



Medication errors involving geriatric patients

The leading cause of death for Americans age 65 and over is heart disease. Cancer (colorectal and breast), diabetes, and epilepsy are among the other leading chronic illnesses for senior Americans. According to the Centers for Disease Control & Prevention, the U.S. senior population is expected to grow from 12.4% today to 20% in the year 2050.

The recently released USP MEDMARX 2002 data report shows that more than one-third of hospital medication errors that reach the patient involve geriatric patients. While 96.5% of these errors did not result in patient harm, harmful medication errors in the geriatric population occurred more often than harmful errors for all populations overall (3.47% versus 1.67%), and more than half the reported fatalities (11 out of 20) involved seniors.

The majority of geriatric errors were reported to have originated in the administering phase of the medication use process (MUP). Of the 18,468 errors that originated in the administering phase, 46% (8,408) of these were errors of omission.

The most frequently reported types of errors included omission, improper dose/quantity, and unauthorized drug errors. (See table on page HSE32.) As a percentage of errors, omission errors were seen more often in the geri-

atric population than in the overall population (42.9% versus 25.6%, respectively), whereas improper dose/quantity errors were seen less frequently (18.1% versus 25.5%, respectively).

Among geriatric medication errors, there were six types of errors that were more harmful when they did occur. Prescribing error and wrong route were the two types of errors most frequently reported to result in harm, followed by wrong administration, improper dose/quantity, unauthorized drug, and wrong patient.

order for the antidepressant maprotiline 50mg BID (twice a day). The nurse caring for the patient sent the order on to the pharmacy, where the order was entered as the beta-adrenergic blocking drug metoprolol 50 mg BID in the pharmacy computer system.

The next day the family inquired about the patient's antidepressant drug. The nurse caring for the patient approached a surgical resident and obtained an order to initiate maprotiline 50 mg BID. On day three, while preparing the patient for transfer from SICU to a general surgical unit, the nurse found the patient with bradycardia, hypotension, shortness of breath, and epigastric pain. An on-call resident was summoned, and additional diagnostic tests indicated that the patient was experiencing an acute myocardial infarction.

Upon review of the medical record, the resident discovered the error. The patient's stay in SICU was extended and additional lab and radiological diagnostic tests were required. The patient was eventually discharged from the hospital with a full recovery. A root cause analysis of this case concluded that the type of error was a prescribing mistake caused by illegible handwriting. Other causes that played a role in this error includ-

Types of errors reported in geriatric patients (2002)

Type of error	Count	Percent
Omission error	13,994	42.9%
Improper dose/quantity	5,897	18.1%
Unauthorized drug	3,598	11.0%
Extra dose	2,782	8.5%
Wrong time	2,636	8.1%
Wrong patient	1,578	4.8%
Prescribing error	1,287	3.9%
Wrong drug preparation	983	3.0%
Wrong administration technique	596	1.8%
Wrong route	430	1.3%
Wrong dosage form	423	1.3%

Source: USP MEDMARX

Case illustration

A 75-year-old female who had a history of hypertension was transferred from the operating room to a surgical intensive care unit (SICU). The attending surgeon wrote a postoperative

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ed look-alike/soundalike generic names.

Suggestions to minimize errors in geriatric patients

The above findings indicate that many of the geriatric medication errors occur in the administering phase, often involve omission errors as a type of error, but are most harmful when the type of error is a prescribing error, wrong route, and/or wrong administration technique error.

To address these areas, practitioners, hospitals, and healthcare systems should consider the following:

- Conduct a failure mode and effects analysis (FMEA) on existing prescribing practices, procedures, processes, and policies.

- Construct a flowchart diagram of the existing prescribing practices and processes for: (1) a selected patient care unit, (2) a selected set of high-risk drugs, or (3) a selected set of DRG/ICD codes that are often used with geriatric patients.

- Review possible breakdown

points in “handoffs” (e.g., [a] passing the care of the patient from the attending physician to an “on-call” physician, [b] between the emergency department and the patient care unit, [c] between the multiple physicians involved in a senior’s care).

- Initiate a concerted effort to eliminate illegible handwriting by:

- Implementing a computerized prescriber order entry (CPOE) system

- Establishing a list of unclear or unsafe abbreviations and enforce their non-use

- Establishing an effective “verbal order” policy that is understood by those practitioners who are most likely to engage in taking verbal orders from prescribers

- Transcribing original orders to medication administration records or to pharmacy patient profiles in a timely manner, with minimal interruption, and with independent verification for accuracy

- Require that a therapeutic indication be added to the medication order to distinguish similar drug names from one another

- Encourage hospital patients and their loved ones to be more involved with their individual care by instructing them to:

- State their name before taking any medications and always offer their wrist/ID bracelet for proper identification.

- Ask the healthcare practitioner to identify each medication by name (including IV infusions or piggybacks) before it is administered.

- Inquire when any medication is not given at its regularly scheduled time during their hospital stay.

- Remind their healthcare provider if they have any allergies to certain medications and food (or if they have a health condition that could affect the usage of certain medications).

- Remind their healthcare provider if they are taking any dietary supplements or over-the-counter medications.

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