Improving Medication Safety in Community Pharmacy: Assessing Risk and Opportunities for Change

Donna Horn, RPh, DPh
Director Patient Safety – Community Pharmacy
Institute for Safe Medication Practices
Disclosures

Donna Horn, RPh, DPh, reported no financial relationships, or relationships to products or devices, she or her spouse has with commercial interests, related to the content of this CE activity.
IMPROVING MEDICATION
SAFETY IN COMMUNITY
PHARMACY:
ASSESSING RISK
AND OPPORTUNITIES
FOR CHANGE

AROC

http://www.ismp.org/communityRx/aroc/tools.asp
Goals of AROC program

• Raise awareness of error-prone processes in the medication delivery system
• Build awareness of risk-identification opportunities in the community pharmacy setting
• Maximize the appropriate application of system strategies to reduce organizational risk
AROC Program Contents

• Background key elements
  – Error with causative factors and specific recommendations
  – Contributing factors chart
  – Recommendations chart
  – Quick check question

• Introduction to Assess-ERR™ and levels of strategies

• Process flow diagrams and questions to explore

• Case studies-actual errors
  – Review processes, contributing factors, key elements
  – Complete Assess-ERR™ (medication system worksheet)

• Appendixes

http://www.ismp.org/communityRx/aroc/tools.asp
Case Study

• **The Error**: Lithium Citrate 8 mEq/5 mL was filled with Chloral Hydrate 500 mg/5 mL (generic for Noctec)

• A patient living in a group home was acting “differently” and was clearly more agitated

• The prescriber ordered a test of Lithium levels done on the patient

• As a result of the low level, the prescriber called the pharmacy to insure that medication had been dispensed correctly

• It was then discovered that the wrong medication had been given
ISMP’s Key Elements of the Medication Use System™

- Patient information*
- Drug information
- Communication*
- Drug labeling, packaging, and nomenclature
- Drug standardization, storage, and distribution*
- Medication device acquisition, use, and monitoring
- Environmental factors, workflow and staffing patterns*
- Staff competency and education
- Patient education
- Quality processes and risk management

http://www.ismp.org/faq.asp#Question_3
Error with Patient Information: Causative Factors

• Patients with very similar names and very similar dates of birth led to a dispensing error
  – Jane F. Doe, (date of birth 6/17/1955) was given Jane S. Doe’s (date of birth 6/13/1955) medication in error at the check out window

• Patient took one tablet (glipizide extended release 10 mg); admitted to the hospital with low blood sugar

• Neither patient had an up-to-date profile indicating health condition

• Neither patient accepted the offer to counsel

• No notation in the pharmacy computer system indicating or warning of patients with same/similar names
Recommendations: Patient Information

• Consistent use of a second patient identifier
• Ask patient’s address or date of birth, and compare to the information on the prescription receipt
• Computerized notes to warn about previously detected patients with similar names; flag patients if selected during patient data entry
• Patient education sessions discuss purpose of the medication, to help ensure the correct medication is being dispensed to the correct patient
• Regularly update patient demographics including health condition codes, in each patient’s profile
• Indications match health conditions, unless off-label
Polling Question #1

• Other than patient age and allergy information, what key piece(s) of information should be documented when filling a prescription for a pediatric patient?
  A. Indication for prescription
  B. Patient’s current weight
  C. Co-morbid conditions
  D. All of the above
Errors with Communication: Causative Factors

- A physician wrote a prescription for lamotrigine 100 mg.
- Pharmacist misread the handwritten order as levothyroxine 100 mcg.
- The drugs have overlapping dosage strength numbers (25, 100, 150, and 200).
- Both administered orally once daily, increasing the risk of mix-ups.
Recommendations: Communication

• Warn staff about the potential for mix-ups with these products
• Encourage prescribers to include the indication for use on prescriptions for these drugs
  – Write only one medication order per prescription blank
• Ask the prescriber or agent for the purpose on call-ins and write it on the prescription
• Counsel patients on these medications (new and refill) to help avoid mix-ups; Rx may have originally been filled correctly, yet still misread and picked incorrectly on refills
Polling Question #2

• Which is NOT an appropriate way of preventing medication errors associated with spoken orders?
  A. Read back order
  B. Spell drug names back to caller
  C. Use abbreviations
  D. Obtain indication for therapy
Error with Standardization, Storage, & Distribution: Causative Factors

- Hydrocodone/acetaminophen 7.5 mg/500 mg dispensed instead of oxyCODONE/acetaminophen 7.5 mg/500 mg
- Look-alike container and labels; same manufacturer
- Schedule II stored in a crowded narcotic cabinet
Recommendations: Storage

- Store the containers of these products apart from one another
- Add reminders to stock bottles and computer screens about the potential for error
Error with Environmental Factors, Workflow, and Staffing Patterns: Causative Factors

• A patient received generic BIAxin tablets 500 mg for a UTI, take two tablets once daily
• The prescription was actually written for BIAxin XL
• Technician performed the data entry and product selection
• RPh missed the error during verification
• According to the patient, this pharmacy is part of a chain where the work environment is typically very high pressured and fast paced
• Patient’s report indicated pressure of the workload caused the pharmacist to perform the checking too hurriedly
Recommendations: Environment, Workflow

• Even in fast paced environments, steps can be taken to ensure adequate time for the verification process
  – Reduce clutter and crowding
  – Match workload with appropriate staffing levels
  – Improve lighting and technology so that errors can be “seen”
Polling Question #3

- Which of the following are risk reduction strategies that can be implemented to reduce errors associated with environmental factors?
  
  I. To reduce clutter, place labeled vials on top of patient receipts, in a neat row, on dispensing counter for pharmacist to verify
  
  II. Reconfigure work stations to prevent crossover foot traffic among staff
  
  III. Store products in a way to limit excessive reaching and climbing on stools

  A. I only
  
  B. III only
  
  C. I and II
  
  D. II and III
  
  E. I, II and III
Medication Flow Process

- Process flow diagrams
  - Identify the steps in a pharmacy’s medication-use system

- Questions for Exploring the Process
  - The questions are to be used during the analysis of a medication incident
  - Help the assessment team think of safety characteristics that should be incorporated in their process
  - Directed to each staff person most actively involved in the process being described
Triage and Order Entry – Tech or RPh

Order Received → Triage → Entry → RPh Verification → Issue?

Call Patient → Triage

Call Prescriber → Entry
Triage and Order Entry – Tech or RPh

• Are allergies verified and documented in the computerized patient profile?

• Does pharmacy staff inquire from patient, prescriber or prescriber’s agent the indication for use or diagnosis?

• Is patient date-of-birth on each hard copy prescription and highlighted if patient under 6 years of age?

• Does technician/pharmacist repeat back and spell out all spoken medication orders?
Pharmacist Verification I – Verifying RPh

Order Received → Triage → Order Entry → RPh Verification I → Issue?

Call Patient → Order Entry

Call Prescriber → Order Entry
Pharmacist Verification I – Verifying RPh

- Are all reference texts current and up-to-date?
- Is there online reference available?
- Is the patient profile readily accessible (number of keystrokes is limited to access profile in system) when verifying new prescription?
- Is the original prescription readily accessible (scanned image or hard copy) for confirmation of data entry?
- Does the computer automatically screen for allergies, drug interactions, maximum doses, etc.?
Product Pick – Technician

1. Label Print
2. Stock Selection
3. RPh Verification II
4. Issue?
5. Delivery Sort
6. Delivery to Patient
Product Pick – Technician

- Are medications with look- and sound-alike names and packaging stored separately?
- Are refrigerator and compounding stock stored safely in well-lighted, appropriately labeled shelves?
- Are automated dispensing and counting devices kept on manufacturers’ suggested maintenance schedules for cleaning and calibrating?
- Are shelf dividers used in crowded areas?
Pharmacist Verification II – RPh

1. Label Print
2. Stock Selection
3. RPh Verification II
4. Issue?
5. Delivery Sort
6. Delivery to Patient
Pharmacist Verification II – RPh

- Are medications checked against the label and the original order?
- Is product verification bar coding available?
- Are prescription orders separated by person and worked on one at a time (basket system)?
- Are ergonomic factors considered in the verification work space: lighting, temperature, work space sufficient and free of clutter, magnifiers, computer terminals, trash receptacles, fatigue mats, etc.?
Transfer to Will-Call Area: Tech or RPh

Label Print → Stock Selection → RPh Verification → Issue? → Transfer to Will-Call Area → Delivery to Patient
Transfer to Will-Call Area: Tech or RPh

- Is the will-call/pick-up area neatly organized and spacious so bagged prescriptions are not misplaced?
- Is there a system to ensure split orders for the same patient are put together at pick-up so patient does not leave with only part of their order (waiting for prescriber call back, out of stock, etc.)?
- Are patient-specific labeled prescriptions needing reconstitution, refrigeration or pharmacist intervention/counseling flagged as such and stored separately?
- Is there a return to stock policy to ensure timely pick-up of completed medication orders?
Point of Sale: Tech or RPh

1. Label Print
2. Stock Selection
3. RPh Verification II
4. Issue?
5. Point of Sale
6. Delivery to Patient
Point of Sale: Tech or RPh

- Has staff been trained to ask for two forms of patient identifiers?
- Are patients informed about look- and sound-alike medications that could be confused with their current medication?
- Does staff open contents of bag and cross-check for omitted items, extra items and that labeled vial(s) match attached receipt(s)?
- Is the offer to counsel made in a positive manner to encourage an affirmative response?
- Are high-alert medications flagged so techs can take extra precautions at point of sale?
Using the Assess-ERR™ Tool

• A three step medication system worksheet designed to assist pharmacists and pharmacy operators with error report investigations
• Develop a standardized approach to documenting error incidents
• Helps to reveal the underlying system deficiencies
• Utilize recommendations from each Key Element to help identify the risk-reduction strategies
Utilizing the Assess-ERR™ Case Study

• **The Error**: Lithium Citrate 8 mEq/5 mL was filled with Chloral Hydrate 500 mg/5 mL (generic for Noctec)

• A patient living in a group home was acting “differently” and was clearly more agitated

• The prescriber ordered a test of Lithium levels done on the patient

• As a result of the low level, the prescriber called the pharmacy to insure that medication had been dispensed correctly

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## Rank Order of Error Reduction Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fail-safes and constraints</td>
<td>High</td>
</tr>
<tr>
<td>Forcing functions</td>
<td></td>
</tr>
<tr>
<td>Automation and computerization</td>
<td></td>
</tr>
<tr>
<td>Standardization</td>
<td></td>
</tr>
<tr>
<td>Redundancies</td>
<td></td>
</tr>
<tr>
<td>Reminders and checklists</td>
<td></td>
</tr>
<tr>
<td>Rules and policies</td>
<td></td>
</tr>
<tr>
<td>Education and information</td>
<td>Low</td>
</tr>
</tbody>
</table>

Items at the top of the list, such as fail-safes, forcing functions, and automation, are more powerful strategies because they focus on systems. The tools in the middle attempt to fix the system yet rely in some part on human vigilance and memory. Items at the bottom, such as education, are old, familiar tools that focus on individual performance and therefore are weak and ineffective when used alone.
Use Variety of Strategies

• **Fail-safes and constraints** true system changes
  
• **Forcing functions** are procedures that create a "hard stop"

• **Automation and computerization** reduce reliance on memory

• **Standardization** creates a uniform model to reduce the complexity and variation of a specific process
Use Variety of Strategies

- **Redundancies** incorporate duplicate steps to force additional checks
- **Reminders and checklists** make important information readily available
- **Rules and policies** guide staff toward an intended positive outcome

- **Education and information** effectiveness relies on an individual’s ability to remember what has been presented
Assess-ERR™ Tool: Step One

- Was indication for use on the prescription? Yes ☒ No
- Was the prescription obtained electronically? Yes ☒ No
- Were two unique patient identifiers used at pickup? ☒Yes No
- Did the patient accept the offer to counsel? Yes ☒ No
- Did the error reach the patient? ☒Yes No
- Was the prescriber notified of the incident? ☒Yes No

• Brief description of the event (what, when, and why):

Patient living in group home received the wrong medication. Lithium Citrate 8 mEq/5 mL was filled with Chloral Hydrate 500 mg/5 mL (Noctec) in error.

Found at:
http://www.ismp.org/Tools/Community_AssessERR/default.asp
# Assess-ERR™ Tool: Step Two

<table>
<thead>
<tr>
<th>Key element</th>
<th>Possible causes</th>
<th>Y/N</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Critical patient information missing?</strong> (age, weight, allergies, pregnancy, patient identity, address, indication for use)</td>
<td>Y</td>
<td><strong>No indication for use on hard copy prescription; no health condition information in pharmacy computer system; profile not reviewed</strong></td>
</tr>
<tr>
<td>Key element</td>
<td>Possible causes</td>
<td>Y/N</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td><strong>Drug name, label, packaging problem?</strong></td>
<td>Y</td>
<td>Similar labels; both manufactured by MGP; similar look and packaging: both pint-size, plastic, amber-colored bottles with same-colored labeling</td>
</tr>
<tr>
<td></td>
<td>(look-/sound-alike names, look-alike packaging, no drug image, NDC or barcode not available or not used)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Assess-ERR™ Tool: Step Three

<table>
<thead>
<tr>
<th>Identified Problem (from Comments)</th>
<th>Key Element</th>
<th>Interventions Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>No patient health condition listed in patient profile</td>
<td>1</td>
<td>Obtain indication to distinguish medications with similar packaging and look-alike or sound-alike names. (redundancy)</td>
</tr>
<tr>
<td>No indication on hardcopy</td>
<td></td>
<td>Match drug ordered to indication provided. (redundancy)</td>
</tr>
</tbody>
</table>
### Assess-ERR™ Tool: Step Three

<table>
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<th>Identified Problem (from Comments)</th>
<th>Key Element</th>
<th>Interventions Implemented</th>
</tr>
</thead>
</table>
| Look alike labels and packaging; same manufacturer: both pint-size, plastic, amber-colored bottles with same-colored labeling | 4           | Use shelf dividers to separate LASA products. (standard)  
Contact manufacturer or discontinue stocking from this manufacturer if safety features cannot be adequately employed; report these hazardous labels to ISMP. (standard) |
Practice Points

• Diagram your workflow
• Match “contributing factors” chart to recommendations chart in AROC
• Complete Assess-ERR™ as a team
• Employ a variety of recommendation strategies
• Share lessons learned with all staff
References

Additional Resources

- ISMP’s List of Error Prone Abbreviations, Symbols, and Dose Designations

- FDA and ISMP’s List of Look-Alike Drug Name Sets with Recommended Tall Man Letters
For More Information

- Donna Horn, RPh, DPh
  - Director Patient Safety – Community Pharmacy
  - dhorn@ismp.org

- www.ismp.org

- http://www.ismp.org/communityRx/aroc/tools.asp