WALLCUR® PRACTI-INSULIN VIALS™
INSTRUCTIONAL GUIDELINES

SYRINGE INSTRUCTIONS:

1. Provide a **variety of 100 U, and LO Dose 50 U or 30 U capacity** insulin syringes.
2. Inform the student that there are several size capacities of U-100 syringes but not all have a 1 mL capacity.
3. Identify unit calibrations by rotating the syringe. The exercises illustrated later in this module flatten the syringe, providing the most accurate simulation practice for measurement.
4. Practice aseptic technique in needle opening.
5. Demonstrate proper disposal of needles following use.

VIAL INSTRUCTIONS:

1. Begin by having the students examine the labels on each vial for solution type, expiration date and vial volume. Locate the **U-100 dosage strength. U-100 insulin dosages require the use of a U-100 calibrated syringe.**
2. Calculate the dosage amount needed in advance and determine what vial is appropriate for use.
3. Explain the differences between Regular (clear) and NPH (suspension) insulin. Instruct the student to gently roll the vial of NPH insulin in the palm of their hands.
4. Point out the **differences between Regular (clear) and NPH (suspension) insulin** then set aside to observe how quickly the **NPH precipitates out.**
5. Instruct on vial protective cap removal and cleansing of top prior to injection of air.
6. Have the students prepare **several single insulin dosages using a variety of insulin syringes.**
    a. First, draw up replacement air in the syringe equal to the amount of solution to be withdrawn and explain why fluid displacement is necessary.
    b. Next, place the vial on the countertop to penetrate rubber top with needle.
    c. Check that the needle tip is above fluid level **before** injecting air.
    d. Inject the replacement air, invert the vial to eye level and adjust the needle tip so it is **under** the level of solution.
    e. Rotate the syringe so that the calibrations can be read clearly, drawing up slightly more of the pre-calculated dosage from the vial.
    f. Hold the syringe perfectly straight and tap the barrel to raise air bubbles, then expel air and solution to the calculated dosage amount and withdraw the needle.
    g. Recheck the dosage and amount of solution in the syringe before proceeding.

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PROCEDURE FOR COMBINED INSULIN PREPARATION:
When two insulins are combined in the same syringe, the shortest acting insulin is always drawn up first.

The following examples have been adapted from ***Math for Meds*** and ***Dimensional Analysis for Meds*** by Curren and Munday.

EXAMPLE # 1 - A dosage of 10 U Regular and 48 U NPH has been ordered.

1. Locate the correct insulins and gently rotate the NPH to mix it. Cleanse both vial tops.
2. The combined dosage (**10 U + 48 U = 58 U**) requires the use of a **U-100 capacity syringe.** Draw up **48 U of air** and insert the needle into the **NPH vial**. Keep the **needle tip above the insulin and inject the air.** Withdraw the needle.
3. Draw up **10 U of air** and inject this into the **Regular insulin vial**. **Draw up the 10 U of Regular insulin**.
4. Insert the needle back into the **NPH vial and draw up 48 U of NPH insulin**. This will require drawing the plunger back until the total insulin in the syringe is **58 U** (**10 U Regular + 48 U NPH**)**.** Withdraw the needle and administer the insulin promptly before the NPH precipitates out.

EXAMPLE # 2 - The order is to give 16 U of Regular and 22 U of NPH

1. Locate the correct insulins and rotate to mix the NPH. Cleanse both vial tops.
2. The combined dosage (**16 U regular and 22 U NPH = 38 U**) will require a **50 U capacity syringe.** Draw up **22 U of air**. Insert the needle into the **NPH vial**, and keep the **needle tip above the insulin** to inject the air .
3. Draw up **16 U of air** and inject it into the **Regular insulin vial**. **Draw up the 16 U of Regular insulin.**
4. **Insert the needle back into the NPH vial** and draw up insulin until the total insulin in the syringe is **38 U** (**16 U Regular + 22 U NPH**). Administer the dose promptly to prevent precipitation of the NPH.

Note: For instructional purposes only. Not for human or animal injection