

1. A patient is to receive Methotrexate 0.25 mg IM now. Available from pharmacy is Methotrexate 250 mg in 10 mL. How many mL will the nurse administer?

0.01 mL

$$x \text{ mL/dose} = \frac{10 \text{ mL}}{250 \text{ mg}} \times \frac{0.25 \text{ mg}}{1 \text{ dose}} = \frac{2.5}{250} = 0.01 \text{ mL/dose}$$

2. Nitroglycerin 25 mg IM now has been ordered for a patient with chest pain. Available from pharmacy is Nitroglycerin 50 mg/10 mL. How many mL will the nurse administer?

5 mL

$$x \text{ mL/dose} = \frac{10 \text{ mL}}{50 \text{ mg}} \times \frac{25 \text{ mg}}{1 \text{ dose}} = \frac{250}{50} = 5 \text{ mL}$$

3. Robinul 100 mcg IM is ordered for a patient. Available from pharmacy is Robinul 0.2 mg/mL. How many mL will the nurse administer?

0.5 mL

$$x \text{ mL/dose} = \frac{1 \text{ mL}}{0.2 \text{ mg}} \times \frac{1 \text{ mg}}{1000 \text{ mcg}} \times \frac{100 \text{ mcg}}{1 \text{ dose}} = \frac{100}{0.2 \times 1000} = \frac{100}{200} = 0.5 \text{ mL/dose}$$

4. Gentamicin 60 mg IM now is ordered for a patient. Available from pharmacy is Gentamicin 40 mg/mL. How many mL will the nurse administer?

1.5 mL

$$x \text{ mL/dose} = \frac{1 \text{ mL}}{40 \text{ mg}} \times \frac{60 \text{ mg}}{1 \text{ dose}} = \frac{60}{40} = 1.5 \text{ mL/dose}$$

5. Vantin 150 mg po now is ordered for a patient. Available from pharmacy is Vantin 100 mg/5mL. How many mL will the nurse administer?

7.5 mL

$$x \text{ mL/dose} = \frac{5 \text{ mL}}{100 \text{ mg}} \times \frac{150 \text{ mg}}{1 \text{ dose}} = \frac{5 \times 150}{100} = \frac{750}{100} = 7.5 \text{ mL/dose}$$

6. Potassium Chloride 40 mEq po now is ordered for a patient. Available from pharmacy is Potassium Chloride 20 mEq/15 mL. How many mL will the nurse administer?

30 mL

$$x \text{ mL/dose} = \frac{15 \text{ mL}}{20 \text{ mEq}} \times \frac{40 \text{ mEq}}{1 \text{ dose}} = \frac{15 \times 40}{20} = \frac{600}{20} = 30 \text{ mL/dose}$$

7. Synthroid 225 mcg po now is ordered. Available from pharmacy is Synthroid 0.15mg/tablet. How many tablet/s will the nurse administer?

1.5 tablet/s

$$x \text{ tabs/dose} = \frac{1 \text{ tab}}{0.15 \text{ mg}} \times \frac{1 \text{ mg}}{1000 \text{ mcg}} \times \frac{225 \text{ mcg}}{1 \text{ dose}} = \frac{225}{0.15 \times 1000} = \frac{225}{150} = 1.5 \text{ tabs/dose}$$

8. Nitrostat (Nitroglycerin) 600 mcg po is ordered for a patient with chest pain. Available from pharmacy is Nitrostat (Nitroglycerin) 0.3 mg/tab. How many tablet/s will the nurse administer?

2 tablet/s

$$x \text{ tabs/dose} = \frac{1 \text{ tab}}{0.3 \text{ mg}} \times \frac{1 \text{ mg}}{1000 \text{ mcg}} \times \frac{600 \text{ mcg}}{1 \text{ dose}} = \frac{600}{0.3 \times 1000} = \frac{600}{300} = 2 \text{ tabs/dose}$$

9. A patient has an IV of LR infusing at 125 mL/hr. The IV began infusing at 1300, it is now 2200. How many mL should have infused?

1,125 mL (on test only write 1125)

$$\begin{array}{r} 2200 \\ - 1300 \\ \hline 900 \end{array} \quad 9 \text{ hrs}$$

$$x \text{ mL infused} = \frac{125 \text{ mL}}{1 \text{ hr}} \times \frac{9 \text{ hrs}}{1 \text{ (infusion)}} = 1125 \text{ mL infused in 9 hrs}$$

10. A patient has an order for LR 75 mL/hr. The infusion was hung at 0915. It is now 1845. How many mL should have infused?

712.5 mL

$$x \text{ mL infused} = \frac{75 \text{ mL}}{1 \text{ hr}} \times \frac{9.5 \text{ hrs}}{1 \text{ (infusion)}} = \frac{75 \times 9.5}{1} = 712.5 \text{ mL}$$

$$\begin{array}{r} 1845 \\ - 0915 \\ \hline 930 = \\ 9 \text{ hr } 30 \text{ min} \\ 9.5 \text{ hr.} \end{array}$$

11. The patient has ordered NS to infuse at 150 mL/hr. How long will it take to infuse 1000 mL?

6 hrs 40 min

$$x \text{ hrs} = \frac{1 \text{ hr}}{150 \text{ mL}} \times \frac{1000 \text{ mL}}{1 \text{ (infusion)}} = \frac{1000}{150} = 6.67 = 6 \text{ hrs } 40 \text{ min}$$

(60 min x 0.67 hr = 40.2 min/hr = 40)

12. The patient has NS 50mL/hr ordered. How long will it take to infuse 1000 mL?

20 hrs 0 min

$$x \text{ hrs} = \frac{1 \text{ hr}}{50 \text{ mL}} \times \frac{1000 \text{ mL}}{1 \text{ (infusion)}} = \frac{1000}{50} = 20 \text{ hrs}$$

13. An IV infusion of NS 150 mL is started at 1345 to infuse at 60 mL/hr. How long will it take for this IV to infuse?

2 hr 30 min

$$x \text{ hrs} = \frac{1 \text{ hr}}{60 \text{ mL}} \times \frac{150 \text{ mL}}{1 \text{ infusion}} = \frac{150}{60} = 2.5 \text{ hrs} = 2 \text{ hrs } 30 \text{ min}$$

What time will this IV be finished infusing?

1615

1345  
~~1445~~  
~~1545~~

1345 } 1 hr  
1445 } 2 hr  
1545 } 30 min  
1615 }



14. A 4 y.o. child has an ear infection. Cefaclor 40mg/kg po in 3 divided doses is ordered. The patient weighs 44#. Available from pharmacy is Cefaclor 250 mg/5mL. How many mL will the nurse administer per dose?

5.3 mL/dose

$$x \text{ mL/dose} = \frac{5 \text{ mL}}{250 \text{ mg}} \times \frac{40 \text{ mg}}{1 \text{ kg}} \times \frac{1 \text{ kg}}{2.2 \#} \times \frac{44 \#}{1 \text{ day}} \times \frac{1 \text{ day}}{3 \text{ doses}} = \frac{5 \times 40 \times 44}{250 \times 2.2 \times 3} = \frac{8800}{1650} = 5.3 \text{ mL/dose}$$

15. Cefazolin Sodium has been ordered for a patient weighing 66 pounds who has an infection. The safe range for this medication is 20-50 mg/kg given in 3-4 equal doses per day. What is the dosage range for this patient per day?

600 mg to 1500 mg

$$\text{Low safe } x \text{ mg} = \frac{20 \text{ mg}}{1 \text{ kg}} \times \frac{1 \text{ kg}}{2.2 \#} \times \frac{66 \#}{1 \text{ day}} = \frac{20 \times 66}{2.2 \times 1} = \frac{1320}{2.2} = 600 \text{ mg/day}$$

$$\text{high safe } x \text{ mg} = \frac{50 \text{ mg}}{1 \text{ kg}} \times \frac{1 \text{ kg}}{2.2 \#} \times \frac{66 \#}{1 \text{ day}} = \frac{50 \times 66}{2.2} = \frac{3300}{2.2} = 1500 \text{ mg/day}$$

16. Biaxin 15 mg/kg/day po divided in 2 equal doses is ordered for a patient weighing 20 pounds. Available from pharmacy is Biaxin 125 mg/5mL. How many mL will the nurse administer per dose?

2.7 mL/dose

$$x \text{ mL/dose} = \frac{5 \text{ mL}}{125 \text{ mg}} \times \frac{15 \text{ mg}}{1 \text{ kg}} \times \frac{1 \text{ kg}}{2.2 \#} \times \frac{20 \#}{1 \text{ day}} \times \frac{1 \text{ day}}{2 \text{ doses}} = \frac{5 \times 15 \times 20}{125 \times 2.2 \times 2} = \frac{1500}{550} = 2.72 = 2.7 \text{ mL/dose}$$

17. Rocephin 1 gram BID has been ordered for a patient with a skin infection. The recommended dosage is 50-75 mg/kg given once a day (or in equally divided doses twice a day). What is the safe range for a patient weighing 33 pounds?

Safe range: 750 mg to 1125 mg

Ordered dose is NOT safe at 2000 mg/day

Is the order of Rocephin 1 gram BID in the safe range? Yes or No

$$\text{Low mg/day} = \frac{50 \text{ mg}}{1 \text{ kg}} \times \frac{1 \text{ kg}}{2.2 \#} \times \frac{33 \#}{1 \text{ day}} = \frac{50 \times 33}{2.2} = \frac{1650}{2.2} = 750 \text{ mg/day}$$

$$\text{high mg/day} = \frac{75 \text{ mg}}{1 \text{ kg}} \times \frac{1 \text{ kg}}{2.2 \#} \times \frac{33 \#}{1 \text{ day}} = \frac{75 \times 33}{2.2} = \frac{2475}{2.2} = 1125 \text{ mg/day}$$

$$\text{Ordered mg/day} = \frac{1000 \text{ mg}}{1 \text{ gram}} \times \frac{1 \text{ gram}}{1 \text{ dose}} \times \frac{2 \text{ doses}}{1 \text{ day}} = \frac{2000}{1} = 2000 \text{ mg/day}$$