GRANTMAKERS RESPOND TO Medication Errors

Between 44,000 and 98,000 Americans die each year from medical errors, surpassing the number of deaths related to car accidents, breast cancer, or AIDS. Medical errors are not simply mistakes but rather the "failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim" (IOM 2000).

Medication errors are among the most common medical errors and can occur when a patient receives the wrong medicine; takes an incorrect dose; takes a medicine at the wrong time; or inappropriately combines medicines, food, or beverages (AHRQ 2003). It is estimated that 7,000 deaths per year are the result of medication errors, costing the health system approximately $2 billion annually (IOM 2000).

All patients are potentially at risk for medication errors. A recent study revealed that 55 percent of fatal hospital medication errors involve seniors (U.S. Pharmacopeia 2003). The elderly are especially vulnerable since they are more likely to suffer from multiple medical conditions and be prescribed complex drug regimens. The potential for medication errors increases as the number of drugs administered increases. In fact, individuals age 65 and older have been found to use three times the number of medications as individuals in other age groups (Liu and Christensen 2002).

Medication errors are not limited to in-patient settings. A 1994 study of inappropriate medication prescribing for community dwelling elderly found that 23.5 percent of people 65 years of age and older, or 6.64 million Americans, received at least one of 20 contraindicated drugs. More than 20 percent received two or more such drugs (IOM 2000).

FUNDING STRATEGIES TO REDUCE MEDICATION ERRORS

While medication errors are a serious problem, we do know how to prevent them. Strategies to reduce errors can be as simple as relabeling similarly named medications or including pharmacists on hospital rounds. They can also include more expensive and complex strategies, such as purchasing and implementing new technologies in institutional settings. Grantmakers can play an important role in adopting these and other strategies.

- **Setting standards to reduce medication errors** – California-based organizations are setting standards, including the use of computerized physician order entry (CPOE) systems and linking hospital licensure to medication error reduction plans, that can reduce medication errors if implemented. With the goal of providing practical, real-time information to health care providers and administrators, the California HealthCare Foundation has assisted hospitals in meeting The Leapfrog Group's patient safety standards for CPOE by disseminating a toolkit featuring case studies of 10 community hospitals that have implemented such systems. Through a grant to the California Institute for Health Systems Performance, the foundation has also provided technical assistance to hospitals to meet state licensure standards requiring hospitals to have medication error reduction plans. It is currently reviewing and summarizing these plans and will publish them as a guide for continued work in this area.

  The Blue Cross Blue Shield of Michigan Foundation has also funded work on CPOE implementation. A grant to Spectrum Health, a health system in western Michigan, supported the evaluation of CPOE implementation in its institutions. The evaluation covered in-service education to raise awareness of the importance of reporting all medication errors, collection of baseline data on documented and undocumented medication errors, repetition of the data collection, and analysis of the effectiveness of the CPOE system.

- **Designing and using error reduction strategies** – Encouraging the design and use of error reduction strategies in hospitals is also important. Through its work on enhancing health care quality, The Commonwealth Fund awarded a $151,497 grant to the Health Research and Educational Trust in 2000 for the distribution of a self-assessment tool to hospitals and health systems throughout the country. Approximately 1,000 hospitals were then contacted to see if they used the self assessment tool, to encourage them to do so, and to collect information on the state of medication safety practices. Results revealed that the majority of hospitals were not performing up to recommended safety standards. A need for educational strategies that can be implemented by multidisciplinary hospital teams was also identified. A second grant of $259,415 to the Health Research and Educational Trust, given in 2001, supported activities in several related areas, including communication among hospital staff regarding drug management decisions,

drug labeling and nomenclature, and access to drug information at the time clinicians are making treatment decisions. The grant also supported the convening of quality improvement and medication safety leaders to develop core educational curricula and tools for hospitals. The materials were tested in 20 hospitals.

- **Reducing errors in nursing home and home health care settings** – Medication errors can occur in any health care setting. A number of funders are working to reduce errors in nursing homes and in the provision of home health care. For example, The Commonwealth Fund supported work to evaluate the impact of drug management on medication-related problems in nursing homes. A 2001 grant to Brown University examined the Fleetwood Model, a prospective medication review process developed by the American Society of Consultant Pharmacists. Key features of the program are automated identification of high-risk patients, drug regimen review, direct communication with prescribing physicians and nurses, and coordinated pharmaceutical care planning for high-risk patients. The grant supports a randomized, controlled trial of the Fleetwood Model in 26 North Carolina nursing homes and evaluates its impact on reducing drug-related problems and their associated costs. Because only a relative handful of consultant pharmacists service the large majority of U.S. nursing homes, widespread dissemination of the model, if proven effective, could be beneficial.

  Additionally, the federal Agency for Healthcare Research and Quality (AHRQ) has funded evaluation of the use of bedside computer technology to improve safety practices in nursing home settings. A specific aim of the study, conducted by Westat, was to determine baseline medication safety practices, such as order entry, alerts to prevent adverse drug events, and dispensing. It also sought to elicit organizational and individual barriers to safe medication practices, assess nursing home culture to determine readiness to embrace new quality improvement strategies, and explore the costs of medication administration and errors in nursing homes.

  The John A. Hartford Foundation, Inc. has awarded patient safety grants to reduce medication errors in home health care settings. For example, in the mid-1990s, the foundation awarded a grant to Vanderbilt University to improve pharmacotherapy in home health patients. The project tested whether a model that was successful in improving medication usage in nursing homes could be adapted to home health care agencies treating elderly patients. In collaboration with visiting nurse service organizations in New York City and Los Angeles, a set of procedures was designed to be incorporated by home health care agencies. Nurses and drug utilization review coordinators were also trained to address potential medication problems. As a follow-up to this project, the foundation awarded a $378,821 grant to the Partners in Care Foundation in 2001. The grant supported a dissemination campaign to put the successful medication management model developed through the Vanderbilt University grant into practice in home health care agencies. The grant to the Partners in Care Foundation also supported the development of an implementation manual, as well as its distribution.

- **Developing a knowledge base to reduce errors** – Funders can also play a role in developing the knowledge base for future efforts to reduce and eliminate medication errors. AHRQ, for example, has funded numerous medication error research projects, including a study of patient and system factors that are predictive of hospitalizations due to dose-related medication errors in elderly patients taking high-risk drugs, such as the anticoagulant warfarin. Research such as this has led to the identification of a number of successful error reduction approaches, but more knowledge is needed. Support is also needed to implement error reduction strategies, such as adopting a systems approach to medical error reduction; implementing standard processes for medication doses, dose timing, and dose scales in a given patient care unit; standardizing prescription writing and prescribing rules; implementing computerized physician order entry systems; and including pharmacists during hospital rounds of patient units (IOM 2000).

SOURCES

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