specific illness without focusing on research studies that provide evidence to support the purpose of the review of the literature.
- Discussing research studies without showing how these studies correlate with each other.

Nursing consideration: A literature review must be focused, succinct, organized, and free from personal bias.

Identification of key words for literature search

Before accessing Internet search engines or other resources, it is imperative to identify keywords to save time and narrow the search to relevant citations. For example: Suppose a group of rehabilitation nurses specializing in stroke care is interested in improving bladder training for increasing continence and independent bladder functioning. In a search engine, the nurses cannot simply type in "urinary incontinence" or "bladder training." Citations for thousands, if not millions, of resources will appear.

Researchers must ask themselves the following questions (Polit & Beck, 2022):

- What is the specific problem or research question that the literature must help to define?
- What is the scope of the literature review?
- Is the search wide enough to make sure that all relevant literature has been found?
- Is the search narrow enough to make sure that irrelevant literature has been discarded?

- Have we critically analyzed the literature?
- Have we cited and discussed study findings contrary to our perspectives?

In the example about bladder training, researchers would use such words as "stroke," with "bladder training" and "urinary incontinence" being typed as a subcategory under "stroke." Researchers must decide on age parameters: if they are going to exclude any coexisting problems, such as Alzheimer's disease; and if they are going to study both men and women.

The search can be narrowed by asking the following questions (Polit & Beck, 2022):

- Who are the patients to be studied?
- What is the problem?
- When does the problem occur?
- Why does it need to be studied?

Researchers can access search engines by using such terms as "bladder retraining in female stroke patients over the age of 65" and "urinary incontinence in female stroke patients over the age of 65". This would limit the study to females of a certain age. If researchers wanted to study both men and women, the researcher would include the term "male" in the parameters or delete the term "female."

Assessing credibility of the literature

Because many resources are now published exclusively on the Internet, it is vital to critique these resources. Here are some questions to ask to help in the critique of Internet resources (Polit & Beck, 2022):

- What are the author's credentials? Are they listed? Are the credentials appropriate for the material they have written?
- Is the author's contact information provided?
- Are references listed? Are they credible? Are they current?
- When was the website created? How and when is the site updated?
- Is any website sponsorship clearly stated? Funding sources must be identified.
- Does the website contain advertising? If so, is it separate from the scholarly material?
- Is information objective and free from bias?
- Does the website provide contact information if technical assistance is needed?
- Is a privacy statement available? Any information requested by users of the website should be protected by a privacy statement.
- What is the purpose of the website? Is it primarily scholarly, informative, or entertaining?

Scholarly sources are typically at least 5 pages long and usually longer. The articles usually have an abstract and a specific outline to the article: introduction (background), presentation of the problem, how the problem is going to be studied, findings, analysis, and recommendations. Scholarly web sources typically end in .edu or .org. Websites ending in .com and .gov are not typically the location to find scholarly articles. Google Scholar is a good place to start looking for information in databases if the researcher is not attached to a university and does not have access to their databases.

Nursing consideration: Many websites have a link called "About Us". This link generally describes the persons responsible for the site and those who contribute scholarly information. This description should include credentials and contact information. Nurses must always be aware of author credentials when conducting a literature review (Polit & Beck, 2022).

Finding a search engine

One of the first questions nurses should ask when embarking on a search for evidence in the literature is where can relevant research articles be found? The following are helpful search engines for sources of EBP nursing research articles:

- **Agency for Health Research and Quality (AHRQ)**: This agency is a free source of government documents for researchers: http://www.ahrq.gov
- **The Cumulative Index to Nursing and Allied Health Literature (CINAHL)**: This site provides indexing of nursing and allied health literature that covers a wide range of topics. Included in the database are nursing journals and publications, books, nursing dissertations, standards of practice, selected conference proceedings, book chapters, and audiovisuals: https://www.ebscohost.com/nursing/products/cinahl-databases/cinahl-complete
- **Cochrane Collaboration**: This resource provides access to abstracts from the Cochrane Database of Systematic Reviews: http://www.cochrane.org
- **EBSCO Host**: EBSCO Information Services provides information from e-journals, e-books, and research databases: http://www.ebsco.com
- **JBI EBP Database**: Membership is required to access this resource. It provides recommended links and descriptions of levels of evidence of articles: http://joannabriggs.org/
- **National Library of Medicine and the National Institutes of Health MEDLINE and PubMed Resources Guide**: This resource contains journal citations and abstracts for biomedical literature from around the world: http://www.nlm.nih.gov/bsd/pmresources.html
- **ProQuest Nursing & Allied Health Source**: Designed to meet needs of researchers at healthcare facilities and nursing and allied health programs at academic institutes, its database offers abstracting and indexing for thousands of titles and full-text dissertations: http://www.proquest.com/products-services/pq_nursingahs_shtml.html
- **PubMed**: This site comprises more than 22 million citations for biomedical literature from MEDLINE: http://www.ncbi.nlm.nih.gov/pubmed
- **Turning Research into Practice**: This site provides a wide sampling of available evidence from a variety of free online resources: http://www.tripdatabase.com
- **Virginia Henderson International Nursing Library**: This service is free of charge and helps nurses to locate conference abstracts and research study abstracts. It is supported by Sigma Theta Tau International: http://www.nursinglibrary.org

Levels of evidence

It is important to determine which level of evidence the research article provides when critiquing research studies. Levels of evidence are organized into a ranking system to describe the strength of the results measured in research studies. Level I is the strongest form of evidence and Level VII is the weakest (Melnyk & Fineout-Overholt, 2019):

- **Level I**: Evidence is gathered from a systematic review of all relevant randomized controlled trials (RCTs) or evidence-based clinical practice guidelines based on systematic reviews.
- **Level II**: Evidence is gathered from at least one well-designed RCT.
- **Level III**: Evidence is gathered from well-designed controlled trials without randomization, a quasi-experimental study.
- **Level IV**: Evidence is gathered from well-designed case-control and cohort studies.
- **Level V**: Evidence is gathered from systematic reviews of descriptive and qualitative studies.
- **Level VI**: Evidence is gathered from a single descriptive or qualitative study.

- **Level VII**: Evidence is gathered from the opinion of authorities or reports of expert committees.

After completing and presenting the literature review to colleagues and leadership representatives, decisions about translation into practice and the feasibility of conducting nursing research are made. In some cases, clinical practice changes will be piloted based on findings. In other cases, nursing research supervised by trained nurse researchers will be conducted.

Self-Assessment Quiz Question #6

A study that is relying primarily on evidence gathered from at least one well-designed RCT is relying on what level of evidence?

a. VII.
b. V.
c. II.
d. I.

Overview of the nursing research process

After developing the research/clinical practice question and conducting the literature review, the following research elements must be considered (Polit & Beck, 2022):

- **Time**: Will the research be completed within a realistic timeframe?
- **Adequate numbers of participants**: Can an adequate number of patients be obtained to participate in the study?
- **Location of the study**: Most researchers select the organizations for which they work or have some type of association, such as a clinical affiliation. However, researchers must consider the review and approval processes mandated by the organization, the resources available for nursing research, and how supportive the organization is to the nursing research process.
- **Finances**: The costs associated with the nursing research project must be considered. These costs include staff time related to conducting the research, expenses related to analysis, copying charges, and postage or computer resources if surveys or questionnaires are part of the research methodology.
- **Ethics**: Ethics is a significant concern in any research project. How are patients who participate in the study protected? Is there any risk to the health and safety of patients who participate in a study? For example, are they taking an experimental drug or agreeing to an experimental treatment method? How will participants receive an explanation of the study and how will they give informed consent to participate in the research project? How will confidentiality be protected? How will objectivity be maintained during data analysis? At times, some unethical researchers have altered data to skew findings to support the researchers' beliefs. Results must be reported accurately, objectivity must be maintained during analysis, and patients' rights and well-being must always be protected.

Self-Assessment Quiz Question #7

Issues related to ethics in the nursing research process include:

a. Maintaining objectivity during analysis.
b. Determining costs related to analysis.
c. Determining how supportive the organization is to the nursing research process.
d. Assessing if the research study will have an adequate number of participants.

Nursing consideration: It can be a challenge to determine how many research participants are needed for a research study. Qualtrics (a web-based survey tool to conduct survey research, evaluations, and other data collection activities) can be helpful when determining sample size.

After determining how the research study should be implemented, a written proposal to obtain permission to conduct research is developed and presented to the organization's institutional review board (IRB). The IRB reviews studies to ensure that ethical standards are met for the protection of the rights of human participants (Polit & Beck, 2022).

Written research proposals generally contain the following information (Polit & Beck, 2022):

- Cover sheet.
- Introduction to the proposed research study.
- Objectives of the study.
- Significance of the study.
- Methodology.
- Sample of the consent form.

The IRB often asks for additional information before granting permission to conduct research. After such permission is secured, the research study is implemented and results are evaluated. Results, supported by the literature review and evaluation of the study findings, may indicate a change in nursing practice. This is referred to as *translating evidence into practice*.

Translating evidence into practice

The ultimate goal of EBP is to translate evidence into practice for improving patient outcomes.

In its simplest format, EBP is based on the following (Polit & Beck, 2022):

- **Identifying the clinical EBP research question**: Questions stem from concerns and observations regarding clinical practice and the need to determine if changes in clinical practice are warranted.
- **Gathering evidence**: All available sources of evidence (the literature, clinical expertise, clinical practice guidelines, patient values, and preferences) are objectively reviewed and the evidence identified.
- **Conducting research**: After evaluating the evidence, it may become apparent that implementing a nursing research study is appropriate. Research is conducted under the supervision of nursing research experts and with the approval of the organization's IRB.
- **Generating new knowledge**: Research should add to the body of nursing knowledge for enhancing patient outcomes.
- **Disseminating knowledge gained from research or a critical analysis of all sources of evidence**: Findings should be shared at the unit and departmental meetings, committee meetings, and meetings with administrative and leadership team members. Knowledge gained should be shared not only within the employing organization, but also with the nursing community at large via publications, presentations at professional association meetings and conferences, and collaboration with academic settings.
- **Using findings in practice**: Using evidence to make practice changes or justify the current practice is the foundation of sound healthcare initiatives.
- **Improving the quality of care**: The ongoing primary goal of any healthcare professional should be to improve the quality of care patients are receiving. Translating evidence into clinical practice will improve patient care services.

Self-Assessment Quiz Question #8

Which of the following statements about translating evidence into practice is true?
a. EBP research questions are determined by the physician.
b. Sources of evidence are limited to the literature.
c. Research should add to the body of nursing knowledge.
d. Using evidence to make practice changes is under the jurisdiction of the IRB.

Self-Assessment Quiz Question #9

The role of the IRB is:
a. To design the research study.
b. To determine sample size.
c. To determine costs of the study.
d. To ensure that ethical standards are met.

Clinical practice EBP guidelines

Evidence-based guidelines—also referred to as clinical practice guidelines—are defined as systematic statements to help the practitioner and patient decide appropriate healthcare for specific clinical circumstances. The National Guideline Clearinghouse (NGC), sponsored by the Agency on Healthcare Research and Quality (AHRQ), has stated, "Guidelines are not fixed protocols that must be followed but are intended to identify generally recommended interventions to be considered by a knowledgeable healthcare provider" (National for Complementary and Integrative Health, 2021).

Many professional organizations and associations have developed guidelines for their respective fields. Such guidelines are developed by panels or groups of experts who synthesize and evaluate the evidence before making recommendations for clinical practice.

The American Academy of Physical Medicine and Rehabilitation has explained the need for clinical practice guidelines. According to the Academy, guidelines serve to accomplish the following (2021).

- Describe appropriate care based on the best available. scientific evidence and broad consensus.
- Reduce inappropriate variation in practice.
- Provide a more rational basis for referral.
- Provide a focus for continuing education.
- Promote efficient use of resources.
- Act as a focus for quality control, including audit.
- Highlight shortcomings of existing literature and suggest appropriate future research.

Nursing consideration: Systematic reviews (SRs) of clinical practice guidelines can be valuable tools when searching for valid and reliable guidelines. They can be used to systematically identify, assess, and summarize the current state of guidance on a specific clinical topic (Johnston et al., 2019).

Numerous clinical guidelines are available from a wide variety of healthcare specialties. These guidelines are accessible via the Internet. Healthcare professionals should critique these guidelines. For example, one could ask the following questions ((Johnston, et al., 2019; University of Washington Health Sciences Library, 2019):

- Who were the authors of the guidelines? What are their credentials? Do their credentials indicate expertise in the field the guidelines address?
- Is there an identified professional association that is affiliated with the guidelines? If so, is it a reputable association?
- Is there an identified healthcare system associated with the guidelines? If so, is the healthcare system reputable?
- Are there any conflicts of interest among the authors, associations, or healthcare system and the content of the guidelines? In other words, does one or more of these entities have a monetary or other interest in the content of the guidelines?
- Do the guidelines reflect the application of the most recent scientific evidence?
- What research findings were used to develop these guidelines? Is the research valid and reliable?
- Do the guidelines contradict any valid research findings?
- Are explanations for changes from previous guidelines given? Do these explanations make sense? Are changes based on recent research findings?
- Can the guidelines be implemented into current clinical practice without difficulty?
- Do the guidelines provide resources to help clinicians see how the guidelines were developed? Is contact information available for guideline authors so that clinicians who have questions about the guidelines or who need help with their implantation can contact the authors or other sources of help?

Here are some resources that provide valuable information about locating clinical practice guidelines:

- **AIDSinfo**: This site has all federally approved HIV/AIDS medical practice guidelines. The guidelines are available in multiple formats and contain treatment recommendations and tables: https://aidsinfo.nih.gov/guidelines
- **American Academy of Physical Medicine & Rehabilitation**: This site provides timely, in-depth information about physical medicine and rehabilitation guidelines: https://www.aapmr.org/home
- **American College of Physicians (ACP) Clinical Recommendations**: This site contains three different types of clinical recommendations: clinical practice guidelines, clinical guidance statements, and best practice advice. The ACP's goal is "to provide clinicians with recommendations based on the best available evidence, to inform clinicians of when there is no evidence, and to help clinicians deliver the best healthcare possible: https://www.acponline.org/clinical-information/guidelines
- **American Diabetes Association (ADA)**: The ADA provides the latest ADA clinical practice recommendations. These guidelines are regularly reviewed and updated: https://diabetesjournals.org/care/issue/44/Supplement_1
- **The American Heart Association**: The American Heart Association and the American Stroke Association publish medical guidelines and scientific statements on various cardiovascular disease and stroke topics: https://professional.heart.org/professional/GuidelinesStatements/UCM_316885_Guidelines-Statements.jsp
- **Best Practice Information Sheets**: Joanna Briggs Institute Guidelines are produced specifically for practicing healthcare professionals and are based on the best available international research evidence as reported in systematic reviews: http://joannabriggs.org/
- **FGCU Library Database**: This database is a list of practice guidelines for nursing students and licensed nurses: https://library.fgcu.edu/az.php
- **CMA Infobase**: This is a Canadian database of Canadian practice guidelines and is maintained by the Canadian Medical Association. The database contains 1,200 guidelines that were developed or endorsed by authoritative medical and healthcare organizations in Canada: https://joulecma.ca/cpg/homepage
- **National Heart, Lung, and Blood Institute**: This site has resources for both healthcare consumers and healthcare professionals. It provides resources to keep healthcare professionals informed about the best practices to treat and manage patient care for those persons who are affected by sickle cells, asthma, hypertension, von Willebrand disease, and cardiovascular disease, and risk reduction in youth: https://www.nhlbi.nih.gov/health-topics/publications-and-resources

- **NCCN Clinical Practice Guidelines in Oncology, National Comprehensive Cancer Network**: The NCCN Clinical Practice Guidelines in Oncology are the recognized standards for clinical policy in oncology. To date, they are the most comprehensive and most frequently updated clinical practice guidelines available in any area of medicine. The guidelines are updated on an ongoing basis. Treatment recommendations are specific and implemented through performance measurement. Issues addressed include cancer detection; prevention and risk reduction; workup; and diagnosis, treatment, and supportive care: https://www.nccn.org/professionals/physician_gls/default.aspx
- **UK's National Institute for Health and Care Excellence**: Referred to as *Guidance Lists* in the United Kingdom, this site has more than 1,110 practice guidelines: https://www.nice.org.uk/guidance/published

Resources to help healthcare professionals locate various practice guidelines also are available (Meyer, 2018; University of Washington Health Sciences Library, 2019):

- **ClinicalKey**: Select "Guidelines" in the browse menu. A search box allows for the search of a particular topic or guideline: https://www.clinicalkey.com/#!/
- **DynaMed Plus**: Healthcare professionals begin by searching for the desired topic or guideline. Guidelines and resources will then be listed in the left-side menu. DynaMed Plus gathers guidelines from national and international sources: https://search.ebscohost.com/login.aspx?authtype=ip,uid&profile=dmp
- **ECRI Guidelines Trust**: ECRI Guidelines Trust has replaced the National Guideline Clearinghouse. It is a publicly available web-based repository of objective evidence-based clinical practice guideline content. Its purpose is to provide physicians, nurses, other clinical specialties, and members of the healthcare community with up-to-date clinical practices to advance safe and effective patient care. This centralized repository includes evidence-based guidance developed by nationally and internationally recognized medical organizations and medical specialty societies: https://guidelines.ecri.org/
- **PubMed**: PubMed comprises more than 20 million citations. There is a quick start guide to help facilitate searches: https://www.ncbi.nlm.nih.gov/pubmed?otool=yalelib
- **UpToDate**: After searching for the topic in question, society guideline links appear in the menu. Guidelines are gathered from both national and international organizations: https://www.uptodate.com/contents/overview-of-clinical-practice-guidelines

Nursing consideration: Many guidelines are accessible on the Internet. It is important to ensure that the most current guidelines are used and that these guidelines are based on a systematic review of the scientific evidence developed by a panel of experts. Guidelines must be accepted at employing organizations (Meyer, 2018).

How can nurses and other healthcare professionals be sure that the websites they are using to obtain clinical guidelines contain accurate and up-to-date information? The University of Washington's Health Sciences Library offers the following suggestions for evaluating websites (Schnall, n.d.). The guidelines have been adapted to focus on clinical guidelines websites:

- **Authority**.
  - Are the guidelines' authors clearly identified?
  - Are the credentials of the authors provided?
  - Are the authors affiliated with a healthcare system or professional association? Do the authors have any declared conflicts of interest?
  - Do the authors have credibility in the fields the guidelines are written for?
  - Is contact information provided for the authors?
- **Accuracy**.
  - Is the information provided in the guidelines accurate?
  - Are references listed? Were they written within the last 3 years? If not, are they considered "classic" information?
  - Are sources of information clearly stated?
  - Is there an explanation of the research methods that were used to gather data?
- **Objectivity**.
  - Is the purpose of the site clearly stated?
  - Is the information presented without bias? Are any conflicts of interest apparent?
  - Is sponsorship acknowledged? Does sponsorship bias the information presented?
- **Coverage**.
  - Does the site meet the needs of the healthcare professionals?
  - Are the guidelines comprehensive? Do they address all-important key aspects of care?
  - Does the site provide any extra features or information not available from other sources or in other formats?
- **Currency**.
  - Is the information provided current? Is the website itself current?
  - Are links current? Do links supplement information important to guideline implementation?
- **Design**.
  - How is the website organized? Is it easy to navigate?
  - Is there an internal search engine?
  - Can the site be accessed on a reliable basis?

The National Heart, Lung, and Blood Institute appoints panels of experts to conduct systematic evidence reviews to facilitate clinical practice guideline development. These experts are not paid and are selected for their scientific and clinical expertise. Persons with apparent financial conflicts and those with professional or intellectual bias are excluded from panel membership.

However, conflicts of interest are sometimes identified among members of the writing and review groups. The following actions handle such conflicts (National Heart, Lung, and Blood Institute, n.d.):

- Members voluntarily verbally disclose any potential conflicts of interest to each other during a general meeting. They must then recuse themselves from voting.
- A methodologist is hired to work with writing groups to provide objectivity in data analysis and in the ranking of evidence via the preparation of evidence tables and facilitating consensus.
- Expert panels provide opportunities for public review and comments via the National Heart, Lung, and Blood Institute or a scheduled public forum.

In summary, reliable, current, and trustworthy clinical practice guidelines should be based on a systematic literature review. The most valid research findings are identified and used to write or update the clinical guidelines.

The quality, reliability, and validity of evidence determines if a particular patient intervention is warranted. The impact of guideline implementation on patient outcomes should be part of every healthcare organization's quality improvement monitoring.

Barriers to the implementation of EBP in nursing

It seems only logical that all organizations should support EBP. However, nurses have identified significant barriers to its implementation. These barriers must be recognized and eliminated or reduced as much as possible.

EBP can be successfully implemented only if all healthcare team members support the EBP model that guides practice in their organization and understand how to apply it to their practice.

This means that ongoing continuing education regarding EBP implementation is essential (Polit & Beck, 2022).

Nursing consideration: Research has suggested that the more education nurses have, the more confidence they have in implementing EBP. Thus, nursing and organizational leadership should facilitate the pursuit of additional formal academic education, including graduate education and ongoing continuing education (Polit & Beck, 2022).

According to recent research, the following are barriers to EBP and suggestions for the reduction or elimination of such barriers.

Organizational culture
The organization's culture is pivotal to EBP implementation and the process of conducting nursing research. If the organization's administrative and leadership staff do not support nursing research and EBP, it is nearly impossible to implement such processes successfully (Paler, et al., 2021). An organizational culture that is stagnant tolerates an attitude of "we have always done it this way," even if evidence suggests that the "old ways" are no longer an acceptable practice. Some nurses have reported that a culture of learning exists in organizations that promote EBP. Leadership team members want clinicians to have the most current knowledge and access to the most reliable evidence in these types of cultures. Access to the most current evidence promotes best practices from nurses. To develop a culture of learning leadership, all healthcare providers must learn about the benefits of EBP and research. Benefits that are most likely to grab the attention of these individuals are decreases in healthcare costs, decreased length of stay, decreased readmissions, and improved patient outcomes. In these situations, administration and leadership need continuing education as much as staff members do.

Insufficient knowledge
Lack of knowledge has been cited as a significant barrier to research and EBP implementation (Paler, et al., 2021). The education received in basic nursing education programs is not sufficient. Nurses at all levels of practice and who hold all types of nursing positions need ongoing continuing education regarding the implementation of nursing research and EBP. The organization's nursing professional development (NPD) practitioners must work closely with all members of the organization to provide ongoing continuing education and training in EBP and research processes.

Lack of motivation
It is easy to become entrenched in the routine of "we have always done it this way." Even experienced nurses believe that if they have implemented patient care in specific ways for a long time without problems, that there is no need to change (Alatawi, 2021). Some research has even suggested that the longer nurses have practiced nursing, the more likely they are to become entrenched. This further emphasizes the need for continuing education. Adult learners need to know why they are doing something or why they need to change established patterns of care. Disseminating evidence that shows EBP improves patient outcomes is imperative.

Perceived lack of time
Nurses and nurse managers have expressed concern that there is not enough time to stay current regarding the latest evidence or to participate in nursing research (Paler, et al., 2021). Patient care is the top priority. However, nursing administration and leaders should allot time for continuing education and research whenever possible.

Inadequate access to up-to-date technology
It is an overwhelming challenge to access the most current evidence and participate in nursing research without good technological equipment (Alatawi, 2021). Nurses need easy access to the Internet, assistance to use technology as needed, and education to use technology as part of EBP and nursing research. Librarians in universities and hospitals and hospital education departments can often assist.

Physician and patient issues
Research findings have suggested that physicians and patients have different values and beliefs that conflict with EBP. Treatment initiatives that have been in place for years and seem to be working may serve as a basis for conflict. Implementing change can be quite a struggle, especially if there is no desire to acknowledge that new evidence could be helpful (Alatawi, 2021). Support from administration and leadership, the establishment of a culture of change, and ongoing education for all practitioners are essential.

Leadership support
Administration and leadership team members should overtly support and acknowledge nurses who participate in, publish, and disseminate EBP and research findings (Melnyk & Fineout-Overholt, 2019). Such nursing actions should be acknowledged in performance evaluations and be part of the requirements for clinical advancement.

Many strategies in the promotion of EBP and nursing research and strategies to reduce or remove barriers to their implementation depend on the support of administration and leadership. This does not mean, however, that staff nurses do not have a role in establishing a culture of learning and practice improvement.

Here are some suggestions for staff nurse involvement in the promotion of EBP and nursing research:

- Identify ways to disseminate new, relevant evidence to nursing colleagues. Examples of ways to do this are starting a nursing journal club and sharing quick, short "blasts" of new information via electronic media such as texting, e-mail, and the organization's website employee section. Information may also be shared with management's authorization via the organization's social media pages. A portion of staff meetings should be devoted to disseminating EBP or nursing research information.
- Promote the formation of an EBP/nursing research council. As more and more organizations adopt a shared governance model, forming such councils is expected and is becoming commonplace. A council with designated responsibility for EBP and nursing research can evaluate EBP data that may be helpful, not only for nursing but also for the entire organization. Consider the formation of an interdisciplinary EBP council. Patient care plans are not developed in departmental isolation. The actions of one department affect the actions of the others. Working together to promote EBP will enhance patient outcomes.
- Participate in interdisciplinary patient rounds. Regularly working with other healthcare team colleagues can improve patient care and improve interdisciplinary working relationships. Sharing EBP and nursing research data in appropriate ways will also help dispel the doubts of those who are reluctant to adopt the EBP format of delivering patient care
- Participate in and promote continuing education about EBP and nursing research. Work with nursing professional development specialists as they develop and implement such education. Encourage colleagues to participate in education. Staff nurses should also consider taking an active role in educating colleagues. They can ask experts in continuing education to help them develop and enhance teaching skills.
- Encourage the establishment of a mentor program for EBP and nursing research. Research has suggested that nurses want and need mentors to implement EBP and participate in nursing research effectively. Nurses with expertise in EBP and nursing research should consider becoming mentors. These individuals have an obligation to disseminate knowledge and promote practice strategies that improve patient outcomes.
- Stay current in the latest research and clinical practice guidelines in the field. Identify professional nursing organizations in specialty practice areas that publish standards of practice and EBP, and frequently check the online sites or receive notices of new information.

Nursing consideration: When sharing EBP and research information via public sources (e-mail, the organization's social media pages), nurses must be sure to adhere to HIPAA and organizational mandates regarding privacy and confidentiality. They should avoid posting information on personal social media pages. At no time should privacy and confidentiality standards be violated!

Self-Assessment Quiz Question #10

Barriers to EBP and nursing research can be diminished by:

a. Establishing a culture of administrative control.
b. Taking punitive action against nurses who are not motivated to implement EBP.
c. Allowing physicians to dictate nursing practice.
d. Providing ongoing continuing education.

Conclusion

Organizations are responsible for establishing a culture of learning that stimulates ongoing inquiry and translation of the best available evidence to clinical practice. Healthcare organizations must support EBP and nursing research by ensuring that nurses have the time to devote to EBP and nursing research, have access to continuing education, and have opportunities to collaborate with interdisciplinary teams for the provision of the best possible patient care.

References

- Alatawi, M., Aljuhani, E., Alsufiany, F., Aleid, K., Rawah, R., Aljanabi, S., & Banakhar, M. (2020). Barriers of implementing evidence-based practice in nursing profession: A literature review. *American Journal of Nursing Science*, *9*(1), 35. https://doi:10.11648/j.ajns.20200901.16
- American Academy of Physical Medicine and Rehabilitation. (2021). Clinical Practice Guidelines. https://www.aapmr.org/quality-practice/evidence-based-medicine/clinical-practice-guidelines
- Center for Innovation in Research and Teaching. (n.d.). *Quantitative approaches.* https://cirt.gcu.edu/research/developmentresources/research_ready/quantresearch/approaches
- Center on Knowledge Translation for Disability & Rehabilitation Research (KTDRR). (2021). *Evidence-based guidelines.* http://ktdrr.org/ktlibrary/guidelines.html
- Chein, L. (2019). Evidence-Based Practice and Nursing Research. *Journal of Nursing Research, 27*(4). https://www.doi:10.1097/jnr.0000000000000346
- Dang, D., Dearholt, S., Bissett, K., Ascenzi, J., & Whalen, M. (2022). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: model and guidelines.* 4th ed. Sigma Theta Tau International. https://www.hopkinsmedicine.org/evidence-based-practice/ijhn_2017_ebp.html
- Duncan, R., Szabo, B., Jackson, Q. L., Crain, M., Lett, C., Masters, C., Spinks, R., Uhrig, L. K., & Gullatte, M. M. (2021). Care and Coping During COVID-19: Practice changes and innovations in the oncology setting. *Clinical Journal of Oncology Nursing*, 25(1), 48–55. https://doi-org.libproxy.troy.edu/10.1188/21.CJON.48-55
- Ferreira-Hermosillo, A., Molina-Ayala, M. A., Molina-Guerrero, D., Garrido-Mendoza, A. P., Ramírez-Rentería, C., Mendoza-Zubieta, V., Espinosa, E., & Mercado, M. (2020). Efficacy of the treatment with dapagliflozin and metformin compared to metformin monotherapy for weight loss in patients with class III obesity: a randomized controlled trial. *Trials*, 21(1), 1–10. https://doi-org.libproxy.troy.edu/10.1186/s13063-020-4121-x
- Fu, L., Su, W., Ye, X., Li, M., Shen, J., Chen, C., Guo, Q., Ye, L., & He, Y. (2020). Evidence-Based Practice Competency and Related Factors Among Nurses Working in Public Hospitals. INQUIRY: *The Journal of Health Care Organization, Provision, and Financing*. https://doi.org/10.1177/0046958020927876
- Harvey, G. & Kitson, A. (2016). PARiHS revisited: From heuristic to integrated framework for the successful implementation of knowledge into practice. *Implementation Science, 11*(1). https://doi.org/10.1186/s13012-016-0398-2.
- Henry, S. L., Mohan, Y., Whittaker, J., Koster, M., Schottinger, J. E., & Kanter, M. H, (2019) E-SCOPE: A strategic approach to identify and accelerate implementation of evidence-based best practices. *Medical Care, 57.* p S239-S245. https://doi:10.1097/MLR.0000000000001191
- Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, *14*(3), 175–182. https://doi:10.1111/wvn.12223
- Johnston, A., Kelly, S. E., Hsieh, S. C., Skidmore, B., & Wells, G. A. (2019). Systematic review of clinical practice guidelines: A methodological guide. *Journal of Clinical Epidemiology,* 108, 64–76. https://www.sciencedirect.com/science/article/pii/S0895435618302877
- Kaplan, L. (n.d.). *Framework for how to read and critique a research study.* Silver Spring, MD: American Nurses Association. https://www.nursingworld.org/
- Kerr, H. & Rainer, D. (2019). Addressing the current challenges of adopting evidence-based practice in nursing. *British Journal of Nursing, 30*(16), 970-974. https://doi.10.12968/bjon.2021.30.16.970
- Li, S. M., Cao, M., & Zhu, X. (2019). Evidence-based practice: Knowledge, attitudes, implementation, facilitators, and barriers among community nurses—systematic review. *Medicine, 98*(39). https://doi:10.1097/MD.0000000000017209
- Melnyk, B. M. & Fineout-Overholt, E. (2019). *Evidence-based practice in nursing and healthcare: A guide to best practice (4th. Ed.)* Wolters Kluwer.
- Meyer, C. (2018). *Finding clinical practice guidelines.* https://library.medicine.yale.edu/blog/finding-clinical-practice-guidelines
- National Center for Complementary and Integrative Health. (2021). Clinical practice guidelines. https://www.nccih.nih.gov/health/providers/clinicalpractice
- National Collaborating Centre for Methods and Tools. (n.d.). *Stetler model of evidence-based practice*. https://www.nccmt.ca/knowledge-repositories/search/83
- National Heart, Lung, and Blood Institute. (n.d.). *About systematic evidence reviews and clinical practice guidelines*. https://www.nhlbi.nih.gov/node/80397
- Newhouse, R. P., Dearholt, S., Poe, S., Pugh, L. C., & White, K. M. (2007). Organizational change strategies for evidence-based practice. *The Journal of Nursing Administration, 37*(12), 552–557. https://doi.org/10.1097/01.NNA.0000302384.91366.8f
- Paler, C. M. & Arganza Cachaper, G. (2021). Evidence-Based Practice: Are Nurses Ready? *Journal of Nursing Practice Applications & Reviews of Research*, 11(1), 43–50. https://doi-org.libproxy.troy.edu/10.13178/jnparr.2021.11.01.1006
- Polit, D. F. & Beck, C. T. (2022). *Essentials of nursing research: Appraising evidence for nursing practice (10th ed.).* Wolters Kluwer.
- Rashid, M., Hodgson, C. S., & Luig, T. (2019). Ten tips for conducting focused ethnography in medical education research. *Medical education online, 24*(1), 1624133. https://doi.org/10.1080/10872981.2019.1624133
- Schnall, J. G. (n.d.). *Criteria for evaluating websites.* http://media.hsl.washington.edu/media/howto/navigating/criteria.pdf
- SIS International Research. (2021). What is quantitative research? https://www.sisinternational.com/what-is-quantitative-research/
- Teskereci, G., Öncel, S., & Arslan, Ü. Ö. (2020). Developing compassion and emotional intelligence in nursing students: A quasi-experimental study. *Perspectives in Psychiatric Care*, 56(4), 797–803. https://doi-org.libproxy.troy.edu/10.1111/ppc.12494
- UCI Office of Research. (2019). *Assessing risks and benefits.* https://research.uci.edu/compliance/human-research-protections/irb-members/assessing-risks-and-benefits.html
- Wolters Kluwer. (2018). *Update on future of nursing report: Are we there yet?* http://lippincottsolutions.lww.com/blog.entry.html/2018/02/13/update_on_futureof-q5jh.html

USING EVIDENCE IN CLINICAL NURSING PRACTICE, 2ND EDITION

Self-Assessment Answers and Rationales

1. The correct answer is C.
Rationale: The nurse wants to research grief, which is a common human experience. Qualitative research is conducted to better understand the meaning of a human experience.

2. The correct answer is A
Rationale: Quality improvement (QI) is the formal, systematic analysis of data for monitoring and improving patient care.

3. The correct answer is B.
Rationale: The Iowa model focuses on identifying triggers, issues, or opportunities, stating the question or purpose, formation of interprofessional teams, reviewing evidence, critiquing, synthesizing, and change implementation through piloting.

- *Identify and sustain practice change*
- *Outcomes dissemination.*

4. The correct answer is A.
Rationale: The ARCC model emphasizes the importance of mentors and EBP for organizational effectiveness.

5. The correct answer is A.
Rationale: Neither the researchers nor the participants know the specific details of the experiment in a double-blind study. This type of study is used to safeguard against experimental bias.

6. The correct answer is C.
Rationale: Level II evidence is obtained from at least one well-designed RCT.

7. The correct answer is A.
Rationale: It is imperative that results are reported accurately, objectivity is maintained during analysis, and patients' rights and well-being are always protected.

8. The correct answer is C.
Rationale: Research should add to the body of nursing knowledge for enhancing patient outcomes.

9. The correct answer is D
Rationale: The IRB reviews studies to ensure that ethical standards are met for the protection of the rights of human participants.

10. The correct answer is D.
Rationale: Participating in and promote the delivery of continuing education about EBP and nursing research reducing barriers to EBP implementation.

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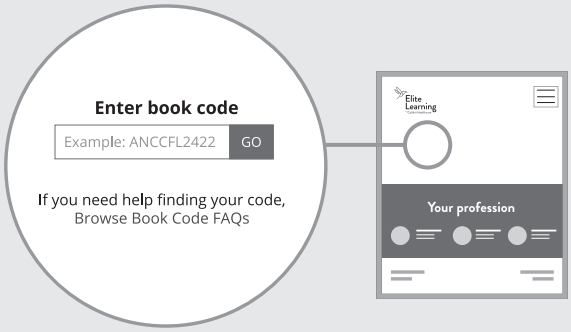

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2. The course content was unbiased and balanced.	8. I intend to apply the knowledge from this course to my practice.
3. The course was relevant to my practice.	9. What I have learned from this course will have an impact on my knowledge.
4. I would recommend this course to my peers.	10. What I have learned from this course will have an impact on patient outcome.
5. What I have learned from this course will have an impact on my practice.	11. The overall rating for this course.
6. The course was well-organized and clear.	

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	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
2	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
3	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
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10	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
	Excellent	Good	Average	Below Average	Poor	Excellent	Good	Average	Below Average	Poor	Excellent	Good	Average	Below Average	Poor
11	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
12	How many total hours did it take you to complete this course? Please indicate the number of hours: _____														
13	Please provide any additional feedback on this course: _____														

SECTION III: General

Fill in the circle below numbers **0=Not likely at all, 5=Neutral and 10=Extremely likely**

How likely is it that you would recommend Elite to a friend or colleague?..... 0 1 2 3 4 5 6 7 8 9 10

If your response is less than a 10, what about the course could we change to score a 10? _____

_____

List other topics that you would like to see provided: _____

❑ I agree to allow Elite to use my comments. If you agree, please provide your name and title as you would like to see them to appear.

_____

NURSING - COURSE EVALUATION (ANCCGA3023 - Required)

To receive continuing education credits for this program, this mandatory evaluation form must be completed.

Licensee Name: _____ **License #**_____

Your honest feedback is vital for the planning, evaluation, and design of future educational programs.

SECTION I: Demographics: Your current license type and education level: ❍LPN/LVN ❍RN - Associate degree ❍RN - Bachelor's degree ❍RN - Master's degree ❍APRN - Master's degree ❍Doctorate / DNP / Other Doctorate ❍Other (specify)_____

How long have your been a nurse: ❍Less than 5 years ❍6 to 10 years ❍11 to 15 years ❍16 to 20 years ❍Over 20 years ❍Not a nurse

SECTION II: Course Evaluation
Please complete the following for each course you have completed. Mark the circle that best matches your evaluation of the question.

1. After completing this course, I am able to meet each of the Learning Outcomes.	7. The course demonstrated the author's knowledge of the subject.
2. The course content was unbiased and balanced.	8. I intend to apply the knowledge from this course to my practice.
3. The course was relevant to my practice.	9. What I have learned from this course will have an impact on my knowledge.
4. I would recommend this course to my peers.	10. What I have learned from this course will have an impact on patient outcome.
5. What I have learned from this course will have an impact on my practice.	11. The overall rating for this course.
6. The course was well-organized and clear.	

	Nursing Assessment, Management and Treatment of Autoimmune Diseases - 6 Contact Hours					Stroke Management in the Acute Care Setting 5 Contact Hours					Using Evidence in Clincial Nursing Practice, 2nd Edition 3 Contact Hours				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
2	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
3	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
4	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
5	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
6	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
7	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
8	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
9	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
10	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
	Excellent	Good	Average	Below Average	Poor	Excellent	Good	Average	Below Average	Poor	Excellent	Good	Average	Below Average	Poor
11	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
12	How many total hours did it take you to complete this course? Please indicate the number of hours: _____														
13	Please provide any additional feedback on this course: _____														

SECTION III: General

Fill in the circle below numbers **0=Not likely at all, 5=Neutral and 10=Extremely likely**

How likely is it that you would recommend Elite to a friend or colleague?..... 0 1 2 3 4 5 6 7 8 9 10

If your response is less than a 10, what about the course could we change to score a 10? _____

_____

List other topics that you would like to see provided: _____

❑ I agree to allow Elite to use my comments. If you agree, please provide your name and title as you would like to see them to appear.

_____