July 30, 2026 | Volume 31 ▪ Issue 15

ISMP Institute for Safe Medication Practices
An ECRI Company

Acute Care
ISMP Medication Safety Alert!®
Educating the Healthcare Community About Safe Medication Practices

Survey Shows Room for Improvement with Three New Best Practices for Hospitals

In our March 12, 2026 newsletter, we invited hospitals to participate in a short survey to establish a baseline of implementation for the three new Best Practices released in the 2026-2027 ISMP Targeted Medication Safety Best Practices for Hospitals. The three new Best Practices are associated with safeguarding use of intravenous (IV) push medications (Best Practice 23), optimizing the use of scanning machine-readable codes on patient identification (ID) bands and products to prevent medication errors (Best Practice 24), and improving the culture of safety (Best Practice 25).

We sincerely thank the ninety-three respondents who participated in our survey and shared their valuable lessons learned regarding the barriers and enablers for the new Best Practices. Among respondents, 28% worked in hospitals with 500 or more beds, 27% in hospitals with 100–299 beds, and 26% in hospitals with 300–499 beds. Nine percent worked at hospitals with 26-99 beds, and 10% with 25 beds or less. Overall, almost three-quarters (73%) reported employing one or more part- or full-time medication safety officer(s) (MSO). Most (98%) respondents were located in the United States or a US territory. An overview of the survey findings is detailed in **Table 1** below.

Table 1. Percent compliance of new Best Practice with common barriers and enablers.

Best Practice	Percent Compliance			Common Barriers (B) or Enablers (E)
	None	Partial	Full	
Best Practice 23: Improve safety with use of intravenous (IV) push medications.				
Optimize the use of ready-to-administer medications.	2%	58%	40%	**B:** Cost, prone to shortages, limited number of 503B outsourcers and manufacturers offering ready-to-administer prefilled syringes due to drug shortages, some products are difficult to fit into automated dispensing cabinets (ADCs), not truly ready-to-administer for pediatric patients **E:** Purchase from multiple 503B outsourcers
Minimize unnecessary dilution and reconstitution of IV push medications outside a pharmacy.	9%	51%	40%	**B:** Culture of "how things have always been done," unsure how frontline staff actually prepare medications, short beyond-use dating and patient-specific dosing drive some dilution and reconstitution at the bedside, still done in certain areas (e.g., ED, OR) and when the pharmacy is closed **E:** Focused on drugs that were frequently diluted unnecessarily and optimized workflow, purchased from 503B outsourcers, educated nurses

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SAFETY briefs

Morphine 2 mg/mL Prefilled Syringes Contain HYDROmorphone 0.5 mg/0.5 mL!

A nurse removed a prefilled syringe of what they thought was morphine 2 mg/mL from an automated dispensing cabinet (ADC). The nurse identified that while the syringe packaging contained a tamper-evident seal labeled "Morphine 2 mg/mL," the syringe was labeled **DILAUDID** (**HYDRO**morphone) 0.5 mg/0.5 mL (**Figure 1**). The nurse escalated this concern to pharmacy, and a total of 6 prefilled syringes with similar mismatched labels were found within the organization at that time. This was a good catch that did not reach the patient.

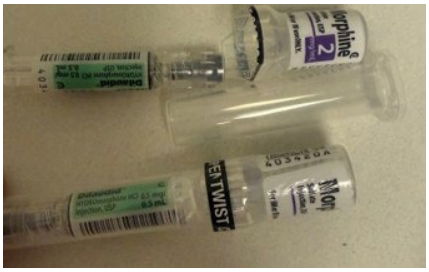

Figure 1. A nurse identified that the prefilled syringe of what was supposed to be morphine 2 mg/mL was labeled **DILAUDID** (**HYDRO**morphone) 0.5 mg/0.5 mL on the syringe barrel.

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IMPORTANT! Read and utilize the Acute Care Action Agenda

One of the most important ways to prevent medication errors is to learn about problems that have occurred in other organizations and to use that information to prevent similar problems at your practice site. Selected items from the **April – June 2026** issues of the ***ISMP Medication Safety Alert! Acute Care*** newsletters have been prepared for use by an interdisciplinary committee or with frontline staff to stimulate discussion and action to reduce the risk of medication errors. Each item includes a brief description of the medication safety problem, a few recommendations to reduce the risk of errors, and the issue number to locate additional information. The **Action Agenda** is available for download as an Excel file.

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Best Practice	Percent Compliance			Common Barriers (B) or Enablers (E)
	None	Partial	Full	
Eliminate the practice of diluting medications in sodium chloride flush syringes.	6%	36%	58%	**B:** Difficult to break this nursing habit, attempted to dispense sodium chloride vials from the ADC with drugs that needed to be reconstituted, but space limitation made this unsuccessful **E:** Bundled the diluent (e.g., sodium chloride vial, sterile water vial) and drug at dispense for those that need to be reconstituted, linked a sodium chloride vial to medications requiring reconstitution within the ADC to dispense together
If the rate of an IV push medication is not practical to be administered manually (e.g., over 5 minutes) use an infusion pump with dose error-reduction systems (DERS).	18%	24%	58%	**B:** Limited syringe pump access, adult units do not have syringe pumps, limited space for pumps **E:** Dispense these drugs in an intravenous piggyback (IVPB) infusion bag, purchased syringe pumps, ensured these medications are built into the drug library
Manually pushed medications should be continuously administered and not left unattended.	8%	17%	75%	**B:** Having a policy does not prevent nurses from leaving these drugs unattended, the expectation is there but still happening in practice **E:** Directly observed practice after educating nurses and confirmed that this is no longer occurring
Monitor for and understand each workflow to address deviations from IV push safe practices.	20%	46%	34%	**B:** No direct observations for how drugs are being administered, no official surveillance plan in place, we do not monitor actual practice or workarounds **E:** Monitor and gather feedback on IV push practices, completing a pilot evaluating administration workflow
Best Practice 24: Optimize use of scanning machine-readable codes (e.g., barcode, radio-frequency identification [RFID]) on patient identification (ID) bands and products to prevent medication errors.				
Proactively scan the barcode on new products received by pharmacy to ensure there are no issues with scanning for end users.	2%	20%	78%	**B:** Products borrowed from other facilities often bypass this step and go straight to the unit, a purchasing change (e.g., different manufacturer) results in a new product barcode with no notification to pharmacy **E:** This is a dedicated responsibility for a pharmacy technician shift, purchasing team scans all products during the receiving process, this is a current process improvement project, created a dashboard

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The impacted products are made by Fresenius Kabi. The **HYDRO**morphone prefilled syringe had an NDC of 76045-009-96, lot number 6402813, and expiration date 12/31/28. The syringe was removed from a carton labeled morphine 2 mg/mL, with an NDC of 76045-004-11, lot number 6402820, and expiration date 12/31/28 (**Figure 2**). The reporting organization tested the barcode on the **HYDRO**morphone syringe label and confirmed that it scans as **HYDRO**morphone.

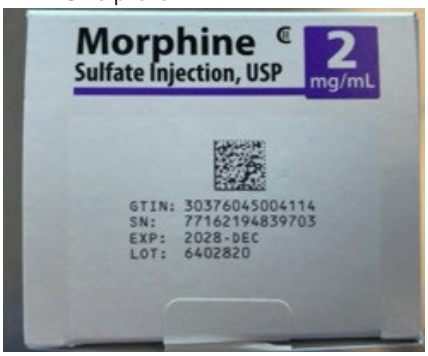

Figure 2. A morphine 2 mg/mL carton contained syringes labeled as **HYDRO**morphone 0.5 mg/0.5 mL.

Over the years, ISMP has received many reports of confusion between the high-alert opioids, **HYDRO**morphone and morphine, some of which have been fatal. If barcode scanning is not available or bypassed, and a practitioner reads the morphine label on the top of the syringe packaging, they may assume the syringe contains 2 mg of morphine and unknowingly administer a syringe containing 0.5 mg of **HYDRO**morphone to a patient.

We have reached out to the US Food and Drug Administration (FDA) and Fresenius Kabi to notify them of this concern. Fresenius Kabi has confirmed that the contents of the syringes contain **HYDRO**morphone, and that no other lot numbers are impacted. They confirmed the syringe label scans as **HYDRO**morphone, and there is no barcode on the tamper-evident seal labeled "Morphine 2 mg/mL." They told us that an investigation is in progress; they are in contact with FDA and will be in communication with customers. They did not have additional information on whether a formal recall is planned.

If your organization has purchased morphine 2 mg/mL prefilled syringes by Fresenius Kabi, immediately check your inventory in

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Best Practice	Percent Compliance			Common Barriers (B) or Enablers (E)
	None	Partial	Full	
Review the type and number of medication barcodes on products dispensed by the pharmacy (e.g., on labels, overwraps).	10%	25%	65%	**B:** Time, resources, prioritization **E:** Review at medication safety committee each month with key stakeholders to ensure action plans are implemented and successful, standard practice training for staff to understand why only one barcode should be available
Develop an escalation process for barcode scanning failures and include steps for users to follow if a barcode will not scan.	5%	21%	74%	**B:** Relies on nursing to escalate concerns, nurses often select the first override reason after bypassing scanning (i.e., barcode scanner broken) so actual barcode issues are not escalated or easily identified **E:** A team group chat with pictures has been immensely helpful for troubleshooting barcode issues, developed a policy and procedure for nurses
Take steps to avoid scanning "proxy" barcodes.	5%	42%	53%	**B:** Common knowledge but no method to prevent nurses from proxy scanning (e.g., barcode images found online), some anesthesia staff use proxy barcodes **E:** Regularly evaluate what is happening on the units, power of storytelling to provide examples of how this has caused patient harm
Engage the information technology (IT) team to proactively identify, escalate, and resolve internet connectivity issues that result in the inability (or failure) to successfully utilize barcode medication administration (BCMA) software as intended.	7%	26%	67%	**B:** Relies on nurses to report issues
Regularly review compliance and other metric data to assess utilization and effectiveness of this safety technology (e.g., scanning compliance rates, bypassed or acknowledged alerts).	1%	23%	76%	**B:** Scanning that occurs after administration is hard to capture, scanning compliance reports do not represent a deep dive into what is actually happening **E:** Created a dashboard, owned by nursing unit managers and nursing leadership, frequent monitoring using data to identify workarounds, highly engaged nursing leaders
Force scanning of the actual product (manufacturer) barcode by removing the pharmacy-generated barcode from pharmacy labels placed on commercially available premixed products.	18%	24%	58%	**B:** Pharmacy-use-only barcodes on dispense labels remain, manual process to remove the pharmacy barcode **E:** Removed extra barcodes on labels to ensure this occurs, do not apply a pharmacy-generated barcode to medications that have a scannable manufacturer barcode

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all locations. If impacted products are found, sequester them until further instructions are provided by the FDA/manufacturer. Educate staff to open the morphine cartons and read the prefilled syringe labels upon receipt in the pharmacy, prior to barcode scanning when refilling ADCs, and before barcode scanning prior to administration. Emphasize the need to be vigilant when checking the prefilled syringe labels for Fresenius Kabi's **HYDRO**morphone and morphine injection, regardless of the lot. Report issues to ISMP, FDA, and the manufacturer.

Stopper Dislodgement Reported with Hikma FentaNYL 50 mL Vials. We have received multiple reports that stoppers were being pushed completely into fenta**NYL** 2,500 mcg/50 mL vials when nurses used spikes to access the product, rendering the vials unusable. Some organizations reported they will use a needle to withdraw the vial contents and prepare the patient's infusion in a bag in the sterile compounding room. Others are evaluating purchasing a different fenta**NYL** concentration or sourcing this product from alternative manufacturers or 503B outsourcers. One organization told us they are instructing nurses to place the vial on a flat surface before inserting the spike to decrease the risk of facial or eye exposure.

We have reported this concern to Hikma. Hikma told us that there was a recent change in the stopper for two fenta**NYL** 50 mL vials (NDC 72572-172-01 with lot number A26108, and NDC 0641-6030-01 with lot number C26110). Unlike the previous stopper, the new stopper is not designed for use with cannulas or spikes for access. The new stopper cannot withstand the forces exerted during access, causing the rubber stopper to be pushed into the vial, rendering the vials to be unusable. Hikma stated that the contents of these fenta**NYL** 50 mL vials should be withdrawn using a needle and syringe and used as described in the package insert.

Organizations that purchase Hikma fenta**NYL** 2,500 mcg/50 mL vials should notify staff of this change and complete a risk assessment to understand how this product is currently being used and what mitigation steps are needed. When using this product, ensure practitioners follow the manufacturer's instructions and

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Best Practice	Percent Compliance			Common Barriers (B) or Enablers (E)
	None	Partial	Full	
When possible, cover the manufacturer's barcode with the pharmacy label for compounded sterile preparations, driving the nurse to scan the barcode on the patient-specific label and not the manufacturer barcode on the diluent bag.	10%	33%	57%	**B:** Manual process, extra step to forget, audits show need for improvement **E:** Standard practice training
Similarly, 503B compounding pharmacies should place the barcode on compounded sterile preparations in a way that drives end users to scan the product barcode, minimizing confusion.	8%	32%	60%	**B:** We cannot control 503B outsourcer practices **E:** Evaluate and select 503B outsourcers following recommendations
Technology vendors should optimize barcode scan alert language and sound for warnings and ensure end users are educated about the meaning of each alert generated when using barcode technology.	26%	41%	33%	**B:** It is not clear to end users that the sound when the barcode is scanned does not necessarily indicate it is correct for administration (it indicates that the barcode was read/captured) **E:** Provided feedback to the technology vendor
Dispensing cabinet vendors should provide users with the configurable option to scan each individual dose of a particular product when stocking or restocking as defined by the organization.	34%	17%	49%	**B:** Not an option from the ADC vendor, scanning of each dose is not able to be configured in the ADC
Best Practice 25: Improve the culture of safety.				
Avoid the use of error rates as an indication of safe practices.	3%	27%	70%	**B:** Error rate is still used for feedback, some teams extremely focused on using as a metric to demonstrate cause-and-effect or improvement **E:** The focus is on encouraging reporting and ramping up reporting events that do not reach the patient
Create a good catch program for medication safety.	5%	20%	75%	**E:** "Fab 50 program" where the greatest 50 best catches are recognized, good catch program that encompasses medication safety catches, share good catch safety stories during every huddle

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use a needle and syringe to access the vial contents. If your organization is considering changing concentrations, assess feasibility and evaluate all the affected systems. For additional recommendations, refer to our June 16, 2022 article, A Comprehensive, Proactive Plan Is Needed to Mitigate Risk When Changing Drug Concentrations. Report issues to the manufacturer and to ISMP.

Unasyn Vial Was Prepared in a Gentamicin Bag and Almost Infused. A prescriber ordered 3 g **UNASYN** (ampicillin and sulbactam) for a patient in the postanesthesia care unit. The nurse removed a 3 g vial of Unasyn and what she thought was a 100 mL bag of 0.9% sodium chloride from the automated dispensing cabinet (ADC). She prepared the patient's dose using a Vial2Bag Advanced Admixture Device. While spiking the bag, she identified that she had inadvertently prepared the Unasyn in a gentamicin bag rather than a sodium chloride bag. The products come in nearly identical-looking 100 mL bags, manufactured by Baxter (**Figure 1**).

The organization determined that when removing 0.9% sodium chloride from the ADC, the screen displayed a location of "Drw 5 pkt 1." Opening drawer 5 gave the nurse access to many medications including 0.9% sodium chloride and gentamicin. After the event, the hospital moved gentamicin into a locked-lidded pocket in the ADC and separated their storage in the pharmacy. The hospital is also investigating alternative options to purchase.

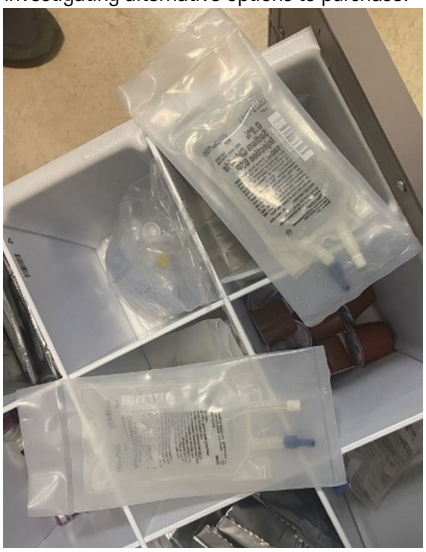

Figure 1. A nurse used a 100 mL bag of gentamicin (bottom) instead of a similar-looking 100 mL bag of 0.9% sodium chloride (top) while preparing a patient's Unasyn dose.

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Best Practice	Percent Compliance			Common Barriers (B) or Enablers (E)
	None	Partial	Full	
Increase the number of close call/near miss reports in your organization.	2%	33%	65%	**B:** Underused (particularly by technicians, interns, and nonlicensed staff), buy-in from staff completing reports, time constraints, uncertainty about what is considered as a close call/near miss to warrant reporting **E:** This is ingrained in our culture
Create an organization medication error-reduction plan and ensure that it includes an assessment of organizational culture.	13%	41%	46%	**B:** Our medication error-reduction plan (MERP) does not routinely assess organizational culture **E:** California hospitals require MERP, this is a regulatory requirement in my state
Educate staff on the importance of error and close call/near miss reporting and the need to proactively look at risk.	1%	25%	74%	**B:** Inability to implement good ideas that come from learning about an error **E:** This is done through our good catch program and sharing stories during safety huddles
Learn from medication errors.	0%	21%	79%	**B:** Our organization does not support Just Culture which impacts our culture of safety, we do not have a great way of escalating safety stories up through the system, done at unit level but global sharing is difficult due to no ownership or structure with reservations from leadership **E:** Share ISMP newsletters, created a quarterly medication safety newsletter
Optimize the use of culture of safety surveys by ensuring that data are regularly reviewed by leadership and action plans are implemented to improve the culture of safety in the organization.	4%	30%	66%	**B:** Have not completed a recent safety survey, employee/safety surveys are not a great reflection of the culture since the questions do not reflect the staff level focus compared to the administration level focus on safety

These survey results suggest there is room for improvement with the three new Best Practices. Notably, the most common barriers were resource constraints (e.g., cost, staffing, time), workflow/practice drift, and technology limitations. The most frequently reported enablers among all interventions were ongoing monitoring, particularly observing the practice and workflow changes that make the right action easier. We hope that hospitals will use these survey results to prompt interdisciplinary discussions that take note of the barriers and enablers while implementing these Best Practices. An Implementation Worksheet for all of the Best Practices for Hospitals is available and might be helpful to document your assessment of implementation status, actions required, and assignments.

Special Announcement

CHEERS AWARDS Nominations Open. Each year, ISMP honors various healthcare disciplines that have demonstrated an exemplary commitment to medication safety through innovative projects with an ISMP **CHEERS AWARD**. Nominations will be accepted through **August 15, 2026**. For more details and to submit a nomination, click here.

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When pharmacy receives a new product, conduct a review to identify potential risks with the product's design, including look-alike labeling and packaging. If risks are identified, consider purchasing one product from a different manufacturer. Store look-alike products separately. Maximize the use of locked-lidded pockets and do not use open matrix drawers to store drugs with look-alike packaging. Optimize bedside barcode scanning technology to confirm that medications selected for administration match those included on the patient's medication administration record. If using a vial transfer device (e.g., Vial2Bag), ensure the system is set up to require scanning both the drug barcode (e.g., Unasyn vial) and the diluent barcode (e.g., 0.9% sodium chloride bag). Educate nurses to carefully review individual product labels after removing the medication from the ADC, when spiking an IV bag, prior to administration, and when discarding or replacing it in storage.

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ISMP Medication *Safety Alert!* Acute Care (ISSN 1550-6312)

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Editors: Shannon Bertagnoli, PharmD; Rita K. Jew, PharmD, MBA, BCPPS, FASHP; Editor Emeritus, Michael R. Cohen, RPh, MS, ScD (hon), DPS (hon), FASHP. ISMP, 500 Virginia Drive, Suite 501, Fort Washington, PA 19034. Email: ismpinfo@ismp.org; Tel: 215-947-7797.