

Pharmacist Role in Patient Safety

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Background: The Evolving Role of the Pharmacist

Medication errors are highly pervasive across all settings of care,^[1] with the Food and Drug Administration (FDA) receiving more than 100,000 reports each year of suspected medication error.^[2] Medication error is a broad term used to describe a number of more specific events that may cause, or lead to, inappropriate medication use or patient harm.^[3] These include patient receipt of the incorrect prescription (e.g., receiving the wrong drug or the correct drug but at the wrong dosage), harmful drug-to-drug interactions, errors in the drug preparation or delivery, and inappropriate or overprescribing of opioids. While the occurrence of an adverse drug event (ADE) is not always the result of medication error, it is cause of *preventable* adverse drug events. [Preventable ADEs result from a medication error](#) reaching the patient and causing any degree of harm, and it is estimated that around half of all ADEs are preventable.

Ensuring the safe prescribing and dispensing of medication to patients is a core function of a pharmacist. Pharmacists ensure that patients not only get the correct medication and dosing, but that they have the guidance they need to use the medication safely and effectively.^[4] However, as healthcare providers with expertise and focus on medications, there is an opportunity for the pharmacist to expand their role as patient safety leaders, working with patients and other providers to improve patient care outcomes and prevent medication errors. While traditionally pharmacists have been perceived as “behind the glass” dispensing medications, in the changing healthcare landscape they are increasingly seen as critical partners in the [multi-disciplinary care team](#) addressing complex patient needs. Particularly in response to the [opioid crisis](#), there are some clear opportunities for hospital and [community pharmacists](#) to assume a greater role in pressing patient safety issues, such as appropriate opioid use, access to medications, medication adherence, readmission reductions, and medication safety.

In 2019, several studies were published on PSNet describing patient safety interventions incorporating pharmacists and highlighting several different ways the role of the pharmacist is changing to prevent medication errors and improve patient safety outcomes. This Annual Perspective will examine the evolving role of the pharmacist as a champion of patient safety.

Expanding Pharmacist Care Services to Support Patient Safety

Articles highlighted several ways the existing roles and responsibilities of the pharmacist could be expanded to support patient safety outcomes. For example, community pharmacists have historically provided patients [counseling services and communication](#) regarding potentially unsafe medication combinations. Increasing [medication reconciliation](#) by the community pharmacist following hospital discharge has the potential to reduce adverse events, reduce patient hospital readmissions, and even reduce the risk of death. Similarly, the expansion of pharmacist responsibilities could have a positive impact on the opioid epidemic. One article highlighted that hospital pharmacists are increasingly leading [hospital opioid stewardship programs](#). Increasing the number of [pharmacist-led pain management services](#) and opioid stewardship has the potential to reduce the use of opioids and their associated adverse drug events.

Another way pharmacist responsibilities are evolving is with regards to how, and at what point, in the patient care workflow pharmacists are consulted. Several articles published on PSNet highlighted examples of facilities considering innovative approaches for utilizing pharmacist expertise and how that expertise is incorporated into care processes. For example, one institution developed a pharmacist-led [prior authorization drug request program](#) with the goal of ensuring timely access to medications, decreasing medication misuse, minimizing adverse events, and reducing medication errors. The program resulted in savings not only in drug costs, but also in avoided costs related to potential adverse events that were intercepted by pharmacists. Another institution incorporated pharmacists in the development and [review of medication orders](#) in the discharge workflow to decrease medication errors. As a result, there was a reduction in medication problems identified during medication reconciliation at discharge.

Use of Pharmacists to Address Limitations of Technology

While some technology has enabled pharmacists to expand their roles and has improved aspects of medication safety, pharmacists have also had to learn to work with the limitations of technology to address new risks to patient safety. Several articles published on PSNet in 2019 noted examples of how pharmacist interaction with technology ensures optimal and safe functioning. For example, automated dispensing cabinets in hospital patient care areas support efficient nursing response to change orders but are subject to potential errors. However, [pharmacist review and approval](#) of prescriptions before nurses can access a medicine is critical to ensuring the correct medications are dispensed. With the growth of electronic health records, pharmacist review can be done remotely, minimizing burden, and is an important fail-safe in these systems.

Similarly, computerized provider order entry (CPOE) modules are intended to reduce the need for pharmacist review as they incorporate automated alerts for potential errors. However, prescribing errors that are “rule-based” are more appropriate for detection via CPOE and [pharmacist error checking](#) is still critical for more comprehensive error prevention. Additionally, CPOE can increase the workload for pharmacists as CPOE systems may [limit their ability to directly make changes](#) to requested prescriptions. As such, the suitability of CPOE should be assessed, any limitations should be well understood, and appropriate pharmacist workarounds should be in place prior to implementation to ensure a safe and

efficient system.

Pharmacists' Role in Error Reporting and Feedback

A marker of a [culture of safety](#) is a blame-free environment where individuals are able to report errors or near misses without fear of reprimand or punishment. This type of feedback process is an essential component of ensuring patient safety in clinical care,^[5] and learning from errors can help to reduce future mistakes.^[6] Pharmacists have a unique expertise and knowledge base that can support improvements in medication error rates and play a critical role in the reporting process, such as providing appropriate [feedback to providers](#). This may result in improved prescribing practices and greater team-work as well as improving pharmacist confidence and feeling of self-worth in the care team.

Where Does the Role of the Pharmacist Go From Here?

There are numerous challenges to overcome in order to continue to advance the role of the pharmacist in patient safety activities. However, despite limited scopes of practice, limited research on best practices, burden from administrative activities, IT interoperability challenges, and a lack of patient engagement, there are several opportunities for pharmacist innovation.

Advancing Medication Stewardship

Antibiotic stewardship programs have been proven effective at improving clinical outcomes, reducing adverse events, and reducing antibiotic resistance.^{[7],[8],[9],[10]} Given the success of the antibiotic stewardship model, pharmacist leadership in other medication stewardship programs may increase. As already discussed, pharmacists offer a unique skillset to advance pain and opioid stewardship programs. Other therapeutic areas, such as glycemic control and thrombotics, may also be suitable targets for future programs. As evidence continues to demonstrate the success of stewardship programs, medication stewardship could become a central aspect of the pharmacists' role in ensuring patient safety.

Providing Daily Patient Care

Increasingly, patient safety initiatives emphasize the benefit of a multidisciplinary, team-based approach to patient care and improvement implementation. As previously discussed, when and how the pharmacist is engaged in the patient care workflow is changing, and moving forward pharmacists can expect to increasingly become a part of the daily patient care team. This type of cultural shift is already being seen in academic medical centers and integrated delivery networks.

Focusing on Longitudinal Patient Care

From a healthcare policy and care delivery standpoint, there is an ever increasing focus on providing patient-centered care as a means of increasing the quality and safety of care. As patient care delivery evolves from episodic to longitudinal, organizations will restructure to care for patients across the continuum. This evolution will reinforce the need for team based care to ensure care coordination, patient safety, and optimal patient outcomes. As such, pharmacists may also be expected to address patient

needs at a population level, rather than within a specific setting of care. Playing a greater role in improving care transitions and considering non-clinical patient factors, such as social determinants of health, all support a transition to longitudinal patient care and can serve to enhance pharmacist patient safety services.

Optimizing Health Technology

Technological advances have increased opportunities for pharmacists to be involved in changing the patient safety paradigm. [A review](#) made available on PSNet at the beginning of 2019 captured some of the key technology advances in this space. For example, the use of some technologies, such as [robotics](#) for medication dispensing, can reduce errors and allow pharmacists to spend more time on medication therapy management activities. As pharmacists increasingly take on new roles and responsibilities, the need to [optimize machine learning](#) and clinical decision support systems to create efficiencies and supplement the pharmacist becomes more acute. As a critical user of these resources, pharmacists can be instrumental in implementation planning and evaluation to ensure systems are used most effectively.

As the topic of medication error is continually pushed to the forefront of patient safety initiatives, the role of pharmacists will continue to evolve. This will broaden the opportunities pharmacists have to become integral change makers in the reduction of adverse events and improvement of healthcare safety.

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