Review Calculations related to medications and IV drips, Basic Safety and Infection Control, National Patient Safety Goals, and Pain Management.

Review important aspects of assessment in the hemodialysis setting, including:

- Absence of bruit indication of thrombosis of AV fistula
- Adequacy of hemodialysis = spKt/V greater than 1.4 (both KDOQI and Fresenius)
- Conductivity alarm, pump continues to operate
- Determine direction of blood flow before cannulating loop access: Stop blood flow by pressing a finger on the anastomosis and seeing a flash on the arterial needle.
- High venous pressure reading, assess the venous access site
- Low serum albumin indicator of malnutrition
- Symptoms of fluid overload: weight greater than estimated dry weight, periorbital edema, peripheral edema, rales
- Prioritize patients for dialysis, giving priority to patient with respiratory difficulty

Review action, preparation, monitoring, and precautions related to medications commonly used in dialysis, such as

- Epoietin alfa (Epogen®), calculate mL dose from order in units
- Epoietin alfa (Epogen®), high H/H: hold today’s dose and check Hct at next blood draw
- Heparin, protocol; used to prevent thrombus formation and clotting in extracorporeal circuit; calculate mL dose from order in units
- Insulin sliding scale
- IV drops per minute calculation
- Ondansetron (Zofran®), treating nausea and vomiting during dialysis
- Paracalcitrol (Zemplar®), symptoms of hypercalcemia (anorexia and weakness)

Review important nursing actions in the dialysis setting, including

- Angle of insertion for cannulating AV fistula, 20 – 35 degrees
- 15-gauge needle, 350 mL/min = recommended gauge and flow for hemodialysis via mature AV fistula
- Minimize recirculation by placing needles 1.5 – 2 inches apart
- Use of normal saline as initial approach to manage muscle cramps during dialysis
- Treat hypotension during dialysis with bolus of normal saline and reducing or turning off ultrafiltration
- Point venous needle in direction of venous return
- Point the arterial needle in either direction and the venous needle in the direction of venous return
- Cardiac arrest: discontinue dialysis, return blood to the patient, clamp and cap tubing attached to needles.
- Minimize intradialytic hypotension by adjusting ultrafiltration
- Symptoms of infection at catheter site, culture discharge and draw blood for culture
- Symptoms of dehydration (ears popping, leg cramps, decreased BP after treatment), anticipate adjusting estimated dry weight
• Symptoms of infection at catheter site, culture discharge and draw blood for culture
• Foam in venous blood line and patient coughing with labored breathing, clamp venous line and stop pump

Review principles and practices related to **safety and infection prevention**, including
- Patient identifiers
- Use of handwashing rather than sanitizer when patient has C. diff
- Fall risk for elderly patients who are receiving benzodiazepines
- Nurse and patient wear mask during dressing change at venous catheter site

Review principles and practices of **communication with patients and family**, including
- Patient satisfaction, importance of communication
- Avoid getting exit site wet
- Reason for rotating sites, to prolong usefulness of the site
- Feel for a thrill at the access and call unit if none is felt
- Potassium content high in bananas and spinach
- First dialysis – recognize and report symptoms of adverse reactions
- Never use arm with access for taking blood pressure
- Lab results show hyperphosphatemia, reduce dairy products

Review measures to prevent **CMS Hospital Acquired Conditions**, including
- Risk for falling

Review **calculations**, including
- Obtaining mL dose from order given in units
- Medication protocols
- Sliding scale
- IV drip rate, calculating drops per minute

**To calculate the infusion rate:** IV drip rate in drops per minute = 
Volume to be infused (mL) over 1 hour/ Drop factor constant

<table>
<thead>
<tr>
<th>Common drop factors</th>
<th>Drop factor constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 gtt/mL - minidrip set</td>
<td>1</td>
</tr>
<tr>
<td>10 gtt/mL – regular drip set</td>
<td>6</td>
</tr>
<tr>
<td>15 gtt/mL – regular drip set</td>
<td>4</td>
</tr>
</tbody>
</table>

Common drop factors are also known as the clock method – drop factors are obtained by dividing 60 minutes by the number of gtts per mL that the IV set delivers.