

POLICY FORUM: INVITED COMMENTARIES & SIDEBARS

Pharmacy's Impact on Hospitals and Health Systems

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Pharmacy practice is evolving across acute and ambulatory care. Integration of pharmacy services, informatics, and leadership roles enhances safety, efficiency, and financial sustainability. Pharmacists now influence broader health care operations in North Carolina, leveraging clinical expertise and strategic planning to improve outcomes and expand organizational impact.

Evolving Roles of Pharmacists in Hospitals

The organizational and structural relationships of hospitals in North Carolina have evolved over the past few decades, and pharmacy has been changing along with it. In 1990, hospitals in North Carolina were mainly independent, county-owned, and the focus of their activities was inpatient care.¹ The employees and hospital leadership lived in the community they served. The pharmacists within the pharmacy department primarily prepared and dispensed medications in the basement pharmacy. The department's major activities were distribution-focused.

At the start of the 1990s, the decision was made to change the education standard of the pharmacist from a bachelor's degree to a Doctor of Pharmacy (PharmD).² Graduates from the PharmD degree were not satisfied with being in the pharmacy focusing on medication distribution. Their education and training prepared them to be an integral member of the medical team, which was a novel concept at that time. Pharmacists were in the position to help other health care professionals ensure that patients were utilizing medications best aligned with the reason for their hospital admission. These clinical pharmacists were educating physicians and nurses about optimal drug therapy for patients and monitoring the outcome to ensure the medication was effective. Because stand-alone hospitals were predominant in North Carolina during this period, the pharmacist activities were primarily focused on inpatient functions. This included rounding with physicians, writing medication-specific consult notes in the medical record, and educating medical residents on preferred medication regimens.

Pharmacists in North Carolina received regulatory approval in July 2000 to create a designation known as a Clinical Pharmacist Practitioner (CPP).³ This allowed for novel patient care activities for pharmacists under a supervising physician; specifically, a CPP "may implement drug therapy after diagnosis

by a supervising physician, modify drug therapy, and order laboratory tests to monitor drug therapy.”⁴ These activities were happening within the clinic setting, an emerging practice setting for pharmacists after decades in the inpatient setting. Around the same time, hospitals were merging with one another to form health systems.⁵⁻⁸ These are multi-hospital institutions that own clinics and physician groups to form one governing structure.⁹

Along with the changes in the structure of the organization, the pharmacy department had to similarly evolve from a primary focus on medication distribution to integrating outpatient pharmacy activities into their daily functions. Services that were established to serve outpatients included having a retail pharmacy available for discharge, and clinic patients and placing pharmacists in the clinic to provide chronic disease state management and medication therapy management. In addition, departments prioritized reducing readmissions, implementing strategies like medication reconciliation, admission medication histories, discharge counseling and hand-offs during transitions of care.¹⁰⁻¹³ Since it has been demonstrated that lack of access to medications upon discharge to home and medication errors arising from this transition can lead to avoidable readmissions, pharmacy departments became involved in these activities.¹⁴ The involvement also further integrated the pharmacist into the patient care activities of the organization.

Another resulting reality of these growing health systems was identifying economies of scale arising from redundant activities across multiple locations and utilizing technology to replace manual tasks. For example, antimicrobial stewardship personnel might not be necessary at multiple institutions and consolidation could happen. Also, the use of mail order pharmacy might reduce the need for multiple small retail pharmacies. Freeing up these personnel resources would allow for redeployment to other areas of need. These positions that operate across multiple hospitals eventually become system roles, working at a corporate level and reducing the responsibilities at a single hospital. These system-level positions allow for streamlining services, harmonizing the practice of pharmacy across the different institutions, and creating a unifying vision for all the different entities. These large systems also have increased purchasing power because of their size, helping to reduce overall drug expense.

Different Pharmacy Functions in a Health System

The pharmacist functions in numerous critical roles that are essential to hospital operations. In addition to working with the different health care professionals on patient wards, they interact frequently with hospital administration and patients throughout the course of their duties.

Acute Care Services

As described above, the historical role of the pharmacist is preparing and dispensing medications for inpatients. Because every patient in a hospital receives medications, this role will never go away. While the system and processes supporting medication distribution will always change because of availability of different product formulations and development of new automation to assist with medication preparation, there will always be the need for pharmacist functions. In addition to the dispensing role, the patient care role at the patient's bedside has also become an expectation. No one questions the value that the pharmacist brings to the patient's care. Because these roles are considered standard of care, reliability and consistency become the focus, as episodic availability can disrupt services. This can become difficult to sustain because the financial model governing reimbursement for a hospital admission continues to reduce, and there is a shortage of pharmacists.¹⁵ The acute care pharmacist will need to pivot and be agile in how they work to ensure that the cost of care does not increase and medication errors do not occur. Some strategies that are being used are offloading technical functions from the pharmacist to a pharmacy technician and using automation to improve efficiency and increase productivity.

Ambulatory Care Services

As described earlier, the role of the pharmacist in the ambulatory care setting has evolved over the last two decades. With the creation of health systems and the incorporation of physician clinics, ambulatory care services were added to existing acute care roles. Adding ambulatory care allows for more services to be delivered away from the hospital, but to do this well, a health system needs to have adequately resourced outpatient services, and the patient needs to have smooth transitions between the different service levels, as interruptions in medication use can be catastrophic. These types of activities and the importance of medications have allowed the pharmacist to clearly establish their role in this setting.

Different from the acute care setting where pharmacy and medications are viewed as an expense, the ambulatory setting allows pharmacists to drive revenue capture. Pharmacists achieve this through patient care services and outpatient pharmacy dispensing. Hospitals have added retail pharmacies to allow patients to fill their prescriptions following discharge and before going home. These establishments are also options for patients to get their medications following a clinic visit. Substantially greater financial opportunities lie in dispensing medications for infusion clinics, specialty pharmacy, and home health care. Beyond dispensing, if the pharmacist is credentialed and privileged to manage patients under protocol (as a Clinical Pharmacist Practitioner), then they can see patients during scheduled clinic visits. Examples of this include anticoagulation, diabetes management, lipids management, and other chronic diseases.

Not only does seamless integration of all these services across the pharmacy enterprise lead to better patient care, but it also provides opportunities for pharmacy to generate revenue and be further integrated into patient care. The health system needs to become large enough for the pharmacy department to create and launch their own outpatient dispensing services. Instead of outsourcing to another company which will take a portion of the revenue, the pharmacy department within the health system that leads these dispensing activities can use the increased revenue to offer patient care to uninsured and underinsured individuals. Without the economies of scale achieved through a large health system, a standalone hospital would have difficulty generating a return on investment to offer this activity on its own. A larger system can justify it much more easily. This revenue places the pharmacy department in a position of influence within the organization and can positively impact the care these patients receive.

Besides these dispensing and patient care roles, there are other cross-cutting functions that pharmacists play within a health system. A few are listed here that are becoming increasingly important.

Medication Safety

With the complexity of medications growing and a focus on reducing medication errors to make patient care safer, the role of the medication safety officer has grown in importance. This person reviews potential and actual medication error events that are reported and recommends policies and fail-safe systems to prevent the errors from happening in the future. In some hospitals, the medication safety officer reports through the pharmacy department, but they can also report through the patient safety officer. The most important focus is to ensure that reporting of potential and actual medication errors supports a just culture where learning and improving to make care safer is part of the department's culture and considered a necessary action.¹⁶

Supply Chain

The sourcing of medications is becoming increasingly important because of the sheer cost of pharmaceuticals. Besides the continuous issues with medication shortages and concerns with medication safety, the cost of goods for pharmaceuticals continues to increase. Individuals focusing on the supply chain will usually be involved in negotiating contracts and managing drug purchasing across the system. They are involved with decisions regarding what formulation the medication should come in (does the product require compounding or dilution before administration or is it ready to administer in the current form), what manufacturer to purchase generics from, and contracts for automation and suppliers. They are also the first individuals to recognize that a medication is going on shortage because the order is not being fulfilled by the wholesaler and can then alert the pharmacy department

to start preparing alternative products. These individuals also assist with inventory management and verifying that the electronic charge master has the correct prices loaded into the billing system. While individuals that fill this position are usually pharmacists, there is no requirement that they must be.

Pharmacy Informatics

With the increased use of electronic health records and provider order entry, a significant amount of data is generated each day. This data can be used to monitor patient care, ensure resources are being utilized correctly, and create forecasts for future needs. This information can also be used to track drug expense across different cost centers, productivity or workload metrics, patient outcomes from medication utilization, and whether certain tasks like medication reconciliation are occurring in a timely manner. Individuals are needed to maintain the systems that collect data and to build dashboards and reports for people to monitor their areas. Pharmacists who understand both clinical and health informatics are crucial resources as health care becomes more automated and technical.

Pharmacy Leadership

Pharmacy organizations in a system are large, complicated, and dynamic. Leading this group requires strategic planning skills, operational management understanding, financial acumen, and the ability to lead people. Medications touch every patient, so people notice when they are not available or when care is not safe because of medication errors. Accountability of narcotics and managing within a budget are also other areas of high organizational concern. Pharmacy leadership needs to work closely with the senior executives, the legal department, physicians, and nurses. The effective pharmacy executive will understand the breadth of their organization, plan for the future, and be able to effectively engage with senior leadership to request resources and answer organizational needs.

Leadership Positions Outside of the Pharmacy Department

Because of the pharmacist's understanding of the medication use process, they are in an ideal position to take on leadership positions outside of the pharmacy department. Pharmacists, even in North Carolina, have been successful in vice president roles over different operational areas, as chief operation officers, and as chief executive officers. They have also overseen hospital clinics and physician offices. Because of their understanding of operational processes coupled with their clinical training, pharmacists can be successful in many different roles that extend beyond the pharmacy department.

Future Opportunities for Health System Pharmacy in North Carolina

Health care will continue to grow and become more complex. Because medications are used by all patients, pharmacy departments are instrumental in the daily activities of the hospital. Here is a list of considerations for North Carolina hospital and health-system leadership to contemplate regarding pharmacy in the next decade of care.

- Every system should have a chief pharmacy officer (CPO) as a leader of their pharmacy services. Many times, this will also come with a vice president title, demonstrating their seniority within the organization. The person the CPO reports to varies, from hospital leadership, physicians, nurses, finance, and operations. Because of the importance of the pharmacy department to the entire organization, the margin that it provides to the health system, and its overall expense, it is critical that the CPO is a member of the organizational C-suite and leadership team. Being able to participate in the system's strategy and decision-making will ensure complete alignment of the pharmacy department with the organizational goals.
- Because of the sheer amount of data that it generates, pharmacy informatics needs to be a robust part of the informatics team or pharmacy department. These individuals should be analyzing data in a way that allows for actionable decisions that ensure resources are used appropriately with the goal of positively impacting the care of patients. It should also ensure that the care provided is as safe as possible from medication errors.
- The use of pharmacy technicians can offload the technical tasks that pharmacists complete. Hospitals also need to prioritize the use of automation to make care as safe as possible. The medication use process, while having pharmacy oversight over all aspects, should limit the amount of time the pharmacist engages with the dispensing part of it. This will allow the pharmacists to use their education and training for clinical care.
- There needs to be seamless integration between the inpatient and outpatient pharmacists. Because the patient flows between these settings, the pharmacists need to ensure transitions of care are seamless and not limited by reporting silos within the organization.

Conclusion

Pharmacists are a critical part of every hospital. Not only are drugs a large segment of the organizational expense budget, but they are also used on all patients. Pharmacists, with their training, can ensure that medications are prescribed and administered appropriately and that care is delivered safely, efficiently, and cost-effectively. This is a great opportunity for North Carolina hospitals and health systems to utilize their pharmacy resources in this manner.

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