

2023–2024

# ISMP Targeted Medication Safety Best Practices for Community Pharmacy



[www.ismp.org](http://www.ismp.org)

**T**he purpose of the Institute for Safe Medication Practices (ISMP) *Targeted Medication Safety Best Practices for Community Pharmacy* is to identify, inspire, and mobilize widespread, adoption of these consensus-based *Best Practices* for specific medication safety issues that continue to cause harmful or fatal errors in patients despite repeated warnings in ISMP publications. ISMP encourages community pharmacies to focus their medication safety efforts over the next two years on these actionable *Best Practices*, which have been successfully adopted by numerous organizations. While targeted for the community pharmacy setting, several of these practices are applicable to other healthcare settings.

The ISMP *Best Practices* has been reviewed by an external expert advisory panel. Each practice also includes references to related issues of the *ISMP Medication Safety Alert!*<sup>®</sup> *Community/Ambulatory Care* newsletter and a worksheet is available to assist with implementation of the 2023-2024 *Best Practices*.

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## BEST PRACTICE 1:

Use a standard protocol to verify a patient's identity, utilizing at least two patient identifiers, when receiving a prescription to be filled, responding to patient-specific questions, providing filled prescriptions to patients at the point-of-sale, when delivering prescriptions to the patient's home, and prior to administering vaccines or other treatments.

- Use at least two identifiers (e.g., full patient name and date of birth) to verify the patient's identity with the patient or caregiver, as well as with the provider or transferring pharmacy if receiving a telephone order.
- Have pharmacists and pharmacy technicians compare the stated identifiers to either the prescription, pharmacy information system, prescription or vaccine label.
- Employ technological enhancements at the point-of-sale that require pharmacy staff to electronically verify the patient's identity before the register transaction can be completed.
- At the point of sale, review the pharmacy labels and contents of each prescription container with the patient to check that the patient's name and medications are correct.
- Managers should periodically perform quality control checks by observing the patient identification processes at various points in the pharmacy workflow to ensure adherence to the standardized work practices.

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### Rationale:

Community pharmacies, like other healthcare settings, are vulnerable to wrong-patient errors. For example, giving a correctly dispensed prescription to the wrong patient is a common error in community pharmacies. In fact, it is the most common complaint the Institute for Safe Medication Practices (ISMP) receives through the *ISMP National Consumer Medication Errors Reporting Program*. Roughly a quarter of the events ISMP has received involve patients ingesting the wrong medication. These reports are only the tip of the iceberg as a study conducted by ISMP found that this error happens about once for every 1,000 prescriptions dispensed.<sup>1</sup>

There are a number of ways wrong-patient errors can happen in a community pharmacy. For example, a pharmacy technician may place the pharmacy label on the wrong prescription vial when working on more than one patient's prescription at a time. The pharmacist may become distracted and place the prescription in the wrong bag for pick-up. A pharmacy staff member may select and retrieve the wrong patient's bag from the will-call area because of similar patient names. Also, the pharmacy's process for identifying the patient may be flawed.

Unfortunately, the consequences of wrong-patient errors may be harmful or even fatal. These consequences include taking a contraindicated medication, missing doses of the correct medication, misusing the incorrect medication, and breaches of protected health information.

Ongoing wrong-patient errors suggest that more needs to be done to reduce the risk of patient harm. It is important for community pharmacies to implement effective, proactive strategies to correctly verify a patient's identity while on a telephone call with the prescriber or patient, providing dispensed medications at the point-of-sale, or administering vaccines. It is also important to engage the patient at the point-of-sale or delivery to review with the patient the pharmacy labels and contents of each prescription container to ensure that the patient's name and medication are correct.

### Reference:

1. Cohen MR, Smetzer JL, Westphal JE, Comden SC, Horn DM. Risk models to improve safety of dispensing high-alert medications in community pharmacies. *J Am Pharm Assoc.* 2012;52(5):584-602.

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### Related issues of the ISMP Medication Safety Alert! Community/Ambulatory Care:

April 2019;  
September 2018;  
January 2018; April 2017; July 2015;  
October 2012;  
October 2011;  
February 2011;  
February 2009

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## BEST PRACTICE 2:

Install and use barcode verification during production (i.e., the prescription filling process) to scan each drug or vaccine package or container (e.g., bottle, carton) used to fill a prescription, including manufacturer cartons or bottles that may be dispensed to a patient.

- Avoid scanning only one item multiple times for prescriptions that require the use or dispensing of multiple stock or manufacturer containers/cartons.
- Implement a standard workflow process to ensure pharmacy staff generate prescription labels for one patient at a time and then fill that patient's prescription(s) before printing labels for or working on another patient's prescription(s).
- 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).
- Periodically perform quality control checks by observing the processes involving barcode verification during production to ensure adherence to standardized work practices.
- Actively solicit feedback about barriers that may lead to workarounds or overriding barcode scanning.

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### Rationale:

The goal of this *Best Practice* is to expand and maximize the utilization of barcode scanning during the medication and vaccine dispensing and administration processes. Implementation of barcode scanning is a well proven error-prevention strategy. When fully and properly implemented, barcode scanning can prevent many medication errors, including dispensing the wrong drug, strength, or dosage form.

Errors due to look-alike packages and labels are commonly reported to the **ISMP National Medication Errors Reporting Program (ISMP MERP)**. Contributing factors in these events include the use of highly stylized label graphics and similar label colors. Products that have similar names and dosages, are used in the same setting, and/or are stored near one another, add to the risk for mis-selection. Barcode scanning systems are designed to catch these types of medication errors and prevent them from reaching patients.

Although this safeguard is utilized in many pharmacies, ISMP has received numerous reports which indicate that not all pharmacies have adopted this technology. And for those pharmacies that use the technology, many face barriers to maximizing the usefulness of the technology. System problems that exist in the medication use process encourage staff to work around the technology's safety features or to use the technology in a way in which it is not intended. For example, staff at one community pharmacy was using a sheet of barcodes prepared from the barcodes printed on the bulk cartons of frequently dispensed unit-of-use products. This was done because the barcodes on the unit-of-use packages were not recognized by the system. Another common system limitation is that pharmacy staff may only be able to scan one manufacturer container even if multiple manufacturer containers were used to fill a prescription or medication bin in an automated dispensing machine (i.e., dispensing robot). Other factors that contribute to circumventing the safeguards provided by barcode scanning include working on more than one patient's prescriptions at a time, manually changing National Drug Codes when barcode scanning fails, and using return-to-stock bottles and labels that lack a functional barcode.

Fully utilizing barcode verification during the medication and vaccine dispensing and administration processes, and implementing standard workflow processes will help deliver the maximum medication safety benefit to patients.

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### Related issues of the ISMP Medication Safety Alert! Community/Ambulatory Care:

October 2022;  
September 2022;  
June 2022; April 2022; August 2021; March 2016; December 2012; November 2009

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## BEST PRACTICE 3:

- a) Use a weekly dosage regimen default for oral methotrexate in electronic systems when medication orders are entered.
- b) Require verification and entry of an appropriate oncologic indication in order entry systems for daily orders.
  - Require a hard-stop verification of an appropriate oncologic indication for all daily oral methotrexate orders.
  - For systems that cannot provide a hard stop, clarify all daily orders for methotrexate if the patient does not have a documented appropriate oncologic diagnosis.
  - Work with software vendors and information technology personnel to ensure that this hard stop is available. Software vendors need to ensure that their order entry systems are capable of this hard stop as an important patient safety component of their systems.
- c) Create a forcing function (e.g., electronic stop in the sales register that requires intervention and acknowledgement by a pharmacist) to ensure that every oral methotrexate prescription is reviewed with the patient or a family member when a prescription is presented or refills are processed.
- d) Provide specific patient and/or family education for all oral methotrexate prescriptions.
  - Specifically ask the patient which day of the week they plan to take this medication.
  - Provide clear written instructions AND clear verbal instructions for oral methotrexate that specifically review the dosing schedule, emphasize the danger with taking extra doses, and emphasize that the medication should not be taken “as needed” for symptom control.
  - Require the patient to repeat back the instructions to validate that the patient understands the dosing schedule and toxicities of the medication if taken more frequently than prescribed.
  - Provide all patients with a copy of or hyperlink to the free ISMP high-alert medication consumer leaflet on oral methotrexate (found at: [www.ismp.org/ext/221](http://www.ismp.org/ext/221)).

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### Rationale:

The goal of this *Best Practice* is to prevent errors involving inadvertent daily dosing of oral methotrexate. Since early 1996, harmful and fatal errors have been reported to ISMP involving the accidental daily dosing of oral methotrexate that was intended for weekly administration.

Methotrexate is a folate antimetabolite used to treat different types of cancers. Since the drug's introduction, its labeled indications have expanded to include non-oncologic uses. It is now used to treat a variety of autoimmune diseases (e.g., psoriasis, severe rheumatoid arthritis, lupus) and other disorders. When used for immunomodulation to treat disorders such as rheumatoid arthritis, the drug is administered once a week.

Prescribing errors occur when physicians or other providers, who are familiar with prescribing many medications for daily administration, erroneously prescribe this medication daily instead of weekly. Dispensing errors occur in much the same way, when pharmacy technicians and pharmacists inadvertently select/approve daily instead of weekly administration during order entry or verification. Patient errors have occurred when complex directions were misunderstood. While patient harm and fatalities have occurred during hospitalization, many have occurred after discharge.

Ongoing errors with oral methotrexate for non-oncologic use suggest that more needs to be done to reduce the risk of patient harm. It is important for community pharmacies to implement effective, proactive strategies so that the medication is dispensed with the proper dosage regimen. While all community pharmacies routinely provide instructions to patients and/or families about the medication's use, extra attention is important with oral methotrexate so that the patient and/or family understands both the proper dosage regimen and potential toxicities when taking more than prescribed.

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### Related issues of the ISMP Medication Safety Alert! Community/Ambulatory Care:

August 2018;  
October 2015; May 2015; January 2012; October 2010; April 2009; February 2004; January 2003.

See also: *ISMP QuarterWatch*®.  
December 4, 2019.  
[www.ismp.org/node/13521](http://www.ismp.org/node/13521).

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## BEST PRACTICE 4:

Standardize to the use of the milliliter (mL) unit of measure when prescribing, dispensing, and measuring oral liquid medications.

- Eliminate the use of “teaspoonful,” “tablespoonful,” and other non-metric units of measurement.
- Purchase and dispense oral liquid dosing devices (e.g., oral syringes) that only display the metric scale.
- Dispense an appropriate metric-only dosing device that most closely matches the prescribed dose volume needed to administer one dose.
- Educate patients, using the teach-back method, on how to accurately measure a dose of the medication with the supplied metric-only dosing device.

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### Rationale:

Confusion between teaspoons (tsp) and tablespoons (tbsp or tbs), milliliters (mL) and teaspoons, even drops (gtts) and mL, often contribute to dose and measurement errors involving oral liquid medications. These errors can lead to serious adverse events and patient harm. ISMP first reported on the confusion of teaspoonfuls and mL in its newsletter in 2000, and in 2009 issued a call for practitioners to move to sole use of the metric system for measuring over-the-counter and prescription oral liquid doses. ISMP issued another call to action in 2011 to standardize to the use of the metric system. However, mix-ups have continued to result in the injury of children and adults. ISMP has received more than 60 reports of mL-teaspoon errors alone, including cases where injuries required treatment or hospitalization.

Other organizations, such as the Food and Drug Administration, Consumer Healthcare Products Association, Centers for Disease Control and Prevention, American Academy of Pediatrics, and National Council for Prescription Drug Programs also have drawn attention to the need to move to use of the metric system.

The healthcare industry needs to acknowledge the risk of confusion when using non-metric measurements with oral liquid medications and standardize to the use of mL alone when prescribing, dispensing, and administering oral liquid medications. This will help protect patients from harmful errors and give providers a greater level of comfort and confidence when calculating and administering doses of medication. Also, when dispensing oral liquid medications, pharmacies should dispense the most appropriate metric-only dosing device to measure the prescribed dose.

### Related issues of the ISMP *Medication Safety Alert! Community/ Ambulatory Care:*

April 2022;  
September 2019;  
November 2018;  
December 2017;  
June 2015; April  
2015; November  
2014; June 2011

See also: *ISMP Statement on Use of Metric Measurements to Prevent Errors with Oral Liquids*. October 1, 2011. [www.ismp.org/node/496](http://www.ismp.org/node/496).



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## BEST PRACTICE 5:

Seek out and use information about medication safety risks and errors that have occurred in organizations outside of your pharmacy, including other affiliated pharmacies, and take action to prevent similar errors.

- Identify reputable resources (e.g., ISMP, ECRI, other patient safety organizations, state agencies, accrediting bodies, patient safety literature) to learn about risks and errors that have occurred externally.
- Establish a process for review of medication risks and errors reported by external organizations. The process should include a review of the pharmacy's current medication use systems (both manual and automated) and other data such as internal medication safety reports to determine any potential risk points that would allow a similar risk or error to occur within the pharmacy or larger organization.
- Share the external (and internal) stories of risk and errors with all staff and all pharmacy locations if applicable, along with any changes to be made in the pharmacy to minimize their occurrence, and then begin implementation.
- Conduct short safety huddles daily or regularly to discuss pertinent safety issues.

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### Rationale:

One of the most important ways to prevent medication errors is to learn from errors that have occurred in other organizations and to use that information to identify potential risk points or practices within your organization to prevent similar errors. Experience has shown that a medication error reported in one organization is also likely to occur in another. Seeking out external sources of risks and errors prompts the evaluation of similar risks within the organization that may otherwise be hidden, lying dormant for years before they cause an adverse outcome.

Because there's a natural human tendency to "normalize" errors that happen elsewhere, believing they will never happen within the organization, leaders must convey that these external risks and errors offer valuable and necessary learning opportunities and must be sought out and reviewed regularly. They must convey that the organization is vulnerable to errors, and that they consider external errors to be a "clear and present danger" in their organization for which steps must be taken to prevent similar occurrences.

To establish a process for learning from external risks and errors, organization leaders must identify reliable sources of information, establish a systematic way to review this information, assess the organization's vulnerability to similar events, and determine a workable action plan to address any vulnerabilities. To facilitate such a process, ISMP publishes the *ISMP Medication Safety Alert! Action Agenda – Community/Ambulatory Care* in January, May, and September to summarize important topics published in the *ISMP Medication Safety Alert! Community/Ambulatory Care* newsletters during the previous four months. The *Action Agenda* is prepared for leadership to use at an interdisciplinary committee meeting and with frontline staff to stimulate discussion and action to reduce the risk of medication errors. Each agenda item includes a brief description of the medication safety problem, recommendations to reduce the risk of errors, and references to related issues of the newsletters to locate additional information.

Other credible sources of information about risks and errors that can be used to proactively address known medication safety issues that could otherwise lead to harmful patient outcomes include the following: advisories from the U.S. Food & Drug Administration and the Centers for Medicare & Medicaid Services, Joint Commission's Sentinel Event Alerts, patient safety organization publications, peer-reviewed journals, and newsletters.

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### Related issues of the *ISMP Medication Safety Alert! Community/Ambulatory Care*:

March 2017; March 2009; July 2005

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## ABOUT ISMP

The Institute for Safe Medication Practices (ISMP) is the only 501c (3) nonprofit organization devoted entirely to preventing medication errors. During its more than 25-year history, ISMP has helped make a difference in the lives of millions of patients and the healthcare professionals who care for them.

ISMP is known and respected as the gold standard for medication safety information. It also has served as a vital force for progress. ISMP's advocacy work alone has resulted in numerous necessary changes in clinical practice, public policy, and drug labeling and packaging.

Among its many initiatives, ISMP runs the only national voluntary practitioner medication error reporting program, publishes newsletters with real-time error information read and trusted throughout the global healthcare community, and offers a wide range of unique educational programs, tools, and guidelines.

In 2020, ISMP formally affiliated with ECRI to create one of the largest healthcare quality and safety entities in the world. The affiliation will allow both organizations to work more closely together for the benefit of providers, patient advocates, governments, and most importantly, patients.

As an independent watchdog organization, ISMP receives no advertising revenue and depends entirely on charitable donations, educational grants, newsletter subscriptions, and volunteer efforts to pursue its life-saving work. For more information or to donate to protect patients worldwide from harmful medication errors, visit ISMP online at: [www.ismp.org](http://www.ismp.org).

For more information about the ISMP *Targeted Medication Safety Best Practices for Community Pharmacy* including an implementation worksheet and educational programs, please visit:  
[www.ismp.org/guidelines/best-practices-community-pharmacy](http://www.ismp.org/guidelines/best-practices-community-pharmacy).



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