

Choose the Most Appropriate Syringe

Using the correct syringe is key when prepping meds...to optimize accuracy and safety.

Choose a syringe that's not too big. Measuring a med in an oversized syringe can decrease dose accuracy.

For instance, drawing up 2 mL of a med into a 10 mL syringe is less accurate than drawing up 2 mL into a 3 mL syringe.

Plus larger syringes may not have markings for "fraction" doses...such as 0.1 mL.

Try to select a syringe that you will fill to at least 20%.

Avoid drawing up fraction doses in syringes without fraction markings...especially for critical meds, such as chemo or pediatric doses. Use multiple syringes instead.

For example, if you need to draw up 21.7 mL of a med, use a 30 mL syringe to measure 21 mL AND a 1 mL syringe to measure 0.7 mL.

Choose a syringe that's not too small. Filling a syringe to max capacity may increase the risk of the plunger dislodging...or make the syringe very bulky for dispensing.

In most cases, select a syringe size closest to the volume to be measured...but try to avoid filling syringes to more than 75% to 80% of their capacity.

For instance, when you need to draw up 18 mL of a med, use a 30 mL syringe instead of a 20 mL syringe, if possible.

Choose a syringe appropriate for the med type. Use device design and visual cues to help reduce error risk.

When dispensing oral liquids, use oral/enteral syringes and strategically place a "for oral use" label over the cap...to prevent accidental injection.

If you dispense U-500 regular insulin, draw doses up in special U-500 syringes, NOT tuberculin syringes or U-100 syringes...to prevent potential fivefold overdoses.

Notify your admin when you discover barriers to using correct syringes...such as not having them in stock or available in convenient locations.

Key References:

-Kosinski TM, Brown MC, Zavala PJ. Sterile Basics of Compounding: Relationship Between Syringe Size and Dosing Accuracy. *Int J Pharm Compd.* 2018 Jan-Feb;22(1):41-46.

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-Muffy MK, Chen MI, Claire RE, et al. Small-Volume Injections: Evaluation of Volume Administration Deviation From Intended Injection Volumes. *Anesth Analg.* 2017 Oct;125(4):1192-1199.

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