Tutorial: Dosage Calculation and Safe Medication Administration 3.0
Module: Safe Dosage

Close ✕

Case studies

A nurse notes that a client's infusion of 0.9% sodium chloride (NaCl) is almost complete. The nurse recalculates the time the infusion will finish and should plan to hang the next bag of 0.9% NaCl at which of the following times?

(Review the MAR and flow sheet.)

A	0900
B	1000
C	1100
D	1200

There are 300 mL left in the IV fluid bag at 0800. The IV fluid rate is set at 100 mL/hr.

Step 1
What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

$X \text{ hr} =$

Step 2
Determine the ratio that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation, ensuring that the unit in the numerator matches the unit being calculated.)

$$X \text{ hr} = \frac{1 \text{ hr}}{100 \text{ mL}}$$

Step 3
Place any remaining ratios that are relevant to the item on the right side of the equation along with any needed conversion factors to cancel out unwanted units of measurement.

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Case studies

A nurse is calculating the dosage of nystatin. How many milliliters should the nurse administer?

(Review the MAR, flow sheet, and medication label.)

Nystatin Oral
Suspension, USP
100,000 units per mL

Rx only
Shake well befo re using
Warning - not for
injection

5

Step 1

What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

$X \text{ mL} =$

Step 2

Find the ratio in the item that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation, ensuring that the unit in the numerator matches the unit being calculated.)

$$X \text{ mL} = \frac{1 \text{ mL}}{100,000 \text{ units}}$$

Close ✕

Calculator

Case studies

⊗ CLOSE

A nurse is calculating the dosage of diphenhydramine. How many milliliters should the nurse administer?

(Review the MAR and flow sheet. Round the answer to the nearest tenth. Measure the correct dose of the medication by dragging the syringe. Then click "Submit.")

10 mL Sterile
Pyrogen-Free Vial
DiphenhydrAMINE
Hydrochloride
Injection, USP

50 mg/mL
HIGH POTENCY
For IV or IM Use
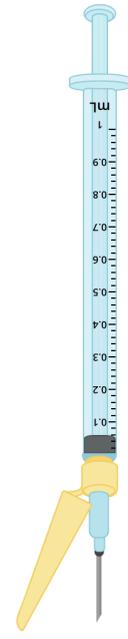
0.5

This syringe holds up to 1 mL and is appropriate for administering this medication because the dose is less than 1 mL. The 1 mL syringe is calibrated in 0.01 mL increments with long marks at 0.1 mL increments. The correct dose is the fifth long line from the hub of the syringe.

Step 1

What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

$X \text{ mL} =$

Step 2

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Calculator

Case studies

A nurse is preparing to administer vancomycin 1 g via intermittent IV bolus. Available is vancomycin 1 g in 0.9% NaCl 250 mL. The nurse should set the IV pump to deliver how many mL/hr?

(Review the MAR and flow sheet. Round the answer to the nearest whole number.)

125 ›

Step 1

What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

$$X \ \text{mL/hr} =$$

Step 2

Find the ratio in the item that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation, ensuring that the unit in the numerator matches the unit being calculated.)

$$X \ \text{mL/hr} = \frac{250 \ \text{mL}}{2 \ \text{hr}}$$

Step 3

Place any remaining ratios that are relevant to the item on the right side of the equation along with any needed conversion factors to cancel out unwanted units of measure.

$$X \ \text{mL/hr} = \frac{250 \ \text{mL}}{2 \ \text{hr}}$$

Step 4

Solve for X.

$$X \ \text{mL/hr} = 125 \ \text{mL/hr}$$

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A nurse is calculating the dosage of acetaminophen. How many tablets should the nurse administer?

(Review the MAR, flow sheet, and medication label. Move the number of tablets the nurse should administer into the medication cup. Then click "Submit.")

Acetaminophen
325 mg/tab
NON-ASPIRIN
PAIN RELIEVER
FEVER REDUCER
SEE NEW WARNINGS INFORMATION
100 Tablets

2

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Tutorial: Dosage Calculation and Safe Medication Administration 3.0
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Calculator

Case studies

A nurse is preparing to administer piperacillin with tazobactam 3.375 mg via intermittent IV bolus. Available is piperacillin with tazobactam 3.375 g in 0.9% NaCl 50 mL to infuse over 30 min. The nurse should set the IV pump to deliver how many mL/hr?

(Review the MAR, flow sheet, and medication label.)

NDC 123456/7890
Piperacillin/ Tazobactam
3.375g
for injection
USP
For injection
50 mL

100

Step 1
What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

$$X \text{ mL/hr} =$$

Step 2
Find the ratio in the item that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation, ensuring that the unit in the numerator matches the unit being calculated.)

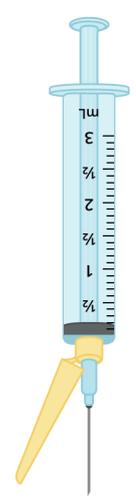$$X \text{ mL/hr} = \frac{50 \text{ mL}}{30 \text{ min}}$$

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Close ✕

Case studies

A nurse is calculating the dosage of ondansetron. How many milliliters should the nurse administer?

(Review the MAR, flow sheet, and medication label. Measure the correct dose of the medication by dragging the syringe. Then click "Submit.")

This syringe holds up to 3 mL and is most appropriate for administering this medication because the dose is equal to or less than 3 mL. The 3 mL syringe is calibrated in 0.1 mL increments with long marks at 1 mL increments. The correct dose is at the "3" line located at the far right.

Step 1

What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

X mL $=$

Step 2

Find the ratio in the item that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation,

Ondansetron
Injection, USP

4 mg/2 mL
2 mg/mL

3

Calculator

Close X

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Calculator

Case studies

A nurse is calculating the dosage of cefotaxime 1 g via intermittent IV bolus. Available is cefotaxime 1 g in 5% dextrose in water (D_5W) 10 mL to be administered over 3 min. How many mL/min should the nurse administer?

(Review the MAR, flow sheet, and medication label. Measure the correct dose of the medication by dragging the syringe. Then click "Submit.")

CEFOTAXIME
FOR INJECTION, USP

1 g/10 mL
FOR IM OR IV USE
Rx ONLY

* Each vial contains sterile cefotaxime sodium equivalent to 1 g cefotaxime. The sodium content is approximately 50.5 mg (2.2 mEq) of sodium per gram cefotaxime.

Storage: Cefotaxime for injection in the dry state should be stored at 20° to 25° C (68 to 77° F) PROTECT FROM LIGHT.

3

3 ml

Step 1

What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

$X \text{ mL}/\text{min} =$

Step 2

Find the ratio in the item that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation.

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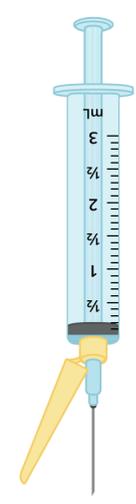Adverse reactions to medications

Activity 1

Safe Dosage: Summary

Case studies

A nurse is converting a client's weight from pounds to kilograms. What is the client's weight in kilograms?

(Review the MAR and flow sheet. Round the answer to the nearest tenth.)

❯ **68.2**

Step 1

What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)

$X \text{ kg} =$

Step 2

Find the ratio in the item that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation, ensuring that the unit in the numerator matches the unit being calculated.)

$$X \text{ kg} = \frac{1 \text{ kg}}{2.2 \text{ lb}}$$

Step 3

Place any remaining ratios that are relevant to the item on the right side of the equation along with any needed conversion factors to cancel out unwanted units of measure.

$$X \text{ kg} = \frac{1 \text{ kg}}{2.2 \text{ lb}} \times \frac{150 \text{ lb}}{1}$$

Step 4

Solve for X.

$X \text{ kg} = 68.181818 \text{ kg}$

Step 5