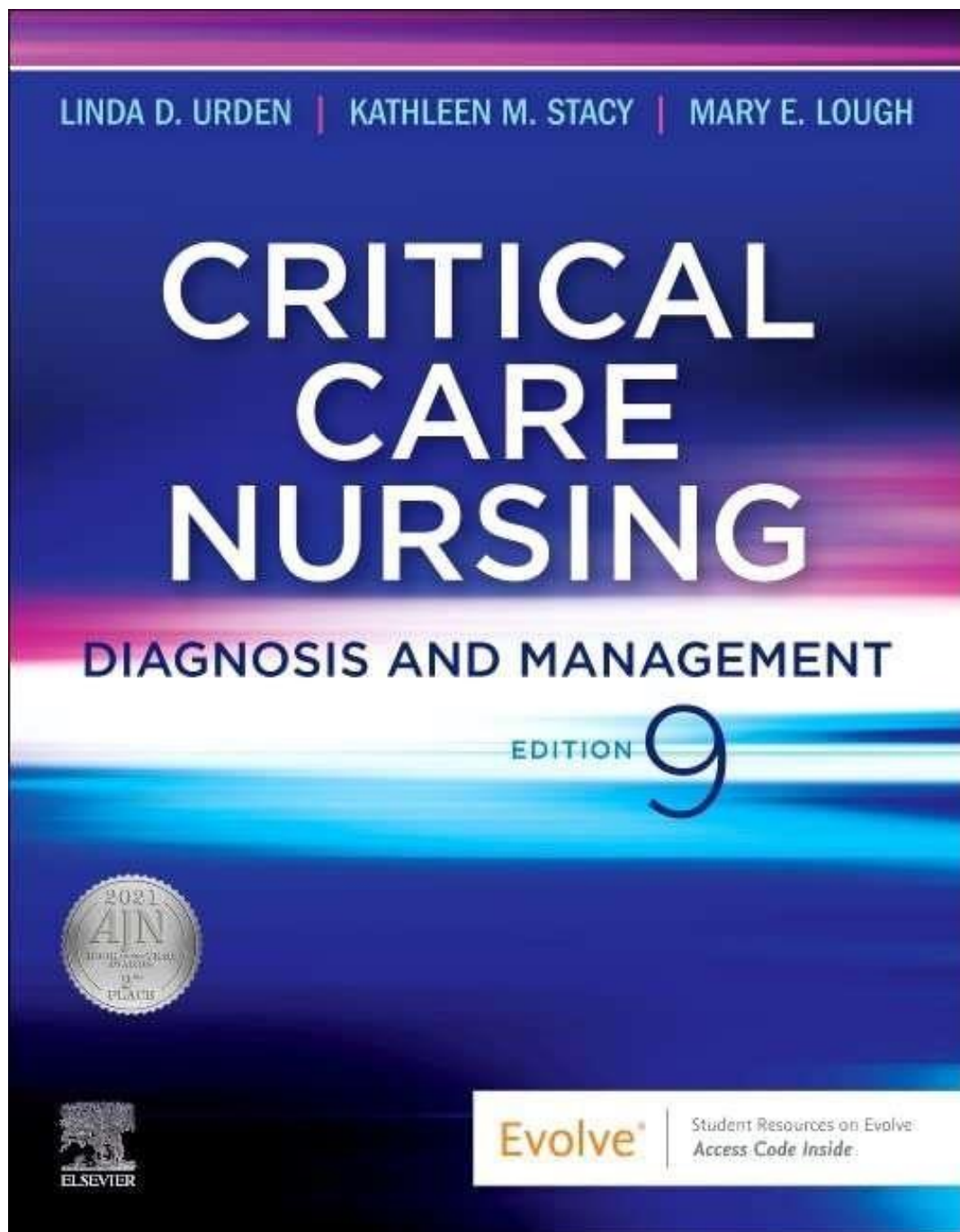


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9th Edition



Chapter 01: Critical Care Nursing Practice

Urden: Critical Care Nursing, 9th Edition

MULTIPLE CHOICE

1. During World War II, what types of wards were developed to care for critically injured patients?
 - a. Intensive care

- b. Triage
- c. Shock
- d. Postoperative

ANS: C

During World War II, shock wards were established to care for critically injured patients. Triage wards establish the order in which a patient is seen or treated upon arrival to a hospital. Postoperative wards were developed in 1900 and later evolved into intensive care units.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 2
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

2. What type of practitioner has a broad depth of specialty knowledge and expertise and manages complex clinical and system issues?
- a. Registered nurses
 - b. Advanced practice nurses
 - c. Clinical nurse leaders
 - d. Intensivists

ANS: B

Advanced practice nurses (APNs) have a broad depth of knowledge and expertise in their specialty area and manage complex clinical and systems issues. Intensivists are medical practitioners who manage the critical ill patient. Registered nurses (RNs) are generally direct care providers. Clinical nurse leaders (CNLs) generally do not manage system issues.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 5
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

3. What type of practitioner is instrumental in ensuring care that is evidence based and that safety programs are in place?
- a. Clinical nurse specialist
 - b. Advanced practice nurse
 - c. Registered nurses
 - d. Nurse practitioners

ANS: A

Clinical nurse specialists (CNSs) serve in specialty roles that use their clinical, teaching, research, leadership, and consultative abilities. They are instrumental in ensuring that care is evidence based and that safety programs are in place. Advanced practice nurses (APNs) have a broad depth of knowledge and expertise in their specialty area and manage complex clinical and systems issues. Registered nurses are generally direct care providers. Nurse practitioners (NPs) manage direct clinical care of groups of patients.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 6
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

4. Which professional organization administers critical care certification exams for registered nurses?
- State Board of Registered Nurses
 - National Association of Clinical Nurse Specialist
 - Society of Critical Care Medicine
 - American Association of Critical-Care Nurses

ANS: D

American Association of Critical-Care Nurses (AACN) administers certification exams for registered nurses. The State Board of Registered Nurses (SBON) does not administer certification exams. National Association of Clinical Nurse Specialists (NACNS) does not administer certification exams. Society of Critical Care Medicine (SCCM) does not administer nursing certification exams for registered nurses.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 7
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC: NCLEX:
Safe and Effective Care Environment

5. Emphasis is on human integrity and stresses the theory that the body, mind, and spirit are interdependent and inseparable. This statement describes which methodology of care?
- Holistic care
 - Individualized care
 - Cultural care
 - Interdisciplinary care

ANS: A

Holistic care focuses on human integrity and stresses that the body, mind, and spirit are interdependent and inseparable. Individualized care recognizes the uniqueness of each patient's preferences, condition, and physiologic and psychosocial status. Cultural diversity in health care is not a new topic, but it is gaining emphasis and importance as the world becomes more accessible to all as the result of increasing technologies and interfaces with

places and peoples. Interdisciplinary care is care among a variety of health care professionals with the patient's health as the common goal.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 12
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

6. The American Association of Critical-Care Nurses (AACN) has developed short directives that can be used as quick references for clinical use that are known as
- a. Critical Care Protocol.
 - b. Practice Policies.
 - c. Evidence-Based Research.
 - d. Practice Alerts.

ANS: D

The American Association of Critical-Care Nurses (AACN) has promulgated several evidence-based practice summaries in the form of "Practice Alerts." Evidence-based nursing practice considers the best research evidence on the care topic along with clinical expertise of the nurse and patient preferences. Critical care protocol and practice policies are established by individual institutions.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 9
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

7. What type of therapy is an option to conventional treatment?
- a. Alternative
 - b. Holistic
 - c. Complementary
 - d. Individualized

ANS: A

The term *alternative* denotes that a specific therapy is an option or alternative to what is considered conventional treatment of a condition or state. The term *complementary* was proposed to describe therapies that can be used to complement or support conventional treatments. Holistic care focuses on human integrity and stresses that the body, mind, and spirit are interdependent and inseparable. Individualized care recognizes the uniqueness of each patient's preferences, condition, and physiologic and psychosocial status.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 16
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice
MSC: NCLEX: Safe and Effective Care Environment

8. Prayer, guided imagery, and massage are all examples of what type of treatment? a. Alternative therapy
- b. Holistic care
 - c. Complementary care
 - d. Individualized care

ANS: C

The term *complementary* was proposed to describe therapies that can be used to complement or support conventional treatments. Spirituality, prayer, guided imagery, massage, and animal-assisted therapy are all examples of complementary care. The term *alternative* denotes that a specific therapy is an option or alternative to what is considered conventional treatment of a condition or state. Holistic care focuses on human integrity and stresses that the body, mind, and spirit are interdependent and inseparable. Individualized care recognizes the uniqueness of each patient's preferences, condition, and physiologic and psychosocial status.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 16 | p. 17
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

9. What is the systematic decision-making model used by nurses termed?
- a. Nursing diagnosis
 - b. Nursing interventions
 - c. Nursing evaluations
 - d. Nursing process

ANS: D

The nursing process is a systematic decision-making model that is cyclic, not linear. An essential and distinguishing feature of any nursing diagnosis is that it describes a health condition. Nursing interventions constitute the treatment approach to an identified health alteration. Evaluation of attainment of the expected patient outcomes occurs formally at intervals designated in the outcome criteria.

PTS: 1 DIF: Cognitive Level: Understanding REF: n/a
OBJ: Nursing Process Step: General TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

10. What is a health condition primarily resolved by nursing interventions or therapies called? a. Nursing diagnosis
- b. Nursing interventions
 - c. Nursing outcomes
 - d. Nursing process

ANS: A

An essential and distinguishing feature of any nursing diagnosis is that it describes a health condition. Nursing interventions constitute the treatment approach to an identified health alteration. Evaluation of attainment of the expected patient outcomes occurs formally at intervals designated in the outcome criteria. The nursing process is a systematic decision-making model that is cyclic, not linear.

PTS: 1 DIF: Cognitive Level: Remembering REF: n/a
OBJ: Nursing Process Step: General TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

11. Designing therapeutic activities that move a patient from one state of health to another is an example of which of the following?
- Nursing diagnosis
 - Nursing interventions
 - Nursing outcomes
 - Nursing process

ANS: B

Nursing interventions constitute the treatment approach to an identified health alteration. An essential and distinguishing feature of any nursing diagnosis is that it describes a health condition. Evaluation of attainment of the expected patient outcomes occurs formally at intervals designated in the outcome criteria. The nursing process is a systematic decision-making model that is cyclic, not linear.

PTS: 1 DIF: Cognitive Level: Remembering REF: n/a
OBJ: Nursing Process Step: General TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

12. A patient was admitted to a rural critical care unit in Montana. Critical care nurses are assisting with monitoring and care of the patient from the closest major city. What is this type of practice termed?
- Tele-nursing
 - Tele-ICU
 - Tele-informatics
 - Tele-hospital

ANS: B

Tele-ICU is a form of telemedicine. Telemedicine was initially used in outpatient areas, remote rural geographic locations, and areas where there was a dearth of medical providers. Currently, there are tele-ICUs in areas where there are limited resources onsite. However, experts (critical care nurses, intensivists) are located in a central distant site.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 19
OBJ: Nursing Process Step: General TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

13. Which core competency for interprofessional practice can be described as working with individuals of other professions to maintain a climate of mutual respect and shared values? a. Interprofessional teamwork and team-based care
b. Values and ethics for interprofessional practice
c. Interprofessional communication
d. Roles and responsibilities for collaborative practice

ANS: B

Values and ethics for interprofessional practice mean working with individuals of other professions to maintain a climate of mutual respect and shared values. Roles and responsibilities for collaborative practice include using knowledge of one's own role and the roles of other professions to appropriately assess and address the health care needs of the patients and populations served. Interprofessional communication includes communicating with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to maintaining health and treatment of disease. Interprofessional teamwork and team-based care means applying relationship-building values and principles of team dynamics to perform effectively in different team roles to plan and deliver patient population-centered care that is safe, timely, efficient, effective, and equitable.

PTS: 1 DIF: Cognitive Level: Remembering
REF: p. 5 | Box 1-5 1-4 ed.9 OBJ: Nursing Process Step: General
TOP: Critical Care Nursing Practice
MSC: NCLEX: Safe and Effective Care Environment

14. What is the stepwise decision-making flowchart for a specific care process named? a. Algorithm
b. Practice guideline
c. Protocol
d. Order set

ANS: A

An *algorithm* is a stepwise decision-making flowchart for a specific care process or processes. A *practice guideline* is usually created by an expert panel and developed by a professional organization. *Protocols* are more directive and rigid than guidelines, and providers are not supposed to vary from a protocol. An *order set* consists of preprinted provider orders that are used to expedite the order process after a standard has been validated through analytic review of practice and research.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 22
OBJ: Nursing Process Step: Intervention TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

15. Which nursing intervention continues to be one of the most error-prone for critical care nurses?
- Inappropriate care
 - Intimidating and disruptive clinician behavior
 - Injury to patients by falls
 - Medication administration

ANS: D

Medication administration continues to be one of the most error-prone nursing interventions for critical care nurses. Intimidating and disruptive clinician behaviors can lead to errors and preventable adverse patient outcomes. Patient safety has been described as an ethical imperative and one that is inherent in health care professionals' actions and interpersonal processes; examples include inappropriate care and injury to patients by falls.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 25
OBJ: Nursing Process Step: Assessment TOP: Critical Care Nursing Practice
MSC: NCLEX: Safe and Effective Care Environment

MULTIPLE RESPONSE

1. What considerations are taken into account in evidence-based nursing practice? (*Select all that apply, one, some, or all.*)
- Clinical expertise of the nurse
 - Availability of staff and facility equipment
 - Research evidence on the topic
 - Patient knowledge of the disease
 - Patient preference regarding care

ANS: A, C, E

Evidence-based nursing practice considers the best research evidence on the care topic along with clinical expertise of the nurse and patient preferences. For instance, when determining the frequency of vital sign measurement, the nurse would use available research and nursing judgment (stability, complexity, predictability, vulnerability, and resilience of the patient). Availability of staff and facility equipment and the patient's knowledge of the disease do not factor into evidence-based nursing practices.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 9

OBJ: Nursing Process Step: Assessment TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

2. The concept of *diversity* encompasses what thoughts and actions? (*Select all that apply, one, some, or all.*)
- Sensitivity to ethnic differences
 - Openness to different lifestyles
 - Openness to different values
 - Reticence to different beliefs
 - Lack of concern regarding different opinions

ANS: A, B, C

Diversity includes not only ethnic sensitivity but also sensitivity to openness to difference lifestyles, opinions, values, and beliefs. Reticence and lack of concern are not part of the concept of diversity.

PTS: 1 DIF: Cognitive Level: Evaluating REF: p. 5
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice MSC:
NCLEX: Safe and Effective Care Environment

3. According to American Association of Critical-Care Nurses, what are the responsibilities of a critical care nurse? (*Select all that apply, one, some, or all.*)
- Respecting the values, beliefs, and rights of the patient
 - Intervening when the best interest of the patient is in question
 - Helping the patient obtain necessary care
 - Making decisions for the patient and patient's family
 - Monitoring and safeguarding the quality of care the patient receives
 - Acting as a gatekeeper for the patient, the patient's family, and other health care professionals

ANS: A, B, C, E

American Association of Critical-Care Nurses (AACN) critical care nurse role responsibilities include respecting the values, beliefs, and rights of the patient; intervening when the best interest of the patient is in question; helping the patient obtain necessary care; and monitoring and safeguarding the quality of care the patient receives. The nurse is not to make decisions for the patient or the patient's family but should support their decisions. The nurse should act as a liaison, not a gatekeeper, for the patient and the patient's family and other health care professionals.

PTS: 1 DIF: Cognitive Level: Evaluating REF: p. 5 | Box 1-1
OBJ: Nursing Process Step: N/A TOP: Critical Care Nursing Practice
MSC: NCLEX: Safe and Effective Care Environment

Chapter 02: Ethical Issues

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MULTIPLE CHOICE

1. What is the difference between ethics and morals?
 - a. Ethics is more concerned with the “why” of behavior.
 - b. Ethics provides a framework for evaluation of the behavior.
 - c. Ethics is broader in scope than morals.
 - d. Ethics concentrates on the right or wrong behavior based on religion and culture values.

ANS: A

Ethics are concerned with the basis of the action rather than whether the action is right or wrong, good or bad.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 12
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

2. A patient’s wife has been informed by the practitioner that her spouse has permanent quadriplegia. The wife states that she does not want anyone to tell the patient about his injury. The patient asks the nurse about what has happened. The nurse has conflicting emotions about how to handle the situation. What is the nurse experiencing?
 - a. Autonomy
 - b. Moral distress
 - c. Moral doubt
 - d. Moral courage

ANS: B

The nurse has been placed in a situation initially causing moral distress and is struggling with determining the ethically appropriate action to take. Moral courage is the freedom to advocate for oneself, patients, and peers. Autonomy is an ethical principle. Moral doubt is not part of the American Association of Critical-Care Nurses (AACN) framework. *The 4A’s to Rise Above Moral Distress*.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 12
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

3. By what action can critical care nurses best enhance the principle of autonomy?
 - a. Presenting only the information to prevent relapse in a patient
 - b. Assisting with only tasks that cannot be done by the patient
 - c. Providing the patient with all of the information and facts

- d. Guiding the patient toward the best choices for care

ANS: C

Patients and families must have all the information about a certain situation to make an autonomous decision that is best for them.

PTS: 1 DIF: Cognitive Level: Applying REF: p. 15 | p. 16
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

4. Which ethical principle is most important when soliciting informed consent from a patient? a. Nonmaleficence
b. Fidelity
c. Beneficence
d. Veracity

ANS: D

Veracity is important when soliciting informed consent because the patient needs to be aware of all potential risks of and benefits to be derived from specific treatments or their alternatives.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 15
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

5. The principle of respect for persons incorporates what additional concepts?
a. Confidentiality and privacy
b. Truth and reflection
c. Autonomy and justice
d. Beneficence and nonmaleficence

ANS: A

Confidentiality of patient information and privacy in patient interactions must be protected and honored by health care providers out of respect for persons. Confidentiality is a right involving the sharing of patient information with only those involved in the patient's care. Privacy includes confidentiality but goes further to include the right to privacy of person and personal space, such as ensuring that a patient is adequately covered during a procedure.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 16
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

6. Which action best reflects the concept of beneficence within the critical care setting?
- Advocating for equitable health care
 - Promoting for safe patient care
 - Ensuring equal access for those with the same condition or diagnosis
 - Confirming technologic advances are available to all in a given community

ANS: B

Advocating for patient safety is an example of beneficence. The other actions are examples of justice.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 15 | Box 2-2
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

7. Which statement best describes the concept of paternalism?
- Encouraging the patient to ambulate after surgery
 - Demanding the patient get out of bed to sit in a chair
 - Following the patient's advance directive despite family objections
 - Administering antibiotics for a viral infection

ANS: B

Encouraging the patient to ambulate after surgery is an example of beneficence. Demanding the patient get out of bed to sit in a chair is an example of paternalism. Following the patient's advance directive despite family objections is an example of autonomy. Administering antibiotics for a viral infection is an example of physiologic futility.

PTS: 1 DIF: Cognitive Level: Applying REF: p. 18
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

8. Which statement regarding the Code of Ethics for Nursing is accurate?
- The Code of Ethics for Nurses is usurped by state or federal laws.
 - It allows the nurse to focus on the good of society rather than the uniqueness of the patient.
 - The Code of Ethics for Nurses was recently adopted by the American Nurses Association.
 - It provides society with a set of expectations of the nursing profession.

ANS: D

The Code of Ethics for Nursing provides a framework for the nurse to follow in ethical decision-making and provides society with a set of expectations of the profession.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 19
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

9. Ethical decisions are best made by performing which action?
- Following the guidelines of a framework or model
 - Having the patient discuss alternatives with the practitioner or nurse
 - Prioritizing the greatest good for the greatest number of persons
 - Studying by the Ethics Committee after all diagnostic data are reviewed

ANS: A

To facilitate the ethical decision-making process, a model or framework must be used so that all involved will consistently and clearly examine the multiple ethical issues that arise in critical care.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 20
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

10. What is the first step of the ethical decision-making process?
- Consulting with an authority
 - Identifying the health problem
 - Delineating the ethical problem from other types of problems
 - Identifying the patient as the primary decision maker

ANS: B

Step one involves identifying the major aspects of the patient's medical and health problems. Consulting an authority is not always necessary in the process. Delineating the ethical problem from other types of problems may not be necessary. Identification of the patient as primary decision maker is not part of the process.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 20
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

11. A practitioner is suggesting treatments to a patient that are contrary to the patient's preferences. What is this practice called?
- Invaluable deficiency
 - Physiologic uselessness
 - Ethical futility
 - Situational insufficiency

ANS: C

Ethical futility is treatment that will not serve the underlying interests, values, and preferences of the patient such as when a practitioner's idea of benefit is contrary to the values and preferences of the patient.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 18

OBJ: Nursing Process Step: General TOP: Ethics

MSC: NCLEX: Safe and Effective Care Environment

12. Institutional ethics committees (IECs) review ethical cases that are problematic for the practitioner. What is the major function of an IEC?
- Consultation with purely binding recommendations
 - Support and education to health care providers
 - Conflict resolution for moral dilemmas
 - Recommendations that are binding in all cases

ANS: B

The Institutional Ethics Committee (IEC) can function in a variety of ways, serving as consultants, providing education, and helping resolve ethical conflicts or dilemmas for health care providers. Recommendations from the formal IEC may or may not be binding and are relative to the situation at hand.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 22

OBJ: Nursing Process Step: General TOP: Ethics MSC:

NCLEX: Safe and Effective Care Environment

13. Developing an organizational policy that supports unobstructed access to the ethics committee by health care team members is one example of a proactive approach to dealing with what issue?
- Moral distress
 - Surrogate decision makers
 - Paternalism
 - Patient advocacy

ANS: A

Every organization must develop policies that support unobstructed access to resources such as the ethics committees to mitigate the harmful effects of moral distress in the pursuit of creating a healthy work environment.

PTS: 1 DIF: Cognitive Level: Remembering

14. The nurse is using the SFNO approach to case analysis to facilitate ethical decision-making. What justification criteria may be used to help explain the reasons for selection of one option over another? a. Effectiveness
- Usefulness
 - Legal ramifications
 - Economics

ANS: A

Justification criteria may be helpful in explaining the reasons for selecting one or two options as superior. These include necessity, effectiveness, proportionality, least infringement, and proper process. Usefulness, legal ramifications, and economics are not part of the criteria.

PTS: 1

DIF: Cognitive Level: Remembering

REF: p. 21 | Box 2-8

OBJ: Nursing Process Step: Assessment TOP: Ethics

MSC:

NCLEX: Safe and Effective Care Environment

15. The nurse is using the SFNO approach to case analysis to facilitate ethical decision-making. Which question is important to ask when considering stakeholders?
- Are there reasons to give priority to one stakeholder over another?
 - Will the stakeholders abide by the decision?
 - Will the stakeholders want to be present during the ethics consultation?
 - Do the stakeholders understand how to use the SFNO model?

ANS: A

In the SFNO model, questions about stakeholders include:

- Who has a stake in the decision being made? Why?
- Who will be significantly affected by the decision made? Why?
- Are there reasons to give priority to one stakeholder over another? The other questions are not relevant to this process.

PTS: 1

DIF: Cognitive Level: Evaluating

REF: p. 21 | Box 2-8

OBJ: Nursing Process Step: General

TOP: Ethics MSC:

NCLEX: Safe and Effective Care Environment

MULTIPLE RESPONSE

1. Which is/are criteria for defining an ethical dilemma? (*Select all that apply, one, some, or all.*)
 - An awareness of different options
 - An issue in which only one viable option exists
 - The choice of one option compromises the option not chosen

- d. An issue that has different options
- e. When the healthcare team is in agreement on what to do

ANS: A, C, D

The criteria for identifying an ethical dilemma are threefold: (1) an awareness of the different options, (2) an issue that has different options, and (3) the choice of one option over another compromises the option not chosen.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 21 | Box 2-8
OBJ: Nursing Process Step: Assessment TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

2. Which situations are early signs of an ethical dilemma? (*Select all that apply, one, some, or all.*)
- a. Disagreements among health care team members
 - b. Failure to discuss end-of-life issues with patient
 - c. Aggressive pain management
 - d. Belief that treatment is harmful
 - e. Following the patient's advance directive despite family objections
 - f. Providing hope to the patient's family

ANS: A, B, D

Disagreements among health care team members, failure to discuss end-of-life issues with patient, and belief that treatment is harmful are early signs or indicators of an ethical dilemma.

PTS: 1 DIF: Cognitive Level: Applying REF: p. 19 | Box 2-5
OBJ: Nursing Process Step: General TOP: Ethics MSC:
NCLEX: Safe and Effective Care Environment

Chapter 03: Legal Issues

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MULTIPLE CHOICE

1. What is the legal standard of care for a nurse's actions?
- a. Minimal competency under the state Nurse Practice Act
 - b. The ability to distinguish what is right or wrong for the patient
 - c. The demonstration of satisfactory knowledge of policies and procedures
 - d. The care that an ordinary prudent nurse would perform under the same circumstances

ANS: D

The legal standard of care for nurses is established by expert testimony and is generally “the care that an ordinarily prudent nurse would perform under the same circumstances.”

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 27
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

2. A patient is admitted with chest pain, and his electrocardiogram shows elevated ST segments. The nurse bases her plan of care on the nursing diagnosis of pneumonia. What type of negligence may be present?
- Assessment failure
 - Planning failure
 - Implementation failure
 - Evaluation failure

ANS: B

Basing nursing care on an erroneous diagnosis is a failure in planning. Standards of care include *assessment*, the collection of relevant data pertinent to the patient’s health or situation; *diagnosis*, analysis of the assessment data in determining diagnosis and care issues; *implementation*, coordinating care delivery and plan and using strategies to promote health and a safe environment; and *evaluation*, evaluation of the progress of the patient toward attaining outcomes.

PTS: 1 DIF: Cognitive Level: Analyzing
REF: p. 27 | p. 30 | Box 3-3 OBJ: Nursing Process Step: Assessment TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

3. What is an injury resulting from the failure to meet an ordinary duty called?
- Negligence
 - Malpractice
 - Assault
 - Battery

ANS: A

Injury resulting from the failure to meet an ordinary duty or standard of care is negligence. Malpractice is a specialized form of negligence. Assault and battery are examples of intentional acts.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 27 | p. 28
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

4. A night nurse is notified by the laboratory that the patient has a critical magnesium level of 1.1 mEq/L. The patient has a do-not-resuscitate order. The nurse does not notify the practitioner

- because of the patient's code status. In doing so, the nurse is negligent for what?
- Failure to analyze the level of care needed by the patient
 - Failure to respect the patient's wishes
 - Wrongful death
 - Failure to take appropriate action

ANS: D

Nurses caring for acutely and critically ill patients must appropriately notify physicians of situations warranting treatment actions. Furthermore, the full no-code, do-not-resuscitate order does not exclude this patient from receiving treatment to correct the critical laboratory value. Failure to take appropriate action in cases involving acutely and critically ill patients has included not only physician-notification issues but also failure to follow physician orders, failure to properly treat, and failure to appropriately administer medication.

PTS: 1 DIF: Cognitive Level: Applying REF: p. 28 | p. 29
OBJ: Nursing Process Step: Assessment | Nursing Process Step: Implementation TOP:
Legal MSC: NCLEX: Safe and Effective Care Environment

5. Two nurses are talking about a patient's condition in the cafeteria. In doing so, these nurses could be accused of what?
- Failure to take appropriate action
 - Failure to timely communicate patient findings
 - Failure to preserve patient privacy
 - Failure to document patient information

ANS: C

Nurses have a duty to preserve patient privacy, and failure to do so is a breach of patient confidentiality and failure to preserve patient privacy. Nurses should also refrain from having discussions about specific patients with anyone except other health care professionals involved in the care of the patient. When discussing specific patients with other health care professionals, it is imperative that patient-specific discussions occur in nonpublic settings. Discussions about specific patients are never appropriate in public areas such as elevators, cafeterias, gift shops, and parking lots.

PTS: 1 DIF: Cognitive Level: Applying REF: p. 31
OBJ: Nursing Process Step: Assessment TOP: Legal MSC:
NCLEX: Safe and Effective Care Environment

6. What is negligence called when it applies to an individual who is a professional?
- Breach
 - Malpractice
 - Duty
 - Harm

ANS: B

Whereas negligence claims may apply to anyone, malpractice requires the alleged wrongdoer to have special standing as a professional. If a nurse caring for acutely and critically ill patients is accused of failing to act in a manner consistent with the standard of care, that nurse is subject to liability for professional malpractice (negligence applied to a professional).

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 28
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

7. A nurse fails to recognize an intubated patient's need for suctioning. The endotracheal tube becomes clogged, and the patient has a respiratory arrest. What type of negligence may be present?
- Assessment failure
 - Planning failure
 - Implementation failure
 - Evaluation failure

ANS: A

Nurses have a duty to assess and analyze the care required by each patient they care for. Failure to do so puts the nurse at risk for negligence related to failure to assess the patient's needs.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 30
OBJ: Nursing Process Step: Assessment TOP: Legal MSC:
NCLEX: Safe and Effective Care Environment

8. What element of malpractice is based on the existence of a nurse-patient relationship? a. Duty
- Breach
 - Damages
 - Harm caused by the breach

ANS: A

Duty to the injured party is the first element of a malpractice case and is premised on the existence of a nurse-patient relationship. *Breach* is failure to act consistently within applicable standards of care. *Harm caused by the breach* occurs when the patient sustained injuries because of the breach of duty. *Damages* are derived from the harm or injury sustained by the acutely or critically ill patient and are calculated as a dollar amount.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 28
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

9. A patient is getting heparin by intravenous infusion. The nurse received an order to increase the heparin infusion rate and obtain a partial thromboplastin time (PTT) in 1 hour. The PTT was drawn correctly and revealed a critically elevated level. The nurse was busy with another patient and failed to report the critical result to the physician within 30 minutes according to the facility's policy. Subsequently, the patient sustained a massive intracerebral bleed. What type of negligence may be present?
- Assessment failure
 - Planning failure
 - Implementation failure
 - Evaluation failure

ANS: C

Failure to communicate and document patient findings in a timely manner is a form of failure to implement appropriate action.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 30
OBJ: Nursing Process Step: Assessment TOP: Legal MSC:
NCLEX: Safe and Effective Care Environment

10. On the way to surgery, a patient expresses doubt about proceeding with the planned procedure. The patient states that the doctor did not explain it very well and she would like to talk to her again before starting the procedure. The nurse knows the surgery schedule is very tight, reassures the patient that everything will be all right, and administers the preoperative sedation. This scenario describes what possible type of negligence?
- Assessment failure
 - Planning failure
 - Implementation failure
 - Evaluation failure

ANS: D

The nurse has a duty to act as a patient advocate, in this case by holding the preoperative sedation until the doctor and the patient can speak and the patient is satisfied that she has the necessary information to make this decision.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 31
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

11. Which statement is accurate regarding a nurse's job description?

- a. As long as the nurse follows the American Nurses Association Standards of Care, the job description is irrelevant in a negligence allegation.
- b. Job descriptions must be reflective of the accepted standard of care.
- c. Institution-specific job descriptions are not legally acceptable.
- d. Job descriptions should be vague in describing nursing functions to avoid claims of negligence.

ANS: B

Although job descriptions can be institution specific, they should be reflective of the national and community standards of care. Job descriptions are based on professional accountability as outlined by state boards of nursing and standards of practice.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 29
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

12. The ability to practice as a licensed professional nurse is a privilege granted by what entity? a.
- a. Employee contract
 - b. State legislature
 - c. State boards of nursing
 - d. Congress

ANS: B

The very ability to practice as a licensed professional nurse is a privilege granted by the state and is a function of each state's authority to promote and protect the health and welfare of its citizens. State boards of nursing (BON) are administrative bodies created by—and that operate under—state statutes, or more generally written state laws created by state legislatures and signed by the governor. In turn, the BONs develop more specific rules (or regulations) for obtaining and maintaining licensure.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 24
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

13. Why is restraining a competent patient against his or her wishes considered an intentional tort?
- a. The nurse did not document the patient's need for restraints.
 - b. The nurse failed to get a physician's order for restraints.
 - c. The nurse touched the patient in an unauthorized manner.
 - d. The nurse does not inform the patient that the restraints were needed.

ANS: C

Assault and battery are examples of intentional torts that are frequently brought against health care providers. Battery occurs if the health care professional actually touches the patient in an unauthorized manner. The act of restraining a patient without consent is battery.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 32

OBJ: Nursing Process Step: Intervention TOP: Legal MSC:

NCLEX: Safe and Effective Care Environment

14. What is the best action a nurse could take to prevent allegations of malpractice?
- Carrying malpractice insurance
 - Clarifying orders with the nursing supervisor
 - Delegating care to nursing assistants
 - Providing care according to standards of practice

ANS: D

Maintaining standards of practice is the best way to reduce risk. The hallmark of risk reduction is knowledge of the professional standards of care, delivery and documentation of that care, and consistent demonstration that the standards are met. Nurses caring for acutely and critically ill patients may be alleged to have acted in a manner that is inconsistent with standards of care or standards of professional practice and may find themselves involved in civil litigation that focuses in whole or in part on the alleged failure.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 24

OBJ: Nursing Process Step: N/A TOP: Legal

MSC: NCLEX: Safe and Effective Care Environment

15. While participating in rounds, a nurse is interrupted by the wife of a ventilated patient, who informs the nurse that her husband is having difficulty breathing. The patient is found to be disconnected from the ventilator and unresponsive when the nurse enters the room after rounds. The alarm mode on the ventilator had been turned off. This situation is an example of what legal situation?
- Assault
 - Battery
 - Injury
 - Malpractice

ANS: D

All four elements of negligence are present: duty and standard of care, breach of duty, causation, and injury. If a nurse caring for acutely and critically ill patients is accused of failing to act in a manner consistent with the standard of care, that nurse is subject to liability for professional malpractice (negligence applied to a professional). Assault occurs if the patient fears harmful or offensive touching. Battery is any intentional act that brings about actual harmful or offensive contact with the plaintiff.

PTS: 1 DIF: Cognitive Level: Evaluating REF: p. 27 | p. 28
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

16. After admission a patient shares with the nurse a concern that her adult children will not be able to reach agreement on what to do if she is no longer able to make decisions for herself. The nurse informs the patient that it is possible to grant authority to one person to make decision through which mechanism?
- Court-appointed guardian
 - Do-not-resuscitate order
 - Durable power of attorney for health care
 - Living will

ANS: C

A durable power of attorney for health care includes legally binding documents that allow individuals to specify a variety of preferences, particular treatments he or she wants to avoid, and circumstances in which he or she wishes to avoid them. The durable power of attorney for health care is a directive through which a patient designates an “agent,” someone who will make decisions for the patient if the patient becomes unable to do so. A living will specifies that if certain circumstances occur, such as terminal illness, the patient will decline specific treatments, such as cardiopulmonary resuscitation and mechanical ventilation.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 36
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

17. In which situation did the nurse disregard the patient’s right to privacy?
- Informing the physician that the patient was verbalizing suicidal thoughts
 - Notifying the health department of a patient’s tuberculosis diagnosis
 - Reporting possible dependent-adult abuse to the police
 - Warning a visitor to wear gloves when giving a back rub because the patient is HIV positive

ANS: D

Telling a visitor of the patient’s HIV status violated the patient’s right to privacy. The nurse could have ensured the visitor’s safety by providing gloves and explaining universal precautions.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 31
OBJ: Nursing Process Step: N/A TOP: Legal MSC: NCLEX: Safe
and Effective Care Environment

18. Which statement best describes the definition of assault?
- An intentional act that causes the patient to believe that harm may have been done
 - A statement that causes injury to the patient's standing in the community
 - Negligence that results in harm to a spousal relationship
 - An intentional act that brings about harm or offensive contact with the patient

ANS: A

Assault occurs if the patient fears harmful or offensive touching. Battery is defined as an intentional act that brings about harm or offensive contact with the patient.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 32
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

19. During transport to the operating room for mitral valve replacement, a patient with a signed consent form says that she does not want to go through with the surgery and asks to be returned to her room. What is the best response from the nurse?
- "The operating room is prepared; let's not keep the surgeon waiting."
 - "You have the right to cancel surgery, but it could be weeks before you are rescheduled."
 - "You sound frightened; tell me what you are thinking."
 - "Your preoperative medications will have you feeling more relaxed in a minute; it will be OK."

ANS: C

The patient has the right to withdraw consent at any time. The nurse must listen and then clarify whether that is really what the patient desires. If it is, the surgeon should then be notified.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 34
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

20. Which situation would be considered a failure of proper implementation?
- Not identifying and analyzing symptoms appropriately
 - Not documenting the patient's response to pain medication
 - Not recognizing a malfunctioning chest tube
 - Not asking the patient about code or no code wishes

ANS: B

Nurses caring for acutely and critically ill patients are required not only to take appropriate action but also to accurately document their findings, interventions performed, and patients' response to those interventions. Failure to thoroughly and accurately document any aspect of care gives rise to negligence causes of action.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 30
OBJ: Nursing Process Step: N/A TOP: Legal
MSC: NCLEX: Safe and Effective Care Environment

21. Which agency is responsible for maintaining the expectations and limits of nursing practice?
- State Hospital Association
 - Court system
 - State Board of Nursing
 - State Department of Health

ANS: C

State Boards of Nursing (SBONs) maintain expectations for and limits of nursing practice in each state through the licensure of nurses and also through challenges to nonnurses engaged in professional activities that intrude upon the nursing scope of practice.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 24
OBJ: Nursing Process Step: N/A TOP: Nurse Practice Act MSC:
NCLEX: Safe and Effective Care Environment

22. A nurse providing care for a patient with a recent tracheostomy notes the presence of an ulceration or wound at the tracheotomy site. The nature of the ulceration or wound clearly indicates it has been present for at least several days. The nurse finds no documentation regarding the ulceration or wound since the insertion of the tracheostomy tube 12 days earlier. This situation is an example of what legal situations?
- Assessment and implementation failure
 - Failure to appropriately diagnose
 - Failure to follow practitioner's orders
 - Planning and evaluation failure

ANS: A

This situation is an example of the prior nurses' failure to assess and implement appropriately. Assessment and implementation failures are related to a failure to assess and analyze a care need, communicate findings to a physician, take appropriate action, and document.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 30
OBJ: Nursing Process Step: N/A TOP: Legal

23. The patient received a blood transfusion based on test results of critically low hemoglobin. The nurse records vital signs (VS) per hospital protocol. One hour after the transfusion was started, the nurse records VS as temperature (T) 102° F, pulse (P) 110, respirations (R) 24, blood pressure (BP) 136/88. The nurse continues to administer the blood. This situation is an example of what legal situation?
- Malpractice
 - Assault
 - Battery
 - Libel

ANS: A

To avoid liability associated with administration of blood and blood products, nurses must carefully follow organizational procedures and protocols that govern these interventions. *Battery* is any intentional act that brings about actual harmful or offensive contact with the plaintiff. *Assault* occurs if the patient fears harmful or offensive touching. *Libel* is defined as publishing false statements that are damaging to a person's reputation.

PTS: 1 DIF: Cognitive Level: Analyzing REF: p. 33 | p. 34
OBJ: Nursing Process Step: N/A TOP: Legal Issues MSC:
NCLEX: Safe and Effective Care Environment

MULTIPLE RESPONSE

1. What elements or criteria must be present for negligence cases to go forward? (*Select all that apply, one, some, or all.*)
- Duty to another person
 - Acknowledgement of wrong doing
 - Harm that would not have occurred in the absence of the breach
 - Breach of duty
 - Damages that have a monetary value

ANS: A, C, D, E

There are four criteria or elements for all negligence cases: (1) duty to another person; (2) breach of that duty; (3) harm that would not have occurred in the absence of the breach (causation); and (4) damages that have a monetary value. All four elements must be satisfied for a case to go forward. Acknowledgment of wrong doing is not required.

PTS: 1 DIF: Cognitive Level: Applying REF: p. 27 | p. 28
OBJ: Nursing Process Step: N/A TOP: Legal Issues MSC: NCLEX:
Safe and Effective Care Environment

2. Which actions by a nurse demonstrate the act of battery? (*Select all that apply, one, some, or all.*)

- a. Performing cardiopulmonary resuscitation (CPR) on a patient with a do-not-resuscitate (DNR) order
- b. Threatening to punch someone
- c. Sexual misconduct with a patient
- d. Drawing blood without the patient's consent
- e. Threatening to restrain a patient for not using his or her call light for mobility assistance

ANS: A, C, D

Battery is any intentional act that brings about actual harmful or offensive contact with the plaintiff. Battery occurs if the health care professional actually touches the patient in an unauthorized manner. Assault occurs if the patient fears harmful or offensive touching. Assault may be alleged if the patient was aware that he or she was going to be touched in a manner not authorized by informed consent. Threatening to punch someone and threatening to restrain a patient for not using his or her call light for mobility assistance are examples of assault.

PTS: 1 DIF: Cognitive Level: Applying REF: p. 32
OBJ: Nursing Process Step: N/A TOP: Legal Issues MSC: NCLEX:
Safe and Effective Care Environment

Chapter 04: Genetic Issues

Urden: Critical Care Nursing, 9th Edition

MULTIPLE CHOICE

1. What is a genetic variant that exists in greater than 1% of the population termed?
 - a. Genetic mutation
 - b. Genetic polymorphism
 - c. Genetic deletion
 - d. Tandem repeat

ANS: B

When a genetic variant occurs frequently and is present in 1% or more of the population, it is described as a *genetic polymorphism*. The term *genetic mutation* refers to a change in the DNA genetic sequence that can be inherited that occurs in less than 1% of the population. Genetic material in the chromosome can also be *deleted* and new information from another chromosome can be inserted or can be a *tandem* repeat (multiple repeats of the same sequence).

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 43
OBJ: Nursing Process Step: General TOP: Genetics in Critical Care MSC:
NCLEX: Health Promotion and Maintenance

2. Which type of genetic disorder occurs when there is an interaction between genetic and environmental factors such as that which occurs with type 2 diabetes?
 - a. Chromosome
 - b. Mitochondrial
 - c. Multifactorial disorders
 - d. Allele dysfunction

ANS: C

In multifactorial disorders there is an interaction between vulnerable genes and the environment. Cardiovascular atherosclerotic diseases and type 2 diabetes are examples of multifactorial disorders that result from an interaction of genetic and environmental factors.

PTS: 1 DIF: Cognitive Level: Understanding REF: p. 46
OBJ: Nursing Process Step: General TOP: Genetics in Critical Care MSC:
NCLEX: Health Promotion and Maintenance

3. *Philadelphia translocation* is a specific chromosomal abnormality that occurs from a reciprocal translocation between chromosomes 9 and 22, where parts of these two

chromosomes switch places. This abnormality is associated with which disease? a.

Hemophilia A

- b. Chronic myelogenous leukemia
- c. Obesity
- d. Marfan syndrome

ANS: B

Philadelphia chromosome or *Philadelphia translocation* is a specific chromosomal abnormality associated with chronic myelogenous leukemia. It occurs from a reciprocal translocation between chromosomes 9 and 22, where parts of these two chromosomes switch places. Hemophilia A is a sex-linked inheritance. Obesity is being studied with the FTO gene on chromosome 16. Marfan syndrome is classified as a single-gene disorder.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 42
OBJ: Nursing Process Step: General TOP: Genetics in Critical Care MSC:
NCLEX: Health Promotion and Maintenance

4. What was the goal of the Human Genome Project?
- a. Identifying haplotype tags
 - b. Exposing untaggable SNPs and recombination hot spots
 - c. Producing a catalog of human genome variation
 - d. Mapping all the human genes

ANS: D

The Human Genome Project was a huge international collaborative project that began in 1990 with the goal of making a map of all the human genes (the genome). The final genome sequence was published in 2003. The HapMap project was to identify haplotype tags. The Genome-Wide Association Studies was used to expose untaggable SNPs and recombination hot spots. The 1000 Genomes project was used to map all the human genes.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 49
OBJ: Nursing Process Step: General TOP: Genetics in Critical Care
MSC: NCLEX: Health Promotion and Maintenance

5. The patient is placed under general anesthesia for a carotid endarterectomy. During the surgery, the patient develops muscle contracture with skeletal muscle rigidity, acidosis, and elevated temperature. What is a possible cause for malignant hyperthermia? a. Polymorphism in *RYR1* at chromosome 19q13.1
- b. Variant in the *VKOR1* gene
 - c. Variant in the cytochrome P450 enzyme *CYP2C9* gene
 - d. Halothane overdose

ANS: A

Individuals with polymorphisms in the ryanodine receptor gene (*RYR1*) at chromosome 19q13.1 are at risk of a rare pharmacogenetic condition known as *malignant hyperthermia*. In affected individuals, exposure to inhalation anesthetics and depolarizing muscle relaxants during general anesthesia induces life-threatening muscle contracture with skeletal muscle rigidity, acidosis, and elevated temperature. Warfarin is being researched as a variant in the *VKOR1* gene and in the cytochrome P450 enzyme *CYP2C9* gene.

PTS: 1 DIF: Cognitive Level: Evaluating REF: p. 53 | Box 4-3
OBJ: Nursing Process Step: Diagnosis TOP: Genetics in Critical Care MSC:
NCLEX: Health Promotion and Maintenance

6. What is the study of heredity particularly as it relates to the transfer heritable physical characteristics called? a. Chromatids
b. Karyotype
c. Genetics
d. Histones

ANS: C

Genetics refers to the study of heredity, particularly as it relates to the ability of individual genes to transfer heritable physical characteristics. Each somatic chromosome, also called an autosome, is made of two strands, called *chromatids*, which are joined near the center. A *karyotype* is the arrangement of human chromosomes from largest to smallest. A specialized class of proteins called *histones* organizes the double-stranded DNA into what looks like a tightly coiled telephone cord.

PTS: 1 DIF: Cognitive Level: Remembering REF: p. 54
OBJ: Nursing Process Step: General TOP: Genetics in Critical Care MSC:
NCLEX: Health Promotion and Maintenance

7. What is the study of all the genetic material within the cell and its impact on biologic and physical characteristics called? a. Chromatids
b. Karyotype
c. Genomics
d. Histones

ANS: C

Genomics refers to the study of all of the genetic material within cells and encompasses the environmental interaction and impact on biologic and physical characteristics. Each somatic chromosome, also called an autosome, is made of two strands, called *chromatids*, which are joined near the center. A *karyotype* is the arrangement of human chromosomes from largest