



**Reducing Medication Errors Through
Implementing a Continuous Quality
Improvement Program**

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DISCLOSURE
Pharmacy Quality Commitment Program

- FPA has available a continuous quality improvement program
- System is web based for documenting and reporting purposes
- Visit www.pharmview.com for more information

Learning Goals

Upon completion of this activity pharmacists will be able to.

- Define elements of a Continuous Quality Improvement Program
- Restructure a pharmacy practice to address quality related events
- Analyze some common causes of quality related events
- Implement an action plan to address quality of care in pharmacies with a goal towards error reduction and prevention
- Recite quality improvement regulations for Florida pharmacies
- Implement programs to improve patient safety in pharmacy health care systems

Upon completion of this activity, technicians will be able to:

- Define CQI; List most common medication errors;
- Employ techniques to reduce medication errors by using CQI.

Assessment Questions

- What are examples of high alert medications?
- What are the five “rights” that pharmacists and nurses need to be aware of?
- Name 5 common causes of negative quality related events
- (T or F) Confirmation bias is the act of believing what you are familiar with is what you expect to see rather than what is there.
- (T or F) Checklists have no place in health care

“Incompetent people are, at most 1% of the problem. The other 99% are good people trying to do a good job who make very simple mistakes and it’s the processes that set them up to make these mistakes.”

Dr. Lucien Leape
Harvard School of Public Health

The Problem

Error Factors	Example
<ul style="list-style-type: none"> •Institutional •Regulatory 	Patient on anticoagulants receive IM pneumococcal vaccine. Health system under pressure to improve vaccination rates
<ul style="list-style-type: none"> •Organizational •Management 	Nurse detected a medication error but was discouraged by the physician from reporting it
<ul style="list-style-type: none"> •Staffing 	Overworked nurse mistakenly administers insulin instead of anti-nausea medication resulting in hypoglycemia coma
<ul style="list-style-type: none"> •Team environment 	Surgeon completed operation despite being informed that a suction catheter tip was missing
<ul style="list-style-type: none"> •Patient characteristics 	Parents of a young boy misread the instructions on a bottle of APAP resulting in liver damage

<https://psnet.ahrq.gov/primers/primer/10/root-cause-analysis>

How big is this problem?

- Serious preventable medication errors occur in 3.8 million inpatient admissions (3.3 outpatient visits)
- Inpatient preventable medication errors cost \$16.4 billion annually
- Outpatient preventable medication errors cost \$4.2 billion annually
- Dosing errors make up 37% of all preventable errors
- Only 13% of primary care physicians reported that they communicated with a pharmacist regarding new Rx's

http://www.nehi.net/bendthecurve/sup/documents/Medication_Errors_%20Brief.pdf

How big is the problem?

- Medical errors are the 3rd leading cause of death ([May 3, 2016 NPR Report](#))
- One research study suggested that errors occurred more frequently at the beginning of each month

How big is the problem?

- 1.5 million preventable adverse drug events occur each year in the US.¹
- 96% of patients nationwide fail to ask questions about how to use their medications²

¹Preventing Medication Errors: Quality Chasm Series 2007

²<http://www.rwjf.org/reports/grr/041745.htm>

Reports From the FDA

- Dog received the drug Sinequan instead of Zeniquin
- One patient died because 20 units of insulin was abbreviated as "20 U," but the "U" was mistaken for a "zero." As a result, a dose of 200 units of insulin was accidentally injected.

Quality Improvement in health care services is not a one person operation!

- Organizational system wide support
- Staff commitment
- Management or owner
- Patients and patient caregiver

Case Study

Ohio Pharmacist Imprisoned from Rx Error

- Pharmacist signed off on improperly prepared chemotherapy treatment.
- 23.4% saline solution used in compound rather than 0.9%
- Resulted in patient's death
- [View video](#)

Case Study

Ohio Pharmacist Imprisoned from Rx Error

- Aggravating Issues
 - Computer system offline for maintenance
 - Backlog of drug orders waiting to be processed
 - Staffing shortage
 - IV prep technician planning a wedding
 - IV prep area cramped and crowded
 - Hypertonic solution within easy reach
- Outcome
 - Pharmacist license revoked
 - Jailed for involuntary manslaughter
 - Ohio Board found no system errors of the hospital



There is no evidence to show that this is the proper way to resolve medical mistakes.

**It is time to do a total health systems
checkup**

- Internal evaluation of staff skills and abilities
 - Encourage feedback
 - Dialog must be open and honest
- Resources of the delivery system
 - There may be a relationship to cost cutting and increased risk
- Facility environment and layout
- Support of pharmacy administration or management
- Support for self reporting policies

**Promoting Positive
Quality Related Events?**

- Health care personnel should not be evaluated solely upon efficiency, revenue development and expense management.
- Performance assessments and reviews should include evidence of error avoidance and prevention, patient health improvement and documented positive outcomes.

What is a positive quality related event and how does a pharmacist create one?

- **REASON** - Tampa pharmacist participating in the Florida patient care management program receives a prescription refill request for a cholesterol lowering drug
- **ACTION** – Pharmacist does an in store cholesterol test and finds the patient not responding. Pharmacist calls MD
- **RESOLUTION** – Physician changes medication
- **OUTCOME** – Patient’s cholesterol levels drop

What is a negative QRE and how does a pharmacist recognize when it happens?

- **REASON** – Diabetic patient (in a hurry) presents new prescription for processing in the Pharmacy
- **ACTION** – Pharmacy staff has difficulty reading the prescription but fills it based upon the pharmacist's hunch. *Some TP DUR soft alerts found.*
- **RESOLUTION** – Patient receives filled prescription in a timely and efficient manner
- **OUTCOME** – Patient admitted to hospital for uncontrolled blood pressure

What action should be taken in the event of a negative quality related event?

- Pharmacist or pharmacy technician should tied to the back of a cruise ship and dragged across the Atlantic Ocean
 - THE OFFENDER SHOULD BE MADE TO STAND ON A STREET CORNER HOLDING A SIGN THAT SAYS "I'M AN IDIOT"
 - Pharmacist license or technician registration should be revoked and the provider exiled to Antarctica.
- **Research and work the system issue.**

Managing negative quality related events (video presentation)

- Listen to the patient or patient's caregiver
- Assume that an error has occurred
- Investigate the facts surrounding the event
- Show genuine concern for the patient
- Apologize for the inconvenience but use judgment on accepting full responsibility
- Document the event immediately
- Notify management/owner
- **If its broken, fix it & document the repair**



Questions to answer in documenting a QRE

- Describe the QRE
- Note the date & time when the QRE occurred and the date and time the incident was reported
- How was the QRE discovered
- Was treating physician or other care giver notified
- Disposition of the patient
- Disposition of the physician
- In a dispensing error was the container retrieved (how much of the drug did the patient use or take)?
- What is the status of the patient?
- Who were the staff/caregiver(s) involved?

Contributing causes of negative quality related events (Video)

- Telephone interruptions
- General interruptions
- Prescriber's handwriting
- Look alike/sound alike drug names
 - Allegra - Viagra
 - Cozaar - Zocar
 - Mucomyst - Mucinex
 - <http://www.ismp.org/Tools/confuseddrugnames.pdf>

High Alert Medications

- | | |
|--|--|
| • amiodarone, IV | • nesiritide |
| • colchicine injection | • nitroprusside sodium for injection |
| • heparin, low molecular weight, injection | • potassium chloride for injection concentrate |
| • heparin, unfractionated, IV | • potassium phosphates injection |
| • insulin, subcutaneous and IV | • sodium chloride injection, hypertonic (more than 0.9% concentration) |
| • lidocaine, IV | • warfarin |
| • magnesium sulfate injection | |
| • methotrexate, oral, non-oncologic use | |

Other contributing causes of negative quality related events

- Prescription volume
- Fatigue
- Verbal orders
- Product labeling and packaging
- Abbreviations
 - D/C (Discharge – Discontinue)
 - IU (International Unit – “IV” – “10”)
 - Q.D. (Once Daily - QID)
 - SSRI
 - µg (microgram – milligram)

“Five Rights” of Patients

- Right drug
- Right time
- Right dose
- Right route
- Right patient

What are other types of negative quality related events?

- Incorrect dosage prescribed or administered
- Inappropriate drug prescribed or administered
- Missed documented drug allergy
- Expired drug dispensed or administered
- Improperly compounded drug (USP 797)
- Miss branded prescription drug

Factors that contribute to positive quality related events

- Influence and support by management
- Use of information provided by computers
- Motivation of the staff/caregiver
- Involvement of the patient or patient's caregiver
- Continuous staff training and system upgrades

Negative QRE Prevention

- Pay attention to the warning signs
 - Patient does not get better or gets worse
 - Computer messages
 - Recognizable changes in medication appearance
 - Questions from patient or patient's caregiver
 - Questions from physicians office
 - Insurance claim denial

Negative QRE Prevention

- Examine the patient's health information
 - Refill schedule out of sync
 - Age (especially in children)
 - Weight
 - Sex
 - Medical history
 - Allergies

Negative QRE Prevention

- Examine dispensing procedures
 - Question illegible prescriptions
 - Question strange therapy
 - Question high doses
- Modify final check process
 - **CONFIRMATION BIAS**
- Verify patient identification

COUNT THE PASSING BALL

Negative QRE Prevention

- Adopt system wide QRE prevention policies
 - Physician electronic order entry
 - Have two health care licensees verify and document the dispensing of problem related drugs (Heparin, Sodium Warfarin, digoxin, IV potassium, etc.)
 - Remove concentrated drug solutions from patient care areas
 - Sterilize final check area
 - Implement bar code/RFID technology

Negative QRE Prevention

- Checklists
 - Promotes redundancy and consistency
 - Establishes a standardized system
 - Encourages habit forming behavior
 - Reduces opportunity for an omission or oversight

Standards of Practice – Continuous Quality Improvement Programs
64B16-27.300

- (1) "Continuous Quality Improvement Program" means a system of standards and procedures to identify and evaluate quality-related events, and improve patient care.

Standards of Practice – Continuous Quality Improvement Programs
64B16-27.300

- (2) "Quality-Related Event" means the inappropriate dispensing of a prescribed medication including:
 - (a) a variation from the prescriber's prescription order, including but not limited to:
 - 1. Incorrect drug;
 - 2. Incorrect drug strength;
 - 3. Incorrect dosage form;
 - 4. Incorrect patient; or
 - 5. Inadequate or incorrect packaging, labeling, or directions.

**Standards of Practice – Continuous Quality Improvement Programs
64B16-27.300**

- (b) a failure to identify and manage:
 - 1. over-utilization or under utilization;
 - 2. therapeutic duplication;
 - 3. drug-disease contraindications;
 - 4. drug-drug interactions;
 - 5. incorrect drug dosage or duration of drug treatment;
 - 6. drug-allergy interactions; or
 - 7. clinical abuse/misuse.

Standards of Practice – Continuous Quality Improvement Programs 64B16-27.300

- (3)(a) Each pharmacy shall establish a Continuous Quality Improvement Program which program shall be described in the pharmacy's policy and procedure manual and, at a minimum shall contain;-

Standards of Practice – Continuous Quality Improvement Programs 64B16-27.300

- 1. Provisions for a Continuous Quality Improvement Committee that may be comprised of staff members of the pharmacy, including pharmacists, pharmacy interns, pharmacy technicians, clerical staff, and other personnel deemed necessary by the prescription department manager of the consultant of record.
- 2. Provisions for the prescription department manager or the consultant pharmacist of record to ensure that the committee conducts a review of Quality Related Events at least every three months;
- 3. A planned process to record, measure, access and improve the quality of patient care;
- 4. The procedure for reviewing Quality Related Events.

Standards of Practice – Continuous Quality Improvement Programs 64B16-27.300

- (b) As a component of its Continuous Quality Improvement Program, each pharmacy shall assure that following a Quality-Related Event, all reasonably necessary steps have been taken to remedy any problem for the patient.
- (c) **At a minimum, the review shall consider the effects on quality of the pharmacy system due to staffing levels, workflow, and technological support.**

Standards of Practice – Continuous Quality Improvement Programs 64B16-27.300

- (4) Each Quality-Related Event that occurs, or is alleged to have occurred, as the result of activities in a pharmacy, shall be documented in a written record or computer database created solely for that purpose. The Quality-Related Event shall be initially documented by the pharmacist to whom it is described, and shall be recorded on the same day of its having been described to the pharmacist. Documentation of a Quality-Related Event shall include a description of the event that is sufficient to permit categorization and analysis of the event. Pharmacist shall maintain such records at least until the event has been considered by the committee and incorporated in the summary required in subsection (5) below.

Standards of Practice – Continuous Quality Improvement Programs 64B16-27.300

- (5) Records maintained as a component of a pharmacy Continuous Quality improvement Program are confidential under the provisions of section 766.101, F.S. In order to determine compliance the Department may review the policy and procedures and a Summarization of Quality related events. The summarization document shall analyze remedial measures undertaken following a Quality Related Event. The summarization document shall analyze remedial measures undertaken following a Quality-Related Event. No patient name or employee name shall be included in this summarization. The summarization shall be maintained for two years. Records are considered peer-review documents and are not subject to discovery in civil litigation or administrative actions.

Assessment Questions

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Things to note in a QRE form

(Report should be considered confidential)

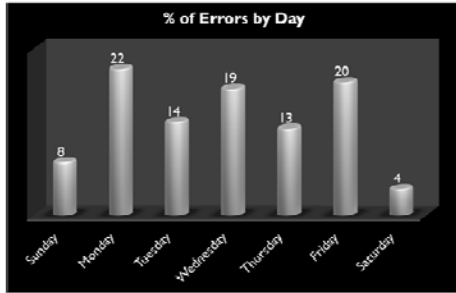
- Date
- Time
- Location
- Reporting staff member
- Brief description of the event
- Type of QRE
 - Incorrect drug, drug strength, dosage form, wrong patient, over or under utilization, interaction, therapeutic duplication, allergy etc
- Action taken
- Staff on duty
- Level of prescription volume
- Turnaround time
- Frequency of interruptions
- Level of telephone call volume
- Environment
 - Lighting, noise distractions etc
- Interpretation
 - Transcription error, look alike-sound alike drugs
- Other factors involved
 - Computer system (including software), fax machine, voice mail, counting machines, IV hood

Things to note in a summary form

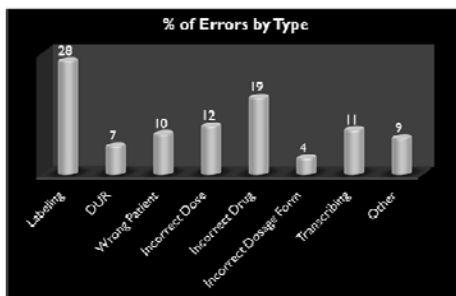
(Must be made available for DOH inspectors)

- Quality related event **category**
 - Drug dispensed to wrong patient, incorrect drug selected, prescribing error noted etc
 - What were the staffing levels, remedial action taken, prescription volume, etc?
 - There must be no reference to patient or staff information in this document.

Sample Summary Reporting Form



Sample Summary Reporting Form



References:

- Journal of the American Medical Association (2006) 1858 – 1866
- The Pharmacy Profession: Transitioning From Prescription Provider To Health Care Manager www.Pharmacist.com
- Preventing Medication Errors: Quality Chasm Series 2007
- <http://www.rwjf.org/reports/grr/041745.htm>
- <http://www.fda.gov/Drugs/ResourcesForYou/Consumers/ucm143553.htm>
- <http://www.ismp.org/Newsletters/acutecare/articles/20090827.asp>
- <http://www.ismp.org/Tools/confuseddrugnames.pdf>
- <http://www.ismp.org/Tools/highalertmedications.pdf>
- Florida Administrative Code 64B16-27.300 - Standards of Practice – Continuous Quality Improvement Programs

Summary