CASE STUDY #1 Peripheral Lines

You are working on a telemetry unit and have just received a transfer from the ICU. The 50-year-old male patient, T.A., had a repair of an AAA measuring 8 cm in diameter. This is his second postoperative day. He has had progressive weakness of his lower extremities and decreasing urine output since surgery. T.A. also has a 10-year history of type 2 DM; he has been requiring insulin the past 6 months to keep his glucose levels under control.

Four hours after admission to your floor, you note that T.A. has had a urine output of 65 ml of dark amber urine. You examine the catheter and tubing for obstructions, and there are none.

1. What is considered a normal urine output per 24 hours?

2. What other assessment data should you gather to determine whether or not a problem exists?

3. T.A. has a dialysis catheter inserted into his left subclavian vein. You are preparing to administer an IV antibiotic and find that his only other IV access is a peripheral line. Outline the nursing care and documentation for a peripheral intravenous line.

4. Can the nurse administer the IV antibiotic to T.A. through his dialysis catheter?

5. When should a peripheral line site be changed and what should be included in the charting when an IV site is discontinued?

T. A. calls the nurse and complains of sternal chest pressure with some SOB. Vital signs are: 152/88, 118, 32, SpO2 of 92%. The nurse immediately orders a stat EKG, starts O2 @ 4L/NC and notifies the
The physician orders the following labs and medications: CBC, CMP, PT/INR, Troponin, CK-MB, and Morphine Sulfate 2-4 mg. every 5-10 min. until C/P resolved. The nurse examines T. A.’s peripheral IV site but it appears swollen and tender to the touch. The nurse starts another peripheral site and draws the lab tests ordered and administers M. S. 2 mg. IV.

6. List the recommended color sequence of tubes the nurse should use for drawing the specific lab tests ordered.

Check out the www.nursingjobs.yakimanursingjobs.com site for color photos of lab tubes and YVMH Laboratory Values

*****Recommended Order of lab draws:

- Blood Culture bottles
- Coagulation tube (baby blue top)
- *Serum gel separator tube with serum separator (gold, tiger top, speckled top) and/or Non additive serum tube (red top, plain tube)
- Heparin tube (green top)
- EDTA tube (purple top)
- Fluoride tube (gray top)
- Miscellaneous tubes (heavy metal dark blue top, ACD yellow top)

To reduce errors from sample collection:

- Always use proper patient identification.
- Always follow proper protocol for line access and maintenance/flushing. This prevents I.V. fluid contamination resulting in erroneous lab results.
- Never use expired tubes/equipment.
- Always follow proper order of draw. This prevents carryover of additives from one tube to the next resulting in erroneous lab results.
- Never force blood from syringe into tube.
- Always ensure tubes are filled with the required volume of blood ±10%.
- Lines used with heparin flush/drip cannot be used for coagulation studies.
- Always label all tubes with date, time of draw, and initials.
- Always consult laboratory with concerns and questions.
- YVMH Laboratory: 575-8030

Please Note:

70% of laboratory error occurs in the pre-analytic phase of laboratory testing.
A few examples are:

- Hemolysis (the release of hemoglobin into the serum or plasma due to ruptured red blood cells) can be caused by many factors and can affect results such as an increase in such tests as potassium, LDH, AST, ALT, Phosporous, Magnesium, Ammonia and a decrease in RBC and Hgb/Hct. Hemolysis can also cause a dilution effect on all other analytes.
- Leaving the tourniquet on longer than 1 minute can cause hemoconcentration.
- Short sampling can result in excessive anticoagulation and red cell shrinkage, affecting HCT values.
- Pumping the fist to make veins visible can induce changes in the blood, particularly potassium and ionized calcium.

CASE STUDY #2 Central Venous Access Lines
J.T., a 48-year-old woman diagnosed with ruptured appendix was hospitalized for an appendectomy. She developed peritonitis and was discharged 9 days later with a left peripherally inserted central catheter (PICC) line to home care for IV antibiotic therapy. You work for the home care department of the hospital. You have been assigned to J.T.’s case, and this is your first home visit. You are to do a full assessment on J.T. During the assessment, you notice a large ecchymotic area over the right upper arm. You question her about the bruise and she tells you, “The nurses took my BP so many times it bruised.” In examining J.T. further, you find a fine, nonraised, dark red rash over her trunk (petechiae). You make a decision to call the physician regarding your findings. The physician orders blood to be drawn for coagulation studies and a complete blood count (CBC) with differential. He says he would like to evaluate J. T. for DIC and orders the following labs:

- PT/INR, PTT
- Fibrin split products, also called D-dimer
- Platelet count
- Fibrinogen level

1. List the recommended color sequence of tubes the nurse should use for drawing the specific lab tests ordered.

2. Can the coagulation lab tests be drawn from the PICC line? Why or why not?

3. What is the minimum syringe size that is safe to use when accessing a central line?

4. Identify the appropriate sequence of steps the nurse must implement to draw blood from J. T.’s locked PICC line.
5. You prepare to administer the IV antibiotic through J.T.’s PICC line. Identify the appropriate sequence of steps the nurse must implement to administer the IV antibiotic through J. T.’s PICC line.