

## Clinical Pharmacists Seek Ways to Address Medication Errors

Thousands of people are affected by medication errors each year. The consequences of these errors can range from minor inconvenience to serious injury or death. Medication errors often occur when patients are taking multiple medications at the same time. In some of these cases, patients are taking incompatible medications, receiving duplicative therapies, or taking more medications than are clinically warranted.

Patients are often unsure of the medications they should be taking, particularly after a visit to a hospital or another health care organization, where medications may be changed, supplemented, or discontinued. To prevent adverse events that may arise from such confusion, The Joint Commission's National Patient Safety Goal 8 requires accredited health care organizations to accurately and completely reconcile medications across the continuum of care.

The use of multiple medications by one patient is called *polypharmacy*, and one negative consequence of polypharmacy is an increased risk for adverse drug events. For example, patients suffering from concurrent medical conditions, such as heart failure and diabetes, will likely need several medications. In some cases, patients may take eight or nine different medications at once.

Further compounding their risk is the fact that care for such patients is often spread over multiple providers. In such cases, the possibility exists that a patient's medication regimen will not be managed appropriately. This can, and often does, result in unintended side effects and dangerous and costly consequences.

In recent years, the clinical pharmacist has played an ever-increasing role in addressing the issue of polypharmacy and preventing medication errors. Clinical pharmacy is a health science discipline in which pharmacists provide patient care that optimizes medication therapy and promotes health, wellness, and disease prevention. Clinical pharmacists have expanded their role from checking for adverse drug interactions and dispensing medications, to proactively assessing a patient's medication list and identifying and resolving potential issues. As technology advances, clinical pharmacists have been able to make a

*Clinical pharmacists have expanded their role beyond checking for adverse drug interactions and dispensing medications.*

greater impact on patient outcomes. Systems such as computerized physician order entry, and automated medication records, can help health care providers—including pharmacists, physicians, and nurses—to be on the same page regarding a patient's medication and quickly identify and resolve potential drug problems.

Across the country, clinical pharmacists and the organizations in which they work are striving to proactively address the potentially adverse effects of polypharmacy and put in place plans, processes, and programs to prevent medication errors. In the summer of 2007, the Jewish Health care Foundation—a not-for-profit public charity that supports healthcare services, education, and research—created a fellowship to support hospital and long

term care-based clinical pharmacists in reducing adverse effects of polypharmacy across Southwestern Pennsylvania. The fellowship was designed to help pharmacists test methods to eliminate adverse effects of polypharmacy and build the capacity to spread the best evidence-based interventions across entire institutions. The following is a discussion of three Pennsylvania-based organizations that are participating in the fellowship program and their work in addressing polypharmacy issues.

### University of Pittsburgh School of Pharmacy

At University of Pittsburgh School of Pharmacy, pharmacists offer patients a comprehensive pharmacy review in the outpatient clinic. Patients make an appointment with a pharmacist for a 30- to 60-minute meeting in the clinic's private counseling area. The pharmacist interviews the patient and reviews his or her prescription medications, over-the-counter medications, and herbal supplements. "We want to determine if the patient understands why he or she is taking the medications and how they should be taken. We also look for potential drug interactions, duplicative therapies, and unnecessary medications," says Karen Pater, assistant professor for the University of Pittsburgh School of Pharmacy. "We also identify patients who may need additional counseling services, such as nutritional counseling, insulin teaching, and lipid management. We can provide basic counseling in our facility and also refer patients for more comprehensive counseling elsewhere in the hospital."

The organization targets its program to patients at high risk for medication

errors, such as individuals older than 65 who have more than three chronic conditions and are taking more than five medications. “Patients hear about our pharmacy review through advertising, word of mouth, physician referral, and so forth,” says Pater. “Many times patients will come in for the review even though they do not get their prescriptions filled here. We provide the service to anyone who is interested in it.”

Through a Jewish Healthcare Foundation’s fellowship, University of Pittsburgh School of Pharmacy is working to implement its counseling program in one of its pulmonary clinics. “A physician in the pulmonary clinic was very interested in working with the pharmacy to help ensure that the medication reconciliation process was effective,” says Pater. The pharmacy is working with the clinic to implement the program and provide pharmacy education and care to patients served by the clinic. “The wonderful thing about pharmacy counseling is you can provide it anywhere—at a clinic, in a patient’s home, or at a physician’s office,” says Pater. Ultimately, the organization hopes to provide its counseling services at many and perhaps all areas of the hospital.

### Western Pennsylvania Hospital

Western Pennsylvania Hospital (West Penn), a 512-bed tertiary care hospital serving the Pittsburgh area, has a pharmacy department that is working to proactively address the potential negative consequences of polypharmacy. The organization is working on a project to implement a comprehensive polypharmacy review process by creating and using a pharmacy assessment tool to examine a patient’s different medications and identify potential problems. To measure the effectiveness of the review process and tool, the organization will monitor several out-

come measures, including patient falls, length of stay, number of medications, and patient costs.


West Penn is starting to implement its initiative on a small scale. The organization has chosen to introduce the tool to the inpatient rehabilitation unit of the hospital. Patients come to the rehabilitation unit from different areas of the hospital, such as the orthopedic unit. Patient length of stay in this area is typically longer than in other areas of the hospital, and the care is more therapy focused. Patients in this unit do not need the level of care provided in many of the other units of the hospital but are also not ready to return home or to the next level of care. “We chose to start with this unit because the relatively long length of stay can give us a better opportunity to analyze the potential effects of the assessment tool,” says Matthew Eberts, pharmacy manager for West Penn Hospital. “We also thought that because all the patients on the unit have come from other areas of the hospital—as opposed to entering from home—the medication lists for the patients would mimic those of patients who were discharged from the facility. Our ultimate goal with this project is to identify potential medication issues and improve patient outcomes across the organization.”

### Allegheny General Hospital

Allegheny General Hospital (AGH), a sister organization to West Penn Hospital, is also working to improve patient care and reduce adverse medication events. The pharmacy department within this 724-bed academic medical center is focusing on improving its discharge medication process. “Oftentimes a patient leaves a hospital with a list of medications that he or she doesn’t really understand. This can be a problem if the list contains duplicate medications or possible medication interactions. Often times a retail phar-

macist will question the medication list, but the patient does not know which medication he or she should take. This can be very frustrating for the pharmacist and the patient,” says Rhonda Horton, clinical pharmacist for AGH. “In addition, if the patient is readmitted to the hospital, it may be difficult to determine which medications the patient was on before the previous hospital visit and which medications were given at the last visit.”

To help address this issue, AGH is working with a specific unit of the hospital and a physician group that is affiliated with the hospital. The clinical pharmacist reviews the discharge medication lists of all patients on the unit that are affiliated with the physician group. The pharmacist will then compare the discharge summary medication list to the medication list in the outpatient chart of the physician’s office. “Our goal is to improve the discharge process in regard to medications, identify potential breakdowns in the process, and address those breakdowns,” says Horton. “We want to start small and address potential issues in a specific patient population group. We hope to implement a series of small changes that can impact outcomes and, once we achieve success, roll out the project to a wider audience.”

While the projects described here are just getting under way, each organization is embracing the expanding role of clinical pharmacists and empowering them to participate in patient care and impact patient outcomes. The work of these pharmacists and their organizations can have a long-term impact on the safety of patients within the hospital and the quality of care provided. 

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### Reference

1. American College of Clinical Pharmacy: *The Definition of Clinical Pharmacy*. <http://www.accp.com/position/Clinpharmdefnfinal.pdf> (accessed Feb. 1, 2008).