

## Calculation guidelines for preparing IV standard concentrations Intermittent Infusions (Dose Over Time)

To prepare standard concentration \_\_\_ mg/mL:

**Step 1:** Determine total volume of standard concentration to be infused:

Dose (mg) **divided** by standard concentration (\_\_\_ mg/mL) = total volume to be infused

### **NOTE:**

If total volume is 50 mL or less, use a syringe to prepare medication for administration

If total volume is greater than 50 mL, use a bag to prepare medication for administration

**Step 2:** Determine volume of medication needed:

Dose (mg) **divided** by supplied strength of medication (\_\_\_ mg/mL) = volume of medication

**Step 3:** Determine volume of compatible IV solution needed:

Total volume to be infused (**step 1**) **minus** the volume of medication (**step 2**) = volume of compatible IV solution

**Step 4:** Choose one of the following:

**Syringe:** Fill appropriate size syringe with volume of compatible IV solution (**step 3**) required. Slowly add required volume of medication (**step 2**) into the syringe containing compatible IV solution. Gently mix the contents of the syringe and then remove any excess air and administer.

### **Using a prefilled minibag:**

Determine the appropriate sized bag (i.e. 25 mL, 50 mL, 100 mL or other) required for administering medication and determine volume of solution to be removed from bag :

Volume of bag required **minus** volume of compatible IV solution required (**step 3**) = volume of compatible IV solution to be removed from bag

Remove volume of compatible IV solution from bag as calculated above, then add the volume of medication (**step 2**) into the bag containing compatible IV solution. Gently mix the contents of the bag and administer.

### **Using empty ExactaMix\* bag:**

Fill appropriate sized empty ExactaMix\* bag with volume of compatible IV solution (**step 3**) required. Slowly add required volume of medication (**step 2**) into the bag containing compatible IV solution. Gently mix the contents of the bag and administer.

**CHECK:** Dose (mg) divided by total volume to be infused (mL) = Standard concentration (\_\_\_ mg/mL)

**EXAMPLE Calculation guidelines for preparing IV standard concentrations**  
**Intermittent Infusions (Dose over Time)**

**To prepare ranitidine Pediatric Standard Concentration 0.5 mg/mL**

Dose less than or equal to 25 mg (volume 50 mL or less), prepare in SYRINGE; Refer to **Sample Calculation #1**

Dose greater than 25 mg (volume greater than 50 mL), prepare in BAG; Refer to **Sample Calculation #2**

**Sample Calculation #1: (Prepare in SYRINGE) – for volume 50 mL or less**

**Step 1: Determine total volume of standard concentration to be infused:**

Dose (mg) **divided** by standard concentration (mg/mL) = total volume to be infused

If dose = 20 mg then: 20 mg divided by 0.5 mg/mL = X mL

X = 40 mL total volume of standard concentration to be infused

**Step 2: Determine volume of medication needed**

Dose (mg) **divided** by supplied strength of medication (mg/mL) = volume of medication

If dose = 20 mg and ranitidine is supplied as 25 mg/mL then:

20 mg divided by 25 mg/mL = X mL

X = 0.8 mL volume of medication needed

**Step 3: Determine volume of compatible IV solution needed**

Total volume to be infused (step 1) **minus** the volume of medication (step 2) = volume of compatible IV solution

40 mL (step 1) **minus** 0.8 mL (step 2) = 39.2 mL of compatible IV solution

**Step 4:**

Fill appropriate sized syringe with volume of compatible IV solution (39.2 mL from step 3) required. Slowly add required volume of medication (0.8 mL from step 2) into the syringe containing compatible IV solution. Final volume will be 40 mL. Gently mix the contents of the syringe and then remove any excess air and administer.

Check: Dose (20 mg) divided by Total Volume to be infused (40 mL) = Standard Concentration (0.5 mg/mL)

## EXAMPLE Calculation guidelines for preparing standard concentrations Intermittent Infusions (Dose over Time)

**Sample Calculation #2: (Prepare in BAG) – for volume greater than 50 mL**

**Step 1: Determine total volume of standard concentration to be infused:**

Dose (mg) **divided** by standard concentration (mg/mL) = total volume to be infused

If dose = **40 mg** then: **40 mg** divided by **0.5 mg/mL** = **X mL**

**X = 80 mL** total volume of standard concentration to be infused

**Step 2: Determine volume of medication needed**

Dose (mg) **divided** by supplied strength of medication (mg/mL) = volume of medication

If **dose = 40 mg** and ranitidine is supplied as **25 mg/mL**

**40 mg** divided by **25 mg/mL** = **X mL**

**X = 1.6 mL** volume of medication needed

**Step 3: Determine volume of compatible IV solution needed**

Total volume to be infused (**step 1**) **minus** the volume of medication (**step 2**) = volume of compatible IV solution

**80 mL (step 1) minus 1.6 mL (step 2) = 78.4 mL** of compatible IV solution

**Step 4:** choose one of the following

**Using a prefilled minibag:**

Determine the appropriate sized bag (i.e. **100 mL**) required for administering ranitidine and determine volume of solution to be removed from bag :

**100 mL** (minibag) **minus 78.4 mL (step 3) = 21.6 mL** volume of compatible IV solution to be removed from bag

Remove and discard volume of compatible IV solution from bag as calculated above, then add the volume of medication (**step 2**) into the bag containing compatible IV solution. Gently mix the contents of the bag and administer.

Remove **21.6 mL (step 4)** from **100 mL** minibag, then add **1.6 mL (step 2)** of ranitidine for a final volume of **80 mL**

**Using empty ExactaMix\* bag:**

Fill appropriate sized empty ExactaMix\* bag with volume of compatible IV solution (**78.4 mL** from **step 3**) required. Slowly add required volume of medication (**1.6 mL** from **step 2**) into the bag containing compatible IV solution. Gently mix the contents of the bag and administer.

**CHECK:** Dose (**40 mg**) divided by total volume to be infused (**80 mL**) = Standard concentration (**0.5 mg/mL**)