The Reading Hospital School of Health Sciences
Nursing Program
NRS 200 Acute Care/Complex Nursing
Critical Thinking: IV Label and Complications Worksheet

1. Fill in the answers to the chart below.

Complications	Signs
Venous Access Device Infection	Redness, swelling, and drainage at site.
Systemic Infection	Chills, fever, malaise, headache, nausea, vomiting, backache & tachycardia.
Tissue Damage	Skin color changes, sloughing of skin, discomfort at site.
Phlebitis	Heat, redness, tenderness at site, sluggish infusion, but usually no swelling or hardness at site.
Thrombophlebitis	Heat, redness, tenderness at site, sluggish infusion, hard or coralike vein
Infiltration	Edema, pain, and coolness at site, with or without a blood return.
Catheter embolism	Decreased blood pressure, pain along vein, weak, rapid pulse, cyanosis of nail beds; loss of consciousness.
Circulatory Overload	Increased blood pressure, distended jugular/neck veins, tachycardia, dyspnea, moist cough, crackles.
Hematoma	Ecchymosis; immediate swelling and leakage of blood at site after catheter insertion; hard painful lumps at insertion site.
Air embolism	Tachycardia, dyspnea, cyanosis decreased LOC.
Speed shock	Flushing, headache or, fainting, other signs vary based on the medication.

Use ***Critical Thinking: IV Label and Complications Resource for Worksheet* to complete numbers 2-10.

2. Match the pictures with the complications:
   a. Infection
   b. Thrombophlebitis
   c. Tissue Damage/Extravasation

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3. What is the solution?

½ NS or 0.45NS w/ 5% Dextrose

Is the solution hypotonic, hypertonic or isotonic?

Hypertonic

List 2 reasons this solution would be ordered.

- Dehydration/Fluid Replacement - ↑ Plasma Volume
- Replaces sodium, chloride, calories
- Hypovolemia
- Maintance IV

How long will it take until the bag needs to be replaced?

1000mL

4. What is the solution?

Heparin Sodium

What is the base solution?

NS - 0.9% Sodium Chloride

If this medication is running at 8ml/hr, how much medication is the patient receiving per hour?

$\frac{200 \text{ units}}{100 \text{mL}} = \frac{16 \text{ units}}{8 \text{mL}}$ 16 units/mL - Heparin Sodium

List two reasons this medication might be ordered.

- Prophylaxis of venous thromboembolism
- A-Fib - embolization

How long will it take until the bag needs to be replaced?

$500 \text{mL} \times \frac{1 \text{ hour}}{8 \text{ml}} = 62.5 \text{ hrs.}$

5. What is this solution?

40mEq Potassium Chloride

What is the base solution?

5% Dextrose

List 2 reasons this might be ordered.

- Hypokalemia
- Excessive vomiting/diarrhea

If this is running at 80ml/hr, how much medication is the person receiving?

$\frac{298 \text{mg}}{100 \text{mL}} = \frac{238.4 \text{mg}}{80 \text{mL}}$ 238.4 mg/hr - Potassium Chloride

How long will it take until the bag needs to be replaced?

$1000 \text{mL} \times \frac{1 \text{hr}}{80 \text{mL}} = 12.5 \text{ hours}$

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6. What is the solution?

10 mEq Potassium Chloride

What is the base solution?

5% Dextrose 0.225% Sodium Chloride

List 2 reasons this might be ordered.

- Hypokalemia
- Excessive Vomitting/Diarrhea

If this is running at 42ml/hr, how much medication is the patient receiving?

$\frac{149\text{mg}}{100\text{mL}} = \frac{62.58\text{mg}}{42\text{ml}}$ 62.58mg/hr - Potassium Chloride

How long will it take until the bag needs to be replaced?

$500\text{mL} \times \frac{60\text{min}}{42\text{mL}} = 11.9$ hours

7. What is the solution?

Dopamine Hydrochloride

What is the base solution?

5% Dextrose

List 2 reasons this might be ordered for a patient.

- Shock - low BP, MI, trauma
- Increases blood flow to kidneys

If this is running at 3ml/hr, how much medication is the patient receiving?

$\frac{160\text{mg}}{100\text{mL}} = \frac{4.8\text{mg}}{3\text{mL}}$ 4.8mg/hr - Dopamine

How long will it take until the bag needs to be replaced?

$250\text{mL} \times \frac{1\text{hr}}{3\text{ml}} = 83.3$ hrs.

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8. What is the solution?

5% Dextrose NS

Is it hypotonic, hypertonic, or isotonic?

Hypertonic

List 2 reasons this might be ordered for a patient.

- Addison's Crisis
- Shock- when plasma expanders aren't available

If this is running at 125ml/hr, how long will it take until the bag needs to be replaced?

$500mL \times \frac{1\ hr.}{125ml} = 4\ hours$

9. What is the solution?

Fluconazole

What is the base solution?

Sodium Chloride

If this medication is running at 100ml/hr, how much medication is the patient receiving per hour?

$\frac{100mL}{1\ hr} \times \frac{2\ mg}{2mL} = 100mg$

List two reasons this medication might be ordered.

- Vaginal candidiasis
- Thrush

} severe infections

How long will it take until the bag needs to be replaced?

100mL / 200mL
1 hr. 2 hr.

10. What is the solution?

Magnesium Sulfate

What is the base solution?

Water

If this medication is running at 100ml/hr, how long will it take to infuse?

$50mL \times \frac{1\ hour}{100mL} =$ 30 minutes

List two reasons this medication might be ordered.

- Eclampsia
- Hypomagnesemia