

REDUCING MEDICATION ERRORS THROUGH  
IMPLEMENTING A CONTINUOUS QUALITY  
IMPROVEMENT PROGRAM

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Learning Goals

- 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

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“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

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### 2004 Wall Street Journal Article

- Community pharmacists fill 3 billion prescriptions annually
- 50 million errors are delivered to customers each year
- 3 million of the 50 million mistakes could have caused harm

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### How big is this problem?

- Americans spend \$220 billion/year to purchase 3 billion prescriptions: An additional \$177 billion is spent to correct drug therapy problems
- More prescribing errors occur between 12 noon and 3:00pm than any other time
- One patient per hospital each day will experience a medication error according to ASHP
- Missing doses by far are the most common medication error
- 1.5 million patients are injured each year due to medication errors costing hospitals \$3.5 billion
- 700,000 patients are sent to the ER each year because of harmful reactions to commonly used drugs

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### How big is the problem?

- The National Patient Safety Foundation found that 1 in 3 Americans have been affected by serious medical mistakes.
- One research study suggested that errors occurred more frequently at the beginning of each month

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### How big is the problem?

- The number of deaths reported from the use of OTC and prescription drugs increased from 34,966 (1998) to 89,842 (2005)\*
- A study by the non-profit group US Pharmacopeia determined that morphine-based medications are among the most common errors that lead to death or injury.

\*9/11/2007 Miami Herald

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### Reports From the FDA

- An elderly patient with rheumatoid arthritis died after receiving an overdose of methotrexate--a 10-milligram daily dose of the drug rather than the intended 10-milligram weekly dose.
- 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.

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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

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## 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

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

- **REASON** - Tampa pharmacist participating in the Florida QRE 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

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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

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## 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?

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## Contributing causes of negative quality related events (Video)

- Telephone interruptions
- General interruptions
- Prescriber's handwriting
- Look alike/sound alike drug names
  - Adderall - Inderal
  - Akarpine – Atropine
  - Neurontin – Noroxin
  - <http://www.ismp.org/Tools/confuseddrugnames.pdf>

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## High Alert Medications

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

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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 – “I” – “10”)
  - Q.D. (Once Daily - QID)
  - µg (microgram – milligram)

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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

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Factors the 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

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## 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

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## Negative QRE Prevention

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

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## Negative QRE Prevention

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

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## 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
  - Verify identity of patient or patient's caregiver

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## Negative QRE Prevention

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

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Standards of Practice – Continuous Quality Improvement Programs  
64816-27.300

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

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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.

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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.

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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;-----**

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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.

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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.

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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.

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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. At a minimum, the review shall consider the effects on quality of pharmacy systems due to staffing levels, workflow, and technological support. 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.

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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

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### 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.

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## New Pharmacy Quality Commitment Program

- FPA has available a new continuous quality improvement program
- System is web based for documenting and reporting purposes
- Watch for notices in the Journal and on our website [www.pharmview.com](http://www.pharmview.com)

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## Florida Pharmacy Association 119<sup>th</sup> Annual Meeting and Convention July 8-12, 2009



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## Summary



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