IV Labeling Practices

Recommendations and Rationale
Objectives

To outline recommended best practices for intravenous tubing labeling.

To provide evidence and case studies as rationale for the recommendations.
Errors related to primary IV line mix ups have caused patient harm.

Incorrectly identifying the primary IV contents (e.g., medication) can lead to:

- Titrating or changing the settings on the wrong IV pump
- Injecting an IV bolus into the injection port on the wrong IV tube.
- Disconnecting the wrong IV tube from a bridge or manifold.
IV phenylephrine was ordered to help manage a patient’s hypotension. While the nurse was getting report at shift change, another nurse administered the medication. The patient later became unstable, and subsequently died. After the patient’s death, it was discovered that the phenylephrine bag was attached to the IV pump that was programmed for the IV fluid and was administered at a rate of 150mL/hr.

Primary IV Label Recommendations

• Label primary IV tubing with the name of the infusate at two locations:
  1. Near the infusion pump (not on the pump)
  2. Just above the injection port closest to the patient (i.e., pump side of the port).

• Use pre-printed labels and standardize the labels with respect the format of information (e.g., generic name, tall man lettering).
• A study of 907 incident reports involving IV lines identified that IV line mix-ups accounted for 9.5% (n = 86) of the reports, and 91.9% of line mix-up errors involved high-alert medications.\(^1\)

• The literature and professional nursing and safety organizations have provided general recommendations supporting the use of IV tubing labels to avoid misidentifying an infusion.\(^1\)-\(^10\) For example, ISMP recommends labeling IV tubing with the drug name at the end closest to the patient and near each pump/channel.\(^2\)

• A lab study showed that when infusions were organized to minimize tangles, grouped by IV access port using a colour-coded line organizer and labeled directly below the pump and directly above the lower injection port, no infusion identification errors were made compared to a mean error rate of 8% (12 of 156 documentation tasks) when IV tubing were tangled and not labeled.\(^11\)
Workflow Considerations

• In addition to adding labels, the prevention of mix up errors requires a workflow where the complete medication preparation process (including attaching tubing, priming, affixing labels, hanging the infusion, tracing the infusion and starting the infusion pump) is performed for each medication prior to starting the preparation of another infusate.

• This workflow is supported by The Joint Commission
  • Lines crossed: Preventing medication errors involving multiple IVs. *The Source*. May 2014; 2(5); pp.8-11.
Errors related to line mix ups are more likely during line changes.

A lack of standardized information on date labels makes it hard to determine when line changes are required. More frequent line changes leads to more frequent opportunities for error.
Date Label Recommendations

• Label primary IV tubing with pre-printed date change labels. Standardize the content (e.g., start date, discard date, start time), format of information (e.g., mm/dd) and location of the labels to minimize unnecessary line changes.

• Ensure date change information for IV tubing (and related components) is tracked consistently and reliably in all tracking systems (e.g., Kardex and/or electronic documentation systems should capture the same information that is on the IV tubing date labels).
Evidence

• Evidence from a field study revealed that IV tubing date labels are not consistently applied, not consistent adhered to the same location, and the information on the labels varies widely in terms of content and format.$^{12}$

• Standardizing the materials, content, format of information, and placement of date labels applied to IV tubing helps ensure components are not being changed more frequently than recommended in guidelines, which decreases interruptions to therapy$^{13}$, mix-up and programming errors.$^{1,12-16}$
A delay or error in identifying the correct port for administering intermittent injections in emergency situations can lead to patient harm.

The person(s) caring for a patient when an intermittent injection is needed may not be the same person who set up the infusion lines. This increases the time and difficulty of identifying the correct injection port.
Push Port Recommendations

• Distinguish the “IV push port” (i.e., the port where intermittent IV medications are administered via a syringe) by applying a label that is visually prominent and different from all other labels used in the bedside environment.
Evidence

- Results from a field study indicated that the use of visually distinct “IV push ports” varies widely.\textsuperscript{12}
- Results from a survey student showed that 39\% (17 of 44) of respondents to a survey on multiple IV infusion practices indicated they do not label their “plain IV line” at all. Of those that do label their “plain IV line”, 93\% (25 of 27) do not use a label that is visually distinct from other labels in the environment.\textsuperscript{17}
References


