Week 1:

- Blood administration
    - Nursing interventions pre-, intra-, and post- transfusion
        - Check vital signs (especially temp) prior to administration and informed consent
        - Type and cross will be completed
        - Stay with the patient for AT LEAST the first 15 min mark, and then every hour after
        - When the blood arrives on the unit you have four hours to begin the infusion
        - Use an 18-20 gauge needles so you don't lyse the blood cells
        - Ask pt if they have had any previous reaction to blood products
        - Two nurse check for blood administration
        - Use a Y-tubing (blood tubing), prime with NORMAL SALINE, then clamp off saline and turn on blood. Infusion time starts when the blood hits the patient NOT when running through the tubing. Not run concurrently w/ blood
        - Blood is typically given in one hour
        - Do not mix w/ other IV meds
        - Obtain informed consent
    - Identifying s/sx of transfusion reactions
        - Fever, tachycardia, hypotension, back pain, dyspnea, decreased O2 sat, adventitious lung sounds, pulse will be ??
        - Stop the infusion and place in high fowlers to facilitate breathing
- Chest tubes
    - Expected findings
        - Tidaling in water chamber- fluctuates during inspiration and exhalation
        - Constant bubbling in the suction chamber
    - Nursing interventions pre-, intra-, and post- placement and removal
        - Informed consent
        - Keep below the level of the chest
        - Dressing should be clean, dry, assess for infection
            - Drainage, extreme redness
        - NEVER clamp a chest tube unless you get an order
        - Chest x-ray to confirm tube placement
        - Listen to lung sounds
        - Set up the drainage system and initial after your shift for output

        - Assess VS, breath sounds, Sao2, color and respiratory effort at least every 4 hours
        - Encourage deep breathing and coughing every 2 hour
        - Position high fowlers
        - Keep sterile water, hemostats, and occlusive dressing at bedside
        - If the tube is removed place in sterile water
    - Measuring output
        - Measure output at end of each shift or Q8. Do not empty at end of shift but draw a line/initial.
- ETT Suctioning
    - Nursing interventions
        - Complication of suctioning is hypoxia
        - Generally not left in place longer than 14 days d/t risk of infection and airway injury
        - Settings ordered by provider
        - Hyper oxygenate before suctioning and assess the patient, before, during and after the procedure
        - Hyper oxygenate for 30 seconds and then suction for no more than 10 seconds (you can only hyper oxygenate for TWO minutes)_
        - Insert catheter without applying suction, apply suction while using a rotation motion to remove it
        - Close suction requires clean gloves
        - Only perform 2 or 3 suction passes
- Cardiac rhythms
    - Identify by rhythm strip OR written description of rhythm
- Atrial fibrillation
    - Manifestations
        - Carotid and radial pulses won't match, apical and radial pulse wont match
        - No P wave is produced
        - If the ventricular rate is 100 bpm or less, the rhythm is controlled and if it is over 100 bpm then it is considered to have a rapid ventricular response and is called uncontrolled

Week 2:

- Pneumothorax
    - Manifestations
        - Anxiety
        - Pleuritic pain
        - Signs of respiratory distress
            - Tachypnea
            - Tachycardia

            - Hypoxia
            - Cyanosis
            - Dyspnea
            - Use of accessory muscles
        - Hyperresonance on percussion due to trapped air
        - Asymmetrical chest wall movement
        - Trachea deviation

Week 3:

- MI
    - Diagnostic testing
        - 12-lead EKG- tombstone looking EKG (ST elevation in EKG leads- blockage)
        - Cardiac enzymes- Troponin T & I, myoglobin, CKMB
        - Chest pain occurs suddenly, dyspnea, diaphoresis, SOB, N/V
- Echocardiogram
    - Patient education prior to this test
        - Tell structural/valve information (ejection fraction)
        - Through the chest: tell the patient it is painless, no need to be NPO because it is not an invasive procedure
        - Done via ultrasound
        - Takes 30-60 minutes
- Cardiac catheterization
    - Nursing interventions pre-procedure
        - Ensure consent is signed
        - Maintain NPO for at least 8 hours
        - Assess for iodine/shellfish allergy
        - Assess renal function prior to the introduction of contrast dye
        - Administer pre-medication as prescribed
        - Assess VS every 15 minsx4, every 30 min x2, every 1hr x4, and then every 4 hours
        - Assess groin site for bleeding and hematoma formation
        - Maintain bedrest in supine position with extremity straight for up to 6 hours
        - Continuous cardiac monitoring
        - Administer anti-platelet, anti-anxiety, pain medication as prescribed
        - Inform pt they will remain awake, and local anesthetic is used.
- Cardiac tamponade
    - Manifestations
        - Hypotension, chest pain, SOB
- Diuretic therapy

- Complications/adverse effects
  - Electrolyte imbalances can occur from diuretic use
    - Potassium, sodium

Week 5:

- Hypervolemia
  - Manifestations
    - Acute weight gain
    - Peripheral edema and ascites
    - Distended jugular veins
    - Crackles
    - Elevated CVP
    - Shortness of breath
    - Elevated BP
    - Bounding pulse and cough
    - Increased respiratory rate
    - Increased urine output
    - Decreased hemoglobin and hematocrit
    - Decreased serum and urine osmolality
    - Decreased urine and sodium specific gravity
- Hypokalemia/Hyperkalemia
  - Interventions
    - Hypokalemia
      - Decreased BP, thready weak pulse, orthostatic hypotension
      - altered mental status anxiety and lethargy that progresses to acute confusion and coma
      - flattened T wave, prominent U wave, ST depression, prolonged PR interval
      - hypoactive bowel sounds, N/V, constipation, abd distention, paralytic ileus can develop
      - weakness, decreased DTRs
      - Monitor EKG/telemetry for flattened T-waves, prominent U-waves, ST depression, and prolonged PR interval
      - Serial EKGS
      - Monitor I&O
      - Assess hands grasps
      - Assess for phlebitis
      - PO or IV potassium- never IM or subQ
      - K-rider (hang with normal saline d/t caustic to the vein)
      - K+ high foods: bananas, spinach, citrus fruits, avocados, raisins, potatoes

        - PO potassium are large pills and may need to be cut in half
    - Hyperkalemia
        - Muscle twitching, paresthesia (early), muscle weakness (late), diarrhea, hyperactive bowel sound, oliguria, restlessness, irritability, hypotension, slow irregular pulse.
        - Peaked T waves
        - Limit dietary potassium
        - Administer medication as prescribed diuretics-loop diuretics furosemide
        - Hypertonic dextrose, regular insulin, IV sodium bicarbonate, IV calcium gluconate, cation-exchange resin (Kayexalate=sodium polystyrene)
        - Educate pt to avoid salt substitutes containing potassium
- EKG changes associated with electrolyte imbalances
    - Listed above

Week 7:

- Casts
    - Patient education
        - Do not place any foreign objects inside the cast to avoid trauma to the skin
        - Do not get cast wet, use plastic bag when showering
        - Use hair dryer on cool setting for itching inside the cast
    - Nursing interventions
        - Monitor neurovascular status every 1 hr for the first 24 hour and assess pain
        - 1-4 hours after
        - Apply ice for 24-48 hours
        - Elevate above the level of the heart for first 48 hours
        - Regularly move joints about and below cast
        - Check before and after cast application, check when patient complains of tingling, check when in traction on the affected limb, check pulses DISTAL to the injury
    - Complications
        - Compartment syndrome
        - Neurovascular compromise→ frequent neuro checks
        - Fat embolism
        - DVT
        - Osteomyelitis
        - Avascular Necrosis
- Skeletal traction
    - Expected findings at pin sites

        - Pin sites will have serous drainage coming out
        - One cotton swab for each pin to avoid cross contamination
        - Minimal redness and swelling
- Buck's traction
    - What does this do?
        - Buck's traction is a type of skin traction that pulls the femur so that the femur can remain in its proper place after a fracture

Week 8:

- Increased ICP
    - Manifestations- EARLY
        - Changes in LOC
        - Restlessness, confusion, increasing drowsiness, increased respiratory effort, purposeless movements
        - Pupillary changes and impaired ocular movements
        - Weakness in one extremity or one side
        - Headache: constant, increasing in intensity
    - LATE
        - Increased systolic blood pressure, widening of pulse pressure, and slowing of the heart rate
        - Projectile vomiting
        - Further deterioration of LOC; stupor to coma
        - Hemiplegia, decortication, decerebration, or flaccidity
        - Respiratory pattern alterations including cheyne stokes breathing and arrest
        - Loss of brainstem reflexes: pupil, gag, corneal, and swallowing
        - Cushing's Triad (occurs w/ ICP as a progressive symptom) → bradycardia, bradypnea, HTN (opposite of shock)
        - Loss of reflexes (pupil, gag)
    - Nursing interventions
        - Interventions to decrease ICP- don't cough, don't strain, HOB elevated to at least 30 degrees, stool softeners, decreased stimulation, dark room, ensure head is positioned **midline**
- Hemorrhagic stroke
    - Manifestations
        - Severe headache
        - Visual disturbances
        - Dizziness slurred speech
        - Weak extremity
        - Confusion
        - N/V

        - Hypertension
- Thrombolytic therapy
    - Complications
        - Anticoagulants in stroke (heparin, enoxaparin) are not recommended due to the high risk of intracerebral bleeding
        - Hemorrhaging
        - Fall risk/bleeding risk
- Bacterial Meningitis
    - Manifestations:
        - Subjective data:
            - Excruciating, constant headache
            - Nuchal rigidity (stiff neck)
            - Photophobia (sensitivity to light)
        - Objective data:
            - Fever and chills
            - Nausea and vomiting
            - Altered level of consciousness (confusion, disorientation, lethargy, difficulty arousing, coma)
            - Positive Kernig's sign (resistance and pain with extension of the clients leg from a flexed position)
            - Positive brudzinski's sign (flexion of the knees and hips occurring with deliberate flexion of the clients neck)
            - Hyperactive DTRs
            - Tachycardia
            - Seizures
            - Red macular rash
            - Rastless, irritability
    - CSF analysis of bacterial meningitis
        - Cloudy, elevated WBC, elevated protein, decreased glucose, elevated CSF pressure

Week 10:

- Prioritization of patients- airway, breathing, circulation
- Escharotomy
    - Goals of this:
        - Release the pressure of involved tissue and improve circulation
- Fluid resuscitation
    - Use Parkland Baxter formula to calculate
        - 4mL x TBSA x weight (kg)
            - ½ over first 8 hours
            - ¼ over next 8 hours
            - ¼ over following 8 hours

Week 11:

- SIADH
  - Pharmacologic and nursing interventions
    - Give tetracycline derivative (correct fluid/electrolyte imbalances by stimulating urine flow), vasopressin antagonist, loop diuretics, and hypertonic sodium IV fluids
    - Fluid restriction 500-1000
    - Monitor I&O and daily wt, urine and blood chemistry
    - Monitor VS: HTN, tachycardia, hypothermia
    - Auscultate lung sounds for pulmonary edema
    - Report AMS
    - Reduce environmental stimuli
- Myxedema coma
  - Nursing interventions/priorities
    - Maintain airway patency
    - Initiate aspiration precautions
    - Administer IV fluids as prescribed
- Hypoglycemia
  - Treatment:
    - 15-20 gram carbohydrate snack
      - 6-10 life savers or hard candy
      - 4 tsp of sugar
      - 4 sugar cubes
      - 1 tbsp of honey or syrup
      - ½ cup of fruit juice or regular soft drink→ 4 oz
      - 8 oz of low fat milk
      - 6 saltine crackers
      - 3 graham crackers
      - If unresponsive→ give 50% dextrose IV or glucagon subQ or IM
- DKA
  - Treatment: Rehydration, electrolytes, reverse acidosis
    - FLUIDS, restoring electrolytes, administer insulin
    - Regular insulin with 0.9 NS unless hyponatremic→ 0.45 NS. Once BG reaches 200-300, give dextrose w/ the regular insulin to reverse ketosis
  - Nursing interventions:
    - Treat the underlying cause
    - Monitor serum potassium levels and initiate replacement therapy if necessary
    - Monitor for and report changes in neuro status
    - In older adult clients monitor blood glucose levels every 1-4 hours when ill
- HHS

    - Pharmacologic treatment (remember there are 3 steps to this, you should know the order of them as well as what is used)
    - BG >600
    - Tachycardia, tachypnea, hypotension, polyuria, polydipsia, wt loss
        - Fluid (0.9 NS), correct electrolytes, then administer insulin (Regular, slow continuous via IV)

Week 12:

- Pancreatitis
    - Manifestations:
        - Sudden onset of severe, boring pain
            - Epigastric, radiating to back, left flank, or left shoulder
            - Worse when lying down
        - Pain relieved somewhat by fetal position or sitting upright, bending forward
        - Nausea and vomiting
        - Weight loss
        - Cullen's (Bellybutton), Turner's (Flank)
        - NPO, fluids, Bed rest
- Hemodialysis
    - Assessing fistulas (patent vs non patent)
        - Assess the patency of an AV fistula or graft by checking for a thrill or bruit.
        - Contact provider for no thrill or bruit
- GI bleeds
    - Priority assessment:
        - Vital signs!!! → assess for hypovolemia/shock (hypotension and tachycardia)
- Chronic Kidney Disease
    - Manifestations (including labs)
        - Nausea, Fatigue, lethargy
        - Fluid overload, HTN, heart failure
        - SOB, Tachypnea, crackles
        - Anemia, Decreased skin turgor, Jaundice
        - UA: hematuria, proteinuria, decrease in specific gravity
        - Serum Cr: gradual increase over months to years
        - BUN: gradual increase with elevated serum Cr over months to years
        - Serum electrolytes: Decreased Na+ (dilutional) and calcium; increased K+, Ph-, Mg+
        - CBC: decreased Hgb and Hct from anemia secondary to loss of erythropoietin in CKD.