

What's New in the Patient Safety World

November 2023

Practices Lead to Fatal Medication Error

ISMP recently described a case where a typical cascade of errors led to a fatal medication error ([ISMP 2023](#)). There are several valuable lessons learned from this unfortunate case.

An ICU patient with rectal bleeding was scheduled to have a colonoscopy the following day. A **SUPREP BOWEL PREP KIT** (sodium sulfate, potassium sulfate, and magnesium sulfate) was ordered, to be administered orally for cleansing of the colon as a preparation for the colonoscopy. Unfortunately, instead of **SUPREP**, the patient was mistakenly given **NATURALYTE**, which is a liquid acid concentrate for bicarbonate hemodialysis, used as a dialysate with hemodialysis equipment after proper dilution.

A nurse went to the medication area and saw a large plastic container of **NATURALYTE**. The nurse assumed this was similar to **GOLYTELY** (polyethylene glycol 3350 and electrolytes for oral solution), the widely used bowel prep, which is much more familiar than **SUPREP**. The **NATURALYTE** did have a barcode and the nurse attempted to scan it but it did not register, likely because it is not a medication and the barcode does not contain a national drug code (NDC), so many medication barcoding systems do not recognize its barcode.

The article speculates the nurse might have thought **NaturaLyte** was a generic replacement for **GoLYTELY**, given that many generic products have different brand names than the original product name and the labels list many similar ingredients, including magnesium, potassium, and sodium. Also, both are in large plastic containers.

Because the barcode scan failed, the nurse called the pharmacy. But rather than sending a new labeled medication (Suprep), or physically reviewing the product that would not scan, a pharmacist sent a patient label that contained a barcode through the tube system for the correct medication, Suprep. The nurse scanned the patient's armband, scanned the label provided by pharmacy, and administered about 240 mL of the NaturaLyte in its concentrated form. The patient began to drink the liquid but could not tolerate it all due to the bad taste and became nauseous. Because the patient could not drink more of the product, a physician noted that a feeding tube would be needed to administer the remainder of the medication. Another nurse (on the next shift) administered the rest of

the concentrated NaturaLyte liquid through the feeding tube. That second nurse also thought that Suprep was similar to GoLYTELY and had been substituted with NaturaLyte. The patient died the following day. Cause of death was not known in the ISMP article.

Lessons learned:

- Dialysis products should not be left intermingled with medications. ISMP notes previous incidents where 23.4% sodium chloride injection vials were left on a nursing unit. (The same applies to anyone leaving unusual items in medication areas. The ISMP article also mentioned a transplant team leaving a highly concentrated potassium cold storage preparation in a medication area. And our February 7, 2012 Patient Safety Tip of the Week “[Another Neuromuscular Blocking Agent Incident](#)” mentioned a case where an anesthesiologist left a vial of atracurium in the refrigerator of a nursery that had a similar appearance to vaccine vials.)
- If a barcode is scanned and fails to be recognized, one should consider the possibility the substance scanned is not a medication.
- This combination was another **LASA (Look-Alike, Sound-Alike) example**. While we always try to identify drug pairs with similar names, who considers similarity of names of substances other than drugs?
- **Barcoding workarounds** keep popping up, tarnishing what is arguably our most potent medication safety technology. Sending a copy of a barcode through the pneumatic tube system was a glaring violation of barcoding safety. ISMP recommends that when a barcode will not scan, pharmacists need to visually verify that the medication matches what is ordered for the patient. It is not safe to send a label by itself. Labels must be considered part of the dispensing process and should only be placed on products by pharmacy personnel.
- When **new medications** are added to the hospital formulary (or when they are introduced to areas of the hospital where they are not normally used) there needs to be widespread inservice education, memos, internal newsletter articles, and/or huddles. Suprep was relatively unfamiliar to the ICU staff, compared to the more familiar GoLYTELY.

Of course, there were likely other factors contributing to this incident. The nurse involved was covering more than the usual number of patients that day because of a staffing shortage. ISMP also wondered whether pharmacy staffing that day may have prevented the pharmacist from going to the floor to visualize the product that would not scan or simply taking a new Suprep kit up to the ICU.

See some of our other Patient Safety Tip of the Week columns dealing with barcoding:

- June 17, 2008 “[Technology Workarounds Defeat Safety Intent](#)”
- April 5, 2016 “[Workarounds Overriding Safety](#)”
- February 28, 2017 “[The Copy and Paste ETTO](#)”

- January 2018 “[Can We Improve Barcoding?](#)”
- September 2020 “[More on Workarounds](#)”
- September 28, 2021 “[Barcoding Better? Not So Fast!](#)”
- June 2022 “[Where Are You Barcoding?](#)”
- May 23, 2023 “[Smudges as Patient Safety Threats](#)”

Some of our prior columns related to workarounds:

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| September 4, 2007 | “ Workarounds as a Safety Issue ” |
| May 2008 | “ UK NPSA Alert on Heparin Flushes ” |
| June 17, 2008 | “ Technology Workarounds Defeat Safety Intent ” |
| September 15, 2009 | “ ETTO’s: Efficiency-Thoroughness Trade-Offs ” |
| August 24, 2010 | “ The BP Oil Spill - Analogies in Healthcare ” |
| March 6, 2012 | “ Lab Error ” |
| July 2, 2013 | “ Issues in Alarm Management ” |
| April 8, 2014 | “ FMEA to Avoid Breastmilk Mixups ” |
| October 7, 2014 | “ Our Take on Patient Safety Walk Rounds ” |
| April 5, 2016 | “ Workarounds Overriding Safety ” |
| June 2016 | “ ISMP Article on Workarounds ” |
| September 2020 | “ More on Workarounds ” |
| May 23, 2023 | “ Smudges as Patient Safety Threats ” |

References:

ISMP (Institute for Safe Medication Practices). Patient Death Tied to Lack of Proper Escalation Process for Barcode Scanning Failures. ISMP Medication Safety Alert! Acute Care Edition 2023; 28(19): 1-3 September 21, 2023
<https://www.ismp.org/resources/patient-death-tied-lack-proper-escalation-process-barcode-scanning-failures>



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