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VIEWPOINTS

Count and Be Counted: Preparing Future Pharmacists to Promote a Culture of Safety

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Pharmacists are comfortable participants in the patient safety movement in matters pertaining to prescriptions, medication systems, institutions, and national policy development. The very existence of the profession of pharmacy is rooted in the fundamental tenets of medication safety. Otherwise, in a health care world in which a physician always knew which drug was best to give to her patient and a nurse was always capable of thoughtfully and accurately administering the medication, why involve yet another individual?

Pharmacists are accustomed to systems designed to promote the accurate dispensation of medicines "as ordered" by physicians and other prescribers. In the most sophisticated, large-volume pharmacies, drug information software checks new orders for appropriate dose, drug-drug interactions, and potential drug-disease interactions. Automated dispensing machines select and count the medication based on a unique numeric identifier that has been entered into a computer, with many double checks and cross checks using visual identifiers and bar codes to avoid human error.[1] Several different pharmacists may check the prescription at key points throughout the dispensing process (initial review, alerts, final verification), and often 2 pharmacists must concur before a system alert can be overridden. Many large mail order facilities take pride in a miniscule error rate based on this standard of practice.[2] Accuracy—and, by implication, patient safety—is one of pharmacy's core values.

Fortunately, pharmacists have extended their influence on medication safety from a focus on accurate dispensing to other aspects of the medication use process, including prescribing, patient monitoring, and patient education. The health care quality literature suggests that this broader professional focus benefits us all, not just pharmacists seeking increased job satisfaction. For example, the involvement of a pharmacist on rounds in intensive care units and general medicine units reduces preventable adverse drug events.[3,4] Pharmacist-managed anticoagulation therapy is safer than traditional care.[5] Follow-up telephone contact with a pharmacist after hospital discharge increases patient satisfaction, results in resolution of medication-related problems, and reduces subsequent visits to the emergency department.[6,7] We in pharmacy education have been preparing our graduates for these roles. Students on hospital rotations are trained to provide prescribers with useful information at the time it is most needed—when pen meets paper (or pinkie meets enter key).[8]

Hospital pharmacists throughout the country are actively involved in patient safety committees, and several serve as safety officers. Despite this level of involvement by some pharmacists, pharmacists are commonly overlooked as key and integral members of a safety team by many of our professional colleagues. Why is this so, and how can we incorporate safety issues in our curricula in ways that better prepare pharmacists to make meaningful contributions to a culture of safety wherever they practice?

Few pharmacists are intentionally excluded from safety teams and, in fact, most who volunteer to become involved are welcomed. Why, then, are pharmacists so often overlooked in safety efforts? First, despite the inroads made by "progressive" practitioners, the generally perceived primary role of the pharmacist is quite narrow and related to drug dispensing and distribution. Pharmacists are not always viewed as patient care providers who share in safe practices that directly affect patients. They are invisible or seen as peripheral to the action. For example, in the hospital, most pharmacists do not have direct patient contact and are not held accountable for most medication errors (unless it was a dispensing error). In the community, pharmacists have direct patient contact, but the intercourse is usually quite brief, involving instruction on how to best take the medicines. Typically, pharmacists spend little or no time assessing the patient for therapeutic or adverse drug effects. Second, pharmacists themselves often draw perimeters around

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their sphere of influence to include issues that they encounter in the context of their drug preparation and dispensing roles. "Clinical" pharmacists have certainly become integral members of the health care team and have expanded their influence to include safe, appropriate, and cost-effective medication use, but their understanding of the full medication use process (eg, optimal medication ordering/dispensing systems and regulatory issues) has atrophied. Finally, pharmacists are "fixers" and most are comfortable remaining behind the scenes. If an order is awry for any reason, they do what they need to do to fix it. In the community setting, they are often hesitant to contact physicians to discuss medication errors that they can correct themselves for fear of creating a poor working relationship.[9] The pressures that accompany high work volume do not encourage a reflective environment in which patterns of unsafe practice are raised at a systems level with members of other health care disciplines.

We believe that it is time for pharmacists not only to engage effectively in every aspect of the medication use process and to push the boundaries of our historical practice roles, but also to be recognized—by their professional colleagues and by themselves—for the improved care that they support. Pharmacists count (literally and contextually)—they also should be counted. But if this transformation is to occur, the way pharmacists are trained and socialized will need to evolve.

The pharmacy academy is well positioned to prepare graduates to become more proactive in creating a safer health care environment for patients. The doctor of pharmacy curriculum offered by all colleges and schools of pharmacy in the United States prepares our graduates to screen patients for chronic disease, provide preventative care (eg, immunizations), and partner with physicians and nurses to use evidence-based, cost-effective treatments, teach patients to use medicines correctly, and assess the effects of medicines. We have taught our students well to solve therapeutic problems through the use of case studies and advanced patient care experiences, but we must do more. We can:

- Train students in interprofessional teams and groups that are systematically grappling with quality and safety issues.
- Acculturate students to believe that their efforts to improve medication safety are completely concordant with the goals of all health providers—not a policing function that may potentially put them at odds with their professional colleagues.
- Teach them the communication skills that will be required in order to make the above point true—and, to effectively defuse tense situations that inevitably arise when multiple individuals engage the complex systems surrounding medication use.
- Involve them in the evaluation of actual medication errors from their earliest days as student pharmacists and teach them the anticipatory framework needed to think "root cause" rather than "quick fix." They must be able to develop a plan for systems change that is likely to address the problem and propose a quality assurance and improvement program that can be used to evaluate the effectiveness of the intervention.
- Teach them to recognize the unanticipated limitations of technology designed to improve medication safety (eg, CPOE, bar coding at the points of dispensing and administration, automated dispensing machines).
- Teach them how to best treat and communicate with patients when an error does occur.
- Provide opportunities for students to select a research project that addresses some aspect of safety and requires interaction with multiple disciplines.
- Teach students that the improved communication and teamwork skills that will support cultural change in health care will require them to continually push the boundaries of existing systems and their own preconceptions of the pharmacist's role in medication safety.

The pharmacy academy is less well positioned to independently raise the expectations of all professionals for the roles that future pharmacists will fill, and changing their traditional role is likely to cause some friction. As pharmacists take on additional roles in health screening, education, and chronic disease management in community settings, they may expect to meet resistance.[10] Addressing these issues will require tact, diplomacy, and robust evidence of improved quality and efficiency. None of these suggestions requires major curricular revisions. Instead, they require only a small but thoughtful broadening of our offerings to raise the awareness of our students to the issues surrounding safety, insisting on their accountability at a system-wide level, and providing the beginning skills they will need to work with their colleagues to create a safe environment for patients.

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