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INNOVATION IN CLINICAL PHARMACY PRACTICE AND OPPORTUNITIES FOR ACADEMIC–PRACTICE PARTNERSHIP

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ABSTRACT

Clinical pharmacy has a rich history of advancing practice through innovation. These innovation helped to mold clinical pharmacy into a patient-centered discipline recognized for its contributions to improving medication therapy outcomes. However, innovations in clinical pharmacy practice have now waned. In our view, the growth of academic–practice partnerships could reverse this trend and stimulate innovation among the next generation of pioneering clinical pharmacists. Although collaboration facilitates innovation, academic institutions and health care systems/organizations are not taking full advantage of this opportunity. The academic–practice partnership can be optimized by making both partners accountable for the desired outcomes of their collaboration, fostering symbiotic relationships that Promote value added clinical pharmacy services and emphasizing continuous quality improvement in the delivery of these services. Optimizing academic–practice collaboration on a broader scale requires both partners to adopt a culture that provides for dedicated time to pursue innovation, establishes mechanisms to incubate ideas, recognizes where motivation and vision align, and supports the purpose of the partnership. With appropriate leadership and support, a shift in current professional education and training practices, and a commitment to cultivate future innovators, the academic–practice partnership can develop new and innovative practice advancements that will improve patient outcomes.

KEYWORDS: clinical pharmacy, innovation, academic–practice partnership, collaboration, pharmacy education, pharmacy practice, research.

INTRODUCTION

Early clinical pharmacists changed professional perspectives and attitudes by positioning themselves as frontline clinicians and valuable druginformation experts. However, as the profession evolved and practice became more sophisticated, so-called clinical pharmacy became the norm, spreading from academic health science centers to community-based health care facilities. Con- currently, the health care system became more complex, fragmented, and specialized. As the population has aged, the demand for health care has increased, but resources to support the advanced training of health care professionals to meet this growing demand have not kept pace. [1] Furthermore, pharmacy's professional degree programs have implemented a more clinical cur-riculum that emphasizes increased experiential education, requiring more teaching and precept-ing time from clinical faculty members who might otherwise create new roles that advance the profession. Ironically, the success of clinical pharmacy may have slowed its pace of innovation.During the early years of clinical pharmacy, innovating was a necessity. [2] Early clinical pharmacists seeking to improve patient care and maximize their impact forged new models of practice. During this pioneering era, rapid growth in drug development and medical research produced significant advances in pharmacotherapy. Drug products became more pharmacologically complex, and the emphasis on achieving cost-effectiveness and optimizing patient outcomes increased. Clinical pharmacist innovators contributed to the development of health-system pharmacy by addressing the increasing health care needs of patients. [3] Professional organizations and early pharmacy leaders concurrently facilitated the evolution of practice standards to stimulate pharmacists to assume important roles in the increasingly complex health care system. Clinical pharmacists led the development of formularies and pharmacy and therapeutics committees, adverse drug event reporting, drug-use evaluations, and drug-use monitoring. In addition, clinical pharmacists began routinely providing specialized services including nutritional support and anticoagulation monitoring and intervention. This growth in the breadth and scope of practice fostered the advent of the doctor of pharmacy (Pharm. D.) degree to meet the educational needs of modern pharmacy practice. Historically, the development of clinical pharmacy practice was shaped by innovators who were continuously reinventing themselves and their practices. Contemporary clinical pharmacy practice has advanced to address important patient and societal needs including curtailing growing health care expenditures, reducing medication errors and adverse drug reactions, and managing the clinical use of narrow therapeutic index drugs. As the profession of pharmacy evolves, it is essential to recognize new opportunities that will drive the next innovations in clinical

pharmacy practice. The growing opportunity for collaboration among academic pharmacy institutions and independent health systems cannot be overstated as a means to provide new incentives and resources for individual clinical pharmacists to change their practice paradigms. In the process, academic practice partnerships can serve as incubators of innovation for a new generation of pioneering clinical pharmacists. [4] A study of hospitals with large Medicare patient populations showed clinical pharmacy services could have a direct impact on lowering the rate of medication errors. In 2000, the Department of Health and Human Services released Healthy People 2010 that contained four goals relevant to clinical pharmacists. These goals fueled the expansion of pharmacy informatics, not only for disseminating drug information but also for establishing reliable systems to ensure appropriate and safe medication use (e.g., electronic prescribing, clinical decision support systems). Certain individual and organizational characteristics contribute to innovation. One report described five discovery skills that distinguish great innovators: questioning, associating, observing, experimenting, and networking (Table 1). Like any other professional, clinical pharmacists can grow complacent and find themselves trapped in their own silos, insulated from their environment. Clinical pharmacists are detail oriented, analytical, and possess a comprehensive knowledge of drug therapy; however, to be innovative, they must also consider the big picture and create strategies for the future. Applying the five discovery skills can allow clinical pharmacists to escape their silos. At the organizational level, innovation begins with the right people. Organizations that have gone from "good to great" did not first ask "where to?" but rather "who?" To foster innovation, an organization should first identify and attract innovators—both internally and externally. Once this human resource is in place, empowering innovators to address and resolve barriers with the assistance, vision, and support of leadership can enable high levels of execution and achievement. [5]

Table 1: Discovery Skills [6]

Discovery Skills	Practice The Idea In Pharmacy
Questioning	Leave the pharmacy "bubble" through field trips, seminars, literature, and experiences in other professions
Associating	Spend 15–30 min each day asking "why" and "what if" questions that challenge the status quo of your practice
Observing	Spend time observing "the job needing to be done" by your customer (nurses, patients, doctors, other pharmacists)
Experimenting	Approach life and work with a hypothesis-testing mindset, implementing interventions and evaluating the result
Networking	Contact the five most creative people you know and ask them how they stimulate creative thinking Hold idea meetings to bounce ideas off each other

Barriers to Innovation [7]

Innovation in health care is often stifled by financial, cultural, and regulatory challenges. Financial barriers include lack of monetary resources to fund innovation (e.g., lack of reim- bursement for clinical pharmacists, inadequate capital for expansion or reinvestment) and eco- nomic disincentives (e.g., billing systems that discourage provision of care through reduced reimbursement). Cultural barriers encompass both individual and organizational challenges, such as the fear of failure (i.e., "playing not to lose," rather than playing to win) and the com- plexity of change (e.g., the multifaceted issues that arise with the implementation of electronic health records and associated clinical decision support tools). Regulatory barriers, including statutory and legislative actions (e.g., state pharmacy practice acts, state and federal laws), as These barriers may potentially be overcome by planning and implementing pilot or "proof-of- concept" projects to first study the impact of process change on a small scale. If a pilot innovation shows promise, its further dissemination can be encouraged. Moreover, this can minimize the impact of financial, cultural, and regulatory barriers, particularly in the short term. Unfortunately, in practice, few innovations are successful initially, underscoring the importance of commitment to rapid-cycle change as well as flexibility among key stakeholders (which can demand an organizational culture shift in some instances). Once an innovation demonstrates value to an organizational process, it has potential to achieve scalability and sustainability, which are important to extending the impact of any innovation. These innovation projects require organizational ownership, support, and a commitment to continuous quality improvement. [8]

The role of the clinical pharmacist continues to expand, but in many settings, the historical demands for balance among professional efforts (e.g., practice, service, research, and scholar- ship) remain. These demands, coupled with additional barriers such as lack of time, resources, or incentives to advance their practice, can leave clinical pharmacists feeling overwhelmed, sometimes leading to career paralysis.

Gaps in Practice Are Opportunities for Innovation

Gaps arising from logistical, financial, personnel, or geographic limitations in clinical pharmacy practice still exist. However, such gaps may spur innovation including deploying technological solutions, such as telemedicine services, to address the deficits. Current initiatives to develop new and innovative practice models and legislative efforts to expand the use of CDTM agreements suggest gaps in clinical pharmacy practice where the profession

missed opportunities to innovate and now must "catch up." Alternatively, gaps may represent opprtunities to learn from other professions and adopt new paradigms through innovation.

Key Ingredients for the Academic–Practice

Partnership to Foster Innovation Leadership Support Innovation will fail without a clear vision and support from leadership. Leaders in academia, health care systems, and organizations must re ognize mutually beneficial opportunities and share their visions for a partnership. They should be mutually accountable for ensuring that the desired innovations are aligned with the mission of each partner. Through strategic planning processes, plans can be developed, prioritized, and implemented to achieve the vision.

Shift in Current Practices in Professional Education and Training

With the changing health care landscape, education must now, more than ever, continue to strive to be one step ahead. The environments in which students will practice tomorrow will be different from those of today. Academic pharmacy must embrace changing models of care delivery and lead innovation to expand practice opportunities. This will require exposing students to learning environments that promote interdisciplinary teamwork and helping them develop the abilities necessary to adapt to changes in practice. One recently implemented innovation in education is "flipping the classroom," whereby students learn course material at home and then use class time to apply their knowledge through case studies, team-based exercises, and other interactive activities.

Academic pharmacy is facing an era of unprecedented opportunity to teach future pharmacists how to practice within a team of health care professionals and use information technology to advance patient care. Experiential education (i.e., advanced pharmacy practice experiences and IPPEs) and graduate pharmacist training (i.e., residencies and fellowships) are perhaps the most common form of academic–practice partnerships in pharmacy.The medical education and graduate medical education models have been more successful in integrating medical students and residents into practice. At present, the accrediting bodies that oversee pharmacy professional education and postgraduate residency training do not stipulate that the training of Pharm.D. students and pharmacy residents must be integrated. However, some suggest that postgraduate pharmacy residency training should include direct involvement with Pharm.D. students and exposure to teaching. [9] The University of North Carolina (UNC) Hospitals and the UNC Eshelman School of Pharmacy built a "Partnership in Patient Care" through a joint strategic planning process. Through this process, it was

recognized that their motivations and outlooks aligned in the area of experiential education; thus they developed a shared vision to make pharmacy students an indispensable and vital part of patient care at the hospital. This shared vision produced a "layered learning practice model" in which pharmacy practice residents team with students to serve as clinical pharmacist extenders, providing patient education, medication reconciliation, and patient profile review. An approach like the layered learning practice model has many potential benefits including the improved integration of pharmacy students and trainees into team-based care and perhaps an easing of current supply/demand concerns related to experiential education and residency training. [10]

Cultivation of Future Innovators

To form a true academic–practice partnership capable of producing innovation in education, practice, and research, both partners must be responsible for cultivating innovators. To innovate, individuals need creative latitude, time, and resources from the academic–practice partnership. Unlike those employed in other sectors of the profession, faculty members have a unique opportunity to exercise their academic freedom to spark innovation. Historically, indviduals leveraged this academic right to help academia serve as an incubator for innovation. Often, however, for individuals employed in health care systems and organizations, research or creative activity is not promoted because generating new knowledge is typically not one of their core missions. Yet to continually advance the profession, pharmacists in all practice settings need to be encouraged to engage in crea-tive or entrepreneurial activities. Ideally, the goals of academic–practice partnerships will be fulfilled when the efforts of faculty and their partner-based collaborators produce innovation and successful outcomes, followed by dissemination of the results of these pursuits. This benefits academia and its partner institutions and advances the profession. [11]

It is critically important that the clinical pharmacy discipline engage mentors and leaders within academia, health care systems, and organizations to help others bring innovation and continuous improvement to their daily professional efforts. As described previously, with the changing landscape in health care and higher education, there are many opportunities for the properly motivated and incentivized individual to pursue innovations in clinical pharmacy practice, education, and research. [12]

Key Points [13]

This article examined how academia and health care systems and organizations might collaborate more optimally to develop new and innovative practice advances that improve patient care and patient outcomes. In doing so, the following key points are worth further mention.

- Clinical pharmacy has a rich history of visionary pioneers who advanced practice through innovation. Their efforts helped develop clinical pharmacy practice into a patient-centered discipline recognized for its contributions to improved medication therapy outcomes. However, individual practitioners are less likely to drive practice innovation today.

- Opportunities to foster disruptive innovation within the profession exist at both the individual and the organizational level, but existing barriers lead to missed opportunities by encouraging or incentivizing complacency.

- "Missed" opportunities (i.e., gaps in clinical pharmacy practice) can also induce innovation. The academic–practice partnership is a mechanism to address these gaps and promote practice innovation through collaboration and symbiotic partnerships that emphasize continuous quality improvement.

- A culture change is needed to optimize the academic–practice partnership so that it is capable of addressing new paradigms of health care delivery through innovative practice. This culture change must include incentives to overcome common barriers for individuals and organizations and should align with patient-centered outcomes and high-quality medication management.

- The academic–practice partnership can foster innovation by providing effective leadership, adopting new approaches to professional education and training, and cultivating future innovators. To achieve an effective partnership, the partners must achieve a shared vision, collaborate in the education and training of the next generation of clinicians, and mutually embrace the responsibility for cultivating future innovators.

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REFERENCES

1. Manasse HR. Health-system pharmacy's imperative for practice model change. Am J Health Syst Pharm, 2012; 69: 972–8.
2. Franke DE, Latiolais CJ, Franke GN, et al. Mirror to hospital pharmacy: a report of the audit of pharmaceutical service in hospitals, a study project conducted under grant W-45. US- PHS. Washington, DC: American Society of Hospital Pharmacists, 1964.
3. Bond CA, Raehl CL. 2006 national clinical pharmacy services survey: clinical pharmacy services, collaborative drug management, medication errors, and pharmacy technology. Pharmacotherapy, 2008; 28: 1–13.
4. White EV, Latif DA. Office-based pharmacy practice: past present, and future. Ann Pharmacother, 2006; 40: 1409–14.
5. Elenbaas RM, Worthen DB. Clinical pharmacy in the United States: transformation of a profession. Lenexa, KS: ACCP Publications, 2010. 13. Allen DD, Smith KM. A hand and glove approach to pharmacy experiential education and residency training. Am J Pharm Educ, 2010; 74: 65.
6. Allen DD, Smith KM. A hand and glove approach to pharmacy experiential education and residency training. Am J Pharm Educ, 2010; 74: 65.
7. Bluml BM, McKenney JM, Cziraky MJ. Pharmaceutical care services and results in project IMPACT: hyperlipidemia. J Am Pharm Assoc, 2000; 40: 157–65.
8. Kohn LT, Corrigan JM, Donaldson MS (Institute of Medicine). To err is human: building a safer health system. Washington, DC: National Academy Press, 2000.
9. Bond CA, Raehl CL. Clinical pharmacy services, pharmacy staffing, and adverse drug reactions in United States hospitals. Pharmacotherapy, 2006; 26: 735–47.
10. Wang L, McLeod HL, Weinshilboum RM.Genomics and drugresponse. N Engl J Med, 2011; 364: 1144–53.
11. Tachakra S, Wang XH, Istepanian RS, Song YH. Mobile e- health: the unwired evolution of telemedicine. Telemed J E Health, 2003; 9: 247–57.
12. Sams A. The flipped classroom: shedding light on the confusion, critique, and hype. The Daily Riff, November 2011; 11. Available from: http://www.thedailyriff.com/articles/the-flipped-class-shedding-light-on-the-confusion-critique-and-hype-801.php.Accessed March 9, 2013.
13. Hammond RW, Schwartz AH, Campbell MJ, et al.Collaborative drug therapy management by pharmacists—2003. Pharmacotherapy, 2003; 23: 1210–25.