



- “We Might Have A Problem.”
- Patient Safety & Preventable Errors

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1

Objectives

- Test Your Knowledge Volunteers/Thinking Game.
- Identify patient cases and scenarios to assist in identification of the most common preventable errors.
- Acknowledge strategies to assist in the reduction of the preventable errors.
- Review the New Mexico Board of Pharmacy Law as it pertains to the topic discussed.
- Learn and review resources available to assist in error reduction.

2

Food and Drug Administration

- Defines a medication error as a “preventable event that may cause or lead to inappropriate medication use or patient harm.”
- Medication errors can happen because of consumers, healthcare professionals, pharmacists, or other people involved in the medication-use system.

3

British Journal of Clinical Pharmacology

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2723196/>)

- Defines a medication error as a failure in the treatment process that leads to, or has the potential to lead to, harm to the patient.
- Defines a prescription error as a failure in the prescription writing process that results in a wrong instruction about one or more of the normal features of a prescription.

4

Agency for Healthcare Research and Quality

(<https://psnet.ahrq.gov/perspective/pharmacist-role-patient-safety>)

- Ensuring the safe prescribing and dispensing of medication to patients is a core function of a pharmacist.
- Pharmacists ensure that patients not only get the correct medication and dosing, but that they have the guidance they need to use the medication safely and effectively.
- Particularly in response to the opioid crisis, there are some clear opportunities for hospital & community pharmacists to assume a greater role in pressing patient safety issues, such as appropriate opioid use, access to medications, medication adherence, readmission reductions, and medication safety.
- Medication stewardship programs, providing daily patient care, optimizing technology, and focusing on longitudinal health outcomes are ways pharmacy can champion patient safety.

5

Medication Error Statistics

- As many as 30% of the medication errors that are reported to the U.S. Poison Control Centers involve pediatric patients (U.S. Pharmacist, 2019).
- In a study of 14,983 pharmacist interventions, 41.2% of medication errors involved cardiovascular medications (*Archives of Internal Medicine*, 2003).
- About 50% of medicines available over the internet are counterfeit (WHO, 2010).

6

Test Your Knowledge - 1 point

- About XX% of Viagra bought online is fake (Viagra, 2021).
- Note: Help from audience is allowed
- Review results before answer is revealed

7

Test Your Knowledge - 1 point

- About 80% of Viagra bought online is fake (Viagra, 2021).

8

Test Your Knowledge - 1 point

- In the United States, X,000 to X,000 people die each year due to medication errors.

9

Test Your Knowledge - 1 point

- In the United States, 7,000 to 9,000 people die each year due to medication errors.

10

Test Your Knowledge - 1 point

- About X.X% of all prescriptions in the community setting have a dispensing error? (*BMJ Open Quality*, 2018)

11

Test Your Knowledge - 1 point

- About 1.5% of all prescriptions in the community setting have a dispensing error? (*BMJ Open Quality*, 2018)

12

ISMP National Vaccine Errors Reporting Program

- Most Common Product Related Contributing Factors
 - Age-dependent formulations of the same vaccine
 - Engerix Peds (age 0-19 yrs) vs EngerixAdult (age 20 yrs and older)
 - Similar brand and generic names, abbreviations, and container labels/packaging
 - Menveo vs Menactra
 - Conjugate antigen listed on labels mistaken as the target vaccine name
 - Acthib with tetanus toxoid vs Tdap as tetanus vaccine

13

ISMP National Vaccine Errors Reporting Program

- Most Common Knowledge and Information Related Contributing Factors
 - Unfamiliarity with the indicated ages, dosing, and intervals
 - Hepisav in a 16 year old (FDA approved for 18 and above)
 - Unfamiliarity with mixing and preparing the vaccines
 - Shingrix diluent only (did not add the lyophilized powder)
 - Unfamiliarity with vaccine schedules, including individualized catch-up schedules
 - HPV dose 2 given at 1 month rather than 2 months (schedule=0, 2 months, 6-12 months)
 - Incomplete or confusing vaccination history in a state or local vaccine registry
 - MMR dose 1 of 2 documented/received only

14

Test Your Knowledge - 1 point

- Medication errors are the XXX leading cause of death in the U.S. (DataRay, 1999).

15

Test Your Knowledge - 1 point

- Medication errors are the eighth leading cause of death in the U.S. (DataRay, 1999).

16

Test Your Knowledge - 1 point

- The U.S. spends more than \$XX billion each year on patients who have been affected by medication errors (NCBI, 2021).

17

Test Your Knowledge - 1 point

- The U.S. spends more than \$40 billion each year on patients who have been affected by medication errors (NCBI, 2021).

18

ISMP National Vaccine Errors Reporting Program

- Most Common Practice-Related Contributing Factors
 - Failure to verify the patient's age before administration
 - 11 year old patient received Pfizer Covid-12 vaccine
 - Failure to check the chart and vaccine registry for date of prior vaccination
 - Moderna dose one and Pfizer dose two given just two months apart
 - Failure to document vaccination in the medical record and/or vaccine registry
 - No vaccine documented in MMRIS, so additional Covid vaccine given
 - Miscommunication of vaccine orders and ambiguous due dates
 - Unsure which pneumococcal vaccines given in past (PCV13 vs PPSV23)
 - Preparation of vaccines for multiple patients at the same time
 - Patient 1-Covid B Shingrix and Patient 2-Shingrix B Pneumo
 - Immunizing multiple patients in the same treatment room
 - Moderna and Pfizer mix-up, talking distractions
- Unlabeled syringes
 - Multiple vaccines with distractions and multiple patients

19

ISMP National Vaccine Errors Reporting Program and Local Error Reporting

- Additional Vaccines Involved in Reported Errors
 - Hepatitis A, vaccine was left out of the cooler area in the shipping box for 72 hours, the day shift thought it had been put away, but it had not been stored correctly. It was discovered days later as still in shipping container.
 - Varivax, taken out of freezer and left on top of freezer unit, discovered on Friday, last shot given on Wednesday, Merck called and vaccine was warm to touch due to heat of freezer unit and not usable.
 - DTap ordered, but Dtap was intended for order, pharmacy does not have any patients under the age of 12, so DTap was returned.
 - Hepatitis A, vaccine given after expiration date, manufacturer called, patient to return for a repeat vaccine to ensure potency.
 - Rabies vaccine, needles/stick due to non-safety needle provided from manufacturer, use safety needle from your inventory to ensure familiarity if necessary.

20

Mass Medication Dosing Error Case, ISMP 2017

- Recombivax HB (5mcg/0.5ml peds) shortage at hospital X.
- Pharmacist received Engerix-HB for newborns (10mcg/0.5ml), but dispensed 0.25ml of the Engerix-HB pediatric dose to match the 5mcg Recombivax HV dose.
- Subtherapeutic immunization occurred with several dozen infants before the error was recognized.
- Similar situation over a 2 year period at another hospital Y, 1400 infants were given a subtherapeutic dose and were discharged vulnerable to hepatitis B.



21

Possible Mitigation Strategies

- 1) If it seems strange, question it
- 2) Wasting is always out of the ordinary regarding medications
- 3) The package insert is always a point of reference
- 4) Pediatric dosing is always being updated to make things easier
- 5) Pediatric dosing is usually very precise and accurate
- 6) Phone a friend, keep a databank of friends
- 7) Self awareness is important
- 8) Immunize.org is available and free of charge

22

Institute Safe Medication Practices Top 10, 2021

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7907321/>)

- Prescribing, dispensing and administering extended-release opioid analgesics to opioid-naïve patients
- Not using smart infusion pumps with dose error-reduction systems (DERS) in perioperative settings
- Errors associated with administration of oxytocin (high-alert medication)
- Hazards associated with positioning infusion pumps outside of the rooms of COVID-19 patients

23

Institute Safe Medication Practices Top 10, 2021

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7907321/>)

- Use of the retrospective, proxy "syringe pull-back" method of verification during pharmacy sterile compounding
- Combining or manipulating commercially available sterile products outside the pharmacy
- Medication loss in the tubing when administering small-volume infusions via a primary administration set
- Wrong route (intraspinal injection) errors with tranexamic acid (high-alert medication)
- Use of error-prone abbreviations, symbols, or dose designations

24

Strategies to Assist in the Reduction of Preventable Errors, ISMP

- Verify brand names stored and labeled separately and clearly in the refrigerator.
- Hang & review notes, comments, overrides that can be entered in the computer system or on dispensing areas.
- Use high alert stickers or dispensing stickers as routine on boxes as they arrive in order.
- Allow for separation of patient and/or treatment areas, use totes in multiple vaccines or multiple documents/vials, etc.
- Always keep same procedure and process when possible, vaccine pull, final verification, never assume one knows the vaccine route, etc.

25

Vaccine Resources Available to Assist in Error Reduction, ISMP

- **CDC Approved Vaccination Abbreviations:**
 - https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-rev.html#CDC_AA_refVal=https://www.cdc.gov/vaccines/2Facip/2Fcommittee/2Fguidance/2F06-abbreviations
- **Childhood /adult immunization schedules and catch-up immunization schedules:**
 - <https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf#page=3>
 - <https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf>
- **Chart of vaccine doses, routes, sites, and needle sizes**
 - <https://www.immunize.org/catg.d/p3085.pdf#id=501>
- **Injection site maps (Children, adults)**
 - <https://cepi.org/assets/docs/IMM-218.pdf>
- **Vaccinations during pregnancy**
 - <https://www.cdc.gov/vaccines/pregnancy/hcp-toolkit/guidelines.html>
- **Screening checklist for contraindications to vaccines**
 - <https://www.immunize.org/catg.d/p4065.pdf>

26

National Coordinating Council for Medication Error Reporting and Prevention

- Pharmacies should employ barcode scanning system in medication use or filling process.
- Systematic approaches, including root cause analysis, should be implemented within the pharmacy to identify and evaluate actual and potential causes of errors related to labeling and dispensing.
- Policies and procedures are developed for repackaging of medications that will clarify labeling to help prevent errors.
- Collaboration among team members, healthcare professionals, patients, families/caregivers, the pharmaceutical industry, stakeholders and others should be encouraged to facilitate design of workflow, packaging, labeling, and dispensing to help minimize errors.
- Pharmacies should develop and provide access to education/training for pharmacy team members including technical support training, as well as to patients, and families/caregivers that address methods for reducing and preventing medication errors.

27

New Mexico Board of Pharmacy Law Review

- 16.19.25.8 THE PHARMACIST IN CHARGE SHALL:
- Develop and implement written error prevention procedures as part of the Policy and Procedures Manual.
 - Report incidents, including relevant status updates, to the Board on Board approved forms within fifteen (15) days of discovery.
- 16.19.25.9 THE BOARD SHALL:
- Maintain confidentiality of information relating to the reporter and the patient identifiers.
 - Compile and publish, in the newsletter and on the Board web site, report information and prevention recommendations.
 - Assure reports are used in a constructive and non-punitive manner.

28

New Mexico Board of Pharmacy Law Review

TITLE 16 OCCUPATIONAL AND PROFESSIONAL LICENSING
CHAPTER 19 PHARMACISTS
PART 1 PHARMACIES

16.19.4.1 ISSUING AGENCY: Board of Pharmacy

- G. Quality Assurance Program: The pharmacist-in-charge shall be responsible for implementing and maintaining a quality assurance program for the automated medication system. The program shall provide for:
 - (1) review of override medication utilization;
 - (2) investigation and reporting of any medication error related to drugs distributed or packaged by the automated medication system;
 - (3) review of any discrepancy or transaction reports and identification of patterns of inappropriate use or access of the automated drug distribution system;
 - (4) review of the operation of the automated medication system;
 - (5) integration of the automated medication system quality assurance program with the overall continuous quality improvement program of the managing pharmacy; and
 - (6) assurance that individuals working with the automated medication system receive appropriate training on operation of the system and procedures for maintaining pharmacy services when the system is not.

29

Test Your Knowledge - Final Round - 1 point

- Errors occur at a rate of X per day in a pharmacy filling 250 prescriptions daily, which amounts to an estimated 51.5 million errors out of 3 billion prescriptions filled annually nationwide.

30

Test Your Knowledge - Final Round - 1 point

- Errors occur at a rate of 4 per day in a pharmacy filling 250 prescriptions daily, which amounts to an estimated 51.5 million errors out of 3 billion prescriptions filled annually nationwide. (Pharmacy Times - <https://www.pharmacytimes.com/view/p2pdispensingerrors-0110>)

31

Winner

Thank you!



32

Summary

- Medication errors can be preventable in most cases
- Communication and process updates are important once an error occurs
- Continue to look for mitigation strategies
- Errors can occur with vaccines as well
- It is important to share our pharmacy experiences with others to ensure we go forward with lessons learned

33