



# GUIDELINES

## GUIDELINES ON PREVENTING MEDICATION ERRORS IN PHARMACIES AND LONG-TERM CARE FACILITIES THROUGH REPORTING AND EVALUATION

### **Preamble**

The purpose of this document is to provide guidance for the pharmacist to take responsibility in medication error detection, reporting, evaluation, and prevention. These guidelines will also provide specific guidance for promoting the development and use of a continuous quality improvement (CQI) system to detect and document, evaluate, report, and prevent medication errors.

### **Background**

Medications are the mainstay of treatment for most chronic conditions, and the elderly take numerous medications--an average of eight per day in the nursing facility setting.<sup>1</sup> Medication errors can lead to serious patient morbidity or mortality, and because drugs are used so frequently, the number of preventable injuries is substantial. ASCP recognizes that medication errors can be minimized by assessing the medication use process, identifying inadequacies within systems, and developing interventions to correct the recognized deficiencies. Consultant pharmacists, in the pharmacy and in the long-term care facility, have a responsibility to develop and participate in this CQI program. The benefits of such a system include increased patient safety, improved quality of care, decreased liability, and reduced costs.

## **Definition**

A medication error is defined as any preventable event that may cause or lead to inappropriate medication use or patient harm, while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems including: prescribing; order communication; product labeling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.<sup>2</sup>

## **Guidance**

Medication errors may occur at any time, from the medication order to consumption by the patient. Reports of medication errors and interventions should be evaluated and incorporated into a continuous quality improvement (CQI) program. The pharmacist must assume responsibility for developing and implementing a plan and for the prevention of medication errors through detection and evaluation. The following guidelines and recommendations will serve as a resource.

## **Medication Error Monitoring and Reporting Program Features**

- Evaluate the medication use process in collaboration with other health care professionals (Appendix A).
- Establish a process for identifying and tracking medication errors.
- Define categories of medication errors, e.g., prescribing, dispensing, administration, monitoring, compliance errors. (Appendix B)
- Simplify process for documenting errors by developing a medication error reporting and evaluation form.
- Increase awareness of medication errors through education and the importance of reporting ALL medication errors, regardless of their suspected significance.
- Establish systems for detecting medication errors in the facility and pharmacy, e.g., med pass observation, random sampling , medication storage survey, etc.
- Involve health care practitioners, patients, and caregivers in the medication error detection and reporting process.
- De-emphasize the focus on the punitive aspects to encourage medication error reporting and focus on the improvement of processes and systems.
- Respect the confidentiality of the patient, facility, and personnel involved in the medication error.

## **Role of the pharmacist**

### **Assessment**

- Examine and evaluate causes of medication errors.
- Analyze aggregate data to determine trends, significance, frequency, and outcomes of medication errors.

### **Prevention strategies**

- Examine processes and develop interventions for reducing medication errors. Potential breakdown points are listed in Appendix A. Some examples of interventions are production changes, instituting bar coding, using different distribution systems, training personnel, standard prescription format, developing protocols for recording and transmission of prescription orders, and developing policies and procedures for proper storage and administration of medication.
- Establish goals and measurable standards.
- Monitor interventions and make necessary changes.

### **Reporting**

- Communicate the results of the medication error program to healthcare practitioners, patients, and caregivers as appropriate.
- Promote reporting of medication errors to a national system for review and analysis, which will result in the development of recommendations to reduce and prevent medication errors and provide benchmarking data.

## **References**

<sup>1</sup>Monette J, Gurwitz JH, Avorn J. Epidemiology of adverse drug events in the nursing home setting. *Drugs & Aging*. 1995; 7(3):203-11.

<sup>2</sup>USP. National council focuses on coordinating error reduction efforts. *Quality Review* 1997;57: 2.

## **Recommendations for additional reading**

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## **Appendix A. Medication System: Potential Breakdown Points<sup>1</sup>**

### **I. Prior to order reaching pharmacy**

#### **A. Administrative**

1. Staffing adequate
2. Staff well trained
3. Equipment adequate
4. Equipment working properly
5. Policies and procedures in place

#### **B. Resident admission**

1. Paperwork completed efficiently
2. Resident assigned identification number in timely fashion
3. Allergies and other required resident information transmitted to record

#### **C. Medication order written**

1. Physician writes order in chart
2. Nurse transcribes verbal order to chart
3. Order written by another method
4. Order technically correct (right chart)
5. Order therapeutically correct
6. Order clear and unambiguous

#### **D. Medication order (chart) to nursing station**

1. Order (chart) returned to nursing station promptly
2. Order (chart) returned to appropriate place
3. Appropriate notification of STAT medication
4. Transmit to pharmacy (routine pick up or FAX)

#### **E. Nursing procedures**

1. Nurse understands use of each medication
2. Order transcribed to MAR/Kardex
3. Discontinued medications noted on MAR/Kardex
4. Discontinued medications separated for return to pharmacy
5. Resident allergies and other required information documented in chart
6. Narcotics signed out properly

#### **F. Clerk check**

1. Order verified complete by clerk
2. Documentation of order completion
3. Order transcribed (copy of chart order), sent to pharmacy
4. Order transcribed to Kardex
5. Chart returned to appropriate location

G. Medication reorder

1. Medication reorders sent to pharmacy

**II. Order in pharmacy**

A. Receipt of order

1. Order received in timely manner
2. Order received clear and unambiguous
3. Information complete
4. Order reviewed for special problems
5. Order processed in reasonable time frame

B. Clarification of order

1. Nurse contacted for unclear order
2. Physician contacted for unclear order
3. Nurse contacted physician for unclear order
4. Physician contacted for inappropriate drug

C. Interpretation of order

1. Order interpreted as physician intended
2. Order interpreted as therapeutically sound

D. Order entry

1. Orders entered on correct resident
2. Appropriate codes used
3. Order entered in timely manner
4. Order entered completely and correctly
5. Pharmacist alerted to allergies
6. Pharmacist alerted to drug interactions
7. Pharmacist alerted to therapeutic duplications
8. Discontinued medications stopped in pharmacy records

E. Medication preparation/storage

1. Medication in stock

2. Compounded medications prepared appropriately
3. Prepackaged medications appropriately labeled
4. Medication is properly stored

F. Medication dispensing

1. STAT medications delivered per policy
2. Medications prepared are correct
3. Medications prepared are appropriately labeled

G. Pharmacist check

1. Pharmacist verifies order is complete
2. Pharmacist verifies label is correct
3. Pharmacist verifies medication administration times are correct
4. Pharmacist follows up on resident allergies
5. Pharmacist follows up on drug interactions
6. Pharmacist follows up on therapeutic duplication
7. Pharmacist verifies medication is correct
8. Medication sent to facility

**III. After order leaves pharmacy**

A. Receipt of medications and forms

1. Medications and forms placed in appropriate location
2. Nurse checks medications and labels in timely manner

B. Maintenance of MAR

1. Kardex checked against original order
2. MAR checked against original order
3. New orders entered on MAR, including monitoring parameters, special instructions/cautions
4. Discontinued orders entered on MAR
5. Administration times verified on MAR

C. Medication administration

1. Medications administered in timely manner
2. Nurse checks medication against MAR
3. Nurse verifies correct dose
4. Nurse verifies route of administration is correct
5. Nurse verifies resident is correct
6. Drug administered therapeutically appropriate
7. Nurse administers dose as scheduled
8. Nurse follows proper procedure for administration

D. Documentation

1. Nurse documentation completed after dose given
2. Nurse documentation is accurate
3. Physician/pharmacist notified of any adverse reaction

E. Resident monitoring

1. Monitoring parameters for each drug understood
2. Monitoring done in timely manner
3. Monitoring is done accurately
4. Resident data is documented in chart/nurses' notes

<sup>1</sup>Feinberg, JL, ed. Med Pass Survey. A Continuous Quality Improvement Approach. ASCP 1993.

## Appendix II. Categories of Medication Errors<sup>1</sup>

### Medication Administration Errors

**Omission Error.** The failure to administer an ordered dose to a resident by the time the next dose is due, assuming there has been no prescribing error. Exceptions would include a resident's refusal to take the medication and failure to administer the dose because of recognized contraindications.

**Unauthorized Drug Error.** The administration of a medication to a resident for which the physician did not write an order. This category includes a dose given to the wrong resident, dose given that was not ordered, administration of the wrong drug or a discontinued drug, and doses given outside a stated set of clinical parameters or protocols.

**Extra Dose Error.** The administration of duplicate doses to a resident or administration of one or more dosage units in addition to those that were ordered. May include administration of a medication dose after the order was discontinued (which could also be considered an Unauthorized Drug Error).

**Wrong Dose Error.** When the resident receives an amount of medication that is greater than or less than the amount ordered by the prescriber.

**Wrong Route Error.** The administration of a medication to a resident by a route other than that ordered by the physician or doses administered via the correct route but at the wrong site (e.g., left eye instead of right eye).

**Wrong Rate Error.** The incorrect rate of administration of a medication to a resident. May occur with intravenous fluids or liquid enteral products.

**Wrong Dosage Form Error.** The administration of a medication in a dosage form different from the one that was ordered by the prescriber. This could include crushing a tablet prior to administration without an order from the prescriber.

**Wrong Time Error.** The failure to administer a medication to a resident within a predefined interval from its scheduled administration time. This interval should be established by each facility and clearly stated in the facility's policies. Different intervals may be established for different drugs or drug classes, based on the therapeutic importance of dosing.

**Wrong Drug Preparation Error.** A medication incorrectly formulated or manipulated before administration, such as incorrect or inaccurate dilution or reconstitution, failure to shake suspensions, crushing medications that should not be crushed, mixing drugs that are physically or chemically incompatible, and inadequate product packaging.

**Wrong Administration Technique Error.** Use of an inappropriate procedure or improper technique in the administration of a drug. Examples of wrong technique errors include incorrect manipulation of inhalers, failure to maintain sanitary technique with medications, not wiping an injection site with alcohol, failure to use proper technique when crushing medications, failure to check nasogastric tube placement or flushing NG tube before and after administration of medication, failure to wash hands or improper hand washing technique used.

**Deteriorated Drug Error.** Administration of a medication when the physical or chemical integrity of the dosage form has been compromised, such as expired medications, medications not properly stored, or medications requiring refrigeration that are left out at room temperature.

### **Additional Types of Medication Errors**

**Prescribing Error.** The inappropriate selection of a drug (based on indication, contraindications, known allergies, existing drug therapy, and other factors); dose; dosage form; quantity; route of administration; concentration; rate of administration; or inappropriate or inadequate instructions for use of a medication ordered by a physician or other authorized prescriber.

**Dispensing Error.** The failure to dispense a medication upon physician order (omission error) or within a specified period of time from receipt of the medication order or reorder (time error); dispensing the incorrect drug, dose, dosage form; failure to dispense correct amount of medication; inappropriate, incorrect, or inadequate labeling of medication; incorrect or inappropriate preparation, packaging, or storage of medication prior to dispensing; dispensing of expired, improperly stored, or physically or chemically compromised medications.

**Monitoring Error.** Failure to review a prescribed regimen for appropriateness, or failure to use appropriate clinical or laboratory data for adequate assessment of resident response to prescribed therapy.

**Potential Error.** A mistake in prescribing, dispensing, or planned medication administration that is detected and corrected through intervention before actual medication administration

**Compliance Error.** Inappropriate resident behavior regarding adherence to a prescribed medication regimen.

**Other Medication Error.** Any medication error that does not fall into a predefined category.

<sup>1</sup>Feinberg, JL, ed. Med Pass Survey. A Continuous Quality Improvement Approach. ASCP 1993.