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VIEWPOINT

A Coming Disruption in Pharmacy?

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The 1990s were a tumultuous time for academic pharmacy with assorted colleges and schools offering various iterations of pharmacy degree programs, from a 5-year, entry-level baccalaureate degree to 6-year doctor of pharmacy (PharmD) track-in programs to the traditional 2-year postbaccalaureate PharmD. After much debate and despite a lack of clear consensus on the future training requirements for pharmacists, the profession endorsed an entry-level, 6-year PharmD degree as the sole credential for pharmacy practice. Prospectively, beginning with students entering pharmaceutical studies in 2000, the baccalaureate degree became insufficient to practice pharmacy in the United States.

Much has changed in both health care and academic landscapes since the early debates surrounding pharmacy academic degrees. It seems only yesterday that the Pew Health Professions Commission recommended closing 20 to 25 percent of US pharmacy schools with a corollary reduction of pharmacy graduates by 10 to 25 percent by 2005.[1] The commission surmised that these changes would be needed in order to avoid an excess of 40 000 pharmacists. The surplus was projected to be an inevitable result of automation and centralization of drug-dispensing functions. Since the 1995 Pew report, the profession has undergone manic workforce swings marked initially with significant growth and followed by a rebounding contraction. These fluctuations were followed in short order by a significant and somewhat sustained growth in the number of US schools and colleges of pharmacy. At the same time as the increase in number of schools, existing and established schools almost unilaterally expanded class sizes to varying degrees.[2,3] Recently, in most areas of the United States, the workforce demand for pharmacists has been contracting, in contrast to the still increasing number of graduates. By 2016, 14 000 to 15 000 PharmD students are expected to enter the workforce.[4] This will represent more than double the number of graduates produced in 2001, leading some to predict a looming joblessness crisis for the profession.[4]

In addition to the obvious effects of a pharmacist surplus, the academy should be cognizant of additional forces that may shape pharmacy practice. A rapidly evolving health care environment, increasingly influenced by factors such as advances in technology and health care reform, may equally, if not more significantly, influence pharmacy. The confluence of external health care factors and a surplus of pharmacists may herald seismic, significant, and sustained changes for the profession. We argue that both subtle and obvious signs of a disruption may already be evident. Salaries across the profession, especially within the ambulatory/community sector, have largely stabilized. Emphasis in the ambulatory sector seems to be increasingly moving toward medication therapy management and associated reimbursement programs with a de-emphasis on dispensing and associated fees. Certainly, continuing reductions in dispensing fees paid by pharmacy benefit management organizations is evidence of this; in some cases a $0 dispensing fee is employed. Pharmacy technicians continuing to assume greater roles in drug dispensing is congruent with ever growing credentialing efforts across the United States.[5] Bar-coded robotics dispensing systems continue to proliferate in hospital systems and are an increasing part of community pharmacy, as well. Finally, progressively complicated and costly drug regimens are creating an emerging market for specialty therapeutics that will require highly focused expertise and experience.

The current model of using over-qualified pharmacy practitioners for the sole purpose of drug dispensing may be replaced by a new 2-tier paradigm involving "dispensing" and "nondispensing" pharmacists. Dispensing pharmacists would supervise a core of pharmacy technicians that provide high-volume, product-focused services. As pharmacy technician credentialing continues to increase, these "super technicians," combined with robotic systems, might even replace the functions of the dispensing pharmacist. Nondispensing, clinically proficient pharmacists, many with residency training and appropriate credentials, would focus on clinical implications of drug therapy, health care outcomes, and other direct patient care-related activities. These clinicians might also meet current primary care gaps within the United States by managing basic and chronic care of patient populations. The substantial patient assessment and care management training occurring at many pharmacy schools prepares pharmacists to assume this more significant patient care

role. A significant salary differential, commensurate with credentialing, training expectations, and differences in clinical service expectations might develop between these 2 "classes" of pharmacists. Subtle undertones of this change may be reaching students, as most schools can attest to significant increases in postgraduate year 1 (PGY1) and 2 (PGY2) program interest.[6] Competition for these limited positions continues to escalate at a remarkable pace as does the number of applicants seeking certification through the Board of Pharmacy Specialties.[7]

Many within the academy continue to question the wisdom associated with the decision to adopt the entry-level PharmD. The potential arrival of a 2-tier system might represent a back-to-the-future moment for the profession, echoing the bachelor of science in pharmacy/postbaccalaureate PharmD era. Some might debate whether the 2-tier system would be a positive or negative proposition for the profession. Regardless, such change would represent a significant disruption in the profession—that is, a complete bifurcation in how we think, behave, go about business, and learn. Disruptions in a process, organization, even a profession are typically associated with improved efficiency, new output, creativity, and tangible gains. However, disruptions are simultaneously inventive *and* caustic. In any disruption, there will be consequences for practitioners, students, and graduates.

Schools should be keenly aware of subtle and obvious changes occurring within pharmacy. Particular attention should be paid to the future role of pharmacy, if and when a disruption occurs. Now more than ever, curricular administrators must be creative and steadfast in their approaches to pedagogy and curricular design. If the profession moves towards a 2-tier system, there will be significant collateral damage to institutions not properly positioned, prepared, or poised to adapt. Certainly, not all schools' financial models support a positive return on investment for graduates who would assume a dispensing pharmacist role that pays significantly less than current salaries. The academy might be well served to begin discussions about possible disruptions within the profession and how to adapt. Ignoring the signs and symptoms of change would be a disservice to our educational institutions, students, and alumni.

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