

## Practice Problem #1

The IVPB you are to administer contains 350 mg of ceftriaxone mixed in 25 mL of Normal Saline.

The recommended range is 10mg to 40 mg per mL.

$$\frac{350 \text{ mg}}{25 \text{ mL}} = 14 \text{ mg/mL}$$

Does the dilution fall in the recommended range?

yes

## Practice Problem #2

Medication: Ranitidine 18 mg

Mixed in: 10 mL normal saline

What is the concentration of this medication?

$$\frac{18\text{mg}}{10\text{mL}} = 1.8\text{mg/mL}$$

## Practice Problem #3

The pediatric dose for piperacillin sodium is 200 mg to 300 mg/kg/24 hours in equally divided doses every 4 to 6 hours. The patient weighs 30 kg. Which of the following is within the recommended range?

$$\begin{array}{l} 200 \text{ mg} / 30 \text{ kg} / 24 \text{ hour} \\ 6000 - 9000 \text{ mg} \\ \begin{array}{l} 4 - 1500 \\ 6 - 1800 \end{array} \quad \begin{array}{l} 4 - 2250 \\ 6 - 1500 \end{array} \end{array}$$

- A. 2,000 mg every 4 hours ↑
- B. 1,200 mg every 4 hours
- C. 1,450 mg every 6 hours ↓
- D. 6,000 mg every 6 hours ↑

## Practice Problem #4

Calculation based on once a day dose.

Patient: 20 kg, 5-year-old

Prescribed Medication: 1,000 mg of ceftriaxone daily

### Medication Reference

**Recommended Dose:** 50 to 75 mg/kg of body weight in 24 hours as a single dose or in equally divided doses every 12 hours. Do not exceed a total dose of 2 gm in 24 hours.

Is the prescribed medication in the recommended range?

$$50 \text{ mg} / 20 \text{ kg} = 1000 \checkmark$$

$$75 \text{ mg} / 20 \text{ kg} = 1500$$

yes

## Practice Problem #5

Calculation based on BID dose.

Patient: 20 kg, 5-year-old

Prescribed Medication: 700 mg of ceftriaxone, BID.

### Medication Reference

**Recommended Dose:** 50 to 75 mg/kg of body weight in 24 hours as a single dose or in equally divided doses every 12 hours. Do not exceed a total dose of 2 gm in 24 hours.

Is the prescribed medication in the recommended range?

$$50 \text{ mg} / 20 \text{ kg} = 1000 = 500 \text{ mg}$$

$$75 \text{ mg} / 20 \text{ kg} = 1500 = 750 \text{ mg}$$

yes

## Practice Problem #6

Which of the following is a recommended dose for a 30 kg child? The medication is vancomycin (Vancocin).

### Medication Reference

#### Recommended Dose for Pediatric Patient:

40 mg/kg/24 hours equally divided and given every 6, 8, or 12 hours. Do not exceed 2 gm in 24 hours.

$$40 \text{ mg} / 30 \text{ kg} = 1200 \text{ mg} / 24 \text{ hr}$$

	6	8	12
300	400	600	

- A. 200 mg every 6 hours ✗
- B. 400 mg every 8 hours ✓
- C. 100 mg every 12 hours ✗
- D. 1,200 mg every 24 hours ✗

## Practice Problem #7

- What Is The Recommended Rate Of Administration For A 25 mL IVPB To Be Given Over 30 Minutes?
- The IVPB Will Be Administered By IV Pump

$$\frac{25 \text{ mL} \times 60 \text{ gtt/s}}{30 \text{ min}} = \left[ \begin{array}{l} 50 \text{ gtt/s/min} \\ 50 \text{ mL/hr} \end{array} \right]$$

# Practice Problem #8

1. **Patient:** A 6.5 kg, toddler, with the diagnosis of acute otitis media.
- Prescribed Medication:** Administer 275 mg amoxicillin (Amoxil) every 12 hours
- Medication Reference Recommended Dose:** Acute otitis media: 80 to 90 mg/kg/day divided every 12 hours
- Concentration of Suspension:** Amoxicillin suspension 250mg / 5 ml

The recommended range is 260 mg to 292.5 mg every 12 hours.

The nurse will administer 5.5 ml of amoxicillin every 12 hours

$$\frac{250\text{mg}}{5\text{mL}} \quad \frac{275\text{mg}}{5.5\text{ml}}$$

## Practice Problem #9

2. Patient: 15 kg, 3-year-old

Prescribed Medication: Administer 1.1 grams of ceftriaxone (Rocephin), IV every 12 hours

Medication Reference  
Recommended Dose:

50 mg/15kg - 750 mg/kg  
75 mg/15kg - 1125 mg/kg → 1125 → 1.125 ✓  
50 to 75 mg/kg of body weight/24 hr as a single dose or in equally divided doses every 12 hours (25 to 27.5 mg/kg every 12 hours). Do not exceed a total dose of 2 gm/24 hours

The nurse would

- A. administer the medication.
- B. contact the primary care provider regarding a dose below the recommended range.
- C. contact the primary care provider regarding a dose exceeding the recommended range.

# Practice Problem #10

3. Patient: 16 kg child

Prescribed Medication: 640 mg meropenem (Merrem), IVPB every 8 hours

Label on IVPB: Meropenem 640 mg in 25 ml normal saline.

## Medication Reference

Recommended Dose: 40 mg/kg every 8 hours

Dilution/Concentration: 2.5 to 50 mg/ml

Rate of Administration: Intermittent infusion may be given over 15 to 30 minutes by IV pump

$$\frac{25 \text{ mL}}{0.25 / 0.5} = 100 \text{ or } 50$$

$$\frac{640 \text{ mg} \times 60 \text{ gHS}}{15 \text{ or } 30} = \frac{2560}{1280}$$

The prudent nurse will

- A. administer the medication at 50 ml/hr. ✓
- B. administer the medication at 125 ml/hr. ✗
- C. contact the pharmacist regarding the concentration.
- D. contact the primary care provider regarding the ordered dose. ✗

$$40 \text{ mg} / 16 \text{ kg} = 640 \text{ mg/kg}$$

$$\frac{640 \text{ mg}}{25 \text{ ml}}$$

$$50 \frac{2.5}{1} = 640$$

## Practice Problem #11

Prescribed medication: Gentamycin sulfate 10 mg mixed in 50 mL normal saline every 8 hours.

Rate of Administration: Administer each dose over a minimum of 20 minutes or a maximum of 30 minutes.

The most appropriate rate for the nurse to set the IV pump is how many milliliters per hour?

A. 50

B. 75

C. 100

D. 160

$$\frac{50 \text{ mL}}{0.5}$$

100

$$\frac{50}{0.3}$$

166.67

