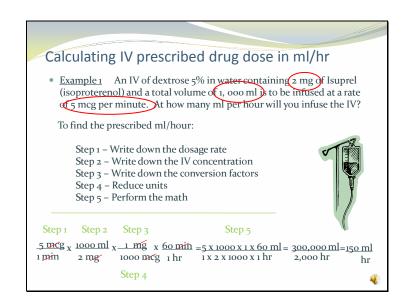## Calculating IV prescribed drug dose in ml/hr

- <u>Example 1</u>   An IV of dextrose 5% in water containing 2 mg of Isuprel (isoproterenol) and a total volume of 1, 000 ml is to be infused at a rate of 5 mcg per minute. At how many ml per hour will you infuse the IV?

To find the prescribed ml/hour:

     Step 1 – Write down the dosage rate
     Step 2 – Write down the IV strength
     Step 3 – Write down the conversion factors
     Step 4 – Reduce units
     Step 5 – Perform the math

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Slide 3

Calculating IV prescribed drug dose in ml/hr

- Example 1   An IV of dextrose 5% in water containing 2 mg of Isuprel (isoproterenol) and a total volume of 1, 000 ml is to be infused at a rate of 5 mcg per minute. At how many ml per hour will you infuse the IV?

To find the prescribed ml/hour:

Step 1 – Write down the dosage rate
Step 2 – Write down the IV concentration
Step 3 – Write down the conversion factors
Step 4 – Reduce units
Step 5 – Perform the math

Step 1   Step 2   Step 3   Step 5

$$\frac{5 \text{ mcg}}{1 \text{ min}} \times \frac{1000 \text{ ml}}{2 \text{ mg}} \times \frac{1 \text{ mg}}{1000 \text{ mcg}} \times \frac{60 \text{ min}}{1 \text{ hr}} = \frac{5 \times 1000 \times 1 \times 60 \text{ ml}}{1 \times 2 \times 1000 \times 1 \text{ hr}} = \frac{300,000 \text{ ml}}{2,000 \text{ hr}} = \frac{150 \text{ ml}}{\text{hr}}$$

Step 4

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Slide 4

Calculating IV prescribed drug dose in ml/hr

Step 5 repeated
Another way to perform the math
• Reducing the numbers

$$= \frac{5 \times \overset{1}{\cancel{1000}} \times 1 \times \overset{30 \times \overset{1}{\cancel{2}}}{\cancel{60}} \text{ ml}}{\underset{1}{\cancel{1}} \times \underset{1}{\cancel{2}} \times \underset{}{\cancel{1000}} \times 1 \text{ hr}} = \frac{5 \times 1 \times 1 \times 30 \text{ ml}}{1 \times 1 \times 1 \times 1 \text{ hr}} = \frac{150 \text{ ml}}{1 \text{ hr}} = \frac{150 \text{ ml}}{\text{hr}}$$

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Slide 5

Calculating IV prescribed drug dose in ml/hr

- Example 2   An IV of dextrose 5% in water containing 2 mg of Levophed (norepinephrine bitartrate) and a total volume of 250 ml is to be infused at a rate of 7 mcg per minute. At how many ml per hour will you infuse the IV?

To find the prescribed IV ml/hour:

Step 1 – Write down the dosage rate
Step 2 – Write down IV concentration
Step 3 – Write down the conversion factors
Step 4 – Reduce units
Step 5 – Perform the math

Step 1   Step 2   Step 3   Step 5

$$\frac{7\ mcg}{1\ min} \times \frac{250\ ml}{2\ mg} \times \frac{1\ mg}{1000\ mcg} \times \frac{60\ min}{1\ hr} = \frac{7 \times 250 \times 1 \times 60\ ml}{1 \times 2 \times 1000 \times 1\ hr} = \frac{105,000\ ml}{2000\ hr}$$

Step 4   = 52.5 ml/ hr rounds to 53 ml/hr

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Slide 6

Calculating IV prescribed drug dose in ml/hr

Step 5 repeated
Another way to perform the math
•Reducing the numbers

Step 5

$$= \frac{7 \times 250 \times 1 \times 60 \text{ ml}}{1 \times 2 \times 1000 \times 1 \text{ hr}} = \frac{7 \times 1 \times 1 \times 15 \text{ ml}}{1 \times 2 \times 1 \times 1 \text{ hr}} = \frac{105 \text{ ml}}{2 \text{ hr}} = \frac{52.5 \text{ ml}}{\text{hr}}$$

Round the final
answer to a whole
number.

$$\frac{53 \text{ ml}}{\text{hr}}$$

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