

Insulin Pens vs. Vials – Clinical Considerations

Background

Insulin is a [high-risk medication](#) available in both vial and pen dosage forms. Improper preparation or administration can contribute to safety concerns, poor glycemic control, infection transmission, and other adverse outcomes. When choosing between pens and vials, facilities must balance **cost, safety, nursing efficiency, medication waste, and resident satisfaction**.

Both insulin vials and pens can be used safely when appropriate safeguards are in place. The **Institute for Safe Medication Practices (ISMP)** [Guidelines for Optimizing Safe Subcutaneous Insulin Use](#) was developed to help facilities prevent insulin errors and improve outcomes by addressing unsafe practices associated with insulin use in the healthcare setting.

	Insulin Vials	Insulin Pens
Advantages	• Decreased risk of insulin pen sharing between residents • Fewer injections when compatible insulins can be mixed • Cost per dose	• Less nursing time required for preparation and administration • Fewer administration risks through manufacturer labeling, barcoding, and resident-specific labeling • Less medication waste due to smaller pen volumes (compared with 10 mL vials)
Challenges	• Risk of inaccurate dosing when units, milliliters (mL), or labeling are misunderstood • Confusion with similar-looking insulin vials or other similarly packaged medications • Labeling concerns (e.g., unlabeled or mislabeled syringes, beyond-use dating errors) • Contamination risk when basic infection control practices are not followed	• Risk of misdialing the correct dose • Risk of improper injection technique • Higher upfront acquisition costs

Best Practices

- Never share insulin pens, needles, or syringes between residents.
- Clearly label all prepared insulin syringes immediately.
- Document vial puncture dates and beyond-use dates.
- Follow proper injection and infection-control techniques.
- Standardize insulin-use processes and provide ongoing staff education.

For additional insulin-related guidance, explore [PharMerica's DYK? Guides and Fact Sheets](#), including the Insulin Comparison Chart, Mixing Insulins, Appropriate Use of Insulin Pens, and more.

References

1. Institute for Safe Medication Practices. ISMP List of High-Alert Medications in Acute Care Settings. Horsham, PA: ISMP; 2024.
2. Institute for Safe Medication Practices. Guidelines for Optimizing Safe Subcutaneous Insulin Use in Adults. Horsham, PA: ISMP; 2017.