Certified Hemodialysis Technologist/Technician
Detail of Examination Content

DOMAIN I: Patient Care (45%)

A. Evaluate Patient Pre and Post Treatment

1. Evaluate fluid management
    a. Replacement therapy
    b. Sequential ultrafiltration
    c. Ultrafiltration concepts
2. Collect and evaluate patient data
    a. Vital signs
    b. Weight evaluation
    c. Access patency
    d. Edema
    e. Signs and symptoms of infection
    f. Hemostasis
    g. Orthostasis
    h. Need for supplemental oxygen
3. Document assessment
    a. Report complaints or observations to nurse
    b. Document observations in medical record
    c. Discuss ultrafiltration plan with nurse

B. Evaluate, Intervene and Manage Treatment

1. Pre treatment
    a. Set treatment parameters per physician order (e.g., bath, blood flow rate, dialysate flow rate)
    b. Check reuse dialyzer label
    c. Inspect dialyzer
    d. Evaluate access (e.g., patency, infection, appearance)
    e. Prepare vascular access for cannulation
    f. Prepare CVC and change dressing
    g. Gain access
    h. Collect laboratory samples (e.g., cultures, blood, urine)
    i. Administer heparin for initiation of treatment
    j. Verify patient identification at initiation of dialysis
    k. treatment (e.g., set parameters, blood flow rate, dialysate flow)
    l. Document observations and patient data
2. During treatment
    a. Collect laboratory samples (e.g., cultures, blood, urine)
    b. Monitor and record treatment data
    c. Identify and respond to complications
    d. Notify nurse of any changes in patient condition
    e. Administer oxygen to patient by cannula or mask
    f. Respond to dialysis machine alarms
    g. Document observations and patient data
3. Post treatment
    a. Collect laboratory samples (e.g., cultures, blood, urine)
    b. Perform procedures to terminate dialysis treatment
    c. Needle site care per protocol (e.g., removal, pressure, dressing)
    d. Catheter care per protocol

e. Document observations and patient data
f. Check dialyzer efficiency (e.g., clots, fibers, leaks)

DOMAIN II: Machine Technology (12%)

A. Maintain Dialysis Machine

1. Clean and disinfect dialysis equipment
2. Record all machine disinfection
3. Check readiness of emergency equipment
4. Verify the calibration of ancillary medical equipment
5. Recognize errors in blood and dialysate flow rates

B. Set-up Machine

1. Prepare dialysis equipment for treatment (e.g., prime, rinse, fluid delivery system)
2. Prepare auxiliary equipment (e.g., oxygen therapy, glucometer, conductivity meter)
3. Rotate dialysis equipment in dialysis unit
4. Perform residual chemical checks
5. Perform required safety checks on dialysis equipment (e.g., conductivity, pH, temperature)
6. Test alarms (e.g., air detector, venous/arterial pressure, blood leak detector)
7. Prepare and verify bicarbonate and acid solutions
8. Document daily equipment logs

C. Evaluate Machine Operation

1. Understand quality control of dialysis equipment per Association for the Advancement of Medical
2. Perform rinse procedures for dialysis delivery systems
3. Perform disinfect procedures for dialysis delivery systems
4. Understand equipment maintenance records for compliances with regulatory and standard setting
5. Adhere to equipment maintenance procedures and schedules

DOMAIN III: Water Treatment (15%)

A. Understand Components/Design of Systems

1. Recognize actions
2. Recognize the process of ultraviolet light exposure

B. Maintain Systems

1. Understand the process of disinfecting water treatment system
2. Understand the maintenance of all treatment components
3. Perform water treatment system checks

C. Monitor and Evaluate Systems

1. Understand quality control of reprocessing equipment per AAMI standards
2. Monitor total chlorine or chloramines
3. Maintain water treatment systems records for compliance with regulatory and standard setting

DOMAIN IV: Infection Control (18%)

A. Maintain a Clean and Safe Patient Environment

1. Follow all clean/dirty procedures in order to eliminate cross-contamination
2. Recognize complications in dialysis treatments regarding infectious diseases (e.g., AIDS, TB, influenza)
3. Ancillary equipment and supplies
4. Demonstrate understanding and perform cannulation using aseptic technique for needle insertion and all

5. Glove changing
6. Wash machines, station area, and chairs after each patient run
7. Hand washing

B. Use Dialysis Precautions

1. Personal protective equipment (PPE) (e.g., gown, gloves, mask)
2. Disinfecting dialysis station
3. Disposal of biohazard waste and SHARPS

C. Implement Isolation Procedures

1. Designated equipment
2. Understand CMS requirements for designated staff
3. Understand status of patient's hepatitis survey
4. Disinfection

DOMAIN V: Education and Professional Development (10%)

A. Educate Patient

1. Advise patient of discharge instructions (e.g., diet, fluid intake, medication regiment)
2. Advise patient and family members based on physician's orders (e.g., personal hygiene, self- care, treatment modalities)
3. Explain dialysis concepts to patients
4. Review and reinforce dialysis prescription
5. Describe basic features of end stage renal disease (ESRD)
    a. Complications
    b. Hemodialysis treatment
    c. Psychosocial implications
    d. Dietary restrictions
    e. Treatment modality
6. Describe treatment of acute renal failure

B. Engage in Professional Development

1. Continuing education of dialysis (e.g., attend meetings, workshops, conferences)
2. Multidisciplinary care plans
3. Medications in the dialysis clinic (e.g., anticoagulants, antihypertensives, erythropoietic stimulating agents (ESA))
4. Proper body mechanics for patient and self
5. Professional ethics and boundaries
6. Dialysis unit safety procedures (e.g., fire drills, disaster drill, bomb threat)
7. Professional literature
8. Role of the preceptor
9. Government regulations
10. Treatment modalities (e.g., peritoneal, transplant, home hemodialysis)

C. Understand Quality-Related Issues

1. Document incidents (e.g., emergency-related, equipment/devices, patient care)
2. Maintain documentation/data
    a. Process improvement
    b. Treatment
3. Maintain storage of medications (e.g., heparin, normal saline, Xylocaine)
4. Maintain storage of equipment and supplies
5. Participate in quality assurance process improvement (QAPI) activities
6. Participate in the development of dialysis unit objectives

D. Demonstrate Communication Skills with Staff Members

1. Promote a teamwork approach by offering information, advice, and assistance
2. Contribute to constructive working relationships
3. Participate in self and/or peer evaluations as directed
4. Ensure the confidentiality of patient and employee information
5. Assist in orientation of new staff members