

Kevin's Review - 100 NCLEX Practice Questions

1. During a comprehensive skin examination on a 45-year-old patient with diabetes, the nurse assesses the patient's tactile sensitivity, particularly in the feet, due to concerns about peripheral neuropathy, a common complication of diabetes. While applying varied pressure to different areas of the skin, the nurse explains to the patient the various receptors responsible for the sensation of touch and pressure. As part of the educational session, the nurse poses a question about the type of receptors that are specially adapted to detect continuous pressure deep within the skin. While conducting a skin examination on a patient, the nurse educates them about a type of deeper tactile receptors that play a crucial role in detecting continuous pressure in the skin. What are these receptors called?

- A. Merkel's disks
- B. Meissner's corpuscles
- C. Ruffini's end organs
- D. Pacinian corpuscles

Correct Answer: C. Ruffini's end organs

Ruffini's end organs are deeper tactile receptors that play an important role in detecting continuous pressure in the skin. These specialized receptors transmit signals to the brain, contributing to the ability to sense and adapt to changes in pressure and skin tension.

- **Option A:** Merkel's disks are tactile receptors found in the epidermis and dermal papillae, primarily responsible for light touch and texture differentiation. Although they play an important role in cutaneous sensations, they are not primarily responsible for detecting deep, continuous pressure.
- **Option B:** Located primarily in the dermal papillae of hairless skin, such as fingertips, Meissner's corpuscles are responsible for sensitivity to light touch and vibrations. They are rapidly adapting, which means they quickly stop firing if the stimulus remains constant. Thus, they aren't specialized for detecting continuous deep pressure.
- **Option D:** Pacinian corpuscles are lamellated corpuscles found deeper in the dermis and are responsible for detecting rapid vibrations and deep pressure. However, they are rapidly adapting and are more sensitive to changes in stimuli rather than sustained pressure.

2. During a hypertensive crisis, the nurse makes sure which of this medicine is readily available?

- A. Phentolamine
- B. Diazepam
- C. Lithium citrate
- D. Phenobarbital sodium

Correct Answer: A. Phentolamine

In a hypertensive emergency, the first goal is to bring down the blood pressure as quickly as possible with intravenous (IV) blood pressure medications to prevent further organ damage. Phentolamine Mesylate (phentolamine mesylate) is used as an antidote for a hypertensive crisis.

- **Option B:** Diazepam is a benzodiazepines.
- **Option C:** Lithium citrate is a mood stabilizer.
- **Option D:** Phenobarbital sodium is a barbiturate and sedative-hypnotics.

3. As soon as the placenta is delivered, the nurse must do which of the following actions?

- A. Inspect the placenta for completeness including the membranes.
- B. Place the placenta in a receptacle for disposal.
- C. Label the placenta properly.
- D. Leave the placenta in the kidney basin for the nursing aide to dispose properly.

Correct Answer: A. Inspect the placenta for completeness including the membranes.

The placenta must be inspected for completeness to include the membranes because an incomplete placenta could mean that there is retention of placental fragments which can lead to uterine atony. If the uterus does not contract adequately, hemorrhage can occur.

- **Option B:** During the examination, the size, shape, consistency and completeness of the placenta should be determined, and the presence of accessory lobes, placental infarcts, hemorrhage, tumors and nodules should be noted. Once deemed complete, it may be disposed of properly.
- **Option C:** The placenta is not necessarily labeled. For inspection, keep in mind that the maternal surface of the placenta should be dark maroon in color and should be divided into lobules or cotyledons. The structure should appear complete, with no missing cotyledons. The fetal surface of the placenta should be shiny, gray, and translucent enough that the color of the underlying maroon villous tissue may be seen.
- **Option D:** Before the proper disposal of the placenta, it should be assessed properly. Evaluating placental completeness is of critical, immediate importance in the delivery room. Retained placental tissue is associated with postpartum hemorrhage and infection.

4. The nurse is conducting an admission assessment of a client with vitamin B12 deficiency. Which of the following would the nurse include in the physical assessment?

- A. Palpate the spleen
- B. Take the blood pressure
- C. Examine the feet for petechiae
- D. Examine the tongue

Correct Answer: D. Examine the tongue

The tongue is smooth and beefy red in the client with vitamin B12 deficiency, so examining the tongue should be included in the physical assessment.

- **Options A, B, and C:** Bleeding, splenomegaly, and blood pressure changes do not occur.

5. Which element in the circular chain of infection can be eliminated by preserving skin integrity?

- A. Host
- B. Reservoir
- C. Mode of transmission
- D. Portal of entry

Correct Answer: D. Portal of entry

In the circular chain of infection, pathogens must be able to leave their reservoir and be transmitted to a susceptible host through a portal of entry, such as broken skin. The portal of entry refers to the manner in which a pathogen enters a susceptible host. The portal of entry must provide access to tissues in which the pathogen can multiply or a toxin can act. Often, infectious agents use the same portal to enter a new host that they used to exit the source host.

- **Option A:** The final link in the chain of infection is a susceptible host. Susceptibility of a host depends on genetic or constitutional factors, specific immunity, and nonspecific factors that affect an individual's ability to resist infection or to limit pathogenicity. An individual's genetic makeup may either increase or decrease susceptibility.
- **Option B:** The reservoir of an infectious agent is the habitat in which the agent normally lives, grows, and multiplies. Reservoirs include humans, animals, and the environment. The reservoir may or may not be the source from which an agent is transferred to a host.
- **Option C:** An infectious agent may be transmitted from its natural reservoir to a susceptible host in different ways. There are different classifications for modes of transmission. In direct transmission, an infectious agent is transferred from a reservoir to a susceptible host by direct contact or droplet spread. Indirect transmission refers to the transfer of an infectious agent from a reservoir to a host by suspended air particles, inanimate objects (vehicles), or animate intermediaries (vectors).

6. Loretta, a newly admitted client was diagnosed with delirium and has a history of hypertension and anxiety. She had been taking digoxin, furosemide (Lasix), and diazepam (Valium) for anxiety. This client's impairment may be related to which of the following conditions?

- A. Infection
- B. Metabolic acidosis
- C. Drug intoxication
- D. Hepatic encephalopathy

Correct Answer: C. Drug intoxication

This client was taking several medications that have a propensity for producing delirium; digoxin (a digitalis glycoside), furosemide (a thiazide diuretic), and diazepam (a benzodiazepine). Precipitating factors usually vary among the population. However, drugs are the most important factor. There are many drugs related to delirium, especially sedative-hypnotic agents and anticholinergic, but opioid analgesics (especially meperidine), nonbenzodiazepines, sedatives, hypnotics, antihistamines (especially first generation), alcohol, anticholinergics, anticonvulsants, tricyclic antidepressants, histamine H2-receptor blockers, antiparkinsonian agents, antipsychotics (especially low-potency typical

antipsychotics), barbiturates, digoxin, and antibiotics have been reported as well. The risk increases as high as four and a half times if the patient consumes three or more drugs (polypharmacy), and the medication is psychoactive.

- **Option A:** Among other precipitating factors are surgery, anesthesia, high pain levels, anemia, infections, acute illness, and acute exacerbation of chronic illness. The nature of delirium is transient, but it can persist in patients with predisposing factors. A systematic review showed that hospital delirium persisted at hospital discharge in 45% of cases, and one month later in 33% of cases.
- **Option B:** There are two groups of risk factors related to delirium: predisposing and precipitant factors. The most common predisposing factors are older age (older than 70 years), dementia (often not recognized clinically), functional disabilities, male gender, poor vision and hearing, and mild cognitive impairment. Alcohol use disorder and laboratory abnormalities have been associated with an increased risk.
- **Option D:** Sufficient supporting data don't exist to suspect the other options as causes. Delirium is a medical condition complex to understand; a single factor can cause it; however, it is not the common course. The multifactorial model has been accepted as an interaction of a vulnerable patient with predisposing factors, exposed to noxious insults or precipitant factors.

7. The following are lipid abnormalities. Which of the following is a risk factor for the development of atherosclerosis and PVD?

- A. High levels of low-density lipid (LDL) cholesterol
- B. High levels of high-density lipid (HDL) cholesterol
- C. Low concentration triglycerides
- D. Low levels of LDL cholesterol.

Correct Answer: A. High levels of low-density lipid (LDL) cholesterol

An increase in LDL cholesterol concentration has been documented as a risk factor for the development of atherosclerosis. LDL cholesterol is not broken down into the liver but is deposited into the wall of the blood vessels. As the LDL particles leave the blood and enter the arterial intima, they accumulate by being trapped by proteoglycans and are modified. While the modifications of LDL are not elucidated, oxidative modification generating oxidized LDL appears to be an attractive candidate.

- **Option B:** High-density lipids are called the “good” cholesterol. They absorb cholesterol and carry it back to the liver. The liver then flushes it from the body. HDL is known for its anti-atherogenic and anti-inflammatory properties, thanks to its uptake and return of the cholesterol stored in the foam cells of atherosclerotic plaques to the liver. Thus, reducing the size of the plaque and its associated inflammation.
- **Option C:** Triglycerides are the type of fat found in the blood. When we eat, the body converts any calories it doesn't need to use right away into triglycerides. These are stored into fat cells. Later, hormones release triglycerides for energy between meals.
- **Option D:** Low levels of LDL or the “bad” cholesterol reduces the risk for atherosclerosis and PVD. Modified LDL is taken up by scavenger receptors (SR) such as SRA and CD36 resulting in foam cell formation since cellular cholesterol content does not regulate these SRs. Following endothelial dysfunction induced by LDL, smoking, diabetes, hypertension, among others, there is a deficiency of NO and prostacyclin and/or an increase in plasminogen activator inhibitor type 1 (PAI-1) and cell adhesion molecules (CAMs).

8. The manic client announces to everyone in the dayroom that a stripper is coming to perform this evening. When the nurse firmly states that this will not happen, the manic client becomes verbally abusive and threatens physical violence to the nurse. Based on the analysis of this situation, the nurse determines that the most appropriate action would be to:

- A. With assistance, escort the manic client to her room and administer Haldol as prescribed if needed.
- B. Tell the client that smoking privileges are revoked for 24 hours.
- C. Orient the client to time, person, and place
- D. Tell the client that the behavior is not appropriate.

Correct Answer: A. With assistance, escort the manic client to her room and administer Haldol as prescribed if needed.

The client is at risk for injury to self and others and therefore should be escorted out of the dayroom. Antipsychotic medications are useful to manage the manic client. Hyperactive and agitated behavior usually responds to Haldol. Alert staff if a potential for seclusion appears imminent. Usual priority of interventions would be: firmly setting limits; chemical restraints (tranquilizers); and seclusions.

- **Option B:** Option B may increase the agitation that already exists in this client. Remain neutral as possible; Do not argue with the client. The client can use inconsistencies and value judgments as justification for arguing and escalating mania. Maintain a consistent approach, employ consistent expectations, and provide a structured environment. Clear and consistent limits and expectations minimize the potential for the client's manipulation of staff.
- **Option C:** Orientation will not halt the behavior. Use a calm and firm approach. Provides structure and control for a client who is out of control. Use short, simple, and brief explanations or statements. Short attention span limits understanding to small pieces of information. Chart, in nurse's notes, behaviors; interventions; what seemed to escalate agitation; what helped to calm agitation; when as-needed (PRN) medications were given and their effect; and what proved most helpful.
- **Option D:** Telling the client that the behavior is not appropriate already has been attempted by the nurse. Decrease environmental stimuli (e.g., by providing a calming environment or assigning a private room); helps decrease escalation of anxiety and manic symptoms.

9. The mid-deltoid injection site is seldom used for I.M. injections because it:

- A. Can accommodate only 1 ml or less of medication.
- B. Bruises too easily.
- C. Can be used only when the patient is lying down.
- D. Does not readily absorb parenteral medication.

Correct Answer: A. Can accommodate only 1 ml or less of medication

The mid-deltoid injection site can accommodate only 1 ml or less of medication because of its size and location (on the deltoid muscle of the arm, close to the brachial artery and radial nerve). It is becoming increasingly important for clinicians to identify a safer intramuscular (IM) injection site in the deltoid muscle because of possible complications following the vaccine administration of IM injections.

- **Option B:** However, Cook reported that these 4 injection sites have the potential to cause injury to the subdeltoid/subacromial bursa and/or anterior branch of the axillary nerve with the arm in the anatomical position. Additionally, we showed that the axillary nerve often runs near the site 5 cm below the mid-acromion lateral border, and concluded that this site is unsuitable for IM injection in terms of the high risk for the complications related to this nerve.
- **Option C:** The deltoid muscle has been used in clinical settings because it is easy for clinicians to administer injections at this site and for patients to expose it, and it is the most commonly used site for vaccines worldwide. Four injection sites have been recommended as safer and appropriate IM injection sites in the deltoid muscle: the first site is 1 to 3 fingerbreadths (5 cm) below the mid-acromion, the second is a triangular injection site, the third is the middle third of the deltoid muscle, and the fourth is a mid-deltoid site.
- **Option D:** The following complications have been reported after the administration of IM injections: injection site reactions such as pain, erythema, and swelling due to over-or under penetration by the needle, axillary or radial nerve palsies, musculoskeletal injuries, local sepsis, and vascular complications. Therefore, it is becoming increasingly important to establish a safer site for IM injections.

10. The nurse is teaching the client how to use a metered-dose inhaler (MDI) to administer a Corticosteroid drug. Which of the following client actions indicates that he is using the MDI correctly? Select all that apply.

- A. The inhaler is held upright.
- B. Head is tilted down while inhaling the medication.
- C. Client waits 5 minutes between puffs.
- D. Mouth is rinsed with water following administration.
- E. Client lies supine for 15 minutes following administration.

Correct Answer: A & D.

In using a corticosteroid MDI, remove the cap and hold the inhaler upright, stand or sit up straight, shake the inhaler, tilt your head back slightly, put the inhaler in the mouth, press down on the inhaler quickly, breathe in slowly for 3 to 5 seconds, hold the breath for 10 seconds, breathe out slowly, repeat puffs as prescribed, rinse the mouth, and gargle using water or mouthwash after each use.

- **Option A:** Keep the chin up and the inhaler upright (not aimed at the roof of the mouth or the tongue). Use a spacer/valve-holding chamber (the best way, useful for all patients) by putting the inhaler into the end with the hole and the mouthpiece end in the mouth. If there is no spacer, hold the inhaler 1 to 2 inches (or two-finger widths) in front of an open mouth.
- **Option B:** Head is tilted up during inhalation of the medication. Start breathing in slowly through the mouth and press down on the inhaler one time. If using a spacer or valved-holding chamber, press down on the inhaler before starting to breathe in. Breathe in slowly.
- **Option C:** For inhaled quick-relief medicine (like albuterol), wait about 1 minute between puffs. There is no need to wait between puffs for other medicines.
- **Option D:** If the client is using this inhaler for a corticosteroid preventer medication, with or without a spacer, rinse the mouth with water and spit after inhaling the last dose to reduce the risk of side effects.

- **Option E:** There is no need to lie supine after administration of the medication. If more than one dose is needed, repeat all the steps.

11. Which goal is a priority for a client with a DSM-IV-TR diagnosis of delirium and the nursing diagnosis acute confusion related to recent surgery secondary to traumatic hip fracture?

- A. The client will complete activities of daily living.
- B. The client will maintain safety.
- C. The client will remain oriented.
- D. The client will understand communication.

Correct Answer: B. The client will maintain safety.

Maintaining safety is the priority goal for an acutely confused client who recently had surgery. All measures to promote physiologic safety and psychosocial wellbeing would be implemented. Remove all potentially dangerous objects from the client's environment; in a disoriented, confused state, clients may use objects to harm self or others. Have sufficient staff available to execute a physical confrontation, if necessary; assistance may be required from others to provide for the physical safety of the client or primary nurse, or both.

- **Option A:** This client would not be able to complete activities of daily living, and safety is a priority over these tasks. Assess the client's level of anxiety and behaviors that indicate the anxiety is increasing; recognizing these behaviors, the nurse may be able to intervene before violence occurs. Maintain a low level of stimuli in the client's environment (low lighting, few people, simple decor, low noise level) because anxiety increases in a highly stimulating environment.
- **Option C:** Interrupt periods of unreality and reorient; client safety is jeopardized during periods of disorientation; correcting misinterpretations of reality enhances client's feelings of self-worth and personal dignity. Orient the patient to surroundings, staff, necessary activities as needed. Present reality concisely and briefly. Avoid challenging illogical thinking—defensive reactions may result. Increased orientation ensures greater degree of safety for the patient.
- **Option D:** The goals of remaining oriented and understanding communication would be appropriate only after the client's acute confusion has resolved. Give simple directions. Allow sufficient time for the patient to respond, communicate, to make decisions. This communication method can reduce anxiety experienced in a strange environment. Avoid challenging illogical thinking. Challenges to the patient's thinking can be perceived as threatening and result in a defensive reaction.

12. Which nurse should be assigned to care for the postpartum client with preeclampsia?

- A. The RN with 2 weeks of experience in postpartum
- B. The RN with 3 years of experience in labor and delivery
- C. The RN with 10 years of experience in surgery
- D. The RN with 1 year of experience in the neonatal intensive care unit

Correct Answer: B. The RN with 3 years of experience in labor and delivery

The nurse with 3 years of experience in labor and delivery knows the most about possible complications involving preeclampsia. Registered nurses need to know their rights and responsibilities when considering a patient assignment. The nurse-patient assignment process is also often a manual process in which the charge nurse must sort through multiple decision criteria in a limited amount of time.

- **Option A:** The nurse is a new staff to the unit hence lacking the experience needed. Most nurse-patient assignment models have focused on balancing patient acuity measures. This focus on patient acuity concentrates workload measures on direct patient care activities. While this is very important for the care of the patient, it does not necessarily take into account all of the activities comprising a nurse's workload.
- **Option C:** The nurse with experience in surgery does not have the same experience in labor and delivery. Balancing workload among nurses on a hospital unit is important for the satisfaction and safety of nurses and patients. To balance nurse workloads, direct patient care activities, indirect patient care activities, and non-patient care activities that occur throughout a shift must be considered.
- **Option D:** This nurse lacks sufficient experience with a postpartum client. Limitations in experience and knowledge may not require refusal of the assignment, but rather an agreement regarding supervision or a modification of the assignment to ensure patient safety. If no accommodation for limitations is considered, the nurse has an obligation to refuse an assignment for which she or he lacks education or experience.

13. Patients taking MAOIs have the tendency to experience hypertensive crisis especially during an interaction with other drugs such as epinephrine. Which of the following is a sign of hypertensive crisis?

- A. Orthostatic hypotension
- B. Diplopia
- C. Delay in ejaculation
- D. Hair loss

Correct Answer: B. Diplopia

- **Option B:** Monoamine Oxidase Inhibitor Toxicity symptoms include hypertension, tachycardia, diplopia, nausea, dilated pupils, palpitations, constricting chest pain and altered mental status.
- **Options A and C:** Orthostatic hypotension and delay in ejaculation are common side effects of monoamine oxidase inhibitors.
- **Option D:** Hair loss is not a related symptom of hypertensive crisis.

14. With peripheral arterial insufficiency, leg pain during rest can be reduced by:

- A. Elevating the limb above heart level.
- B. Lowering the limb so it is dependent.
- C. Massaging the limb after application of cold compresses.
- D. Placing the limb in a plane horizontal to the body.

Correct Answer: B. Lowering the limb so it is dependent

The cornerstone of treatment of PAD is exercise to improve peripheral circulation, walking economy, cardiopulmonary function, and functional capacity. The data to support the efficacy of supervised exercise in improving claudication are robust with the length of the program influencing the magnitude of increase in maximal walking distance of up to 150% (range 74% to 230%).

- **Option A:** Functional benefits (increased walking speed, distance, duration, and decreased symptoms) accrue gradually and can occur in as early as 4 to 8 weeks, but greater benefit is conferred with programs of 6 months or longer. Typical improvements in walking distance include more than 100% increase in peak exercise performance and self-reported physical function. Longer walking interventions achieve greater benefit. However, most studies have been of short duration, 3 to 6 months, with few longer than 12 months.
- **Option C:** Exercise recommendations have been extrapolated from clinical trials in patients with PAD. Based on these studies, walking is the most effective mode of exercise. Although resistance training does confer some benefit, it has been shown to be less effective than walking in improving walking distance in patients with PAD. Recently, pole striding exercise has been demonstrated to increase cardiovascular fitness, improve symptoms and quality of life in a small group of PAD patients.
- **Option D:** Exercise intensity is based on the workload achieved during a treadmill test that elicited claudication pain within 3 to 5 minutes of walking. Once this workload has been determined, the patient is asked to walk at this set workload until claudication of moderate intensity. Once this point is reached the patient is allowed to rest (standing or sitting) until pain subsides. The exercise-rest-exercise pattern is repeated for the duration of the exercise session.

15. Alvin with a massive pulmonary embolism will have an arterial blood gas analysis performed to determine the extent of hypoxia. The acid-base disorder that may be present is?

- A. Metabolic acidosis
- B. Metabolic alkalosis
- C. Respiratory acidosis
- D. Respiratory alkalosis

Correct Answer: D. Respiratory alkalosis

A client with massive pulmonary embolism will have a large region and blow off large amounts of carbon dioxide, which crosses the unaffected alveolar-capillary membrane more readily than does oxygen and results in respiratory alkalosis.

- **Option A:** Large amounts of carbon dioxide are blown off, removing the option of metabolic acidosis.
- **Option B:** Respiratory, not metabolic, alkalosis is the result of a massive pulmonary embolism.
- **Option C:** Acidosis does not occur with pulmonary embolism. Hypocapnia usually is present with an embolism.

16. A nurse is assessing the neurovascular of a client who has returned to the surgical nursing unit 4 hours ago after undergoing an aortoiliac bypass graft. The affected leg is warm, and the nurse notes redness and edema. The pedal

pulse is palpable and unchanged from admission. The nurse interprets that the neurovascular status is:

- A. Normal because of increased blood flow through the leg.
- B. Slightly deteriorating and should be monitored for another hour.
- C. Moderately impaired, and the surgeon should be called.
- D. Adequate from an arterial approach, but venous complications are arising.

Correct Answer: A. Normal because of increased blood flow through the leg

An expected outcome of surgery is warmth, redness, and edema in the surgical extremity because of increased blood flow. Aortoiliac occlusive disease can contribute to lower extremity ischemic symptoms necessitating intervention. Symptoms of patients with aortoiliac occlusive disease may include claudication, rest pain of the lower extremities, or ischemic ulcer formation on lower extremities due to inadequate blood flow.

- **Option B:** As with any surgical procedure, there exists a risk of bleeding or infection. In addition, there is a risk of wound infection, hematoma. Complications that result in significant morbidities include MI, renal dysfunction, and respiratory dysfunction. Late complications include hernias, graft thrombosis, and graft pseudoaneurysms, graft infections, aortoenteric fistulas further discussed below.
- **Option C:** Most frequently, (in 50% of cases), cardiac ischemia is responsible for death related to aortic reconstruction, which is because there are seldom patients with normal coronary arteries. Hence the importance of pre-operative screening and treatment and cardiac comorbidities. Mortality related to cardiac death following surgical intervention is 1% to 2.5% in some centers.
- **Option D:** Another common complication following surgery is renal insufficiency. This condition is typically a result of prolonged ischemia after clamping suprarenal, embolization secondary to clamping, hypoperfusion, hypovolemia, or intrinsic renal artery disease. Often, this post-operative complication directly relates to the patient's preoperative cardiac and renal function.

17. Mr. Leopold, a 60-year-old renowned violinist, was recently diagnosed with gout after experiencing several painful episodes affecting his fingers. He is eager to manage his condition effectively, as it has begun to impact his ability to play the violin. During a clinic visit, the nurse provides him with education on medication management. Which statement made by Mr. Leopold suggests he may not fully grasp the guidance and needs additional clarification?

- A. "I should take my prescribed medications during an acute gout attack."
- B. "I should drink plenty of water while taking my medications."
- C. "I should avoid over-the-counter nonsteroidal anti-inflammatory drugs (NSAIDs)."
- D. "I should continue taking my uric acid-lowering medication even when I am symptom-free."

Correct Answer: A. "I should take my prescribed medications during an acute gout attack."

Medications prescribed for gout, such as nonsteroidal anti-inflammatory drugs (NSAIDs) and colchicine, are most effective when started at the first sign of an attack, not during the attack itself. Therefore, the patient's statement indicates a need for further teaching.

- **Options B:** Drinking plenty of water can help prevent the formation of uric acid crystals, which cause gout attacks. It can also support kidney function and aid in the excretion of uric acid from the body.
- **Option C:** Avoiding over-the-counter NSAIDs prevents interactions with prescribed medications.
- **Option D:** Uric acid-lowering medications, such as allopurinol or febuxostat, are designed to prevent gout attacks by reducing uric acid levels in the blood. They should be taken consistently, even during symptom-free periods, to maintain their therapeutic effect.

18. When caring for a client with a central venous line, which of the following nursing actions should be implemented in the plan of care for chemotherapy administration? Select all that apply.

- A. Verify patency of the line by the presence of a blood return at regular intervals.
- B. Inspect the insertion site for swelling, erythema, or drainage.
- C. Administer a cytotoxic agent to keep the regimen on schedule even if blood return is not present.
- D. If unable to aspirate blood, reposition the client, and encourage the client to cough.
- E. Contact the health care provider about verifying placement if the status is questionable.

Correct Answer: A, B, D, & E.

A major concern with intravenous administration of cytotoxic agents is vessel irritation or extravasation. In order to avoid additional chemotherapy adverse effects, every effort should be made to minimize the complications of chemotherapy administration. All the oncology team members share the responsibility to ensure the safe administration of chemotherapy.

- **Option A:** The Oncology Nursing Society and hospital guidelines require frequent evaluation of blood return when administering vesicant or non-vesicant chemotherapy due to the risk of extravasation. These guidelines apply to peripheral and central venous lines.
- **Option B:** Chemotherapy extravasation is manifested by a wide range of symptoms that can be mild and can present as acute burning pain, swelling, at the infusion site. Symptoms vary according to the amount and concentration of extravasated drugs. Pain and erythema, induration, and skin discoloration progresses over a few days and weeks and may progress to blister formation. Unlike flare reaction and vessel irritation, extravasation is usually manifested with no or minimal blood return at the infusion site.
- **Option C:** In case of chemotherapy extravasation and as soon as the patient complains of pain or swelling, the first step should be an immediate cessation of the infusion while keeping the cannula or port needle in place. This is followed by attempts at the aspiration of the chemotherapeutic agent and removing the cannula or port needle.
- **Option D:** In addition, central venous lines may be long-term venous access devices. Thus, difficulty drawing or aspirating blood may indicate the line is against the vessel wall or may indicate the line has occlusion. Having the client cough or move position may change the status of the line if it is temporarily against a vessel wall.
- **Option E:** Occlusion warrants a more thorough evaluation via x-ray study to verify placement if the status is questionable and may require a declotting regimen. Any local incidence of extravasation should be reported. While documentation may differ among institutions, certain items remain essential and should be documented for every incident.

19. A client's family member says to the nurse, "The doctor said he will provide palliative care. What does that mean?" The nurse's best response is:

- A. "Palliative care is given to those who have less than 6 months to live."
- B. "Palliative care aims to relieve or reduce the symptoms of a disease."
- C. "The goal of palliative care is to affect a cure of a serious illness or disease."
- D. "Palliative care means the client and family take a more passive role and the doctor focuses on the physiological needs of the client. The location of death will most likely occur in the hospital setting."

Correct Answer: B. "Palliative care aims to relieve or reduce the symptoms of a disease."

The goal of palliative care is the prevention, relief, reduction, or soothing of symptoms of disease or disorders without effecting a cure. Palliative care improves the quality of life of patients and that of their families who are facing challenges associated with life-threatening illness, whether physical, psychological, social, or spiritual. The quality of life of caregivers improves as well.

- **Option A:** Palliative care is required for a wide range of diseases. The majority of adults in need of palliative care have chronic diseases such as cardiovascular diseases (38.5%), cancer (34%), chronic respiratory diseases (10.3%), AIDS (5.7%), and diabetes (4.6%). Many other conditions may require palliative care, including kidney failure, chronic liver disease, multiple sclerosis, Parkinson's disease, rheumatoid arthritis, neurological disease, dementia, congenital anomalies, and drug-resistant tuberculosis.
- **Option C:** Palliative care is an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with life-threatening illnesses. It prevents and relieves suffering through the early identification, correct assessment, and treatment of pain and other problems, whether physical, psychosocial, or spiritual.
- **Option D:** Addressing suffering involves taking care of issues beyond physical symptoms. Palliative care uses a team approach to support patients and their caregivers. This includes addressing practical needs and providing bereavement counseling. It offers a support system to help patients live as actively as possible until death.

20. Annaliza has a nursing diagnosis of fluid volume deficit. Which one of the following medications could potentially exacerbate the problem?

- A. Synthroid
- B. Digoxin
- C. Lasix
- D. Insulin

Correct Answer: C. Lasix

Lasix will contribute to fluid loss through its action as a diuretic. The diuretic effect of furosemide can cause depletion of sodium, chloride, body water, and other minerals. Therefore, careful medical supervision is necessary during treatment. Furosemide (Lasix) is a potent diuretic (water pill) that is used to eliminate water and salt from the body. In the kidneys, salt (composed of sodium and chloride), water, and other small molecules normally are filtered out of the blood and into the tubules of the kidney. The filtered fluid ultimately becomes urine.

- **Option A:** Oral levothyroxine is primarily indicated for the treatment of primary, secondary, and tertiary hypothyroidism. Levothyroxine (T4) is a synthetic version of one of the body's natural thyroid hormones: thyroxine (T4). Normally, the hypothalamus secretes thyrotropin-releasing hormone (TRH), which then stimulates the anterior pituitary to secrete thyroid-stimulating hormone (TSH), which subsequently stimulates the thyroid to secrete 80% thyroxine (T4) and 20% L-triiodothyronine (T3).
- **Option B:** Digoxin increases the force of contraction of the heart by reversibly inhibiting the activity of the myocardial Na-K ATPase pump, an enzyme that controls the movement of ions into the heart. Digoxin has vagomimetic effects on the AV node. By stimulating the parasympathetic nervous system, it slows electrical conduction in the atrioventricular node, therefore, decreases the heart rate.
- **Option D:** Insulin is a medication used in the treatment and management of diabetes mellitus type-1 and sometimes diabetes mellitus type-2, both of which are a significant risk factor for coronary artery disease, stroke, peripheral vascular disease, and a host of other vascular conditions.

21. Malou with schizophrenia tells Nurse Melinda, “My intestines are rotted from worms chewing on them.” This statement indicates a:

- A. Jealous delusion
- B. Somatic delusion
- C. Delusion of grandeur
- D. Delusion of persecution

Correct Answer: B. Somatic delusion

Somatic delusions focus on bodily functions or systems and commonly include delusion about foul odor emissions, insect manifestations, internal parasites, and misshapen parts. Of the delusional symptoms, somatic delusions—those that pertain to the body—are rather rare. Somatic delusions are defined as fixed false beliefs that one's bodily function or appearance is grossly abnormal. They are a poorly understood psychiatric symptom and pose a significant clinical challenge to clinicians.

- **Option A:** Delusional jealousy (also known as morbid jealousy) is one type of delusional disorder, and as the name implies people with jealous delusions are completely convinced that their spouses or romantic partners have been unfaithful. Delusional jealousy, by its very nature, is highly destructive: it can cause immense damage to treasured relationships and in some instances can lead to obsessive or even violent behavior.
- **Option C:** A delusion of grandeur is the false belief in one's own superiority, greatness, or intelligence. People experiencing delusions of grandeur do not just have high self-esteem; instead, they believe in their own greatness and importance even in the face of overwhelming evidence to the contrary. Someone might, for example, believe they are destined to be the leader of the world, despite having no leadership experience and difficulties in interpersonal relationships. Delusions of grandeur are characterized by their persistence. They are not just moments of fantasy or hopes for the future.
- **Option D:** Persecutory delusions occur when someone believes others are out to harm them despite evidence to the contrary. It's a type of paranoid thinking that can be part of several different mental illnesses. Whether people with this condition think coworkers are sabotaging their work or they believe the government is trying to kill them, persecutory delusions vary in severity. Some individuals with persecutory delusions believe they have to go to great lengths to stay safe—and

consequently, they may struggle to function normally.

22. A nurse is caring for a client who is disoriented to time, place, and person and is attempting to get out of bed and pull out an intravenous (I.V.) line that is supplying hydration and antibiotics. The client has a vest restraint and bilateral soft wrist restraints. Which nursing actions would be appropriate? Select all that apply.

- A. Perform a face-to-face behavior evaluation every hour.
- B. Tie the restraints in quick-release knots.
- C. Tie the restraints to the side rails of the bed.
- D. Document the client's condition.
- E. Document alternative methods used before the restraints were applied.
- F. Document the client's response to the intervention.

Correct Answer: A, B, D, E, & F.

Preventing a client from falling or harming him- or herself is of utmost importance. Applying restraints should be a last resort when all other alternative interventions have been attempted.

- **Option A:** A face-to-face evaluation must be performed every hour. After restraint placement, patients should be reevaluated every hour and moved at regular intervals to prevent sequelae such as pressure ulcers, rhabdomyolysis, and paresthesias.
- **Option B:** Restraints should be tied in knots that can be released quickly and easily. Physical restraints encompass hand mitts, soft cloth limb restraints, leather limb restraints, enclosed beds, belts, and vests.
- **Option C:** Restraints should never be secured to side rails because doing so can cause injury if the side rail is lowered without untying the restraint. Ideally, a restraint team should include at least five people, including the team leader.
- **Options D, E, and F:** The nurse should document the client's condition, any alternative methods used before the restraints were applied, and the client's response to the interventions. Document appropriate clinical indication and have a standardized checklist prepared for staff to monitor and supply patient needs effectively.

23. Toxicity from which of the following medications may cause a client to see a green halo around lights?

- A. Digoxin
- B. Furosemide
- C. Metoprolol
- D. Enalapril

Correct Answer: A. Digoxin

One of the most common signs of digoxin toxicity is the visual disturbance known as the green halo sign.

- **Option B:** Furosemide does not cause this kind of toxicity. The principal signs and symptoms of overdose with furosemide are dehydration, blood volume reduction, hypotension, electrolyte imbalance, hypokalemia, and hypochloremic alkalosis, and are extensions of its diuretic action.
- **Option C:** Metoprolol is not associated with this effect. Poisoning due to an overdose of metoprolol may lead to severe hypotension, sinus bradycardia, atrioventricular block, heart failure, cardiogenic shock, cardiac arrest, bronchospasm, impairment of consciousness, coma, nausea, vomiting, cyanosis, hypoglycemia, and, occasionally, hyperkalemia.
- **Option D:** This medication isn't associated with such an effect. While there is limited data about enalapril overdose in humans, overdosage may result in marked hypotension and stupor based on the pharmacological properties of the drug. The most common adverse effects of enalapril include cough, hypotension, stupor, headache, dizziness, and fatigue.

24. A nurse teaches a client about the use of a respiratory inhaler. Which action by the client indicated a need for further teaching?

- A. Removes the cap and shakes the inhaler well before use.
- B. Press the canister down with your finger as he breathes in.
- C. Inhales the mist and quickly exhales.
- D. Waits 1 to 2 minutes between puffs if more than one puff has been prescribed.

Correct Answer: C. Inhales the mist and quickly exhales.

Take the inhaler out of the mouth. If the client can, he should hold his breath as he slowly counts to 10. This lets the medicine reach deep into the lungs. The client should be instructed to hold his or her breath at least 10 to 15 seconds before exhaling the mist.

- **Option A:** If the client has not used the inhaler in a while, he may need to prime it. See the instructions that came with the inhaler for when and how to do this. Shake the inhaler hard 10 to 15 times before each use.
- **Option B:** Hold the inhaler with the mouthpiece down. Place lips around the mouthpiece so that the mouth forms a tight seal. As the client starts to slowly breathe in through the mouth, press down on the inhaler one time.
- **Option D:** If using inhaled, quick-relief medicine (beta-agonists), wait about 1 minute before taking the next puff. You do not need to wait a minute between puffs for other medicines.

25. The nurse is measuring the duration of the client's contractions. Which statement is true regarding the measurement of the duration of contractions?

- A. Duration is measured by timing from the beginning of one contraction to the beginning of the next contraction.
- B. Duration is measured by timing from the end of one contraction to the beginning of the next contraction.
- C. Duration is measured by timing from the beginning of one contraction to the end of the same contraction.
- D. Duration is measured by timing from the peak of one contraction to the end of the same contraction.

Correct Answer: C. Duration is measured by timing from the beginning of one contraction to the end of the same contraction.

Duration is measured from the beginning of one contraction to the end of the same contraction. Duration is timed from when you first feel a contraction until it is over. This time is usually measured in seconds.

- **Option A:** This refers to frequency. Frequency is timed from the start of one contraction to the start of the next. It includes the contraction as well as the rest period until the next contraction begins.
Option B: We do not measure from the end of one contraction to the beginning of the next contraction. Contractions are considered regular when the duration and frequency are stable over a period of time. An example is contractions lasting 60 seconds and coming five minutes apart for an hour.
- **Option D:** Duration is not measured from the peak of the contraction to the end, as stated in D. Contractions that are lasting longer and getting closer together are considered to be progressing. Over the course of labor, contractions get longer, stronger, and closer together.

26. A nurse is preparing the client's morning NPH insulin dose and notices a clumpy precipitate inside the insulin vial. The nurse should:

- A. Draw up and administer the dose.
- B. Shake the vial in an attempt to disperse the clumps.
- C. Draw the dose from a new vial.
- D. Warm the bottle under running water to dissolve the clump.

Correct Answer: C. Draw the dose from a new vial.

The nurse should always inspect the vial of insulin before use for solution changes that may signify a loss of potency. NPH insulin is normally uniformly cloudy. Clumping, frosting, and precipitates are signs of insulin damage. In this situation, because potency is questionable, it is safer to discard the vial and draw up the dose from a new vial.

- **Option A:** Crystalline NPH insulin administration is subcutaneous. Administration is not Intramuscular or intravenous. NPH insulin is available in a two-phase solution, which means that apart from NPH, it has a solvent or a rapid-acting insulin solution. It comes in the form of a subcutaneous suspension or suspension pen-injector.
- **Option B:** The abdominal subcutaneous injection causes quicker absorption as compared to arms or thighs. The most significant advantage of NPH is that it can be included in premixed formulation with regular insulin. NPH in premixed formulations does not affect the potency and time-action profile of regular insulin. Exercise, massage, and local heat application increase NPH insulin absorption.
- **Option D:** NPH insulin has a somewhat higher risk of hypoglycemia. Inadequate resuspension is thought to contribute to the high day to day variability in the pharmacodynamic and pharmacokinetic profile of NPH insulin, leading to hypoglycemia. Patients can adequately resuspend NPH by rotating the vial several times until it's uniformly cloudy.

27. Your goal is to minimize David's risk of complications after a herniorrhaphy. You instruct the patient to:

- A. Avoid the use of pain medication.
- B. Cough and deep breath Q2H.
- C. Splint the incision if he can't avoid sneezing or coughing.
- D. Apply heat to scrotal swelling.

Correct Answer: C. Splint the incision if he can't avoid sneezing or coughing.

Teach the patient to avoid activities that increase intra-abdominal pressure such as coughing, sneezing, or straining with a bowel movement. Patients should be advised to avoid strenuous activities for a few weeks. Typically, light work can be resumed after 1 week, heavier jobs after 6 weeks.

- **Option A:** Postoperative chronic pain is more frequent than was previously understood and has become one of the most important primary endpoints in hernia surgery. In published reports, the incidence of post herniorrhaphy pain has ranged from 0% to more than 30%. Chronic inguinaldynia is defined as pain persisting more than 3 months post herniorrhaphy, after the process of wound healing is complete.
- **Option B:** Recurrence in Lichtenstein hernioplasty may be due to inaccurate execution of the technique (inadequate size or improper fixation of the mesh) or to an overlooked hernia at the primary operation. To avoid the latter, the patient should be asked to cough, and the region should be carefully examined for an indirect hernia, a direct hernia, a femoral hernia, or a combined hernia.
- **Option D:** After the procedure, the patient is asked to rest for a few hours. He or she may be discharged later the same day on a day-care basis. Early mobilization is the key to rapid convalescence. Patients can safely ambulate on the evening of the operation. If general or regional anesthesia is used, the patient may be hospitalized for a few days.

28. You are preparing to change the linens on the bed of a client who has a draining sacral wound infected by MRSA. Which PPE items will you plan to use. Select all that apply

- A. N95 respirator
- B. Surgical Mask
- C. Gloves
- D. Goggles
- E. Gown

Correct Answer: C & E

A gown and gloves should be used when coming in contact with linens that may be decontaminated by the client's wound secretions.

- **Options A, B, and D:** The other items are not necessary because transmission by splashes, droplets, or airborne means will not occur when the bed is changed.

29. Which of the following will probably result in a break in sterile technique for respiratory isolation?

- A. Opening the patient's window to the outside environment.

- B. Turning on the patient's room ventilator.
- C. Opening the door of the patient's room leading into the hospital corridor.
- D. Failing to wear gloves when administering a bed bath.

Correct Answer: C. Opening the door of the patient's room leading into the hospital corridor.

Respiratory isolation, like strict isolation, requires that the door to the patient's room remain closed. Appropriate patient placement is a significant component of isolation precautions. A private room is important to prevent direct- or indirect-contact transmission when the source patient has poor hygienic habits, contaminates the environment, or cannot be expected to assist in maintaining infection control precautions to limit transmission of microorganisms (ie, infants, children, and patients with altered mental status).

- **Option A:** Opening the patient's window is acceptable because the room needs to be well-ventilated. A private room with appropriate air handling and ventilation is particularly important for reducing the risk of transmission of microorganisms from a source patient to susceptible patients and other persons in hospitals when the microorganism is spread by airborne transmission. Some hospitals use an isolation room with an anteroom as an extra measure of precaution to prevent airborne transmission.
- **Option B:** The patient's room should be well ventilated, so turning on the ventilator is desirable.
- **Option D:** The nurse does not need to wear gloves for respiratory isolation, but good handwashing is important for all types of isolation. Wearing gloves does not replace the need for handwashing, because gloves may have small, apparent defects or may be torn during use, and hands can become contaminated during removal of gloves. Failure to change gloves between patient contacts is an infection control hazard.

30. A client is receiving intravenous heparin therapy. The nurse ensures the availability of which of the following medication?

- A. acetylcysteine (Mucomyst)
- B. calcium gluconate (Calcium gluconate)
- C. vitamin K (Mephyton)
- D. protamine sulfate (Protamine)

Correct Answer: D. protamine sulfate (Protamine)

Protamine sulfate is the antidote that reverses the anticoagulant effects of heparin by binding to it.

- **Option A:** Acetylcysteine (Mucomyst) is the antidote for acetaminophen toxicity.
- **Option B:** Calcium gluconate is the antidote for magnesium sulfate toxicity.
- **Option C:** Vitamin K (Mephyton) is the antidote for warfarin sodium toxicity.

31. Which finding indicates that fluid resuscitation has been successful for a client with a burn injury?

- A. Hematocrit = 60%
- B. Heart rate = 130 beats/min

- C. Increased peripheral edema
- D. Urine output = 50 mL/hr

Correct Answer: D. Urine output = 50 mL/hr

The fluid remobilization phase improves renal blood flow, increases diuresis, and restores blood pressure and heart rate to more normal levels, as well as laboratory values. This phase occurs on days 1-3 and requires an accurate fluid resuscitation and thorough evaluation for other injuries and comorbid conditions.

- **Option A:** Hematocrit can indirectly reflect the resuscitation effect in the burn shock stage. Whether hematocrit level can be lowered to 0.45-0.50 during the first 24 hours after burn may be an important index for evaluation of fluid resuscitation effect in the early shock stage after severe burn.
- **Option B:** The average daily heart rate was elevated in burn patients up to two years post-burn. Heart rate was elevated despite any afforded resuscitative efforts. While research data are up to two years post-injury, the heart rate of severely burned children was still 120% of predicted compared to normal values for children.
- **Option C:** Swelling tends to occur soon after injury and generally decreases after 48–72 hours, although this timescale can vary. The extent and location of the swelling will depend on how the burn was caused and the location and depth of the burn injury. It is very important that the swelling is reduced as soon as possible.

32. A client with acute leukemia is admitted to the oncology unit. Which of the following would be most important for the nurse to inquire?

- A. "Have you noticed a change in sleeping habits recently?"
- B. "Have you had a respiratory infection in the last 6 months?"
- C. "Have you lost weight recently?"
- D. "Have you noticed changes in your alertness?"

Correct Answer: B. "Have you had a respiratory infection in the last 6 months?"

The client with leukemia is at risk for infection and has often had recurrent respiratory infections during the previous 6 months.

- **Options A, C, and D:** Insomnolence, weight loss, and a decrease in alertness also occur in leukemia, but bleeding tendencies and infections are the primary clinical manifestations.

33. The nurse is monitoring a client with glaucoma. Which of the following drugs, if prescribed for the client, would the nurse question?

- A. metipranolol (Optipranolol).
- B. brimonidine (Alphagan P).
- C. dorzolamide (Trusopt).
- D. atropine (Isopto Atropine).

Correct Answer: D. Atropine (Isopto Atropine).

Atropine (Isopto Atropine) is a mydriatic and is contraindicated with glaucoma because of the risk of increased ocular pressure.

- **Options A, B, & C:** These are used to treat glaucoma.

34. *Benztropine (Cogentin) is used to treat the extrapyramidal effects induced by antipsychotics. This drug exerts its effect by:*

- A. Decreasing the anxiety causing muscle rigidity.
- B. Blocking the cholinergic activity in the central nervous system (CNS).
- C. Increasing the level of acetylcholine in the CNS.
- D. Increasing norepinephrine in the CNS.

Correct Answer: B. Blocking the cholinergic activity in the central nervous system (CNS).

This is the action of Cogentin. Benztropine antagonizes acetylcholine and histamine receptors. In the CNS and smooth muscles, benztropine exerts its action through competing with acetylcholine at muscarinic receptors. Consequently, it reduces central cholinergic effects by blocking muscarinic receptors that appear to improve the symptoms of Parkinson disease. Thus, benztropine blocks the cholinergic muscarinic receptor in the central nervous system. Therefore, it reduces the cholinergic effects significantly during Parkinson disease which becomes more pronounced in the nigrostriatal tract because of reduced dopamine concentrations.

- **Option A:** Anxiety doesn't cause extrapyramidal effects. Benztropine belongs to the synthetic class of muscarinic receptor antagonists (anticholinergic drug). Thus, it has a structure similar to that of diphenhydramine and atropine. However, it is long-acting so that its administration can be with less frequency than diphenhydramine. It also induces less CNS stimulation effect compared to that of trihexyphenidyl, making it a preferable drug of choice for geriatric patients.
- **Option C:** Overactivity of acetylcholine and lower levels of dopamine are the causes of extrapyramidal effects. It is also useful for drug-induced extrapyramidal symptoms and the prevention of dystonic reactions and acute treatment of dystonic reactions. Furthermore, benztropine has further off-label use as it can treat chronic sialorrhea occurring in developmentally-disabled patients. Also, several clinical studies worked on using benztropine in managing intractable hiccups.
- **Option D:** Benztropine doesn't increase norepinephrine in the CNS. Benztropine overdose can cause an anticholinergic toxidrome, which, in its role, may require supportive care. Commonly, the risk assessment for benztropine overdose can take place as soon as 6 hours after overdose ingestion, and toxicity effects may last variably between 12 hours to 5 days at most. The most crucial step of proper detection of benztropine overdose starts from carrying out intensive and inclusive investigations. For example, ECG can be an essential assessment tool using 12 leads during testing. Also, monitoring the acetaminophen concentrations as well as blood glucose concentrations can become a useful method for toxicity investigations if the toxicant is unknown.

35. *The client has a clinic appointment scheduled 10 days after discharge. Which laboratory finding at that time would indicate that allopurinol (Zyloprim) has had a therapeutic effect?*

- A. Decreased urinary alkaline phosphatase level
- B. Increased urinary calcium excretion

- C. Increased serum calcium level
- D. Decreased serum uric acid level

Correct Answer: D. Decreased serum uric acid level

By inhibiting uric acid synthesis, allopurinol decreases its excretion. The drug's effectiveness is assessed by evaluating for a decreased serum uric acid concentration. Allopurinol undergoes metabolism in the liver, where it transforms into its pharmacologically active metabolite, oxypurinol. The half-life of allopurinol is 1 to 2 hours, and oxypurinol is about 15 hours.

- **Option A:** Alkaline phosphatase levels are not altered by allopurinol. Both allopurinol and oxypurinol are renally excreted. Allopurinol and oxypurinol both inhibit xanthine oxidase, an enzyme in the purine catabolism pathway that converts hypoxanthine to xanthine to uric acid.
- **Option B:** It does not affect calcium excretion. In patients with renal insufficiency (chronic kidney disease stage 4 and greater), allopurinol should start at 50 mg daily dose, and the dose shall be escalated by 50 mg every 2 to 5 weeks until reaching the target serum uric acid.
- **Option C:** Allopurinol does not alter the level of alkaline phosphatase, nor does it affect urinary calcium excretion or the serum calcium level. Complete blood count, liver function tests, renal function, and serum uric acid levels shall be measured every 2 to 5 weeks while titrating the dose until achieving target serum uric acid level and every six months after that.

36. After undergoing transurethral resection of the prostate to treat benign prostatic hyperplasia, a male client returns to the room with continuous bladder irrigation. On the first day after surgery, the client reports bladder pain. What should Nurse Anthony do first?

- A. Increase the I.V. flow rate.
- B. Notify the physician immediately.
- C. Assess the irrigation catheter for patency and drainage.
- D. Administer meperidine (Demerol), 50 mg I.M., as prescribed.

Correct Answer: C. Assess the irrigation catheter for patency and drainage.

Although postoperative pain is expected, the nurse should make sure that other factors, such as an obstructed irrigation catheter, aren't the cause of the pain. Palpate bladder to determine presence of distention. Check drainage tubing for kinks. Observe drainage for an adequate amount, presence of clots that might be blocking drainage tubes. Evaluate I & O. Avoid cold irrigation solution as it may cause bladder spasm.

- **Option A:** Increasing the I.V. flow rate may worsen the pain. If there is increased bloody drainage or presence of clots, the nurse may increase the rate of irrigation infusion as per physician's orders. If a large amount of blood or clots persists, notify the physician.
- **Option B:** Notifying the physician isn't necessary unless the pain is severe or unrelieved by the prescribed medication. Complete pain assessment using the 0-10 or visual analogue scale.
- **Option D:** After assessing catheter patency, the nurse should administer an analgesic, such as meperidine, as prescribed. To help prevent urinary tract obstruction by flushing out small blood clots that form after prostate or bladder surgery. Check the inflow and outflow lines periodically for kinks, to make sure the solution is running freely.

37. Stacy was diagnosed with acute lymphoid leukemia (ALL). She was discharged from the hospital following her chemotherapy treatments. Which statement of Stacy's mother indicated that she understands when she will contact the physician?

- A. "I should contact the physician if Stacy has difficulty in sleeping".
- B. "I will call my doctor if Stacy has persistent vomiting and diarrhea".
- C. "My physician should be called if Stacy is irritable and unhappy".
- D. "Should Stacy have continued hair loss, I need to call the doctor".

Correct Answer: B. "I will call my doctor if Stacy has persistent vomiting and diarrhea".

Persistent (more than 24 hours) vomiting, anorexia, and diarrhea are signs of toxicity and the patient should stop the medication and notify the healthcare provider.

- **Option A:** Oftentimes, chemotherapy drugs cause patients to feel tired and sleepy throughout the day. Therefore, patients on chemotherapy can end up napping or sleeping during the day and that leads to difficulty sleeping at night or through the night.
- **Option C:** Chemotherapy medications can directly impact the way people feel emotionally and physically.
- **Option D:** Chemotherapy drugs are powerful medications that attack rapidly growing cancer cells. Unfortunately, these drugs also attack other rapidly growing cells in the body, including those in the hair roots.

38. Which information is the most essential in the initial teaching session for the family of a young adult recently diagnosed with schizophrenia?

- A. Symptoms of this disease imbalance in the brain.
- B. Genetic history is an important factor related to the development of schizophrenia.
- C. Schizophrenia is a serious disease affecting every aspect of a person's functioning.
- D. The distressing symptoms of this disorder can respond to treatment with medications.

Correct Answer: D. The distressing symptoms of this disorder can respond to treatment with medications.

This statement provides accurate information and an element of hope for the family of a schizophrenic client. For the initial treatment of acute psychosis, it is recommended to commence an oral second-generation antipsychotic (SGA) such as aripiprazole, olanzapine, risperidone, quetiapine, asenapine, lurasidone, sertindole, ziprasidone, brexpiprazole, molindone, iloperidone, etc. Sometimes, if clinically needed, alongside a benzodiazepine such as diazepam, clonazepam, or lorazepam to control behavioral disturbances and non-acute anxiety. First-generation antipsychotics (FGA) like trifluoperazine, Fluphenazine, haloperidol, pimozide, sulpiride, flupentixol, chlorpromazine, etc. are not commonly used as the first line but can be used.

- **Option A:** There are also arguments that schizophrenia is a neurodevelopmental disorder based on abnormalities present in the cerebral structure, an absence of gliosis suggesting in utero changes, and the observation that motor and cognitive impairments in patients precede the illness onset.

- **Option B:** Several studies postulate that the development of schizophrenia results from abnormalities in multiple neurotransmitters, such as dopaminergic, serotonergic, and alpha-adrenergic hyperactivity or glutamergic and GABA hypoactivity. Genetics also play a fundamental role – there is a 46% concordance rate in monozygotic twins and a 40% risk of developing schizophrenia if both parents are affected. The gene neuregulin (NGR1) which is involved in glutamate signaling and brain development has been implicated, alongside dysbindin (DTNBP1) which helps glutamate release, and catecholamine O-methyltransferase (COMT) polymorphism, which regulates dopamine function.
- **Option C:** Although the remaining statements are true, they do not provide the empathic response the family needs after just learning about the diagnosis. These facts can become part of the ongoing teaching. The first schizophrenic episode usually occurs during early adulthood or late adolescence. Individuals often lack insight at this stage; therefore few will present directly to seek help for their psychotic symptoms. Common presentations include a relative noticing social withdrawal, personality changes, or uncharacteristic behavior; deliberate self-harm or suicide attempts; calling the police to report their delusional symptoms, or referral via the criminal justice system.

39. Nurse Hazel receives emergency laboratory results for a client with chest pain and immediately informs the physician. An increased myoglobin level suggests which of the following?

- A. Liver disease
- B. Myocardial damage
- C. Hypertension
- D. Cancer

Correct Answer: B. Myocardial damage

Detection of myoglobin is a diagnostic tool to determine whether myocardial damage has occurred. Myoglobin, an oxygen-carrying protein found in cardiac muscle and striated skeletal muscle, presents an attractive alternative to CPK and LDH in the emergency department setting for identification of acute myocardial infarction. Myoglobin levels may be elevated in the serum within one hour after myocardial cell death with peak levels reached within four to six hours.

- **Option A:** Liver disease usually has elevated hepatic enzymes, elevated serum bilirubin, elevated serum ammonia, low levels of glucose, and elevated creatinine, among others. In chronic liver disease, there is inflammation and destruction of hepatocytes that leads to the release of aspartate aminotransferase (AST) and alanine aminotransferase (ALT), hence the high levels of these markers in the blood. Other parameters (ALP and GGT) of LFTs also appear elevated in cholestatic conditions like PBC.
- **Option C:** Initial laboratory tests for hypertension may include urinalysis; fasting blood glucose; hematocrit; serum sodium, potassium, creatinine, and calcium; and lipid profile. The evaluation consists of looking for signs of end-organ damage and consists of the following: blood workup including complete blood count, ESR, creatinine, eGFR, electrolytes, HbA1c, thyroid profile, blood cholesterol levels, and serum uric acid; 12 lead ECG (to document left ventricular hypertrophy, cardiac rate, and rhythm); and urine albumin to creatinine ratio.
- **Option D:** Cancer is diagnosed based on a number of diagnostic tests and procedures and radiology. The 2015 NHIS findings show that the utilization of cancer screening tests for cervical, colorectal, and breast cancer was below Healthy People 2020 target. In 2015, rates for Pap tests,

mammography, colorectal cancer screening were 80%, 70%, and just above 60 %, respectively, whereas the HP 2020 targets are 93% for Pap tests, 81% for mammography, and 70.5 % for colorectal cancer screening.

40. Nurse Monette recognizes that the focus of environmental (MILIEU) therapy is to:

- A. Manipulate the environment to bring about positive changes in behavior.
- B. Allow the client's freedom to determine whether or not they will be involved in activities.
- C. Role play life events to meet individual needs.
- D. Use natural remedies rather than drugs to control behavior.

Correct Answer: A. Manipulate the environment to bring about positive changes in behavior

Environmental (MILIEU) therapy aims at having everything in the client's surrounding area toward helping the client. Theories of MT commonly acknowledge the role of the environment as a setting in which therapeutic change happens. According to Dincin (1975), "a great deal has been written about the importance of the milieu and the environment. The creation of a therapeutic atmosphere is one of [its] hallmarks" (p. 134).

- **Option B:** Milieu therapy is a form of psychotherapy that involves the use of therapeutic communities. Patients join a group of around 30, for between 9 and 18 months. During their stay, patients are encouraged to take responsibility for themselves and the others within the unit, based upon a hierarchy of collective consequences.
- **Option C:** In milieu therapy, you spend a significant amount of time in a home-like environment, interacting with other people as you conduct ordinary activities throughout the day. You may attend group or individual therapy sessions as part of your schedule. With this treatment approach, patients have daily responsibilities that contribute to the functioning of their environment. Many programs allow people to choose the work they do every day so they feel comfortable and productive. The idea is that these activities and responsibilities will become opportunities to look at, talk about, and change ways of thinking and acting that aren't healthy.
- **Option D:** In milieu therapy, power is distributed in a more egalitarian way. This shared authority approach allows everyone in the program to have a greater sense of agency and responsibility. That's because the end goal is for everyone in the program to emerge with more confidence in their ability to handle stressors in the larger society.

41. Which of the following factors causes the nausea associated with renal failure?

- A. Oliguria
- B. Gastric ulcers
- C. Electrolyte imbalances
- D. Accumulation of waste products

Correct Answer: D. Accumulation of waste products

Although clients with renal failure can develop stress ulcers, the nausea is usually related to the poisons of metabolic wastes that accumulate when the kidneys are unable to eliminate them. Nausea

and vomiting are very common in kidney patients and have many causes. These causes include the build-up of uremic toxins, medications, gastroparesis, ulcers, gastroesophageal reflux disease, gallbladder disease, and many many more.

- **Option A:** The client has oliguria, but this doesn't directly cause nausea. In patients with acute oliguria, one of the most common functional derangements that are observed is the sudden fall in the GRF, leading to acute renal failure. It results in rapid increment in plasma urea and creatinine levels, metabolic acidosis with hyperkalemia, other electrolyte abnormalities, and volume overload.
- **Option B:** The occurrence and pathophysiology of peptic ulcer was studied in 117 uraemic patients. Ulcer disease was unusually frequent, and the highest incidence was found in patients on regular dialysis (48%). Factors implicated were hyperacidity, hypergastrinemia, and the effect of dialysis itself.
- **Option C:** In renal failure, acute or chronic, one most commonly sees patients who have a tendency to develop hypervolemia, hyperkalemia, hyperphosphatemia, hypocalcemia, and bicarbonate deficiency (metabolic acidosis). Sodium is generally retained, but may appear normal, or hyponatremic, because of dilution from fluid retention.

42. The oncology nurse specialist provides an educational session to nursing staff regarding the characteristics of Hodgkin's disease. The nurse determines that further education is needed if a nursing staff member states which of the following is characteristic of the disease?

- A. Prognosis depends on the stage of the disease
- B. Occurs most often in the older client
- C. Presence of Reed-Sternberg cells
- D. Involvement of lymph nodes, spleen, and liver

Correct Answer: B. Occurs most often in the older client

- **Option B:** Hodgkin's disease is a disorder of young people up to age 40 and among adults. It is more common in adolescents between the ages of 15 and 19.
- **Option A:** Hodgkin's lymphoma prognosis depends on the stage of the disease. It is treatable in the early stages of the stages.
- **Option C:** Hodgkin's disease is marked by the presence of Reed-Sternberg cells which are the abnormal B lymphocytes (WBC that produces antibodies that are essential in combating infections).
- **Option D:** The disease spread through the lymph vessels from lymph node to lymph node. It can also travel to other parts such as the lung, liver, and spleen.

43. Nicolas is experiencing hallucinations and tells the nurse, "The voices are telling me I'm no good." The client asks if the nurse hears the voices. The most appropriate response by the nurse would be:

- A. "It is the voice of your conscience, which only you can control."
- B. "No, I do not hear your voices, but I believe you can hear them".
- C. "The voices are coming from within you and only you can hear them."

D. "Oh, the voices are a symptom of your illness; don't pay any attention to them."

Correct Answer: B. "No, I do not hear your voices, but I believe you can hear them".

The nurse, demonstrating knowledge and understanding, accepts the client's perceptions even though they are hallucinatory. Accept the fact that the voices are real to the client, but explain that you do not hear the voices. Refer to the voices as "your voices" or "voices that you hear". Validating that your reality does not include voices can help the client cast "doubt" on the validity of their voices.

- **Option A:** Help the client to identify the needs that might underlie the hallucination. What other ways can these needs be met? Hallucinations might reflect needs for anger, power, self-esteem, and sexuality. Explore how the hallucinations are experienced by the client. Exploring the hallucinations and sharing the experience can help give the person a sense of power that he or she might be able to manage the hallucinatory voices.
- **Option C:** Help the client to identify times that the hallucinations are most prevalent and frightening. Helps both nurse and client identify situations and times that might be most anxiety-producing and threatening to the client. Stay with clients when they are starting to hallucinate, and direct them to tell the "voices they hear" to go away. Repeat often in a matter-of-fact manner. The client can sometimes learn to push voices aside when given repeated instructions. especially within the framework of a trusting relationship.
- **Option D:** Decrease environmental stimuli when possible (low noise, minimal activity). Decrease the potential for anxiety that might trigger hallucinations. Helps calm the client. Keep to simple, basic, reality-based topics of conversation. Help the client focus on one idea at a time. The client's thinking might be confused and disorganized; this intervention helps the client focus and comprehend reality-based issues.

44. The clinic nurse is preparing to test the visual acuity of a client using a Snellen chart. Which of the following identifies the accurate procedure for this visual acuity test?

- A. Both eyes are assessed together, followed by the assessment of the right and then the left eye.
- B. The right eye is tested followed by the left eye, and then both eyes are tested.
- C. The client is asked to stand at a distance of 40ft. from the chart and is asked to read the largest line on the chart.
- D. The client is asked to stand at a distance of 40ft from the chart and to read the line that can be read 200 ft away by an individual with unimpaired vision.

Correct Answer: B. The right eye is tested followed by the left eye, and then both eyes are tested.

Visual acuity is assessed in one eye at a time, and then in both eyes together with the client comfortably standing or sitting. The right eye is tested with the left eye covered; then the left eye is tested with the right eye covered. Both eyes then are tested together. Visual acuity is measured with or without corrective lenses and the client stands at a distance of 20ft. from the chart. A visual acuity test is only one part of a comprehensive ophthalmologic examination. The goal of the visual acuity test is to determine clarity or sharpness of vision.

- **Option A:** Cover the patient's eye with their hand or an occluder card. Some testers prefer to test the eyes in the same order on all patients. An alternative is to test the eye with worse vision first to reduce remembered letters. The second eye can also read the letters backward to reduce remembered letters.

- **Option C:** Position the patient in a well-lit area so that they are a standard distance from the chart. The testing distance is typically 20 feet (6 m), but this may vary. In smaller spaces, mirrors can be used to achieve the required distance. Additionally, a near Snellen chart may be used at 14 inches in some cases, which would require reading glasses if applicable.
- **Option D:** Move the patient closer to the chart if they are unable to read to the top line, the new distance from the chart becomes the numerator in a fraction reporting system. For example, if able to read the top line at 10 feet, the patient's vision would be represented as 10/200.

45. A pregnant client is receiving magnesium sulfate therapy for the control of preeclampsia. A nurse discovers that the client is encountering toxicity from the medication in which of the following assessments?

- A. Respirations of 10 breaths per minute.
- B. Presence of deep tendon reflex.
- C. Urine output of 25 ml/hr.
- D. Serum magnesium level of 7 mEq/L.

Correct Answer: A. Respirations of 10 breaths per minute.

Magnesium sulfate is a central nervous system depressant and anticonvulsant. It can cause smooth muscle relaxation. Signs of magnesium sulfate toxicity relate to the central nervous system depressant effects of the medication and include respiratory depression, decreased urine output, loss of deep tendon reflexes, hypotension and a decreased maternal and fetal heart rate.

- **Option B:** Deep tendon reflexes must be present.
- **Option C:** Urine output should be maintained at 25-30ml/hr.
- **Option D:** Normal range for magnesium is between 4-7 mEq/L

46. A child has recently been diagnosed with Duchenne's muscular dystrophy. The parents are receiving genetic counseling prior to planning another pregnancy. Which of the following statements includes the most accurate information?

- A. Duchenne's is an X-linked recessive disorder, so daughters have a 50% chance of being carriers and sons a 50% chance of developing the disease.
- B. Duchenne's is an X-linked recessive disorder, so both daughters and sons have a 50% chance of developing the disease.
- C. Each child has a 1 in 4 (25%) chance of developing the disorder.
- D. Sons only have a 1 in 4 (25%) chance of developing the disorder.

Correct Answer: A. Duchenne's is an X-linked recessive disorder, so daughters have a 50% chance of being carriers and sons a 50% chance of developing the disease.

The recessive Duchenne gene is located on one of the two X chromosomes of a female carrier. DMD is a genetic disease due to the mutation of the dystrophin gene, located on chromosome Xp21. It is inherited as an X-linked recessive trait; however, approximately 30% of cases are due to new mutations. Carrier females show no evidence of muscular weakness; however, symptomatic female

carriers have been described. About 2.5% to 20% of female carriers may be affected. This can be explained by the Lyon hypothesis in which the normal X chromosome becomes inactivated, and the X chromosome with the mutation is expressed.

- **Option B:** If her son receives the X bearing the gene he will be affected. Female carriers can become symptomatic if they are associated with Turner's syndrome (45X) or mosaic Turner karyotype, balanced X autosome translocations with breakpoints within the dystrophin gene and preferential inactivation of the normal X, and females with a normal karyotype but with nonrandom X chromosome inactivation with diminished expression of the normal dystrophin allele.
- **Option C:** Daughters are not affected, but 50% are carriers because they inherit one copy of the defective gene from the mother. Mutations in the dystrophin gene result in diseases known as dystrophinopathies, which encompass Duchenne muscular dystrophy, Becker muscular dystrophy, and an intermediate form.
- **Option D:** There is a 50% chance of a son being affected. Mutations result in a limited production of the dystrophin protein, which results in loss of the myofiber membrane integrity with repeated cycles of necrosis and regeneration. Fibrous connective tissue and fat progressively replace muscle leading to clinical features.

47. You are preparing a child for IV conscious sedation before the repair of a facial laceration. What information should you report immediately to the physician?

- A. The child suddenly pulls out the IV
- B. The parent is not sure regarding the child's tetanus immunization status
- C. The parent wants information about the IV conscious sedation
- D. The parent's refusal of the administration of the IV sedation

Correct Answer: D. The parent's refusal of the administration of the IV sedation.

The refusal of the parents is an absolute contraindication; therefore the physician must be notified. But the autonomy of parents is very obviously different from the autonomy of patients to make decisions for themselves. While adult patients are generally thought to have an absolute right to refuse medical treatment for themselves, we don't usually think that parents can refuse all medical treatment for their children.

- **Option A:** The RN can reestablish the IV access. Parents' views might, at least in some circumstances, influence whether or not treatment would be in a child's best interests. Nurses and doctors are able to administer fluid directly into the veins using IV therapy. IV therapy is a relatively simple process that can be performed by nurses, but there are serious complications associated with it.
- **Option B:** Tetanus status can be addressed later. Tetanus immunization is part of the DTaP (diphtheria, tetanus, and acellular pertussis) vaccinations. Kids usually get: a series of four doses of DTaP vaccine before 2 years of age. another dose at 4–6 years of age.
- **Option C:** The RN can provide information about conscious sedation. Identifying teachable moments in clinical practice is an effective way to increase workplace learning with all nurses playing a role, not just nurse educators.

48. The nursing diagnosis that would be most appropriate for a 22-year old client who uses ritualistic behavior would be:

- A. Ineffective coping
- B. Impaired adjustment
- C. Personal identity disturbance
- D. Sensory/perceptual alterations

Correct Answer: A. Ineffective coping

Ineffective coping is the impairment of a person's adaptive behaviors and problem-solving abilities in meeting life's demands; ritualistic behavior fits under this category as a defining characteristic. During the beginning of treatment, allow plenty of time for rituals. Do not be judgmental or verbalize disapproval of the behavior. To deny the client this activity can precipitate panic level of anxiety.

- **Option B:** Gradually limit the amount of time allotted for ritualistic behavior as the client becomes more involved in unit activities. Anxiety is minimized when the client is able to replace ritualistic behaviors with more adaptive ones. Encourage independence and give positive reinforcement for independent behaviors. Positive reinforcement enhances self-esteem and encourages repetition of desired behaviors.
- **Option C:** Personal identity disturbance is not a priority diagnosis for the client. Assess client's level of anxiety. Investigate the types of situations that increase anxiety and result in ritualistic behaviors. Helping the client recognize the precipitating factors is the first step in teaching the client to interrupt the escalating anxiety. Initially meet the client's dependency needs as necessary. Sudden and complete elimination of avenues for dependency would create anxiety and will burden the client more.
- **Option D:** This nursing diagnosis is appropriate, but it is not the priority. Encourage the recognition of situations that provoke obsessive thoughts or ritualistic behaviors. Recognition of precipitating factors is the first step in teaching the client to interrupt escalation of anxiety. Provide positive reinforcement for non-ritualistic behaviors. Positive reinforcement enhances self-esteem and encourages repetition of desired behaviors.

49. A male client abruptly sits up in bed, reports having difficulty breathing and has an arterial oxygen saturation of 88%. Which mode of oxygen delivery would most likely reverse the manifestations?

- A. Simple mask
- B. Non-rebreather mask
- C. Face tent
- D. Nasal cannula

Correct Answer: B. Non-rebreather mask

A non-rebreather mask can deliver levels of the fraction of inspired oxygen (FIO₂) as high as 100%. Other modes — simple mask, face tent, and nasal cannula — deliver lower levels of FIO₂. Non-rebreathing masks have a bag attached to the mask known as a reservoir bag, which inhalation draws from to fill the mask through a one-way valve and features ports at each side for exhalation, resulting in an ability to provide the patient with 100% oxygen at a higher LPM flow rate.

- **Option A:** Face masks can be generally divided into simple facemasks, air-entrainment masks, and non-rebreathers. A simple facemask is a mask with no bag attached, which delivers oxygen at 5 to 8 LPM. A disadvantage of this and other full face masks is the inability of the patient to eat, drink, or easily communicate while using such a device.
- **Option C:** Face tents are used to provide a controlled concentration of oxygen and increase moisture for patients who have facial burn or a broken nose, or who are claustrophobic. The mask covers the nose and mouth and does not create a seal around the nose. It can provide 28% to 100% O₂. Flow meter should be set to deliver O₂ at a minimum of 15 L/min. It is difficult to achieve high levels of oxygenation with this mask.
- **Option D:** Nasal cannula is a thin tube, often affixed behind the ears and used to deliver oxygen directly to the nostrils from a source connected with tubing. This is the most common method of delivery for home use and provides flow rates of 2 to 6 liters per minute (LPM) comfortably, allowing the delivery of oxygen while maintaining the patient's ability to utilize his or her mouth to talk, eat, etc.

50. A patient receiving head and neck radiation and systemic chemotherapy has ulcerations over the oral mucosa and tongue and thick, ropey saliva. An appropriate intervention for the nurse to teach the patient is to

- Rinse the mouth before and after each meal and at bedtime with a saline solution
- Use cotton-tipped applicators dipped in hydrogen peroxide to clean the teeth
- Gargle and rinse the mouth several times a day with an antiseptic mouthwash
- Remove food debris from the teeth and oral mucosa with a stiff toothbrush

Correct Answer: A. Rinse the mouth before and after each meal and at bedtime with a saline solution

- **Option A:** The patient should rinse the mouth with a saline solution frequently to decrease the pain and to cleanse the wounds.
- **Option B:** Hydrogen peroxide may damage tissues.
- **Option C:** Antiseptic mouthwashes may irritate the oral mucosa and are not recommended.
- **Option D:** A soft toothbrush is used for oral care.

51. A 32-year-old patient with a progressive demyelinating disorder has been admitted to the neurology ward for further evaluation and management. Over the course of the disorder, the patient's clinical record notes a remarkable resilience against concurrent CNS infections, which is unusual in individuals with a disrupted blood-brain barrier. During the ward round, the attending physician engages the medical team in a discussion regarding the neuroimmune interactions within the CNS. In light of the patient's clinical course and the neuroscience lecture on the role of specific nerve cells in protecting the CNS from infection and their ability to become phagocytic in response to inflammation, which type of nerve cell is primarily responsible for this immune function within the CNS?

- A. Schwann cells
- B. Ependymal cells
- C. Microglia
- D. Astrocytes

Correct Answer: C. Microglia

Microglia are specialized immune cells found in the central nervous system. Their primary function is to act as the brain's resident immune cells, monitoring the brain's microenvironment, and responding to potential threats, such as infections or damage, by phagocytosing (engulfing and eliminating) cellular debris, pathogens, and abnormal proteins, thus helping to maintain brain health and homeostasis.

- **Option A:** Schwann cells are primarily involved in the myelination of peripheral nerves, not central nervous system nerves. They help in speeding up the conduction of nerve impulses and aid in the regeneration of peripheral nerve fibers. They do not have a primary role in immune response or phagocytosis within the CNS.
- **Option B:** Ependymal cells line the ventricles of the brain and spinal cord canal and are involved in the production and circulation of cerebrospinal fluid. They don't play a primary role in immune responses or phagocytosis within the CNS.
- **Option D:** Astrocytes are a type of glial cell that provides structural and metabolic support for neurons. They contribute to the maintenance of the blood-brain barrier and regulate the extracellular environment. While they do have some roles in the immune response within the CNS, they are not primarily responsible for phagocytosis or direct immune defense like microglia.

52. The mothers asks the nurse why her child's hemoglobin was normal at birth but now the child has S hemoglobin. Which of the following responses by the nurse is most appropriate?

- A. "The placenta bars passage of the hemoglobin S from the mother to the fetus."
- B. "The red bone marrow does not begin to produce hemoglobin S until several months after birth."
- C. "Antibodies transmitted from you to the fetus provide the newborn with temporary immunity."
- D. "The newborn has a high concentration of fetal hemoglobin in the blood for some time after birth."

Correct Answer: D. "The newborn has a high concentration of fetal hemoglobin in the blood for some time after birth."

Sickle cell disease is an inherited disease that is present at birth. However, 60% to 80% of a newborn's hemoglobin is fetal hemoglobin, which has a structure different from that of hemoglobin S or hemoglobin A. Sickle cell symptoms usually occur about 4 months after birth, when hemoglobin S begins to replace the fetal hemoglobin.

- **Option A:** The gene for sickle cell disease is transmitted at the time of conception, not passed through the placenta. Sickle cell disease is an autosomal recessive disorder of a gene mutation. On chromosome 11, nucleotide mutation leads to substitution of glutamic acid to valine at position six on the beta-globin subunit. This leads to changes in the physical properties of the globin chain.
- **Option B:** Some hemoglobin S is produced by the fetus near term. The fetus produces all its own hemoglobin from the earliest production in the first trimester. Fetal hemoglobin production is switched off soon after birth although the time of switch over is not known. A replacement of glutamic acid of the beta chain by valine at the 6th position gives rise to a sickle cell disorder. This change, called hemoglobin S (HbS), is an abnormal hemoglobin

- **Option C:** Passive immunity conferred by maternal antibodies is not related to sickle cell disease, but this transmission of antibodies is important to protect the infant from various infections during early infancy. Studies have revealed that HbF usually disappears from red blood of infants after about 6 months. However, the exact time of disappearance of HbF may vary and the signal that determines the switch from fetal to adult hemoglobin is not known.

53. Which route of administration is preferable for administration of daily analgesics (if all body systems are functional)?

- A. IV
- B. IM or subcutaneous
- C. Oral
- D. Transdermal
- E. PCA

Correct Answer: C. Oral

If the gastrointestinal system is functioning, the oral route is preferred for routine analgesics because of lower cost and ease of administration. Oral route is also less painful and less invasive than the IV, IM, subcutaneous, or PCA routes. Although a few drugs taken orally are intended to be dissolved in the mouth, nearly all drugs taken orally are swallowed. Of these, most are taken for the systemic drug effects that result after absorption from the various surfaces along the gastrointestinal tract.

- **Option A:** IV therapy allows a higher concentration of nutrients or medication into the body — and that means the body gets what it needs faster and more effectively without further damage to the GI system.
- **Option B:** Rapid and uniform absorption of the drug especially those of the aqueous solutions. Rapid onset of the action compared to that of the oral and the subcutaneous routes. IM injection bypasses the first-pass metabolism. It also avoids the gastric factors governing drug absorption.
- **Option D:** Transdermal route is slower and medication availability is limited compared to oral forms. Transdermal delivery systems provide continuous administration of drugs through the skin, which maintains constant plasma drug levels and avoids the peaks and troughs that are seen with oral administration.
- **Option E:** Patient-controlled analgesia is used to treat acute, chronic, postoperative, and labor pain. A variety of medications can be used for patient-controlled analgesia and are administered intravenously (IV), through an epidural or peripheral nerve catheter, and transdermally.

54. One of the most serious blood coagulation complications for individuals with cancer and for those undergoing cancer treatments is disseminated intravascular coagulation (DIC). The most common cause of this bleeding disorder is:

- A. Brain metastasis
- B. Sepsis
- C. Intravenous heparin therapy
- D. Underlying liver disease

Correct Answer: B. Sepsis

- **Option B:** Bacterial endotoxins released from gram-negative bacteria activate the Hageman factor or coagulation factor XII. This factor inhibits coagulation via the intrinsic pathway of homeostasis, as well as stimulating fibrinolysis.
- **Option D:** Liver disease can cause multiple bleeding abnormalities resulting in chronic, subclinical DIC; however, sepsis is the most common cause.

55. A 67-year-old male patient who recently had a permanent artificial pacemaker implanted is receiving education from the nurse about managing his health and lifestyle with the device. The patient enjoys an active lifestyle and is keen to understand what activities and precautions are necessary with his new pacemaker. He also uses various electrical appliances at home and is concerned about how they might affect his pacemaker. In this scenario, which piece of information provided by the nurse indicates a knowledge deficit regarding the management of a patient with an artificial cardiac pacemaker?

- A. "Take your pulse rate once a day, in the morning upon awakening."
- B. "You may use electrical appliances but maintain a safe distance from high-powered devices."
- C. "Regular follow-up care is important to ensure the pacemaker is functioning correctly."
- D. "You may engage in contact sports."

Correct Answer: D. may engage in contact sports

The client should be advised by the nurse to avoid contact sports. This will prevent trauma to the area of the pacemaker generator.

- **Option A:** The physician may advise to take and record the pulse rate often to gauge the heart rate. This allows comparison of the heart rate to the acceptable range to determine if the pacemaker is working effectively.
- **Option B:** Use of electrical appliances is allowed, but the client must maintain a distance from the appliances. Devices such as anti-theft systems, metal detectors, cell phones, mp3 players/headphones, radios, power-generating equipment, magnets, etc may interfere with a pacemaker.
- **Option C:** Modern pacemakers are built to last. Still, it needs to be checked periodically to assess the battery and find out how the wires are working, so it is a must to keep pacemaker checkup appointments.

56. A client with rectal cancer may exhibit which of the following symptoms?

- A. Abdominal fullness
- B. Gastric fullness
- C. Rectal bleeding
- D. Right upper quadrant pain

Correct Answer: C. Rectal bleeding

Rectal bleeding is a common symptom of rectal cancer. Rectal cancer may be missed because other conditions such as hemorrhoids can cause rectal bleeding. Symptoms according to tumor location on the clinical presentation of rectosigmoid are more frequently associated with a change in bowel habits (diminish stool caliber), bright red blood per rectum (hematochezia), pain (tenesmus), leakage diarrhea (mucus discharge), and constipation (obstruction).

- **Option A:** Abdominal fullness may occur with colon cancer. Physical examination should explore signs of ascites, hepatomegaly, and lymphadenopathy and must extend to a digital rectal exam for fixed mass. A thorough family history is of great relevance in identifying familial clusters and inherited patterns that would change the surveillance and therapy of a high-risk patient.
- **Option B:** Gastric fullness may occur with gastric cancer. The most common physical examination finding is a palpable abdominal mass indicating advanced disease. The patient may also present with signs of metastatic lymphatic spread distribution, including Virchow's node (left supraclavicular adenopathy), Sister Mary Joseph node (periumbilical nodule), and Irish node (left axillary node).
- **Option D:** Right upper quadrant pain may occur with liver cancer. Most patients are initially asymptomatic from hepatocellular carcinoma but often present with related symptoms due to chronic liver disease. Patients may complain of upper abdominal discomfort and distention, weight loss, fever, poor appetite, early satiety, diarrhea, and other symptoms.

57. Nurse Pauline is aware that Dementia unlike delirium is characterized by:

- A. Slurred speech
- B. Insidious onset
- C. Clouding of consciousness
- D. Sensory perceptual change

Correct Answer: B. insidious onset

Dementia has a gradual onset and progressive deterioration. It causes pronounced memory and cognitive disturbances. The pathophysiology of dementia is not understood completely. Most types of dementia, except vascular dementia, are caused by the accumulation of native proteins in the brain. History must be obtained from the patient and their family members. Patients may present with symptoms of change in behavior, getting lost in familiar neighborhoods, memory loss, mood changes, aggression, social withdrawal, self-neglect, cognitive difficulty, personality changes, difficulty performing tasks, forgetfulness, difficulty in communication, vulnerability to infections, loss of independence, etc., A detailed history should include past medical, family, drug, and alcohol history.

- **Option A:** Physical examination should evaluate head-to-toe and vital signs to determine any possible cause. Neurologic examination should focus on evaluating new focal findings that suggest an intracranial cause, for example, a stroke. The dopamine excess contributes to hyperactive delirium and is related to decreased acetylcholine. The dopaminergic and cholinergic pathways overlap in the brain. This explains why dopamine receptors impact acetylcholine levels and explain the clinical manifestations of delirium, including hyperactive and hypoactive forms. The imbalance between neurotransmitters and the cholinergic pathway may result in delirium.
- **Option C:** Acetylcholine is a very important neurotransmitter in attention and consciousness. It is known, acetylcholine acts as a modulator in sensory and cognitive input, so an impairment in the route leads to developing symptoms of hypoactive or hyperactive delirium, including inattention, disorganized thinking, and perceptual disturbances. Cholinergic pathways project from basal forebrain and pontomesencephalon to interneurons in the striatum and finally targets throughout the cortex.

- **Option D:** This is also a characteristic of delirium. The DSM-5 defines delirium as the presence of all the following criteria: disturbance in attention and awareness that develops acutely and tends to fluctuate in severity; at least one additional disturbance in cognition; disturbances not better explained by preexisting dementia; disturbances that do not occur in the context of a severely reduced level of arousal or coma; or evidence of an underlying organic cause or causes.

58. A patient in the cardiac unit is concerned about the risk factors associated with atherosclerosis. Which of the following are hereditary risk factors for developing atherosclerosis?

- A. Family history of heart disease
- B. Overweight
- C. Smoking
- D. Age

Correct Answer: A. Family history of heart disease

Family history of heart disease is an inherited risk factor that is not subject to a lifestyle change. Having a first-degree relative with heart disease has been shown to significantly increase risk. ASCVD is multifactorial etiology. The most common risk factors include hypercholesterolemia (LDL-cholesterol), hypertension, diabetes mellitus, cigarette smoking, age (male older than 45 years and female older than 55 years), male gender, and strong family history (male relative younger than 55 years and female relative younger than 65 years).

- **Option B:** Also, a sedentary lifestyle, obesity, diets high in saturated and trans-fatty acids, and certain genetic mutations contribute to risk. While a low level of high-density lipoprotein (HDL)-cholesterol is considered a risk factor, pharmacological therapy increasing HDL-cholesterol has yielded negative results raising concerns about the role of HDL in ASCVD.
- **Option C:** Smoking is a risk factor that is subject to lifestyle change and can reduce risk significantly. For the most part atherosclerosis and its pathology can be prevented. All healthcare workers who look after patients should educate patients on the need to exercise regularly, discontinue smoking, maintain healthy body weight, eat a healthy diet, and remain compliant with the medications used to lower lipids.
- **Option D:** Advancing age increases the risk of atherosclerosis but is not a hereditary factor. It has been reported that 75% of acute myocardial infarctions occur from plaque rupture and the highest incidence of plaque rupture was observed in men over 45 years; whereas, in women, the incidence increases beyond age 50 years.

59. Which statements by the mother of a toddler would lead the nurse to suspect that the child has iron-deficiency anemia? Select all that apply.

- A. "He drinks over 3 cups of milk per day."
- B. "I can't keep enough apple juice in the house; he must drink over 10 ounces per day."
- C. "He refuses to eat more than 2 different kinds of vegetables."
- D. "He doesn't like meat, but he will eat small amounts of it."
- E. "He sleeps 12 hours every night and takes a 2-hour nap."

Correct Answers: A & B

Toddlers should have between 2 and 3 cups of milk per day and 8 ounces of juice per day. If they have more than that, then they are probably not eating enough other foods, including iron-rich foods that have the needed nutrients.

- **Option A:** A serving of iron-fortified cereals typically has 100 percent of the daily value for iron in just one serving. The exact amount will vary, so be sure to check the label. Dry cereals, like Cheerios, are usually fortified as well.
- **Option B:** The body absorbs iron better when the child consumes it with a source of vitamin C. To enable the body to absorb more iron, serve iron-rich foods alongside foods rich in vitamin C.
- **Option C:** The body doesn't absorb nonheme iron as easily as heme iron. This is true for both toddlers and adults. If the child eats a vegetarian or mostly vegetarian diet, aim for twice as much iron as the recommended amount.
- **Option D:** Meat and poultry contain large amounts of heme iron, which is easy for the body to digest. Beef, organ meats, and liver in particular have a lot of iron. A 3-ounce serving of beef liver, for example, contains 5 mg of iron.
- **Option E:** Peirano et al. reported that relative to controls, children with IDA showed: a) longer duration of REM sleep episodes in the first third and shorter in the last third; b) more REM sleep episodes in the first third and fewer in the second third; and c) shorter latency to the first REM sleep episode and shorter NREM stage 2. So, their results show that IDA is associated with long-lasting alterations in the temporal organization of sleep patterns.

60. The nurse is caring for a hospitalized client who has chronic renal failure. Which of the following nursing diagnoses are most appropriate for this client? Select all that apply.

- A. Excess Fluid Volume
- B. Imbalanced Nutrition; Less than Body Requirements
- C. Activity Intolerance
- D. Impaired Gas Exchange
- E. Pain.

Correct Answer: A, B, C, & E.

Appropriate nursing diagnoses for clients with chronic renal failure include excess fluid volume related to fluid and sodium retention; imbalanced nutrition, less than body requirements related to anorexia, nausea, and vomiting; and activity intolerance related to fatigue.

- **Option A:** Renal disorder impairs glomerular filtration that results in fluid overload. With fluid volume excess, hydrostatic pressure is higher than the usual pushing excess fluids into the interstitial spaces. Since fluids are not reabsorbed at the venous end, fluid volume overloads the lymph system and stays in the interstitial spaces.
- **Option B:** Due to restricted foods and prescribed dietary regimens, an individual experiencing renal problems cannot maintain ideal body weight and sufficient nutrition. At the same time, patients may experience anemia due to decreased erythropoietic factors that cause a decrease in the production of RBC causing anemia and fatigue.

- **Option C:** Assess the extent of weakness, fatigue, ability to participate in active and passive activities. This provides information about the impact of activities on fatigue and energy reserves.
- **Option D:** Gas exchange is not impaired in CRF. Instead, there is a dysfunction in renal tissue perfusion. For optimal cell functioning the kidney excrete potentially harmful nitrogenous products-urea, creatinine, and uric acid, but because of the loss of kidney excretory functions, there is impaired excretion of the nitrogenous waste product causing an increase in laboratory results of BUN, creatinine, and uric acid level.
- **Option E:** Pain is a discomfort that is caused by the stimulation of the nerve endings. Any trauma that the kidney experiences (by any causes or factors) is perceived by the body as a threat, the body releases cytokine and prostaglandin causing pain which is felt by the patient at his flank area.

61. Nurse Joey is assigned to care for a postoperative male client who has diabetes mellitus. During the assessment interview, the client reports that he's impotent and says he's concerned about its effect on his marriage. In planning this client's care, the most appropriate intervention would be to:

- A. Encourage the client to ask questions about personal sexuality.
- B. Provide time for privacy.
- C. Provide support for the spouse or significant other.
- D. Suggest referral to a sex counselor or other appropriate professional.

Correct Answer: D. Suggest referral to a sex counselor or other appropriate professional.

The nurse should refer this client to a sex counselor or other professional. Making appropriate referrals is a valid part of planning the client's care. Erectile Dysfunction (ED) is common in men with diabetes; these men tend to present with more severe and refractory ED compared to non-diabetic peers. While ED is the best established diabetes-related sexual dysfunction, ejaculatory and sexual desires issues may also occur in men.

- **Option A:** The nurse doesn't normally provide sex counseling. Diabetic neuropathy may impair autonomic and somatic nerve processes essential to erections. Diabetes is also associated with impaired relaxation of cavernosal smooth muscle due to endothelial-derived nitric oxide, which may be a side effect of glycosylation products.
- **Option B:** It is recommended that diabetic men be screened for the presence of low testosterone by checking serum total testosterone; sex hormone binding globulin and albumin should also be tested to assess for free and bioavailable testosterone.
- **Option C:** As with most aspects of diabetes care, routine exercise, careful monitoring of glucose levels, and usage of appropriate therapies to prevent hyperglycemia are key to preventing progression of diabetes-induced sexual problems. Weight management and dietary prudence are also critical in the management of diabetes.

62. The effects of theophylline may be increased by:

- A. Phenobarbital
- B. Phenytoin
- C. Rifampin

D. Cimetidine

Correct Answer: D. Cimetidine

Cimetidine will increase the effects of theophylline. Other medications can affect the removal of theophylline from the body, which may affect how theophylline works. Examples include cimetidine, disulfiram, fluvoxamine, interferon, mexiletine, propranolol, rifampin, drugs used to treat seizures (such as carbamazepine, phenytoin).

- **Option A:** Theophylline, ephedrine, and phenobarbital combination is used to treat the symptoms of bronchial asthma, asthmatic bronchitis, and other lung diseases. theophylline, ephedrine, and phenobarbital relieves cough, wheezing, shortness of breath, and troubled breathing.
- **Option B:** The effect of phenytoin, 100 mg thrice daily for 3 weeks, on theophylline disposition was studied in eight healthy volunteers. 2. The anticonvulsant significantly reduced the half-life of theophylline and this was associated with an increase in the rate of theophylline clearance.
- **Option C:** The effect of rifampicin pre-treatment (600 mg daily for 6 days) on theophylline disposition at steady state was investigated in six healthy males. Following rifampicin treatment total plasma clearance of theophylline increased by 82%.

63. Joy has entered the chemical dependency unit for treatment of alcohol dependency. Which of the following client's possessions will the nurse most likely place in a locked area?

- A. Toothpaste
- B. Shampoo
- C. Antiseptic wash
- D. Moisturizer

Correct Answer: C. Antiseptic wash

Antiseptic mouthwash often contains alcohol & should be kept in a locked area, unless labeling clearly indicates that the product does not contain alcohol. Alcohol misuse has been linked to numerous social, economic, and health problems. Estimates vary but have suggested that up to 40% of patients have experienced complications of alcohol misuse. In the United States, 138.3 million people aged 12 and older, surveyed, report that they actively use alcohol, according to the 2015 National Survey on Drug Use and Health. Of those, 48.2% report that they had binge drinking episode(s) within 30 days before taking the survey. Of those who reported binge drinking, 26% reported heavy alcohol use, defined as binge drinking five or more days in the previous 30 days, which accounts for 12.5% of total alcohol users.

- **Option A:** History gathering will often reveal reported episodes of binge drinking of four or five or more drinks at a time. Use of the CAGE questionnaire will reveal a score of 2 or greater (CAGE means (1) have you ever felt you should Cut down on your drinking, (2) have you ever been Annoyed by people criticizing your drinking, (3) have you ever felt Guilty about your alcohol use, or (4) have you ever needed an Eye-opener to steady your nerves or get rid of a hangover).
- **Option B:** The patient may also report frequent falls, blackout spells, unsteadiness, or visual disturbances. They may report seizures if they went a few days without drinking, or tremors, confusion, emotional disturbances, and frequent job changes. They may also report social issues, such as job termination, separation/divorce, estrangement from family, or loss of their home. They may also report sleep disturbances.

- **Option D:** On exams, they may exhibit signs of cerebellar dysfunction, such as ataxia or difficulty with fine motor skills. They may exhibit slurred speech, tachycardia, memory impairment, nystagmus, disinhibited behavior, or hypotension. They may present with tremors, confusion/mental status changes, asterixis, ruddy palms, jaundice, ascites, or other signs of advanced liver disease. There may also be spider angiomas, hepatomegaly/splenomegaly (early; liver becomes cirrhotic and shrunken in advanced disease).

64. A 20-year-old male client was brought to the emergency department with a gunshot wound to the chest. In obtaining a history of the incident to determine possible injuries, the nurse should ask which of the following?

- A. "How long ago did the incident occur?"
- B. "What was the initial first aid done?"
- C. "Where did the incident happen?"
- D. "What direction did the bullet enter into the body?"

Correct Answer: D. "What direction did the bullet enter into the body?"

The entry point and direction of the bullet will predict the injuries of the client. In gunshot wounds, due to the high-intensity kinetic energy of the bullet, the pathway is often unpredictable in nature as well as the internal organs that may be affected. The most common organs injured are the small and large bowel at 50% and 40%, respectively.

- **Option A:** Personnel such as paramedics, police officers, or fire rescue who may have arrived at the scene of the injury may be utilized as sources of essential history regarding the etiology of the injury. This is especially important if the patient has altered mental status and is unable to relay the history of the incident.
- **Option B:** In penetrating abdominal injury due to a gunshot wound, initial treatment can be paramount for the prognosis and survival of the victim. The most important task for the initial assessment is to assess the airway, breathing, and circulation of the patient and stop the bleeding.
- **Option C:** The other information is not as useful in determining which diagnostic studies and care are needed immediately. It is beneficial to gather information regarding the events surrounding the injury, including the environment, people involved, allergies, medications, and past medical history of the patient. Information about the caliber of the weapon, the number of shots heard, and any other extenuating circumstances may provide additional valuable information.

65. After a motor vehicle accident, Armand, a 22-year-old client, is admitted with a pneumothorax. The surgeon inserts a chest tube and attaches it to a chest drainage system. Bubbling soon appears in the water seal chamber. Which of the following is the most likely cause of the bubbling?

- A. Air leak
- B. Adequate suction
- C. Inadequate suction
- D. Kinked chest tube

Correct Answer: A. Air leak

Bubbling in the water seal chamber of a chest drainage system stems from an air leak. In pneumothorax, an air leak can occur as air is pulled from the pleural space.

- **Option B:** Inadequate suction does not cause bubbling.
- **Option C:** Bubbling doesn't normally occur with adequate suction or any preexisting bubbling in the water seal chamber.
- **Option D:** A kinked chest tube does not cause bubbling in the water seal chamber.

66. Which of the following approaches would be most appropriate to use with a client suffering from narcissistic personality disorder when discrepancies exist between what the client states and what actually exists?

- A. Rationalization
- B. Supportive confrontation
- C. Limit setting
- D. Consistency

Correct Answer: B. Supportive confrontation

The nurse would specifically use supportive confrontation with the client to point out discrepancies between what the client states and what actually exists to increase responsibility for himself. Supportive confrontation means that we are putting good energy and effort into addressing a value or principle that seems disconnected or out of alignment, using some specific skills. Over time we view this as an opportunity to deepen relationships, strengthen teams, and enhance our organizations.

- **Option A:** Rationalization is an attempt to logically justify immoral, deviant, or generally unacceptable behavior. In Freud's classical psychoanalytic theory, rationalization is a defense mechanism, an unconscious attempt to avoid addressing the underlying reasons for behavior.
- **Option C:** Limit setting allows the boundaries of the therapeutic relationship to be established and provides the consumer with a clear understanding of what is and isn't acceptable behavior and what the consequences of their actions will be.
- **Option D:** Consistency refers to the way in which minority influence is more likely to occur if the minority members share the same belief and retain it over time. This then draws the attention of the majority to the minority.

67. When assessing the adequacy of sperm for conception to occur, which of the following is the most useful criterion?

- A. Sperm count
- B. Sperm motility
- C. Sperm maturity
- D. Semen volume

Correct Answer: B. Sperm motility

Although all of the factors listed are important, sperm motility is the most significant criterion when assessing male infertility. To reach and fertilize an egg, sperm must move — wriggling and swimming

through a woman's cervix, uterus, and fallopian tubes. This is known as motility. Males are most likely to be fertile if at least 40% of their sperm are moving.

- **Option A:** A normal sperm count ranges from 15 million sperm to more than 200 million sperm per milliliter (mL) of semen. Anything less than 15 million sperm per milliliter, or 39 million sperm per ejaculate, is considered low.
- **Option C:** Sperm cells are continually being produced by the testes, but not all areas of the seminiferous tubules produce sperm cells at the same time. One immature germ cell takes as long as 74 days to reach final maturation, and during this growth process, there are intermittent resting phases.
- **Option D:** According to the International Society for Sexual Medicine, the average semen volume per ejaculate ranges from 1.25 to 5 milliliters (ml). This amount is the equivalent of one-quarter to 1 teaspoon of semen. It is important to note that semen volumes can vary from one time to another.

68. Marina with acute renal failure moves into the diuretic phase after one week of therapy. During this phase the client must be assessed for signs of developing:

- A. Hypovolemia
- B. Renal failure
- C. Metabolic acidosis
- D. Hyperkalemia

Correct Answer: A. Hypovolemia

In the diuretic phase fluid retained during the oliguric phase is excreted and may reach 3 to 5 liters daily, hypovolemia may occur and fluids should be replaced. The diuretic stage usually lasts for 1-2 weeks but can persist longer. In this stage, an increase in urine output is noted and uremia begins to resolve as the kidney continues to heal.

- **Option B:** The client is already experiencing renal failure. In the initiating stage, which begins when the kidney is injured and lasts from hours to days, signs of renal impairment are present such as altered BUN and creatinine levels and decreased urine output. During this phase, the cause of acute renal failure is sought and treatment is initiated.
- **Option C:** Metabolic acidosis is caused by a build-up of too many acids in the blood. Differentiating between pre-renal azotemia and ATN can be difficult. In prerenal azotemia, urine output is diminished. In ATN, urine output may or may not be diminished. In pre-renal assaults, the urinalysis will show normal urinary sediment with hyaline or granular casts, high specific gravity, high osmolality, low urinary sodium and urea, and normal urine creatinine.
- **Option D:** People with chronic kidney disease have a high risk for hyperkalemia, due in part to the effects of kidney dysfunction on potassium homeostasis. Other complications can include cardiac arrest from hyperkalemia due to the decrease in urine output, elevated phosphorus levels due to impaired renal regulation of calcium and phosphates, metabolic acidosis due to decreases in excretion hydrogen ions, GI bleeding, and decreased nutritional status. In treating hyperkalemia, all sources of dietary potassium should be stopped and a low potassium diet prescribed.

69. Dave, a 6-year-old boy, was rushed to the hospital following her mother's complaint that her son has been vomiting, nauseated and has overall weakness.

After a series of tests, the nurse notes the laboratory results: potassium: 2.9 mEq. Which primary acid-base imbalance is this boy at risk for if medical intervention is not carried out?

- A. Respiratory Acidosis
- B. Respiratory Alkalosis
- C. Metabolic Acidosis
- D. Metabolic Alkalosis

Correct Answer: D. Metabolic Alkalosis

Vomiting, hypokalemia, overdosage of NaHCO₃ and NGT suctioning are considered risk factors of metabolic alkalosis.

70. Referencing the image below, what is the name of the structure marked #16.

- A. Loop of henle
- B. Renal medulla
- C. Renal calyx
- D. Renal blood vessels
- E. Renal capsule
- F. Renal vein
- G. Renal nerve
- H. Renal artery
- I. Renal pelvis
- J. Renal pyramid

Correct answer: #16 is the Option E. renal capsule.

The renal capsule is a thin, tough membrane that envelops the outer surface of the kidney. It provides structural support, protection from trauma and injuries, and helps maintain the kidney's shape.

71. A 22 y.o. patient with diabetic nephropathy says, "I have two kidneys and I'm still young. If I stick to my insulin schedule, I don't have to worry about kidney damage, right?" Which of the following statements is the best response?

- A. "You have little to worry about as long as your kidneys keep making urine."
- B. "You should talk to your doctor because statistics show that you're being unrealistic."
- C. "You would be correct if your diabetes could be managed with insulin."
- D. "Even with insulin, kidney damage is still a concern."

Correct Answer: D. "Even with insulin, kidney damage is still a concern."

Kidney damage is still a concern. Microvascular changes occur in both of the patient's kidneys as a complication of the diabetes. Diabetic nephropathy is the leading cause of end-stage renal disease. The kidneys continue to produce urine until the end stage. Nephropathy occurs even with insulin management.

- **Option A:** In T2DM, UKPDS (United Kingdom Prospective Diabetes Study) showed that targeting an HbA1C of 7% led to a lower risk of microvascular complications, including nephropathy. However, blood pressure (BP) control also led to a decrease in cardiovascular mortality.
- **Option B:** The benefits of good glycemic control early in the onset of disease carried over even after a long time, despite glycemic control being similar in both groups on longer follow up. This effect is "metabolic memory," a term coined by DCCT/EDIC investigators.
- **Option C:** Studies in patients with T1DM and overt proteinuria have also shown that ACE inhibitors slow the progress of diabetic nephropathy. The IDNT and RENAAL studies have shown similar benefits in T2DM patients. These studies provide clear evidence of the benefit of RAS-blocking medication on slowing progression of diabetic nephropathy, independent of their effect on BP.

72. Before birth, which of the following structures connects the right and left auricles of the heart?

- A. Umbilical vein
- B. Foramen ovale
- C. Ductus arteriosus
- D. Ductus venosus

Correct Answer: B. Foramen ovale

The foramen ovale is an opening between the right and left auricles (atria) that should close shortly after birth so the newborn will not have a murmur or mixed-blood traveling through the vascular system.

- **Option A:** The umbilical vein carries oxygenated, nutrient-rich blood from the placenta to the fetus, and the umbilical arteries carry deoxygenated, nutrient-depleted blood from the fetus to the placenta. Any impairment in blood flow within the cord can be a catastrophic event for the fetus.
- **Option C:** At birth, the lungs fill with air with the first breaths, pulmonary vascular resistance drops, and blood flows from the right ventricle to the lungs for oxygenation. The increased arterial oxygen tension and the decreased flow through the ductus arteriosus allow the ductus to constrict.
- **Option D:** In utero, the ductus venosus connects the left portal vein to the inferior vena cava, allowing a portion of the venous blood to bypass the liver and return to the heart. After birth, the ductus venosus generally closes between days of life 2 to 18 in term infants

73. Nurse Joy is preparing to administer medication through a nasogastric tube that is connected to suction. To administer the medication, the nurse would:

- A. Position the client supine to assist in medication absorption
- B. Aspirate the nasogastric tube after medication administration to maintain patency
- C. Clamp the nasogastric tube for 30 minutes following administration of the medication
- D. Change the suction setting to low intermittent suction for 30 minutes after medication administration

Correct Answer: C. Clamp the nasogastric tube for 30 minutes following administration of the medication.

If a client has a nasogastric tube connected to suction, the nurse should wait up to 30 minutes before reconnecting the tube to the suction apparatus to allow adequate time for medication absorption. Flush 10 ml of water between medications. This step prevents interactions between medications. After the last medication has been given, flush the tube with 30 ml of water. Flushing prevents blocking of the tube.

- **Option A:** The client should not be placed in the supine position because of the risk of aspiration. Help the patient to a high sitting position unless contraindicated. This position reduces the risk of aspiration during swallowing. Pour medication and water solution into the 60 ml syringe, release pinch, and allow fluid to drain slowly by gravity into the gastric tube.
- **Option B:** Aspirating the nasogastric tube will remove the medication just administered. Patients with a gastric tube (nasogastric, nasointestinal, percutaneous endoscopic gastrostomy [PEG], or jejunostomy [J] tube) will often receive medication through this tube (Lynn, 2011). Liquid medications should always be used when possible because absorption is better and less likely to cause blockage of the tube.
- **Option D:** Low intermittent suction also will remove the medication just administered. Determine if medication should be given with or without food. If the medication is to be given on an empty stomach, the enteral feeding may need to be stopped from 30 minutes before until 30 minutes after the medication is given. Follow specific medication guidelines to ensure adequate absorption and distribution of the medication.

74. A priority nursing diagnosis for the client who is being discharged home 3 days after a TURP would be:

- A. Deficient fluid volume
- B. Imbalanced Nutrition: Less than Body Requirements
- C. Impaired Tissue Integrity
- D. Ineffective Airway Clearance

Correct Answer: A. Deficient fluid volume

Deficient Fluid Volume is a priority diagnosis because the client needs to drink a large amount of fluid to keep the urine clear. The urine should be almost without color. About two (2) weeks after a TURP, when desiccated tissue is sloughed out, a secondary hemorrhage could occur. The client should be instructed to call the surgeon or go to the ED if at any time the urine turns bright red.

- **Option B:** The client is not specifically at risk for nutritional problems after a TURP. Encourage fluid intake to 3000 mL as tolerated. Limit fluids in the evening, once the catheter is removed. Maintains adequate hydration and renal perfusion for urinary flow. Reducing fluid intake at the right schedule decreases the need to void and interrupt sleep during the night.
- **Option C:** The client is not specifically at risk for impaired tissue integrity because there is no external incision. Maintain a sterile catheter system. Provide regular catheter and meatal care with soap and water. Apply antibiotic ointment around the catheter site. Measures to prevent the introduction of bacteria that may cause infection or sepsis.
- **Option D:** The client is not specifically at risk for airway problems because the procedure is done after spinal anesthesia. Monitor vital signs, noting low-grade fever, chills, rapid pulse and respiration, restlessness, irritability, disorientation. Patient who has had a cystoscopy and/or TURP

is at increased risk for surgical or septic shock related to manipulation and instrumentation.

75. A mother tells the nurse that she is very worried because her 2-year old child does not finish his meals. What should the nurse advise the mother?

- A. make the child seat with the family in the dining room until he finishes his meal
- B. provide a quiet environment for the child before meals
- C. do not give snacks to the child before meals
- D. put the child on a chair and feed him

Correct Answer C. Do not give snacks to the child before meals.

If the child is hungry he/she is more likely to finish his meals. Therefore, the mother should be advised not to give snacks to the child. Set times for meals and snacks and try to stick to them. A child who skips a meal finds it reassuring to know when to expect the next one. Avoid offering snacks or pacifying hungry kids with cups of milk or juice right before a meal — this can diminish their appetite and decrease their willingness to try a new food being offered.

- **Option A:** The child is a “busy toddler.” He/she will not be able to keep still for a long time. For some kids, dinner becomes a negotiation session from the very start, and parents have been using dessert as an incentive for decades. But this doesn’t encourage healthy eating. Instead, it creates the impression that “treats” are more valuable than mealtime food.
- **Option B:** Be alert to what toddlers say through their actions. A child who is building a tower of crackers or dropping carrots on the floor may be telling you he or she is full. Pushing food on a child who’s not hungry may dull the internal cues that help kids know when they’ve eaten enough. Kids can manage their hunger when they come to expect that food will be available during certain times of the day. If a child chooses not to eat anything at all, simply offer food again at the next meal or snack time.
- **Option D:** Kids should start finger feeding around 9 months of age and try using utensils by 15-18 months. Some parents think that not letting kids feed themselves is for the best, but it takes away control that rightfully belongs to kids at this age. They need to decide whether to eat, what they will eat, and how much to eat — this is how they learn to recognize the internal cues that tell them when they’re hungry and when they’re full. Just as important, toddlers need to learn and practice the mechanics of feeding themselves.

76. When planning care for a client with ulcerative colitis who is experiencing symptoms, which client care activities can the nurse appropriately delegate to an unlicensed assistant? Select all that apply.

- A. Assessing the client’s bowel sounds.
- B. Providing skincare following bowel movements.
- C. Evaluating the client’s response to antidiarrheal medications.
- D. Maintaining intake and output records.
- E. Obtaining the client’s weight.

Correct Answer: B, D, and E.

The nurse can delegate the following basic care activities to the unlicensed assistant: providing skincare following bowel movements, maintaining intake and output records, and obtaining the client's weight. Assessing the client's bowel sounds and evaluating the client's response to medication are registered nurse activities that cannot be delegated.

- **Option A:** Assessing a patient's abdomen can provide critical information about his internal organs. Always follow this sequence: inspection, auscultation, percussion, and palpation. Changing the order of these assessment techniques could alter the frequency of bowel sounds and make your findings less accurate.
- **Option C:** The evaluation of the effectiveness of pharmacotherapy includes measurable improvement in clinical signs and symptoms and/or laboratory values. The evaluation of the safety of pharmacotherapy includes evidence of adverse drug reactions and/or toxicity.

77. A client has developed atrial fibrillation, which has a ventricular rate of 150 beats per minute. A nurse assesses the client for:

- A. Hypotension and dizziness
- B. Nausea and vomiting
- C. Hypertension and headache
- D. Flat neck veins

Correct Answer: A. Hypotension and dizziness

The client with uncontrolled atrial fibrillation with a ventricular rate more than 150 beats a minute is at risk for low cardiac output because of loss of atrial kick. The nurse assesses the client for palpitations, chest pain or discomfort, hypotension, pulse deficit, fatigue, weakness, dizziness, syncope, shortness of breath, and distended neck veins. A physical exam should always begin with the assessment of airway breathing and circulation as it is going to affect the decision making regarding management. On general physical examination, patients may have tachycardia with an irregularly irregular pulse.

- **Option B:** The presentation of AF can range from asymptomatic to devastating complications such as cardiogenic shock and ischemic stroke. A complete history should focus on symptoms such as palpitations, chest pain, shortness of breath, increased lower extremity swelling, dyspnea on exertion, and dizziness.
- **Option C:** In addition, history is imperative in identifying risk factors such as hypertension, history of valvular, structural, or ischemic heart disease, obstructive sleep apnea, obesity hypoventilation syndrome, smoking, alcohol intake, illicit drug use, history of rheumatic fever/heart disease, history of pericarditis, and hyperlipidemia.
- **Option D:** The physical exam should focus on identifying the cause of AF. For instance, examining the neck of the patient may give some clues regarding carotid artery disease or thyroid problems. The pulmonary examination may reveal signs of heart failure in the form of rales, and the presence of wheeze may indicate antecedent pulmonary diseases such as asthma and chronic obstructive pulmonary disease (COPD).

78. Arthur has a family history of colon cancer and is scheduled to have a sigmoidoscopy. He is crying as he tells you, "I know that I have colon cancer, too." Which response is most therapeutic?

- A. "I know just how you feel."

- B. "You seem upset."
- C. "Oh, don't worry about it, everything will be just fine."
- D. "Why do you think you have cancer?"

Correct Answer: B. "You seem upset."

Making observations about what you see or hear is a useful therapeutic technique. This way, you acknowledge that you are interested in what the patient is saying and feeling. Observations about the appearance, demeanor, or behavior of patients can help draw attention to areas that might pose a problem for them.

- **Option A:** Giving one's own opinion, evaluating, moralizing, or implying one's values by using words such as "nice", "bad", "right", "wrong", "should" and "ought" is not appropriate. Advanced levels of emotional support include sitting with patients and "providing opportunities for them to feel accompanied in their struggles," directly answering questions, making the patient feel special, and making supportive gestures such as, when appropriate, holding the patient's hand.
- **Option C:** Giving the patient false reassurance is inappropriate. False reassurance is something a nurse might give to a patient in an effort to comfort or encourage them, but in reality, is not based on fact either.
- **Option D:** Probing is inappropriate in this situation. Nontherapeutic communication also includes probing, or the continuous questioning of the client about something, that may, in turn, discourage proper communication between the nurse and patient.

79. Which activity would not be expected by the nurse to meet the cultural needs of the client?

- A. Promote and support attitudes, behaviors, knowledge, and skills to respectfully meet the client's cultural needs despite the nurse's own beliefs and practices.
- B. Ensure that the interpreter understands not only the language of the client but feelings and attitudes behind cultural practices to make sure an ethical balance can be achieved.
- C. Develop structure and process for meeting cultural needs on a regular basis and means to avoid overlooking these needs with clients.
- D. Expect the family to keep an interpreter present at all times to assist in meeting the communication needs all day and night while hospitalized.

Correct Answer: D. Expect the family to keep an interpreter present at all times to assist in meeting the communication needs all day and night while hospitalized

It is not the family's responsibility to assist in the communication process. Many families will leave someone to help at times, but it is the hospital's legal obligation to find an interpreter for continued understanding by the client to make sure the client is fully informed and comprehends in his or her primary language.

- **Option A:** When caring for a patient from a culture different from the nurse's own, she needs to be aware of and respect his cultural preferences and beliefs; otherwise, he may consider the nurse insensitive and indifferent, possibly even incompetent. But beware of assuming that all members of any one culture act and behave in the same way; in other words, don't stereotype people.
- **Option B:** Establishing an environment where cultural differences are respected begins with effective communication. This occurs not just from speaking the same language, but also through body language and other cues, such as voice, tone, and loudness. The Joint Commission on

Accreditation of Healthcare Organizations (JCAHO) requires facilities to have interpreters available, so every facility should make a list available.

- **Option C:** Thinking about one's beliefs and recognizing one's own cultural bias and worldview will help understand differences and resolve cultural and ethical conflicts one may face. But while caring for this patient, promote open dialogue and work with him, his family, and health care providers to reach a culturally appropriate solution. For example, a patient who refuses a routine blood transfusion might accept an autologous one.

80. What are the advantages of using directional hypotheses? Select all that apply.

- A. The indication of the use of a theory base to derive the hypothesis.
- B. The provision of a specific theoretical frame of reference.
- C. Ensurance that findings will be generalizable.
- D. The indication of a non-biased selection of subjects.

Correct Answer: A, B

A directional (or one-tailed hypothesis) states which way the researcher thinks the results are going to go, for example in an experimental study we might say..."Participants who have been deprived of sleep for 24 hours will have more cold symptoms in the following week after exposure to a virus than participants who have not been sleep deprived."

- **Option A:** A decent hypothesis will contain two variables, in the case of an experimental hypothesis there will be an IV and a DV; in a correlational hypothesis there will be two co-variables.
- **Option B:** A test of a nondirectional alternative hypothesis does not state the direction of the difference, it indicates only that a difference exists. In contrast, a directional alternative hypothesis specifies the direction of the tested relationship, stating that one variable is predicted to be larger or smaller than the null value.
- **Option C:** A directional hypothesis is a prediction made by a researcher regarding a positive or negative change, relationship, or difference between two variables of a population.
- **Option D:** A directional hypothesis is a one-tailed hypothesis that states the direction of the difference or relationship (e.g. boys are more helpful than girls).

81. She notes that there is increasing unrest of the staff due to fatigue brought about by the shortage of staff. Which action is a priority?

- A. Evaluate the overall result of the unrest.
- B. Initiate a group interaction.
- C. Develop a plan and implement it.
- D. Identify external and internal forces.

Correct Answer: B. Initiate a group interaction

Initiating a group interaction will be an opportunity to discuss the problem in the open. Managers should communicate conflict resolution policies and processes to create a sense of safety in the workplace and provide an outlet for employees to report incidents should they feel the need. It is also important to

ensure that employees understand any no retaliation policies regarding expressing concerns in the workplace.

- **Option A:** To help employees cope, employers can consider implementing an employee assistance program (EAP). An EAP will help alleviate stress and worry, connect employees with the resources they need to manage their mental health and help prevent potential violence before it occurs.
- **Option C:** Having a plan in place helps organizations remain calm during a chaotic situation. A business continuity plan should detail how the business will respond to a variety of situations.
- **Option D:** Understanding the community, developing processes to address a variety of “what if” scenarios, and exemplifying appropriate behavior will help employers maintain a civil workplace and squash conflicts before they get out of hand.

82. A 56-year-old male is newly admitted to the medical unit. Which factor alerts the nurse that this client has a risk for acid-base imbalances?

- A. The client takes antacids for occasional indigestion.
- B. The client gets short of breath with extreme exertion.
- C. The client has a history of myocardial infarction 1 year ago.
- D. The client has chronic renal insufficiency.

Correct Answer: D. The client has chronic renal insufficiency.

Chronic renal disease and pulmonary disease are risk factors for acid-base imbalances in the older adult. Renal failure patients have an altered acid-base balance; most commonly, a mixed type of metabolic acidosis (hyperchloremic, and of a high anion gap) is observed.

- **Option A:** Although antacid abuse is a risk factor for metabolic alkalosis, occasional antacid use will not cause imbalances. Antacid use won't normally lead to metabolic alkalosis. But if the patient has a weak or failing kidneys and uses a nonabsorbable antacid, it can bring on alkalosis. Nonabsorbable antacids contain aluminum hydroxide or magnesium hydroxide.
- **Option B:** A typical respiratory response to all types of metabolic alkalosis is hypoventilation leading to a pH correction towards normal. Increases in arterial blood pH depress respiratory centers. The resulting alveolar hypoventilation tends to elevate PaCO₂ and restore arterial pH toward normal.
- **Option C:** MI is not related to metabolic alkalosis. Metabolic alkalosis is caused by too much bicarbonate in the blood. It can also occur due to certain kidney diseases. Hypochloremic alkalosis is caused by an extreme lack or loss of chloride, such as from prolonged vomiting.

83. A client with a vancomycin-resistant enterococcus (VRE) infection is admitted to the medical unit. Which action can be delegated to a nursing assistant who is assisting with the client's care?

- A. Monitor the results of the laboratory culture and sensitivity test.
- B. Educate the client and family members on ways to prevent transmission of VRE.
- C. Implement contact precautions when handling the client.
- D. Collaborate with other departments when the client is transported for the ordered test.

Correct Answer: C. Implement contact precautions when handling the client.

All hospital personnel who care for the client are responsible for the correct implementation of contact precautions.

- **Options A, B, and D:** The other options should be carried out by a licensed nurse.

84. Which of the following best describes thrombophlebitis?

- A. Inflammation and clot formation that result when blood components combine to form an aggregate body.
- B. Inflammation and blood clots that eventually become lodged within the pulmonary blood vessels.
- C. Inflammation and blood clots that eventually become lodged within the femoral vein.
- D. Inflammation of the vascular endothelium with clot formation on the vessel wall.

Correct Answer: D. Inflammation of the vascular endothelium with clot formation on the vessel wall

Thrombophlebitis refers to an inflammation of the vascular endothelium with clot formation on the wall of the vessel.

- **Option A:** Blood components combining to form an aggregate body describe a thrombus or thrombosis
- **Option B:** Clots lodging in the pulmonary vasculature refers to pulmonary embolism. Pulmonary embolism usually arises from a thrombus that originates in the deep venous system of the lower extremities; however, it rarely also originates in the pelvic, renal, upper extremity veins, or the right heart chambers
- **Option C:** The femoral vein runs along the inside of the legs from the groin area downward. Femoral vein thrombosis refers to a blood clot present in those veins. These veins are superficial, or close to the surface of the skin, and are often more prone to blood clots than deeper veins.

85. When giving intravenous (I.V.) phenytoin, which of the following methods should you use?

- A. Use an in-line filter.
- B. Withhold other anticonvulsants.
- C. Mix the drug with saline solution only.
- D. Flush the I.V. catheter with dextrose solution.

Correct Answer: C. Mix the drug with saline solution only.

Phenytoin is compatible only with saline solutions.

- **Options A and B:** You needn't withhold additional anticonvulsants or use an in-line filter.
- **Option D:** Dextrose causes an insoluble precipitate to form.

86. The best method of oxygen administration for client with COPD uses:

- A. Cannula
- B. Simple Face mask
- C. Non-rebreather mask
- D. Venturi mask

Correct Answer: D. Venturi mask

Venturi delivers controlled oxygen. An air-entrainment (also known as venturi) mask can provide a pre-set oxygen to the patient using jet mixing. As the percent of inspired oxygen increases using such a mask, the air-to-oxygen ratio decreases, causing the maximum concentration of oxygen provided by an air-entrainment mask to be around 40%.

- **Option A:** A thin tube, often affixed behind the ears and used to deliver oxygen directly to the nostrils from a source connected with tubing. This is the most common method of delivery for home use and provides flow rates of 2 to 6 liters per minute (LPM) comfortably, allowing the delivery of oxygen while maintaining the patient's ability to utilize his or her mouth to talk, eat, etc.
- **Option B:** Facemasks can be generally divided into simple face masks, air-entrainment masks, and non-rebreathers. A simple facemask is a mask with no bag attached, which delivers oxygen at 5 to 8 LPM. A disadvantage of this and other full face masks is the inability of the patient to eat, drink, or easily communicate while using such a device.
- **Option C:** Non-rebreathing masks have a bag attached to the mask known as a reservoir bag, which inhalation draws from to fill the mask through a one-way valve and features ports at each side for exhalation, resulting in an ability to provide the patient with 100% oxygen at a higher LPM flow rate.

87. Estrogen is given in the management of all of the following conditions except:

- A. Dysfunctional uterine bleeding
- B. Primary hypogonadism
- C. Suppression of ovulation
- D. Endometrial carcinoma

Correct Answer: D. Endometrial carcinoma

Estrogen is given in the management of dysfunctional uterine bleeding, primary hypogonadism, and suppression of ovulation. The primary use of estrogen therapy lies in its treatment of menopausal symptoms. Although there is a reduction in the use of estrogen therapy as a preventative treatment, it is still routinely used to treat menopausal symptoms locally. Typically, drugs administered vaginally are used mainly for their local effects, but they can also have systemic effects. Choices A, B, and C are all indicators for estrogen treatment.

- **Option A:** Localized estrogen treatment often relieves these symptoms and significantly increases the quality of life, which includes life-changing improvements in sexuality, the incidence of urinary tract infections, and incontinence. The method of estrogen delivery is vital in assessing its benefits and uses. For example, the use of estrogen transdermally, in stark contrast to orally, has been linked to a lower risk of deep vein thrombosis, cholecystitis, osteoporosis, and stroke.
- **Option B:** Estrogen is a steroid hormone that plays a central role in the reproductive system by altering the transcription of genes in specific organs and tissues, primarily the uterus and vagina.

The genes undergo alteration through the act of estrogen on certain receptors, known as nuclear transcription factors. These nuclear transcription factors, once bound by estrogen, are then able to bind to promoter regions in sequences of specific genes and are therefore able to regulate these genes

- **Option C:** Estrogen therapy (ET), a form of hormone replacement therapy (HRT), is a useful way of combating the uncomfortable symptoms that often accompany menopause. Roughly 1.5 million women between the ages of 45 and 55 experience menopausal symptoms, which often involve hot flashes, flushing, and night sweats, also known as vasomotor symptoms.

88. A client is prescribed metaproterenol (Alupent) via a metered-dose inhaler (MDI), two puffs every 4 hours. The nurse instructs the client to report side effects. Which of the following are potential side effects of metaproterenol?

- A. Irregular heartbeat
- B. Constipation
- C. Pedal edema
- D. Decreased heart rate.

Correct Answer: A. Irregular heartbeat

Irregular heart rates should be reported promptly to the care provider. Metaproterenol may cause irregular heartbeat, tachycardia, or anginal pain because of its adrenergic effect on the beta-adrenergic receptors in the heart. It is not recommended for use in clients with known cardiac disorders. Metaproterenol does not cause constipation, pedal edema, or bradycardia.

- **Option B:** In children, the most common side effects are diarrhea, nausea, laryngitis, pharyngitis, sinusitis, otitis, and viral infection. The most commonly observed side effects in patients aged 15 years and over were headaches, influenza infection, abdominal pain, cough, and dyspepsia.
- **Option C:** There are some reports of serious adverse events due to angioedema, hypersensitivity, fatigue, confusional state, abnormal dreams, epilepsy, aggression, immune system disorder, hemorrhage, excoriation, eosinophil count increase, pain in extremity, and abdominal pain.
- **Option D:** Tell the doctor right away if any of these unlikely but serious side effects occur: fast/pounding/irregular heartbeat, muscle cramps, weakness.

89. The nurse is giving discharge teaching to a 45-year-old client, a professional athlete, seven (7) days post-myocardial infarction. The client, anxious about returning to his normal life and activities, asks the nurse why he must wait six (6) weeks before having sexual intercourse. He also inquires about the impact on his athletic performance. Given his profession and concerns, what is the best response by the nurse to this question?

- A. "You need to regain your strength before attempting such exertion, especially considering your profession."
- B. "When you can climb 2 flights of stairs without problems or feeling short of breath, it is generally safe to engage in activities like sex."
- C. "Have a glass of wine to relax you, then you can try to have sex."

- D. "Your heart needs time to heal, and premature exertion can risk another cardiac event."
- E. "You should consider discussing this with your cardiologist, who can provide guidelines tailored to your athletic needs."

Correct Answer: B. "When you can climb 2 flights of stairs without problems, it is generally safe."

After a myocardial infarction, it's essential for the heart to heal and for the patient to gradually return to physical activities. The ability to climb 2 flights of stairs without experiencing symptoms is often used as a general benchmark to gauge a person's cardiovascular fitness and readiness to engage in activities that require exertion, such as sexual intercourse. Given the client's profession as an athlete, this benchmark is particularly relevant. The other options either provide incomplete advice or are not directly related to the client's primary concern.

90. Jonas comes into the local blood donation center. He says he is here to donate platelets only today. The nurse knows this process is called:

- A. Directed donation
- B. Autologous donation
- C. Apheresis
- D. Allogeneic donation

Correct Answer: C. Apheresis

The process of apheresis involves the removal of whole blood from a donor. Within an instrument that is essentially designed as a centrifuge, the components of whole blood are separated. One of the separated portions is then withdrawn, and the remaining components are retransfused into the donor.

- **Option A:** Directed donation is collected from a blood donor other than the recipient, but the donor is known to the recipient and is usually a family member or friend. A directed donation is the donation of blood or platelets that is designated for a specific patient. There is no scientific evidence that designated blood is safer than blood from other volunteer donors. In fact, directed donors must meet the same eligibility criteria as other volunteer donors.
- **Option B:** Autologous donation is the collection and reinfusion of the patient's own blood. Although preoperative autologous blood donation is employed in elective surgery, this is declining because of the increasingly safe allogeneic blood supply. However, it continues to be used because of the public's perception of allogeneic blood risks and increasing blood shortages. Patients may donate a unit of blood (450 ± 45 ml) as often as twice weekly, up to 72 hours before surgery. Preoperative autologous blood is most beneficial in procedures that cause significant blood loss.
- **Option D:** Allogeneic donation is collected from a blood donor other than the recipient. Allogeneic donation, commonly referred to as whole blood donation, is the process of voluntarily donating a unit of blood (which is around 470mL) for the national supply.

91. Tranylcypromine sulfate (Parnate) is prescribed for a depressed client who has not responded to the tricyclic antidepressants. After teaching the client about the medication, Nurse Marian evaluates that learning has occurred when the client states, "I will avoid:

- A. Citrus fruit, tuna, and yellow vegetables."

- B. Chocolate milk, aged cheese, and yogurt”
- C. Green leafy vegetables, chicken, and milk.”
- D. Whole grains, red meats, and carbonated soda.”

Correct Answer: B. Chocolate milk, aged cheese, and yogurt”

These high-tyramine foods, when ingested in the presence of an MAO inhibitor, cause a severe hypertensive response. MAOIs prevent the breakdown of tyramine found in the body as well as certain foods, drinks, and other medications. Patients that take MAOIs and consume tyramine-containing foods or drinks will exhibit high serum tyramine level. A high level of tyramine can cause a sudden increase in blood pressure, called the tyramine pressor response. Even though it is rare, a high tyramine level can trigger a cerebral hemorrhage, which can even result in death.

- **Option A:** Also, certain fruits can contain tyramine like overripe fruits, avocados, bananas, raisins, or figs. Further examples are cheeses, alcohol, and fava beans; all of these should be avoided even after two weeks of stopping MAOIs. Anyone taking MAOIs is at risk for an adverse hypertensive reaction, with accompanying morbidity.
- **Option C:** Tyramine occurs naturally in small amounts in protein-containing foods. As these foods age, the tyramine levels increase. Tyramine amounts can vary among foods due to different processing, storage, and preparation methods. You can't reduce the amount of tyramine in food by cooking it.
- **Option D:** Eating foods with high tyramine can trigger a reaction that can have serious consequences. Patients should know that tyramine can increase with the aging of food; they should be encouraged to have foods that are fresh instead of leftovers or food prepared hours earlier. Examples of high levels of tyramine in food are types of fish, as well as types of meat, including sausage, turkey, liver, and salami.

92. A client with a diagnosis of HPV is at risk for which of the following?

- A. Hodgkin's lymphoma
- B. Cervical cancer
- C. Multiple myeloma
- D. Ovarian cancer

Correct Answer: B. Cervical cancer

The client with HPV is at higher risk for cervical and vaginal cancer related to this STI. The Human Papillomavirus (HPV) is the initiating force behind multiple epithelial lesions and cancers, predominantly of cutaneous and mucosal surfaces. Today, HPV has been implicated as a cause of laryngeal, oral, lung and anogenital cancer. Subtypes 6 and 11 are low risk and usually present with the formation of condylomata and low-grade precancerous lesions. HPV subtypes 16 and 18 are high risk and are responsible for high-grade intraepithelial lesions that progress to malignancies.

- **Option A:** It is important to understand that HPV alone does not cause cancer but requires triggers like smoking, folate deficiency, exposure to UV light, immunosuppression, and pregnancy. Long-term follow-up is essential as recurrence of warts is common. In addition, all treatments for warts have side effects that need to be monitored.
- **Option C:** The prognosis after an HPV infection is good but recurrences are common. Even though there are many treatments for warts, none works well and most patients require repeated treatments. The HPV infection can also result in vulvar intraepithelial dysplasia, cervical dysplasia,

and cervical cancer.

- **Option D:** Some women remain at high risk for developing vaginal and anal cancer. The risk of malignant transformation is highest in immunocompromised individuals. Finally, when a patient has been diagnosed with HPV infection, there is a 5-20% risk of also having other STDs like gonorrhea and/or chlamydia.

93. Which of the following tests should be administered to a client suspected of having diverticulosis?

- A. Abdominal ultrasound
- B. Barium enema
- C. Barium swallow
- D. Gastroscopy

Correct Answer: B. Barium enema

A barium enema will cause diverticula to fill with barium and be easily seen on x-ray. A barium enema is a radiographic (X-ray) examination of the lower gastrointestinal (GI) tract. The large intestine, including the rectum, is made visible on X-ray film by filling the colon with a liquid suspension called barium sulfate (barium). Barium highlights certain areas in the body to create a clearer picture.

- **Option A:** The abdominal US can tell more about structures, such as the gallbladder, liver, and spleen, than the intestine. An abdominal ultrasound is a noninvasive procedure used to assess the organs and structures within the abdomen. This includes the liver, gallbladder, pancreas, bile ducts, spleen, and abdominal aorta. Ultrasound technology allows quick visualization of the abdominal organs and structures from outside the body.
- **Option C:** A barium swallow can view upper GI structures. A barium swallow also called an esophagram, is an imaging test that checks for problems in the upper GI tract. The upper GI tract includes the mouth, back of the throat, esophagus, stomach, and first part of the small intestine. The test uses a special type of x-ray called fluoroscopy.
- **Option D:** A gastroscopy is a procedure where a thin, flexible tube called an endoscope is used to look inside the esophagus (gullet), stomach, and the first part of the small intestine (duodenum). It's also sometimes referred to as an upper gastrointestinal endoscopy. The endoscope has a light and a camera at one end. The camera sends images of the inside of the esophagus, stomach, and duodenum to a monitor.

94. During the first few days of recovery from ostomy surgery for ulcerative colitis, which of the following aspects should be the first priority of client care?

- A. Body image
- B. Ostomy care
- C. Sexual concerns
- D. Skin care

Correct Answer: B. Ostomy care

Although all of these are concerns the nurse should address, being able to safely manage the ostomy is crucial for the client before discharge. Patients may have comorbidities that affect their ability to

manage their ostomy care. Conditions such as arthritis, vision changes, Parkinson's disease, or post-stroke complications may hinder a patient's coordination and function to manage the ostomy.

- **Option A:** Help the patient identify and initiate positive coping behaviors used in the past. Successful behaviors can be fostered in dealing with current problems and stress, enhancing a patient's sense of self-control.
- **Option C:** Provide opportunity for the patient to discuss how illness has affected relationships, including sexual concerns. Stressors of illness affect all areas of life, and the patient may have difficulty coping with feelings of fatigue and pain in relation to relationship and sexual needs.
- **Option D:** Observe excessively dry skin and mucous membranes, decreased skin turgor, slowed capillary refill; Indicates excessive fluid loss or resultant dehydration.

95. Which of the following medications will likely be ordered for the client?"

- A. Prozac
- B. Valium
- C. Risperdal
- D. Lithium

Correct Answer: B. Valium

Diazepam is an anxiolytic benzodiazepine, first patented and marketed in the United States in 1963. It is a fast-acting, long-lasting benzodiazepine commonly used in the treatment of anxiety disorders, as well as alcohol detoxification, acute recurrent seizures, severe muscle spasm, and spasticity associated with neurologic disorders. In the setting of acute alcohol withdrawal, diazepam is useful for symptomatic relief of agitation, tremor, alcoholic hallucinosis, and acute delirium tremens.

- **Option A:** Fluoxetine has FDA-approval for major depressive disorder (age eight and older), obsessive-compulsive disorder (age seven and older), panic disorder, bulimia, binge eating disorder, premenstrual dysphoric disorder, bipolar depression (as an adjunct with olanzapine also known as Symbyax), and treatment-resistant depression when used in combination with olanzapine. Non-FDA-approved uses for fluoxetine include social anxiety disorder (social phobia), post-traumatic stress disorder in adults, borderline personality disorder, Raynaud phenomenon, and selective mutism.
- **Option C:** In addition to psychotic symptoms, risperidone can be used for aggression and agitation in patients with dementia. Risperidone has also been used for augmentation of antidepressant therapy in the treatment of non-psychotic unipolar depression. In addition to irritability associated with autism, risperidone has also been used for social impairment, stereotypical behaviors, cognitive problems, and hyperactivity in autism.
- **Option D:** Lithium was the first mood stabilizer and is still the first-line treatment option, but is underutilized because it is an older drug. Lithium is a commonly prescribed drug for a manic episode in bipolar disorder as well as maintenance therapy of bipolar disorder in a patient with a history of a manic episode. The primary target symptoms of lithium are mania and unstable mood.

96. Dietary recommendations for a patient with a hypotonic fluid excess should include:

- A. Decreased sodium intake

- B. Increased sodium intake
- C. Increased fluid intake
- D. Intake of potassium-rich foods

Correct Answer: B. Increased sodium intake

Hypotonic fluid volume excess (FVE) involves an increase in water volume without an increase in sodium concentration. Increased sodium intake is part of the management of this condition. Hypotonic dehydration occurs when sodium loss is greater than water loss, resulting in a decrease in serum osmolality. This causes a shift of water from the extracellular space into the intracellular space. The cells swell and cerebral edema may occur.

- **Option A:** Hyponatremia can be acute or chronic. If sodium loss occurs for more than 48 hours, it becomes chronic hyponatremia, and the body may adapt to this state. Sodium imbalance mainly manifests as neurological symptoms ranging from headaches, nausea, lethargy, and potentially confusion, coma, and death.
- **Option C:** Adequate hydration is recommended during all activities to prevent dehydration. Water intake is key to replacing fluid lost during exercise, in hot weather, during hospitalization, and in elderly patients with impaired thirst sensation.
- **Option D:** Intravenous fluids can be used for fluid replacement in unconscious patients with severe dehydration while plain water, sports drinks with electrolytes, and oral rehydration solutions are used for the prevention and treatment of mild dehydration. Electrolyte monitoring is mandatory for patients using diuretics for prolonged periods.

97. The nurse is caring for a client with a vancomycin-resistant enterococcus (VRE) infection. Which action can be delegated to the nursing assistant?

- A. Implement contact precautions when caring for the client.
- B. Monitor the results of ordered laboratory culture and sensitivity tests.
- C. Teach the client and family members about means to prevent transmission of VRE.
- D. Interact with other departments when the client is transported for ordered tests.

Correct Answer: A. Implement contact precautions when caring for the client

Correct implementation of contact precautions should be well-known by the hospital staff. Depending on daily needs, this can involve changing soiled sheets, cleaning up spills, changing bedpans, setting up equipment, and reducing the spread of germs and infection in the patient's living area.

- **Option B:** The key item identified by the American Nurses Association as being unable to be delegated is the nursing process itself. This notably includes any task that requires nursing judgment (or critical judgments) or decision making.
- **Option C:** Education is a complex action that should be carried out by an RN. If a CNA does something that is not in their scope of work, the hospital is within their rights to dismiss them or at least issue them with a warning.
- **Option D:** Appropriate delegation allows for responsibility transition in a consistent, safe manner. The RN transfers the performance of a procedure, skill, or activity to a CNA. However, the practice of pervasive functions of critical decisions, nursing judgment, and clinical reasoning cannot be delegated.

98. The mother of a 6-month-old asks when her child will have all his baby teeth. The nurse knows that most children have all their primary teeth by age:

- A. 15 months
- B. 18 months
- C. 27 months
- D. 33 months

Correct Answer: D. 33 months

- Option D: All 20 primary, or deciduous, teeth should be present by age 33 months.

99. Tiffany is diagnosed with increased intracranial pressure (ICP); which of the following if stated by her parents would indicate a need for Nurse Charlie to reexplain the purpose for elevating the head of the bed at a 10 to 20-degree angle?

- A. Help alleviate headache
- B. Increase intrathoracic pressure
- C. Maintain neutral position
- D. Reduce intra-abdominal pressure.

Correct Answer: B. Increase intrathoracic pressure

Head elevation decreases, not increases, intrathoracic pressure. In most patients with intracranial hypertension, head and trunk elevation up to 30 degrees is useful in helping to decrease ICP, providing that a safe CPP of at least 70 mmHg or even 80 mmHg is maintained.

- **Option A:** Elevating the head of the bed in a child with increased ICP helps to alleviate headache which may contribute to increased ICP. Therapeutic positioning of the head (different degrees of head-of-bed elevation (HBE)) has been proposed as a low-cost and simple way of preventing secondary brain injury in these people.
- **Option C:** The position of the backrest of the bed is a simple and cheap intervention. This is important as most brain injury happens in low- and middle-income countries with relatively undeveloped health systems and few resources to deal with brain injury.
- **Option D:** Elevated intra-abdominal pressure (IAP) occurs in many clinical settings, including sepsis, severe acute pancreatitis, acute decompensated heart failure, hepatorenal syndrome, resuscitation with large volume, mechanical ventilation with high intrathoracic pressure, major burns, and acidosis.

100. A client who is taking mycophenolate mofetil must follow which of the following instructions?

- A. Take with food.
- B. Avoid use of corticosteroid.
- C. Monitor for adverse effects.

D. Practice effective contraception.

Correct Answer: D. Practice effective contraception.

Effective contraception is essential because of the potential for teratogenic effects. The client must use acceptable birth control during her treatment, and for 6 weeks after she stops taking mycophenolate. The doctor will tell her which forms of birth control are acceptable for her to use. Mycophenolate may decrease the effectiveness of oral contraceptives (birth control pills), so it is especially important to use a second form of birth control along with this type of contraceptive.

- **Option A:** It is recommended that the drug be taken on an empty stomach. Mycophenolate comes as a capsule, a tablet, a delayed-release (releases the medication in the intestine) tablet, and a suspension (liquid) to take by mouth. It is usually taken twice a day on an empty stomach (1 hour before or 2 hours after eating or drinking, unless the doctor tells otherwise).
- **Option B:** The drug is often given with corticosteroids. Mycophenolate (CellCept) is used with other medications to help prevent transplant organ rejection (attack of the transplanted organ by the immune system of the person receiving the organ) in adults who have received heart and liver transplants and in adults and children 3 months of age and older who have received kidney transplants. Mycophenolate (Myfortic) is used with other medications to help prevent the body from rejecting kidney transplants. Mycophenolate is in a class of medications called immunosuppressive agents. It works by weakening the body's immune system so it will not attack and reject the transplanted organ.
- **Option C:** All medication should be monitored for side effects. Mycophenolate may cause side effects. Tell the doctor if any of these symptoms are severe or do not go away: constipation, stomach pain or swelling, nausea, vomiting, difficulty falling asleep or staying asleep, pain, especially in the back, muscles, or joints, headache, gas, prickling, tingling, or burning feeling on the skin muscle, stiffness or weakness.