**PROBLEM:** Using oral syringes that cannot be connected to intravenous (IV) tubing, and enteral feeding tubes with connectors that accept oral syringes, can significantly lessen the likelihood of inadvertently administering an enteral product by the IV route.

The Institute for Safe Medication Practices (ISMP) has alerted practitioners to the dangers of preparing oral solutions in parenteral syringes as well. For example, ISMP has received reports of a case in which Versed Syrup (15 mg) and acetaminophen (Tylenol, McNeil Consumer Products Company) liquid (650 mg) were drawn up in a parenteral syringe and administered intravenously to an 11-year-old child being prepared for surgery. After a registered nurse and fourth-year student nurse prepared the dose, the nurse was called away momentarily and the student nurse administered the drugs via IV. The child remained unconscious for 50 minutes and required several days of antibiotics, but he recovered fully.

There is still another trap that could lead to such a disastrous event. Current efforts to avoid harmful connections between enteral and parenteral drug-delivery devices have focused on the distal ends of administration sets. What if an enteral feeding container could be spiked at its proximal end with an IV administration set and the container looked like a three-in-one parenteral nutrition container? Several dietitians, nurses, pharmacists, and physicians have alerted us to just that. Many ready-to-hang, closed enteral nutrition containers (e.g., Mead Johnson Kangaroo, Nestle UltraPak, Ross Ready-to-Hang) can be spiked with a standard IV infusion set and will allow the formula to flow freely. Even if a filter is in-line, it might not prevent IV administration. If administration sets with a 0.22-micron filter are used, it will likely occlude right away. But with the larger filters (1–5 microns), it might be possible for some volume of the enteral feeding suspension to enter the vascular system before an infusion pump alarms.

Although the enteral containers have labeling to warn against IV administration, this is not enough to eliminate that risk. With the ever-increasing use of opaque IV fat emulsions, three-in-one parenteral nutrition formulas, and lipid-based drug products, health care professionals can no longer rely on visual appearance to determine the suitability of administering solutions by the IV route.

The recent introduction of the modified Nestle UltraPak Enteral Closed System bag, which is filled with creamy white enteral feeding (Nutren 1.0), heightens the risk of confusion because it closely resembles a three-in-one parenteral nutrition bag. The ISMP recently heard about a fatality with this product. An agency nurse administered 200 mL of enteral feeding via an IV infusion over one to two hours in a patient who was to receive total parenteral nutrition (TPN). The enteral product had been discontinued one week earlier but had not been removed from the nursing unit refrigerator. The nurse, who had never seen enteral products dispensed in anything other than a can, mistakenly thought the enteral bag was TPN. The patient expired four to five days after the event.

**SAFE PRACTICE RECOMMENDATIONS:** When using a closed enteral nutrition system, alert practitioners to the dangers of preparing oral solutions in parenteral syringes as well. For example, ISMP has received reports of a case in which Versed Syrup (15 mg) and acetaminophen (Tylenol, McNeil Consumer Products Company) liquid (650 mg) were drawn up in a parenteral syringe and administered intravenously to an 11-year-old child being prepared for surgery. After a registered nurse and fourth-year student nurse prepared the dose, the nurse was called away momentarily and the student nurse administered the drugs via IV. The child remained unconscious for 50 minutes and required several days of antibiotics, but he recovered fully.

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**SAFE PRACTICE RECOMMENDATIONS:** When using a closed enteral nutrition system, alert practitioners to this potential for error. Affix large, bold auxiliary warning labels in prominent places on the container stating “WARNING! For enteral use only—not for IV use,” and attach the appropriate enteral administration set with a rubber band before the product is stocked in or dispensed to patient care units. As with any medications dispensed for specific patients, discontinued enteral products should be removed from patient care areas immediately and returned to their original source.

An independent double-check system for TPN, which compares the original order with the container’s contents before administration, might have prevented the fatality. The ISMP and several individual practitioners have alerted the FDA and standards-setting organizations and suggested the development of standards for IV and enteral administration sets that would prevent connections at their proximal ends with containers intended for the opposite route of administration.