MS AMS DC PRACTICE 3

1. The patient is on an Insulin drip infusing at 5 units/hr. The bag is labeled 100 units of insulin in 250 mL of normal saline. At what rate should the pump be set?

   $\frac{100 \text{ units}}{250 \text{ mL}} = \frac{0.4 \text{ units}}{\text{mL}}$ $\frac{5 \text{ units/hr}}{0.4 \text{ units/mL}}$ = **12.5 mL/hr**

2. Heparin is ordered to be given at 800 units/hr. The drug is supplied as 25000 units/500mL. At what rate should the pump be set?

   $\frac{25{,}000 \text{ units}}{500 \text{ mL}} = \frac{500 \text{ units}}{\text{mL}}$ $\frac{800 \text{ units/hr}}{500 \text{ units/mL}}$ = **1.6 mL/hr**

3. The patient is receiving norepinephrine (Levophed) at 23 mL/hr to maintain a mean arterial pressure greater than 90. The drug is supplied as 4 mg/250mL. The patient weighs 87kg. How many mcg/min are infusing?

   4 mg x 1000 mcg = $\frac{4000 \text{ mcg}}{250 \text{ mL}} = \frac{16 \text{ mcg/mL x } 23 \text{ mL/hr}}{60 \text{ min/hr}} = \frac{368 \text{ mcg}}{60 \text{ min}}$ = **6.13 mcg/min**

4. The patient is to receive ceftriaxone (Rocephin) 500 mg over 40 minutes. The drug is supplied as 1 GM/50 mL. The drop factor is 60. How many gtt/min should you deliver?

   500 x 2 = 1 gm 50 mL ÷ 2 = $\frac{25 \text{ mL x } 60 \text{ gtt/mL}}{40 \text{ min}} = \frac{1{,}500}{40}$ = **37.5 gtt/min**

5. Give promethazine (Phenergan) 12.5 mg IV now. The drug is supplied as 40 mg/10 mL. How many milliliters will you deliver?

   $\frac{40 \text{ mg}}{10 \text{ mL}} = \frac{4 \text{ mg}}{\text{mL}}$ $\frac{12.5 \text{ mg}}{4 \text{ mg}}$ = 3.13 mL = **3 mL**

6. Dobutrex (Dobutamine) is infusing at 15 mL/hr. Calculate the dose in mcg/kg/min. The concentration is 500 mg/250 mL. The patient weighs 203 lbs.

   203 lbs. ÷ 2.2 kg = 92.3 kg

   500 mg x 1000 mcg = $\frac{500{,}000 \text{ mcg}}{250 \text{ mL}} = \frac{2{,}000 \text{ mcg/mL x } 15 \text{ mL/hr}}{92.3 \text{ kg x } 60 \text{ min/hr}} = \frac{30{,}000}{5{,}538}$ = **5.42 mcg/kg/min**

7. The order is to infuse amiodarone (Cordarone) 0.5 mg/min. The drug is supplied as 450 mg/250 mL of D5W. At what rate should the pump be set at?

   $\frac{450 \text{ mg}}{250 \text{ mL}} = \frac{1.8 \text{ mg}}{\text{mL}}$ $\frac{0.5 \text{ mg/min x } 60 \text{ min/hr}}{1.8 \text{ mg/mL}} = \frac{30}{1.8}$ = **16.6 mL/hr**

8. Propofol (Diprivan) is infusing at 7 mL/hr. The drug is supplied as 1 GM/100 mL. The patient weighs 160 lbs. How many mcg/kg/min is the patient receiving?

   160 lbs. ÷ 2.2 kg = 72.7 kg

   1 gm = $\frac{1{,}000{,}000 \text{ mcg}}{100 \text{ mL}} = \frac{10{,}000 \text{ mcg/mL x } 7 \text{ mL/hr}}{72.7 \text{ kg x } 60 \text{ min/hr}} = \frac{70{,}000}{4{,}362}$ = **16.1 mcg/kg/min**

9. Nitroprusside (Nipride) is ordered to maintain a systolic blood pressure less than 180. The starting dose is 0.4 mcg/kg/min. The drug is supplied as 50 mg/250 mL and the patient weighs 94 kg. What rate should be set on the pump?

$$50 \text{ mg} \times 1000 \text{ mcg} = \frac{50{,}000 \text{ mcg}}{250 \text{ mL}} = \frac{200 \text{ mcg}}{\text{mL}}$$

$$\frac{94 \text{ kg} \times 0.4 \text{ mcg/kg/min} \times 60 \text{ min/hr}}{200 \text{ mcg/mL}} = \frac{2{,}256}{200} = \mathbf{11.3\ mL/hr}$$

10. The order is for metoprolol (Lopressor) 2.5 mg IV push for acute chest pain. The drug is supplied as 10 mg/2 mL. How many milliliters should you deliver?

$$\frac{10 \text{ mg}}{2 \text{ mL}} = \frac{5 \text{ mg}}{\text{mL}} \quad \frac{2.5 \text{ mg}}{5 \text{ mg}} = \mathbf{0.5\ mL}$$

11. The patient is receiving diltiazem (Cardizem) 10 mL/hr. The drug is supplied as 250 mg/500 mL. How many mg/hr are infusing?

$$\frac{250 \text{ mg}}{500 \text{ mL}} = 0.5 \text{ mg/mL} \times 10 \text{ mL/hr} = \mathbf{5\ mg/hr}$$

12. Xylocaine (Lidocaine) is infusing at 30 mL/hr for ventricular tachycardia. The drug is supplied as 2 GM/500 mL. How many mg/min are infusing?

$$2 \text{ gm} \times 1{,}000 \text{ mg} = \frac{2{,}000 \text{ mg}}{500 \text{ mL}} = \frac{4 \text{ mg/ml} \times 30 \text{ mL/hr}}{60 \text{ min/hr}} = \frac{120}{60} = \mathbf{2\ mg/mL}$$

13. The patient is to receive Cipro 400 mg IV over 1 hour. You receive a bag from the pharmacy labeled Cipro 400 mg in 100 mL D5W. The IV tubing delivers 12 gtt/mL. How many drops per minute (gtt/min) will you deliver?

$$\frac{100 \text{ mL} \times 12 \text{ gtt/mL}}{60 \text{ min/hr}} = \frac{1{,}200}{60} = \mathbf{20\ gtt/min}$$

14. The patient is on a Dopamine drip infusing at 35 mL/hr. The label reads 400 mg Dopamine in 500 mL D5W. The patient weighs 62 kg. How many mcg/kg/min is the patient receiving?

$$\frac{400 \text{ mg}}{500 \text{ mL}} = \frac{0.8 \text{ mg}}{\text{mL}} \times 1{,}000 \text{ mcg} = \frac{800 \text{ mcg/mL} \times 35 \text{ mL/hr}}{62 \text{ kg} \times 60 \text{ min/hr}} = \frac{28{,}000}{3{,}720} = \mathbf{7.53\ mcg/kg/min}$$

15. The order is to begin a Nitroglycerin infusion at 5 mcg/min. The bottle is labeled 25 mg/ 250 mL D5W. At what rate will you set the pump?

$$\frac{25 \text{ mg}}{250 \text{ mL}} \times 1{,}000 \text{ mcg} = \frac{25{,}000 \text{ mcg}}{250 \text{ mL}} = \frac{100 \text{ mcg}}{\text{mL}}$$

$$\frac{5 \text{ mcg/min} \times 60 \text{ min/hr}}{100 \text{ mcg/mL}} = \frac{300}{100} = \mathbf{3\ mL/hr}$$

16. The nurse is preparing to administer 500 mg of a medication intravenously over 30 minutes. The medication bag is 500 mg premixed in 50 mL 0.9% sodium chloride. The nurse should set the IV pump to deliver how many mL/hr? (Round to the nearest whole number).

    50 mL/0.5 hours = **100 mL/hr**

17. A nurse is preparing to administer a medication ordered for 150 mg PO daily. The amount available is 100 mg/tablet. How many tablets should the nurse administer per dose? (Round the answer to the nearest tenth.)

    $\frac{150\ \cancel{mg}}{100\ \cancel{mg}/\text{tablet}}$ = **1.5 tablets**

18. A nurse is caring for a patient prescribed Medication A 1.5mg/kg subcutaneous every 12 hr. The client weighs 245 lbs. How many mg should the nurse administer per dose? (Round the answer to the nearest whole number.)

    Weight 245 lb = 111 kg

    111 ~~kg~~ X 1.5 mg/~~kg~~ = 166.5 mg = **167 mg**

19. A nurse is preparing to administer a medication of 10 mg/kg PO every 12 hours to a patient that weighs 220 lb. Available is 250 mg/5mL. How many mL should the nurse administer per dose?

    Weight 220 lb = 100 kg

    100 ~~kg~~ X 10 mg/~~kg~~ = 1000 mg

    $\frac{1000\ \cancel{mg}}{250\ \cancel{mg}}$ = 4 mg X 5 mL = **20 mL**

20. A nurse is preparing to administer a medication 80 mEq equally divided into 2 doses. Available is 20 mEq/5mL. How many mL should the nurse administer per dose?

    80 mEq/2 = 40 mEq per dose

    $\frac{40\ \cancel{mEq}}{20\ \cancel{mEq}}$ = 2 X 5mL = **10 mL**