



Math Study Strategies

Nursing Math

Parenteral Drugs (example 2)



You have an order for Staphicillin **125mg** **Im** qid. You have a **5ml** vial containing 1g of Staphcillin in powder form. The directions read: “add **1.5ml** diluent to yield 2ml reconstituted solution.” How much Staphcillin will you give per dose?

1. Write down the given information
 - **125mg** per dose
 - **5ml** vial contains **1g** (**5ml is the capacity of the vial and is not needed in this calculation**)
 - **1.5ml** diluent yields **2ml** solution

Note: you will give the patient the solution of Staphcillin, not the powder form. Therefore, **4.5ml** diluent is irrelevant. The important value is **2ml** solution.

2. You need to calculate the amount of Staphcillin (in ml) to give per dose. Therefore, start the dimensional analysis with ml. The problem states that **1gram** of Staphcillin will yield **2ml** of solution, which is expressed in ratio form as:

$$\frac{2ml}{1g}$$

3. You must get rid of grams to leave only ml in the final answer. Therefore, the next calculation will involve using **125mg**. To cross-cancel mg with g, convert the **g** to **mg**.

$$\frac{2ml}{\cancel{1g}} \times \frac{\cancel{1g}}{1,000\cancel{mg}} \times \frac{125\cancel{mg}}{dose}$$

4. The final answer will contain $\frac{ml}{dose}$, which are the desired units. You can now perform multiplication.

$$\frac{250}{1,000} = \frac{0.25ml}{dose}$$