Safety and Infection Control

Safe Medication Administration and Error Reduction: Completing an incident Report for a Medication Error

- Assessment
    - Obtain information about medical diagnoses and conditions that affect medication administration
    - Obtain necessary proadministration data to assess the appropriateness of the medication and to obtain baseline data for evaluating the effectiveness of medications
    - Questions the provider if the prescription is unclear or seems inappropriate for the client. Refuse to administer a medication if it seems unsafe and notify the charge nurse or supervisor.
- Implementation
    - Check the labels for the medication's name and concentration.
    - Follow the rights of medication administration consistently and carefully. Take the MAR to the bedside.
    - Do not administer medications that someone else prepared.
- Evaluation
    - Complete and incident report within the time frame the facility specifies, usually 24 hr. This report should include: Client's identification, Name and dose of the medication, Time and place of the incident, accurate and objective account of the event, who you notified, what actions you took, Your signature
    - Medication errors relate to systems, procedures, product design, or practice patterns. Report all errors to help the facility's risk managers determine how errors occur and what changes to make to avoid.
    - Do not reference or include the incident report in the client's medical record

Diabetes Mellitus: Nursing Actions Following a Medication Error

- Nursing Administration
    - When mixing short-acting insulin with longer-acting insulin, draw the short-acting insulin up into the syringe first, the longer-acting insulin. This prevents the possibility of accidently injecting some of the longer-acting insulin into the shorter-acting insulin vial.
    - NPH and premixed insulins should appear cloudy. Do not administer other insulins if they are cloudy or any insulins that are discolored or if a precipitate is present.
    - Instruct clients to administer subcutaneous route
- Actions continued
    - Ensure adequate glucose is available at the time of onset of insulin and during all peak times
    - For insulin suspensions, gently rotate the vial between the palms to disperse the particles throughout the vial prior to withdrawing insulin

    - Administer NPH by subcutaneous route
- Interactions
    - Sulfonylureas, meglitinides, beta blockers, and alcohol have additive hypoglycemic effects with concurrent use
    - Concurrent use of thiazide diuretics and glucocorticoids can raise blood glucose levels and thereby counteract the effect of insulin
    - Beta blockers can mask SNS response to hypoglycemia (tachycardia, tremors), making it difficult for clients to identify hypoglycemia. Beta blockers also impair the body's natural ability to breakdown glycogen stores to raise blood glucose levels.

Pharmacological and Parenteral Therapies

Chronic Neurologic Disorders: Medications That Interact with Carbamazepine

- Decrease topiramate level
- Decrease in the effects of oral contraceptives and warfarin due to stimulation of hepatic medication-metabolizing enzymes
- Phenytoin and phenobarbital decrease effects of carbamazepine

Medications Affecting Urinary Output: Reporting Adverse Effects or Furosemide

- Dehydration, hyponatremia, hypochloremia, hypotension, Ototoxicity, Hypokalemia, Hyperglycemia, hyperuricemia, hypocalcemia, hypomagnesemia, decrease in HDL, increase in LDL
- Contraindicated in clients who have anuria (no urine output)
- Monitor for dehydration, manifestations of postural hypotension, cardiac status and potassium levels, blood glucose, uric acid, calcium, magnesium, and lipid levels

Cardiac Glycosides and Heart Failure: Risk Factors for Digoxin Toxicity

- Quinidine increases the risk of digoxin toxicity when used concurrently by displacing digoxin from its binging site and reducing kidney excretion
- Fatigue, weakness, vision changes, GI effects
- Dehydration, low potassium levels, low magnesium levels, kidney problems, combining digitalis with other medications, and thyroid problems.

Antibiotics Affecting the Bacterial Cell Wall: Priority Finding to Report to Provider

- Instruct clients to report any findings of an allergic response (dyspnea, a skin rash, itching, and hives)
- Observe for allergic reactions for 30min following parenteral administration of penicillin. Immediate reactions occur between 2-30min after administration; accelerated reactions occur within 1-27hrs, and delayed reactions occur within days to weeks

- A history of severe allergic reactions to penicillin, cephalosporins, or imipenem is a contraindication for penicillin

Adverse Effects, Interactions, and Contradictions: Priority Treatment for Anaphylaxis

- Anaphylaxis is a life-threatening, immediate systemic reaction caused from an allergic response to a medication, dye, food, or insect bite or sting. Allergic asthma also has a rapid onset with similar causes.
- Manifestations start with anxiety, weakness, generalized itching and hives that progress to erythema and angioedema of the head and neck. Crackles, wheezing, decreased breath sounds, a feelings of a lump in the throat, hoarseness, and stridor can develop into a life-threatening condition that results in respiratory failure, hypoxemia, hypotension, tachycardia, and death. Allergic asthma has similar manifestations that involve pulmonary system that can become life threatening.
- Epinephrine to reduce body's allergic response

Mycobacterial, Fungal, and Parasitic Infections: Evaluating Use of Anti-Infective Medications

- Effectiveness depends on therapeutic intent
- Improvement of TB symptoms such as clear breath sounds, no night sweats, increased appetite, no afternoon rises in temperature
- Three negative sputum culture for TB
- Improvement of manifestations
- Improvement of findings of systemic fungal infection, such as clear breath sounds and negative chest x-rays

Hear Failure and Pulmonary Edema: Priority Actions for a Client who has heart Failure

- Using the airway, breathing, and circulation (ABC) priority approach to client care
- First action the nurse should take is to assist the client into high-Fowler's position – decrease venous return to the heart and help relieve lung congestion
- Assess for shortness of breath and dyspnea on exertion

Nonopioid Analgesics: Identifying a Contraindication for Receiving Acetaminophen

- Pregnancy Risk Category B for oral, rectal use, and C for IV use
- Avoid in clients who have hypersensitivity to a component, or severe liver impairment or disease, kidney impairment, chronic alcohol use disorder, malnutrition
- Shock – a condition where the body is unable to maintain adequate blood flow

Medications Affecting Coagulation: Safe Administration of Enoxaparin

- For SUBQ injections when a prefilled syringe is not available, use a 20- to 22-guage needle to withdraw medication from the vial. Then, change to a small needle (25- or 26-gauge, ½ to 5/8 inches long). Deep SUBQ injections should be administered in the abdomen, ensuring a distance 2 inches from the umbilicus. Do not aspirate
- Rotate sites between right and left anterolateral and posterolateral abdominal walls at least 2 inches from umbilicus
- Do not rub site for 1-2min after the injection. Rotate and record injection sites

Opioid Agonist and Antagonist: Adverse Effects of Epidural Morphine

- Respiratory depression
  - Monitor vital signs
  - Stop opioids if the client's respiratory rate is less than 12/min, and notify the provider
  - Have naloxone and resuscitation equipment available
- Orthostatic hypotension
  - Advise client to sit or lie down if lightheadedness or dizziness occur
  - Due to the dilation of effect to the peripheral arterioles and veins, avoid sudden changes in position by slowly moving clients from a lying to a sitting or standing position.
  - Provide assistance with ambulation as needed
- Opioid toxicity triad
  - Monitor vital signs
  - Provide mechanical ventilation
  - Adverse naloxone, an opioid antagonist that reverses respiratory depression and other manifestations of toxicity

Individual Considerations of Medication Administration: Risk Factors for Adverse Reactions in Older Adult Clients

- Physiological changes
  - Increased gastric pH
  - Decreased gastrointestinal motility and gastric emptying time, resulting slower rate absorption
  - Decreased blood flow through cardiovascular system, liver, and kidneys
- Other factors
  - Multiple or severe illnesses
  - Impaired memory or altered mental state
  - Inadequate supervision of long-term therapy
- Polypharmacy – the practice of taking several medications simultaneously with diminished bodily functions and some medical problems can contribute to the potential for medication toxicity

Intravenous Therapy: Selecting a Site to initiate IV Therapy

- Peripheral vein via a catheter

- Jugular or subclavian vein via a central venous access device
- Avoid:
    - Varicose veins that are permanently dilated and tortuous
    - Veins in the inner wrist with bifurcations, in flexion areas, near valves, in lower extremities, and in the antecubital fossa
    - Veins in the back of the hand
    - Veins that are sclerosed or hard
    - Veins in an extremity with impaired sensitivity, lymph nodes, removed, recent infiltration, a PICC line, or an arteriovenous fistula or graft
    - Veins that had previous venipunctures

Intravenous Therapy: Actions for an IV Infusion Infiltration

- Administering fluids via IV catheter to administer medications, supplement fluid intake, or give fluid replacement, electrolytes, or nutrients.
- Large-volume IV infusions on a continuous basis
- Mix IV medication in a large volume of fluid to give as a continuous IV infusion or intermittently in a small amount of fluid.

- IV bolus, giving the medication in a small amount of solution, concentrated or diluted, and injecting it over a short time (1-2min or longer, depending on the medication).

Total Parenteral Nutrition: Initiating Therapy

- Client's gastrointestinal tract is not function, or when a client cannot physically or psychologically consume sufficient nutrients orally or enterally.
- Used when caloric needs are very high, when long-term therapy is indicated, or when the solution to be administered is hypertonic.
- For patients with insufficient intake, burns, bowel obstructions, paralytic ileus, patient refusing to eat, trauma, anorexia, and weight loss of more than 10%

Physiological Adaptation

Intravenous Therapy: Manifestations of Fluid Volume Excess

- IV fluid administration can irritate the lining of the vein
- Circulatory fluid overload is possible if the infusion is large or too rapid
- Immediate absorption leaves little time to correct errors

Medications Affecting Labor and Delivery: Treatment for Hypermagnesemia

- Cessation of causative medications like magnesium containing laxatives, renal dialysis, and the administration of calcium gluconate, calcium chloride and/or intravenous dextrose and insulin
- Identification and correction of the underlying cause cessation of contributory drug peritoneal dialysis or hemodialysis

- IV fluids, such as normal saline or lactated Ringer’s solution. Loop diuretics such as furosemide. Calcium gluconate (10%).

Reduction of Risk Potential

Depressive Disorders: Laboratory Values to Report

- Hyponatremia - Baseline blood sodium, and monitor level periodically throughout treatment.
- Liver Function Test
- CBC
- TSH
- BUN and creatinine
- ABGs