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Calculating IV Solution Concentration

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\[
\frac{400 \text{ mg}}{100 \text{ ml}} = 4 \text{ mg/ml}
\]
Calculating IV Solution Concentration

- **Example 1** You have an IV preparation of 500 milligrams of lidocaine HCL (Xylocaine) in 5% D/W. The final solution has a volume of 250 ml. You realize that the IV solution contains ____ mg of lidocaine HCL per ml.

To find the mg/ml:

- **Step 1** – Write down the amount of drug added as the numerator
- **Step 2** – Write down the volume of the solution in the denominator
- **Step 3** – Perform the math

\[
\frac{500 \text{ mg}}{250 \text{ ml}} = 2 \text{ mg/ml}
\]
Calculating IV Solution Concentration

Example 2: 500 ml of IV fluid contains 0.02 mg of morphine sulfate per ml. The solution was prepared by adding morphine to dextrose 5% in water. How many mg of morphine are contained in the solution?

To find the total milligrams in the solution:

Step 1 – Write down the volume of the solution
Step 2 – Write down the strength of the solution
Step 3 – Reduce the units
Step 4 – Perform the math

\[
\begin{align*}
\text{Step 1} & : \quad 500 \text{ ml} \\
\text{Step 2} & : \quad 0.02 \text{ mg/ml} \\
\text{Step 3} & : \quad \frac{500 \text{ ml}}{1} \times \frac{0.02 \text{ mg}}{1 \text{ ml}} \\
\text{Step 4} & : \quad \frac{500 \times 0.02 \text{ mg}}{1 \times 1} = 100 \text{ mg}
\end{align*}
\]

Step 3