In addition to calculating IV flow rates, nurses also commonly calculate when an infusion will be completed so they will know when to discontinue the infusion or hang another IV bag. Let’s practice calculating how long it will take an IV infusion to complete.

Practice Problem: IV Completion Time (Example 1)

Patient Information:

Name: Amanda Parks, DOB: 09/29/19xx, Allergies: NKDA, Weight: 70 kg

Prescription: 0.9% Sodium Chloride IV at 75 mL/hr

Fluid Supplied: See Figure 5.16 for the IV fluid bag supplied.
1. Begin by setting up the goal unit being solved for, which is an hour:

\[ \text{Hour} = ? \]

2. Set up the first fraction by matching the numerator to hour. Look at the information in the problem related to hours. The order states the IV should be administered at 75 mL per hour, so add 75 mL to the denominator:

\[ \text{Hour} = \frac{1 \text{ hour}}{75 \text{ mL}} \]

3. Set up the second fraction with the intent to cancel out mL, so add mL to the numerator of the second fraction. Look at the information in the problem related to mL. By looking at the bag, we know there are 500 mL to infuse, so plug in 500 in the numerator and place 1 in the denominator with the intent to cross out units:

\[ \text{Hour} = \frac{1 \text{ hour}}{75 \cancel{\text{ mL}}} \times \frac{500 \cancel{\text{ mL}}}{1} \]

4. Cross off units then multiply across the numerators and denominators. Divide the final fraction for the final answer:

\[ \text{Hour} = \frac{1 \text{ hour}}{75 \cancel{\text{ mL}}} \times \frac{500 \cancel{\text{ mL}}}{1} = \frac{500 \text{ hour}}{75} = 6.666667 \text{ hours} \]

5. When performing calculations related to time, it is important to remember that anything after the decimal is a portion
of an hour and needs to be converted to minutes. To finish the answer, multiply 60 minutes \( \times 0.6667 = 40.02 \) minutes. The final answer is the infusion will be completed in 6 hours and 40 minutes.

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**Practice Problem: IV Completion Time (Example 2)**

Now let’s add a start time to the above problem and calculate what time the infusion will end. We determined that the IV infusion will take 6.6667 hours to infuse 500 mL at 75 mL/hr.

Let's assume the infusion started at 0800.

1. Add the total infusion time to the start time of the infusion, so add 6 hours to the start time of 0800. Use military time and put a “0” before the six for 6 hours:

\[
0800 + 0600 = 1400
\]

2. Add the minutes to the time:

\[
1400 + 40 = 1440
\]

3. Answer: Our infusion will be complete at 1440.

**Video Review of Calculating IV Infusion Times**: 

[2]

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https://med.libretexts.org/Bookshelves/Nursing/Nursing_Skills_(OpenRN)/05%3A_Math_Calculations/5.16%3A_IV_Completio...
Please practice IV completion rates with the interactive learning activity below.

Query \(\PageIndex{1}\)

1. “0.9% Sodium Chloride in 500 ml” by Deanna Hoyord, Chippewa Valley Technical College is licensed under CC BY 4.0.