iv mastery
INFUSION THERAPY

Kansas IV Certification Course Syllabus

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Teaching and Learning Strategies

IV Mastery uses the following teaching and learning strategies:

- Instructional videos
- Printable workbooks and posters
- Video tutorials

IV Mastery checks each students acquired knowledge through a multiple-choice test at the end of each module during a course.

IV Mastery also offers clinical experience for hands on skills through practical learning sessions provided by a qualified educator.

Content Outline (Total of 12 didactic and 4 clinical hours)

Module 1: Legal Implications of infusion Therapy (1 didactic hour)

- Regulatory Agencies and Governing Bodies
- Responsibilities of a Licensed Nurse
- Educational Requirements
- Components of a Complete Order
- Proper Documentation

Module 2: Infection Prevention and Adverse (1 didactic hour)

- Infection Control
    - Standard precautions
    - Hand hygiene
    - Infection control specific to IV therapy
- Adverse Reactions
    - Allergic reactions (mild to severe)
    - Actions to take

Module 3: Hydration Therapy and Fluids regulation (1 didactic hour)

- General Knowledge
- Bodily Fluid Compartments/Movement
- Types of Solutions
- Conditions requiring IV Hydration
- Components of Hydration System
- Fluid Regulation and Flow Rate
- Procedure for IV Hydration

Module 4: IV Medication Administration (1 didactic hour)

- General Knowledge

    - Examples of medications
    - Half-life of a medication/antibiotic
- General Guidelines
    - What to know before starting IV antibiotics
    - Recommendations for IV access
- Piggyback Infusion Procedure
- Documentation

Module 5: Vascular Anatomy and Short Peripheral Catheter Management (1 didactic hour)

- Vein Anatomy and Physiology
- Artery vs Vein Anatomy
- Short Peripheral Catheters
- Short Peripheral Catheter Care and Maintenance
- Short Peripheral Catheter Complications

Module 6: Midline Catheter Management (1 didactic hour)

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- Contraindications for Midline Use
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- Midline Removal
- Midline Removal Procedure
- Midline Documentation and Reporting
- Midline Special Considerations

Module 7: Understanding Vascular Access device (CVAD) (1 didactic hour)

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- Indications for use of a CVAD
- Advantages of Central Line
- CVAD Configurations
- Types of Catheters
- Peripherally Inserted Central Catheter
- CVAD Contraindications

Module 8: Central Vascular Access Device Complications and Management (1 didactic hour)

- Assessment
- Complications and Prevention
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    - Phlebitis
    - Infiltration/Extravasation
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    - Nerve Injury
    - Infection
    - Venous Air Embolism

    - Catheter Damage/Rupture
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Module 9: Central Vascular Access Device Dressing Change (1 didactic hour and 1 clinical hour)

- Policy and Purpose
- General Guidelines
- Procedure
- Documentation and Reporting

Module 10: Implanted Port Management Access and De-Access (1 didactic hour)

- General Guidelines
- Advantages of an Implanted Port
- Disadvantages of an Implanted Port
- Non-coring Needle Selection
- Accessing an Implanted Port
- De-Accessing an Implanted Port
- Implanted Port Complications

Module 11: Peripheral Catheter Insertion (1 didactic hour and 1 clinical hour)

- General Guidelines for Peripheral Catheter Insertion
- Indications for peripheral IV access
- Advantages of peripheral IV access
- "4 Factors for Success"
- Site Choice/Identifying a suitable vein
- Step-by-Step review of the procedure
- Possible complications
- Documentation and Reporting

Module 12: Parenteral Nutrition Management (1 didactic hour and 2 clinical hours)

- General Guidelines for Parenteral Nutrition
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    - Side effects
    - Complications
    - Laboratory Tests
- Continuous vs. Cycled Parenteral Nutrition
- Parenteral Nutrition Lipid Administration
- Clinical Monitoring of Parenteral Nutrition
- Parenteral Nutrition Additives
- Documentation and Reporting

End of Module Assessments

Class 1: Infusion Therapy Management

Module 1 Test Questions

1. The organization that sets the standard for excellence in infusion nursing by developing and disseminating Standards of Practice is called:
    a. ONS
    b. INS
    c. ASPEN
    d. JCAHO
2. Which components constitute a complete order for hydration therapy?
    a. Date, solution, volume, drops per minute
    b. Date, time, nurse's name, solution
    c. Date, time, solution, volume, infusion method, type of access, duration of therapy, rate
    d. Any order is acceptable if the intent is understood
3. Which organization's document should always be readily available and accessible to the healthcare team members as a reference?
    a. The Public Health Code
    b. IV Policies and procedures manual
    c. Employee Handbook
    d. None of the above
4. Proper clinician's documentation of IV therapy should contain:
    a. Accurate and complete information regarding the patient's infusion
    b. Initial and ongoing assessments, interventions, monitoring and patient response
    c. Expected side effects and unexpected adverse events with actions taken
    d. All the above
5. The legal document that presents the patient with all pertinent information regarding the benefits, risks, and alternative treatments prior to obtaining the patient's authorization to proceed with medical treatment is called:
    a. Informed Consent
    b. Certificate of authorization
    c. Advanced directives
    d. Nurse Practice Act
6. Choose all that applies: Some of the legal responsibilities of a licensed nurse are?
    a. Be aware of the legal requirements and ramifications of the procedures.
    b. Know and adhere to facility specific IV Policies and Procedures.
    c. Be qualified by education and experience for performing specific procedures relative to infusion therapy.
    d. All the above
7. The healthcare provider should document the teaching content provided and to whom it was provided in the patient's permanent record, as well as comprehension of the education.
    a. True
    b. False

8. The minimum concentration of an IV medication observed after its administration and just prior to the administration of a subsequent dose in a multiple dosing regimen is called?
    a. Peak
    b. Trough
    c. Blood concentration
    d. Therapeutic
9. All infusion orders should contain: (choose all that applies)
    a. Flushing Protocol
    b. Laboratory test
    c. Signature of the patient
    d. The patient's allergies
    e. A and B
10. The education certificate of completion must be on file with the facility or institution in which the healthcare team member is employed. Always keep the original documentation and provide a copy for the employee's file.
    a. True
    b. False

Module 2 Test Questions

1. What do you call a set of infection control practices that healthcare personnel use to reduce the transmission of microorganisms in healthcare settings?
    a. Infection Control
    b. Standard Precautions
    c. Hand Hygiene
    d. Adverse Effect Prevention
2. Gowns are not parts of the personal protective equipment (PPE)
    a. True
    b. False
3. During the hand hygiene process, you will rub your hands together for at least:
    a. 2 minutes
    b. 1 minute
    c. 45 seconds
    d. 20 seconds
4. Which of these actions are necessary to Prevent Central Lines Associated Bloodstream Infection?
    a. Perform adequate needleless connector disinfection (30 sec)
    b. Provide staff education on central line maintenance
    c. Perform central line dressing change using sterile technique
    d. All of the above
5. How do you call a severe, potentially life-threatening allergic reaction?
    a. Systemic reaction
    b. Red Man Syndrome
    c. Anaphylactic reaction
    d. Hypovolemic shock

6. Which of the following is not an action to be taken during an anaphylactic reaction?
    a. Stop the infusion
    b. Administer Epinephrine Hydrochloride
    c. Call 911
    d. Wait to receive a physician order before doing anything
7. Before accessing the resident IV catheter, what is the minimum time you must scrub the needleless access device with an alcohol pad to prevent blood stream infection?
    a. 1 to 2 minutes
    b. 10 to 15 seconds
    c. 15 to 30 seconds
    d. I don't need to scrub the needleless access device
8. The medication used when a resident has an anaphylactic reaction is called:
    a. Benadryl
    b. Atarax
    c. Diphenhydramine Hydrochloride
    d. Epinephrine Hydrochloride
9. To Prevent Central Line Associated Bloodstream Infections (CLABSIs) you need to do all these except:
    a. Perform adequate needleless connector disinfection (15-30 sec)
    b. Provide staff education on central line maintenance
    c. Change the patient's central line every week
    d. Perform central line dressing change using sterile technique.
10. All IV devices used should have engineered sharp injury protection mechanisms.
    a. True
    b. False

Module 3 Test Questions

1. Which of the following measures the concentration of dissolved solutes per liter of solution?
    a. Toxicity
    b. Osmolarity
    c. Osmosis
    d. The pH
2. What is the Osmolarity of the plasma?
    a. 50-110 mOsm/L
    b. 500-600 mOsm/L
    c. 280-300 mOsm/L
    d. Greater than 600 mOsm/L
3. Which of these solutions have a tonicity equal to that of the plasma?
    a. Isotonic solution
    b. Hypotonic solution
    c. Hypertonic solution
    d. None of the above

4. Mr. Kelly has been vomiting all day. So, his physician orders a hypotonic solution to be infused intravenously for dehydration. Which one of these solutions would be most likely to be ordered?
    a. 5% Dextrose in 0.45% Normal Saline - 396 mOsm/L
    b. 5% Dextrose - 252 mOsm/L
    c. 0.9% Normal Saline – 308 mOsm/L
    d. 0.45% Normal Saline – 154 mOsm/L
5. Before Hanging an IV solution, the nurse would check the fluid container for the following:
    a. Clarity and visible particulate matter
    b. Expiration date
    c. Leaks
    d. All the above

Module 4 Test Questions

1. Which of the following about antibiotic therapy is true?
    a. Antibiotics are designed to destroy viruses
    b. Antibiotic Therapy is the administration of medications, specifically designed to destroy infectious microbes.
    c. All antibiotics have the same half-life
    d. IV antibiotics can only be infused using a flow regulator. Do not use an IV pump for IV antibiotics.
2. When taking care of a patient receiving intravenous antibiotics the nurse must follow these guidelines. Choose all that applies:
    a. IV tubing needs to be changed every 24 hours for intermittent antibiotic administration.
    b. Label the tubing initially and every time it is changed with date, time, and initials.
    c. Label IV antibiotic bag with date, time, and initials.
    d. Each antibiotic requires a separate I.V. tubing.
    e. All the above
3. Peripheral Catheters are the preferred IV access for non-vesicant and non-irritant antibiotics and a duration for therapy of 5 days or less.
    a. True
    b. False
4. Mr. Kelly has been diagnosed with peripheral edema. So, his physician orders IV push Lasix (furosemide), before administering IV push Lasix the nurse must:
    a. Verify That the institution has a protocol in place for IV push Lasix
    b. Verify that IV Lasix is on the facility formulary
    c. Monitor the patient vital signs every 5 minutes for 2 hours
    d. A and B
5. After giving IV push medication the nurse must document all the following except:
    a. The diagnosis for which the resident is receiving the medication for.
    b. Prescribed flushing agent
    c. Medication/solution
    d. Rate of administration

Module 5 Test Questions

1. All these statements are true about veins, except?
    a. They are superficial
    b. They display dark red blood on the skin surface
    c. They have no pulsation
    d. They do not have valves
2. Short peripheral catheters are mostly used to infuse intravenous _____and intravenous antibiotics.
    a. Nutrition
    b. Hydration
    c. Diuretics
    d. Corticosteroids
3. Which one of these is a peripheral catheter complication?
    a. Pulmonary Embolism
    b. Speed shock
    c. Deep vein thrombosis
    d. Phlebitis
4. The inadvertent administration of non-vesicant medication or solution into the surrounding tissues is called?
    a. Infiltration
    b. Extravasation
    c. Phlebitis
    d. Infection
5. Peripherals are flushed and aspirated for blood return prior to each infusion to assess catheter function and prevent complications.
    a. True
    b. False

Module 6 Test Questions

1. A midline is a catheter inserted into the upper arm with the internal tip located at the level of the axilla. Which upper arm veins can be used to insert a midline?
    a. Basilic vein
    b. Cephalic vein
    c. Brachial vein
    d. All the above
2. In conformity with new INS standards of practice, in the absence of a clear indication for a central line, a midline catheter should be placed whenever non-vesicant IV therapy is likely to exceed?
    a. 30 days
    b. 60 days
    c. 6 days
    d. 3 days
3. A midline catheter should not be used for the following indications? Choose all that apply:
    a. Continuous vesicant therapy
    b. Total parenteral nutrition

c. IV antibiotic therapy
d. A and B

4. Before removing a midline, the nurse must verify that:
    a. The midline has a positive blood return
    b. The line was flushed with Heparin
    c. The line was flushed with Normal Saline
5. Midline catheter shall be placed and removed only by a qualified practitioner, certified for IV placement using ultrasound guidance.
    a. True
    b. False

Module 7 Test Questions

1. A central vascular access device is a catheter inserted into a peripheral or centrally located vein with the tip residing in which vein.
    a. Basilic vein
    b. Cephalic vein
    c. Brachial vein
    d. Superior Vena Cava
2. Which of the following is not a condition for central vascular access device placement?
    a. Medications or solutions with an osmolarity of higher than 900 mOsm/L
    b. Long-term venous access requirements as with chronic diseases
    c. Non-vesicant and non-irritant medication for less than 30 days
    d. Need for medications known to cause phlebitis
3. The interior space of a tubular structure, such as a blood vessel or catheter is called?
    a. Lumen
    b. Gauge
    c. Port
    d. Hub
4. What type of central catheter is open at the end, which allows fluid and medications to be pushed in, and blood to be drawn out.
    a. Closed-ended catheter
    b. Midline catheter
    c. Open-ended catheter
    d. Valve catheter
5. All the following are true about non-valved catheter except:
    a. A non-valved catheter doesn't have a clamp
    b. Non-valved catheters have an open end
    c. Non-valved catheters may be in single, double, or triple-lumen configurations
    d. The non-valved catheter may be a tunneled, non-tunneled type of catheter
6. Which of the following is a non-tunneled catheter?
    a. Hickman catheter
    b. Subclavian catheter
    c. Groshong catheter
    d. None of the above

7. The port consists of a reservoir with a _____. Connected to the port reservoir is the catheter in which the tip extends to the superior vena cava.
    a. Membrane
    b. Huber needle
    c. Port
    d. Self-sealing septum
8. When the patient does not require treatment and the implanted port is not accessed, the port should be flushed approximately every?
    a. Week
    b. 24 hours
    c. 28-30 days
    d. 6 months
9. Mr. Beck will be receiving Vancomycin 2 grams for a MRSA infection. In this situation a PICC is indicated for Mr. Beck to receive his treatment safely. Which of the following statements are true about Peripherally Inserted Central Catheter (PICC)? Choose all that apply:
    a. PICC insertion is a sterile procedure that can be performed at the bedside.
    b. PICC Can be Valved or non-valved
    c. PICC can be single, Double or triple lumen
    d. All the above
10. When a PICC is inserted at the bedside, the Tip of a PICC must be confirm in the superior vena cava using chest X-ray or ECG technology before use.
    a. True
    b. False

Module 8 Test Questions

1. When caring for a patient with a Central Vascular Access Device (CVAD) the nurse must assess the entire system for all these except?
    a. integrity of the system
    b. Integrity of the dressing
    c. accurate flow rate
    d. When was the line inserted
2. When assessing a CVAD the nurse must measure the arm circumference of the resident when performing dressing change and as needed in order to prevent or detect which complication?
    a. Air Embolism
    b. Possible catheter occlusion
    c. Deep vein thrombosis
    d. Catheter dislodgment
3. Signs or symptoms of a Catheter-Related Bloodstream Infection (CRBSI) are? Choose all that apply:
    a. Systemic changes, such as fever, chills, general malaise, tachycardia, hypotension, elevated white blood cell count
    b. Localized changes such as erythema
    c. pain or tenderness at catheter entry site, Cording along catheter tract
    d. All of the above

4. A CVAD complication that refers to the inability to infuse through or flush the catheter without resistance and the inability to elicit a blood return is called?
    a. Infiltration
    b. Venous Air Embolism
    c. Occlusion
    d. Thrombosis
5. A CVAD complication that refers to the leaking of intravenous (IV) fluid or non-vesicant medication into the tissue surrounding a vascular access device is called?
    a. Infiltration
    b. Extravasation
    c. Venous Air Embolism
    d. Thrombosis
6. Extravasation refers to the leaking of a vesicant drugs into the tissue surrounding a vascular access device.
    a. True
    b. False
7. Thrombosis refers to compression of, or direct damage to nerve tracts within the body at or near a CVAD insertion site.
    a. True
    b. False
8. Dyspnea, continuous coughing, breathlessness, tachypnea, wheezing, Chest pain, tachyarrhythmia, hypotension are all symptoms of which CVAD complication?
    a. Thrombosis
    b. Extravasation
    c. Catheter Breakage or leakage
    d. Venous Air Embolism (VAE)
9. A CVAD-associated venous thrombosis refers to a superficial or deep vein thrombosis along path of a CVAD. Which of the following are signs or symptoms of a venous thrombosis?
    a. Distention or engorgement of the veins surrounding or distal to the CVAD insertion site
    b. Edema
    c. Leaking at the insertion site
    d. A and B
10. Vessel wall inflammation or irritation with damage to endothelial and subendothelial layers of cells (tunica intima) that may involve tunica media is called Phlebitis and it can have mechanical, chemical, or bacterial/fungal origin.
    a. True
    b. False

Module 9 Test Questions

1. CVAD and Midline dressing changes will be done at established intervals for Vascular Access Devices (VAD) or when the integrity is compromised.
    a. True
    b. False
2. A CVAD dressing change should be performed immediately if? Choose all that apply

a. The dressing is non-occlusive or soiled.
b. There is drainage or moisture under the dressing.
c. There are signs of irritation or inflammation at the insertion site.
d. All the above

3. When performing A CVAD or Midline Dressing change the nurse will use an aseptic technique
    a. True
    b. False
4. Initial dressings after insertion of midlines, PICCs, and CVADs will be changed in?
    a. 72 Hours
    b. 7 days
    c. 24 hours
    d. 5 days
5. After insertion of a CVAD or Midline and periodically when the dressing is changed the practitioner must perform which measurements?
    a. Resident arm circumference and the external length of the catheter
    b. Resident upper arm length and the external length of the catheter
    c. Resident arm circumference and the total length of the catheter
    d. None of the above

Module 10 Test Questions

1. A nurse is caring for a male client who has an implanted port inserted into his subclavian vein. The client is about to receive his IV antibiotic. The nurse must perform which of the following actions before beginning his antibiotic?
    a. Aspirate blood return from the port to confirm port function
    b. Change the dressing using sterile technique
    c. Clean the site with alcohol
    d. Auscultate the client's lungs
2. Which of the following is NOT an indication for insertion of an implanted port
    a. Long term chemotherapy
    b. Frequent transfusions
    c. Emergency venous access in the ED
    d. Long term antibiotic therapy
3. Which of the following statements is FALSE?
    a. Implanted ports are inserted surgically
    b. The catheter tip is introduced in the vein and advanced to the right atrium or SVC
    c. The catheter is tunneled from the insertion site to the subcutaneous pocket where it is attached to the port
    d. Implanted ports are only available as single lumens
4. Occlusion of the catheter, a potential complication of an implanted port, can be due to:
    a. Fibrin sheath formation
    b. Medication precipitate
    c. Catheter thrombosis
    d. All the above
5. Which one of these statements is false about implanted port?

a. An implanted venous port differs from the other types of central lines in that it is located completely under the skin, with no external entrance or exit site.
b. The implanted port is made of 2 parts, the reservoir and the septum
c. The catheter is inserted into the subclavian vein or, in the case of a PICC port, into a major vein in the upper extremity, and advanced to the Cavo-atrial junction.
d. The catheter is connected to a titanium, stainless steel or plastic reservoir.

6. An implanted port can only be accessed using a special needle called a non-coring needle.
    a. True
    b. False
7. When an implanted port is not being used how often does it need to be flushed with saline and heparin?
    a. Once a week
    b. Every two weeks
    c. Once a month
    d. There is no need to flush the implanted port if not accessed.
8. Which of these statements is not true about non-coring needle selection?
    a. An assessment should be completed to determine the correct gauge and length of access needle appropriate for the patient.
    b. You should use the smallest gauge, shortest length needle appropriate for the patient's port depth and therapy.
    c. Port access needles are available in sizes ranging from 19 to 25 gauge and lengths from ½ inch to 2 inches.
    d. The needle should never reach the bottom of the reservoir and should press into the skin at all times.
9. What is the intervention and treatment for the thrombotic catheter occlusion of an implanted port?
    a. Treated the occlusion with 70% ethanol
    b. Treated according to the drug pH, using hydrochloric acid, sodium bicarbonate, or sodium hydroxide
    c. Instill thrombolytic agent such as Cathflo®.
    d. Pressure flush the implanted port with to dislodge the thrombus
10. De-accessing an implanted port is a clean procedure not a sterile procedure.
    a. True
    b. False

Module 11 Test Questions

1. When inserting a short peripheral catheter, the nurse should always use the biggest possible catheter gauge?
    a. True
    b. False
2. All the following are layers of the blood vessel except.
    a. Tunica Intima
    b. Tunica Media
    c. Tunica Muscula

d. Tunica Externa

3. Which of the following is a common indication for a peripheral catheter insertion?
    a. A-Infusion of fluid and electrolytes
    b. B-Administration of IV antibiotic
    c. C-Infusion of total parenteral nutrition
    d. A and B
4. Peripheral IV catheter should never be used for continuous infusions of vesicant therapy.
    a. True
    b. False
5. Which of the following are part of the 4 factors for a successful peripheral IV catheter insertion?
    a. Correct tourniquet application
    b. Choose appropriate IV catheter
    c. Use proper prepping technique
    d. All the above
6. Which of the following is not a criterion for Peripheral IV insertion when it comes to choosing the right vein?
    a. Bouncy
    b. Mobile
    c. Visible
    d. Straight
7. When you get ready to puncture the vein with the catheter, how should you apply skin traction in order to stabilize the vein?
    a. Pull down the skin from the insertion site
    b. Pull the skin side way from the insertion site
    c. Pull the skin down and away from the insertion site
    d. There's no need to pull or stretch the skin when inserting a peripheral catheter.
8. Which of the following is a possible complication of peripheral IV catheter?
    a. Deep vein thrombosis
    b. Venous air embolism
    c. Catheter migration
    d. Infiltration
9. All the following are causes of phlebitis except.
    a. Positional
    b. Bacterial
    c. Chemical
    d. Mechanical
10. No more than 2 unsuccessful attempts shall be permitted by a trained practitioner.
    a. True
    b. False

Module 12 Test Questions

1. What do you call the type of nutrition used to provide a liquid mixture of nutrients directly into a patient's bloodstream?
    a. Parenteral

b. Enteral
c. Symmetrical
d. Tangential

2. Total parenteral nutrition (TPN) should be used when the patient:
    a. Needs to build muscle mass.
    b. Is unable to eat or absorb necessary nutrients.
    c. Is undergoing all types of surgery.
    d. Needs weight reduction.
3. Total parenteral nutrition is given through a(n) _____, which is a catheter that ends in the superior vena cava.
    a. Peripheral line
    b. Enteral Line
    c. Superior line
    d. Central line
4. Which of the following statements about Partial Parenteral Nutrition (PPN) is NOT true?
    a. PPN is also called peripheral parenteral nutrition.
    b. PPN is administered through a peripheral vein in the arm.
    c. PPN is used for long term treatment for those who are unable to eat.
    d. PPN is managed by a dietician to ensure proper nutrients are provided.
5. Which of the following is most likely to require a person to need parenteral nutrition?
    a. Diabetes
    b. Osteoporosis
    c. Intestinal cancer
    d. Severe constipation
6. A 3-in-1 total nutrition admixture contains which of the following:
    a. Dextrose
    b. Amino Acids
    c. Lipids
    d. All of the above
7. The rate at which parenteral nutrition is administered should be tapered upward for _____ when starting the infusion
    a. It should not be tapered upwards
    b. 15-30 minutes
    c. 1-2 hours
    d. 8 hours
8. The _____ assesses the patient's nutritional status, calculates the daily requirement, and designs the feeding regimen.
    a. Physician
    b. Pharmacist
    c. Dietician
    d. Nurse
9. The patient being unable to maintain nutritional status due to severe diarrhea or vomiting is an indication for TPN.
    a. True

b. False

10. Stable hospital, home, or long-term care setting patients with no formulation changes for one week should be monitored every _____ if clinically stable.
    a. 8 hours
    b. 24 hours
    c. 2-7 days
    d. 1-4 weeks
11. Total parenteral nutrition can be stopped suddenly.
    a. True
    b. False
12. The Nurse must have received training and demonstrated competency related to the handling of Parenteral Nutrition (PN) prior to performing this procedure.
    a. True
    b. False
13. Sterile technique must be used at all times when administering Parenteral Nutrition.
    a. True
    b. False
14. Parenteral nutrition bags must be changed every _____.
    a. 2 hours
    b. 8 hours
    c. 24 hours
    d. 48 hours
15. A parenteral nutrition bag should be removed from the refrigerator at least _____ per liter before infusing
    a. 15 minutes
    b. 30 minutes
    c. 1 hour
    d. 2 hours
16. Which of the following should be documented in the patient's medical record after performing the parenteral nutrition procedure?
    a. Signature of the physician prescribing parenteral nutrition
    b. The catheter gauge being used for the infusion
    c. Any changes in parenteral nutritional formula
    d. All of the above
17. Lipids are used to provide _____ to residents who are not able to get sufficient oral intake.
    a. Calories
    b. Protein
    c. Dextrose
    d. Micronutrients
18. Lipid administration is contraindicated in residents with:
    a. Allergy to egg yolk
    b. Hepatic disease
    c. Hyperlipidemia
    d. All of the above

19. Medications added to parenteral nutrition are stable for _____
    a. 8 hours
    b. 24 hours
    c. 3-4 days
    d. Medications added to parenteral nutrition are stable indefinitely
20. Shake the bag vigorously for 30 seconds after placing additives.
    a. True
    b. False

Appendix A: Competency Checklists

Peripheral Catheter Insertion

Peripheral I.V. Insertion Skills Competency

Nurse:	Facility:
Date:	Preceptor:

	Skills Reviewed	Successful	Unsuccessful
1.	Procedures Reviewed	☐	☐
2.	Verbal consent obtained	☐	☐
3.	Explanation of procedure	☐	☐
4.	Correct tourniquet application	☐	☐
5.	Venous site identified	☐	☐
6.	Appropriate supplies pulled	☐	☐
7.	Prefills extension set and access device	☐	☐
8.	Follows universal precautions	☐	☐
9.	Skin prep performed	☐	☐
10.	Maintains aseptic technique	☐	☐
11.	Completes successful venipuncture	☐	☐
12.	Flushes catheter and tubing	☐	☐
13.	Stabilizes catheter and tubing	☐	☐
14.	Cleanses & dresses site	☐	☐
15.	Disposes IV device in sharps	☐	☐
16.	States four factors for success	☐	☐
	Procedure Rating: ☐Successful ☐Unsuccessful		

Student's Signature:	Date:
Preceptor's Signature:	Date:

CVAD Dressing Change

CVAD Dressing Change Competency

Nurse:	Facility:
Date:	Preceptor:

	Skills Reviewed	Successful	Unsuccessful
1.	Verify physician order	☐	☐
2.	Verify patient identity	☐	☐
3.	Explain procedure	☐	☐
4.	Position patient for comfort with port site exposed	☐	☐
5.	Wash hands	☐	☐
6.	Gather equipment and supplies; assemble on a clean work surface	☐	☐
7.	Don non-sterile gloves	☐	☐
8.	Remove the old transparent dressing	☐	☐
9.	Remove the old securement device	☐	☐
10.	Assess site for complications	☐	☐
11.	Remove non-sterile gloves and discard.	☐	☐
12.	Open the central line dressing kit	☐	☐
13.	Open the securement device and drop in the dressing kit	☐	☐
14.	Open the protective disk and drop in the dressing kit(optional)	☐	☐
15.	Wash hands	☐	☐
16.	Don mask	☐	☐
17.	Don sterile gloves	☐	☐
18.	Set up supplies on sterile field	☐	☐
19.	Clean the site	☐	☐
20.	Apply new securement device	☐	☐
21.	Apply protective disk(optional)	☐	☐
22.	Apply transparent dressing over the site	☐	☐

23.	Affix label with date and nurse's initials	☐	☐
24.	Remove and replace the needleless connection device(s)	☐	☐
25.	Measure External length of catheter	☐	☐
26.	Measure resident's arm circumference	☐	☐
27.	Dispose of trash	☐	☐
28.	Wash hands.	☐	☐
29.	Document procedure in medical record and MAR.	☐	☐
Procedure Rating: ☐Successful ☐Unsuccessful			

Student's Signature:	Date:
Preceptor's Signature:	Date:

Preparation and Administration of Parenteral Nutrition Competency

Nurse:	Facility:
Date:	Preceptor:

	Skills Reviewed	Successful	Unsuccessful
1.	Verifies that the patient has a central venous catheter with the tip terminating in the SVC.	☐	☐
2.	Checks the order for TPN with the label on the TPN bag.	☐	☐
3.	Removes the TPN from the refrigerator at least one hour per liter before administration.	☐	☐
4.	Checks MD order for appropriate lab orders.	☐	☐
5.	Checks MD order for 10% Dextrose order.	☐	☐
6.	Checks MD order for appropriate flush order.	☐	☐
7.	Washes hands.	☐	☐
8.	Correctly adds ordered medications (vitamins, etc.) to the bag using aseptic technique.	☐	☐
9.	Explains procedure to patient.	☐	☐
10.	Assembles administration set correctly.	☐	☐
11.	Loads and programs pump correctly.	☐	☐
12.	Flushes the lumen to be used for TPN with saline.	☐	☐
13.	Attaches administration tubing correctly to needleless connector on dedicated lumen of central venous catheter.	☐	☐
14.	Opens all clamps on administration tubing and catheter lumen being used for TPN. Begins infusion.	☐	☐
15.	If using a multi-lumen catheter, clamps the lumens not being used.	☐	☐
16.	Documents the procedure in patient's chart and MAR according to policy.	☐	☐
	Procedure Rating: ☐Successful ☐Unsuccessful		

Student's Signature:	Date:
Preceptor's Signature:	Date:

Parenteral Nutrition Piggyback Lipid Administration

Parenteral Nutrition Piggyback Lipid Administration Competency

Nurse:	Facility:
Date:	Preceptor:

	Skills Reviewed	Successful	Unsuccessful
1.	Checks MD order for lipid administration	☐	☐
2.	Inspect lipid solution for discoloration or other signs of breakdown	☐	☐
3.	Verify resident name, type of solution, rate, route, and time	☐	☐
4.	Assemble solution, tubing, needleless connection device, normal saline flushes, and alcohol wipes	☐	☐
5.	Explains procedure to patient.	☐	☐
6.	Perform hand antisepsis. Don non-sterile gloves	☐	☐
7.	Place tubing in container and prime tubing	☐	☐
8.	Close clamp on tubing	☐	☐
9.	To run "piggyback" into primary Parenteral Nutrition tubing, place at most distal side port (Y connector) after cleansing port with alcohol.	☐	☐
10.	Place tubing into pump and set rate as ordered.	☐	☐
11.	Start pump and observe flow.	☐	☐
12.	Note resident response to procedure.	☐	☐
13.	Documents the procedure in patient's chart and MAR according to policy.	☐	☐
Procedure Rating: ☐Successful ☐Unsuccessful			

Student's Signature:	Date:
Preceptor's Signature:	Date:

Example Certificate of Completion