STATEMENTS

Are We Producing Innovators and Leaders or Change Resisters and Followers?

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Education seems to be in America the only commodity of which the customer tries to get as little he can for his money.¹

The Scottish social philosopher Adam Smith, who gave us the concept of the “invisible hand” as a force in society, is often credited with articulating the importance of the unintended consequences of actions, especially those taken on a societal scale. History is replete with examples of public policy that, while intended to address a societal need, has given rise to long-term, unanticipated negative consequences. For example, the generous donation of clothing to certain regions of Africa has decimated the local textile industry, exacerbating rather than relieving poverty.²

In the healthcare arena, 1 of the commonly cited unintended consequences of our educational and practice efforts is the lack of innovation in health care and healthcare delivery. The Institute of Medicine Roundtable on Value & Science-Driven Health Care, whose purpose is “the development of a learning healthcare system that is designed . . . to drive the process of discovery as a natural outgrowth of patient care; and to ensure innovation, quality, safety, and value in health care,” has noted that “although medical care in the United States has the capability to be the world’s best, it currently falls short. Far too often, care that is important is not delivered, and care that is delivered is not important.”³ The Roundtable was refer-

ring to health care in general, but we believe that their concerns are especially applicable to pharmacy practice and education.

Over the past 2 decades, pharmacy education has undergone a major transformation with the shift to a doctor of pharmacy degree for entry-level practice. This change was made because of the prevailing belief at the time that pharmacy practice and pharmaceutical science were advancing to the point where additional education was required to ensure that the pharmacy profession maintained its leadership role in medication therapy management and ensuring the safety of drug therapy.⁴ The result of this educational shift was a number of changes in how we recruit, educate, and place our students. While each measure enacted has been intended to advance our education of new professionals, it is legitimate to ask if these well-intentioned actions are giving rise to inadvertent negative consequences. In particular, we suggest that pharmacy educational programs are at risk of producing not the leaders and innovators needed to change health care but rather followers who will inappropriately tend to preserve the status quo in health care and pharmacy practice.

We believe there are several trends promoting this concern. These are widespread and affect our key processes: admissions/recruitment, curricular design, programmatic evaluation, and preparation/advising for career placement. Our concerns begin with how we select students for admission to our programs. There is significant research published on the various admission processes used in colleges and schools of pharmacy. The research indicates that our quantitative measures (eg, Pharmacy College Admissions Test scores, prepharmacy grade-point average [GPA],

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math/science grades) are good predictors of academic success, defined as professional program GPA, graduation rates, and success on national board examinations.⁵⁻⁹ Although most schools use these measures as key predictors for admittance, there appears to be little research on how good these measures are at predicting applicants' future leadership potential or their likelihood of becoming change agents for the profession.

Fortunately, the requirement of the Accreditation Council for Pharmacy Education (ACPE) that all potential enrollees be interviewed enables us to combine these quantitative criteria with qualitative assessments. Interview approaches appear to vary widely and the ability of these approaches to predict students' academic performance or, more importantly, their potential for leadership or innovation is not clear. Some researchers who have tried to examine the structure of the interview process have noted significant variation, including in who actually does the interviewing.^{10,11} Others have suggested possible factors that should be considered, such as students' past experiences in healthcare settings or their commitment to serving the public.¹² Students have been asked to prepare (either in writing or during the interview) self-reflective statements about their career aspirations with the intent of gaining further insight into their "character."¹³ Some research suggests that developing interview scores based on these factors can be predictive of involvement in student organizations or community service during pharmacy school, which may be considered an indicator of future leadership or innovation potential.¹⁴

Other professions also wrestle with determining the appropriate assessment for admissions. For example, a recent perspective published in the *New England Journal of Medicine* on the Medical College Admissions Test (MCAT) describes how the test has changed to identify the personal characteristics that are needed to manage patients in future healthcare settings, such as an understanding of human behavior and cultural diversity and a broad view of ethical behavior.¹⁵ The MCAT's limitations in testing noncognitive aspects of personal qualities and values are also noted; the interview process and a thorough review of the applicants' educational and cultural background have been suggested to be more predictive of their leadership qualities and their potential to significantly impact health care. In the professions of nursing and dentistry, the value of the admission process in selecting the right students, especially in establishing a diverse pool of enrollees to address the assorted needs of their future healthcare populations, has also been questioned.^{16,17}

While this research on the interview process has been helpful in our selection practices, our understanding of how to identify the potential leaders and innovators of

the future is still unclear and perhaps misdirected. For example, our admissions processes currently seem to be highly weighted (perhaps even exclusively) to students who can demonstrate a clear commitment to traditional roles for pharmacists through their extracurricular activities prior to entering pharmacy college or school. Based on experiences related by our alumni, many of our most successful graduates clearly would not pass the "commitment to the profession" bar in place for admissions today. Does our focus on commitment to traditional roles in the application process inadvertently exclude some of our more creative applicants who are likely to become the change agents of the future?

Even if we are successful in attracting innovative students, the current pedagogical culture of many of our programs may also present a barrier to encouraging their further development. Too often, our viewpoint in the academy is to get students to master a relatively narrow set of skills and knowledge that focuses on clinical practice as we currently understand it. This viewpoint tends to minimize the professions' past history of evolving new and different roles for pharmacists.

This narrowness is inadvertently encouraged by our current method of programmatic evaluation through the accreditation process. The increasingly prescriptive approach of accreditation seems to focus on ensuring that all colleges and schools meet minimal and detailed standards of competency. We believe this approach discourages experimentation and innovation in education and stifles student creativity. Colleges and schools of pharmacy seem to be encouraged to concentrate on meeting a prescribed list of competencies and not continuing our past practices of experimenting with novel ways to educate our students. This is of special concern considering that a growing number of new programs are using this check-box rubric as the sole platform for their program designs.

As Koda-Kimble and Speedie noted several years ago:

Somewhere along the line, ACPE has permitted formulas to creep into some, if not many, of its standards. Formulas are fairly easy to write, and once written, they are easily understood and followed, if only for fear of sanctions. Their breach is also easily detected, and they are therefore easily enforced. The problem is that formulas, like traffic laws, are inflexible. They do not allow for deviation, even if justified. Worse yet, formulas do not permit experimentation. Without flexibility and experimentation, everything in pharmacy education is essentially the same and nothing evolves. If the current standards had been in place 40 years ago, clinical pharmacy never could have been invented.¹⁸

Subsequent to these observations, some change to the requirements has occurred, and each of the programs led by

the authors has successfully completed the accreditation process. Nevertheless, we continue to believe that the design of the accreditation process has deleterious effects on the preparation of future pharmacy leaders.

It is instructive to compare accreditation standards among health professional programs. Table 1 summarizes the number and length of the published standards for accreditation of numerous health professions programs. Review of these data readily demonstrates that ACPE exceeds all other programs in the exacting and prescriptive nature of its standards, as well as the simple volume of paper required to articulate those standards. We are unaware of any basis to justify this voluminous approach to accreditation.

The evaluation instrument provided for site visits as a part of ACPE accreditation contains 249 separate boxes for the team to check in assessing the program. Some of these items ask for assessments that lack defined measures or boundaries, and evidence of their impact on outcomes appears to be lacking. There are an even larger number of check boxes under documentation and data, as well as under comments on each standard. This excess promotes what we believe to be an unhealthy and intimidating approach to site visits that understandably discourages the undertaking of meaningful educational experimentation in pharmacy programs. Ironically, the standards that do not seem to be vigorously enforced by ACPE require all colleges and schools to embrace scholarship and research as part of their mission and vision and require faculty members to be productive in scholarship and research, including educational research, as demonstrated by publications and other forms of dissemination.

This may be because of the difficulty in developing metrics for these standards; however, if the academy wants to model innovation and leadership to its students, an active program of research is essential.

Regardless of our success at selecting and producing innovators, we are concerned about the possible narrowness of the students' view of the various pathways available for successful pharmacy careers. These students have many choices after graduating, including additional educational opportunities (eg, a master's or doctor of philosophy degree) or advance practice experiences (eg, residencies or fellowships). Our academic institutions appear to be effective in exposing students to the route that requires additional education or training, perhaps because many of our faculty members have that background. This approach is encouraged by the American College of Clinical Pharmacy and the American Society of Health-System Pharmacists, who have created position statements suggesting that all pharmacy graduates who are involved in direct patient-care settings in hospital-based systems should pursue advanced practice education (ie, first-year residency for all clinical practitioners and specialty residencies for advanced clinical specialists).¹⁹⁻²¹ Our success in promoting this choice is underscored by the increasing numbers of pharmacy students who have applied for residencies in the past few years, perhaps having been influenced by the changing job market.²²

We are less successful at exposing our students to the broad range of opportunities for those who choose not to pursue additional education or training. This failure is especially important because a majority of pharmacy graduates make this choice. They are joined by the large

Table 1. Length of Accreditation Standards for Various US Health Professional Programs

Profession	Agency	No. of Standards	No. of Pages of Standards	Year of Standard
Optometry	Accreditation Council on Optometric Education (ACOE)	8	13	2009
Occupational therapy	Accreditation Council for Occupational Therapy Education (ACOTE)	3	14	2011 ^a
Pharmacy	Accreditation Council for Pharmacy Education (ACPE)	30	57	2007
Physician assistants	Accreditation Review Commission on Education for the Physician Assistant, Inc (ARC-PA)	10	16	2010
Veterinary medicine	American Veterinary Medical Association Council on Education (AVMA COE)	11	5	2011
Physical therapy	Committee on Accreditation in Physical Therapy Education (CAPTE)	^b		
Nursing	Commission on Collegiate Nursing Education (CCNE)	4	11	2008
Dentistry	Commission on Dental Accreditation (CODA)	6	20	2010
Podiatry	Council on Podiatric Medical Education (CPME)	8	36	2011
Medicine	Liaison Committee on Medical Education (LCME)	17	24	2011

^a Draft.

^b Organization uses program evaluation criteria and not standards.

number of disappointed students who apply for residencies but are not selected because of the limited slots available.²² As DiPiro notes,²³ “Graduates’ career choices are still constrained by their limited knowledge and understanding of all the directions that are open to them and because of the way pharmacy education is channeled along traditional paths.” Besides producing a large number of disappointed students, this narrow career planning results in missed opportunities for future pharmacists, especially in nontraditional or nonpractice-oriented careers (eg, hospital CEOs, owners of medical communication/advertising firms, and key regulatory officers for small biotech companies).

Several colleges and schools of pharmacy have attempted to address this issue through courses and other programs. These include creating a professional development series in which outside speakers from a variety of careers are invited,²⁴ summer programs to orient students to research or innovative practice sites,²⁵ courses exposing students to practicing in other cultures,²⁶ enhanced mentoring opportunities with alumni or faculty,²⁷ and student leadership retreats.²⁸

Despite these innovative attempts, we believe that insufficient progress has occurred in preparing our students for the opportunities available to them after graduation, particularly nontraditional career pathways. DiPiro notes: “Curriculums that only focus on preparing graduates to fit the mold of pharmacy ‘generalist’ may produce graduates who are competent in many traditional functions but not in demand in the healthcare workforce of the future. Clearly, we need to do more to make students aware of their career choices with more discussion of new opportunities for pharmacists.”²³

While we will be addressing these issues at our respective institutions (as well as collectively through our interinstitutional organization, the Committee on Institutional Cooperation), we feel these actions will not be sufficient to impact the whole pharmacy educational effort. Hence, we put forth the following recommendations for a national movement:

- (1) *We urge the American Association of Colleges of Pharmacy (AACP) to lead the Academy in an introspective assessment of current admission, recruitment, and interview practices to critically assess whether these activities are effectively identifying the individuals who will likely be the leaders and innovators of the future healthcare delivery system.* The high student-success rate in our programs makes it difficult for any 1 organization to assess the impact of applicant characteristics on academic and postgraduate success. Thus, the sharing of

best practices across the Academy may be the desired route to assure recruitment of students who will be the change agents of the future. A collaborative national project across programs may provide useful data in the assessment of current admissions processes. The AACP and other pharmacy organizations should also encourage more scholarship on the type of skills needed to become a successful leader in pharmacy practice.

- (2) *We strongly urge the ACPE to critically evaluate and streamline its standards and program assessments.* Programmatic evaluation must focus on what is really important: broad educational outcomes and innovations that adapt to the changing needs of the profession. Interestingly, this focus has been articulated in the introduction of the new accreditation system for graduate medical education.²⁹ The perspective expressed in an adage often attributed to Albert Einstein is helpful to keep in mind: “Not everything that counts can be counted, and not everything that can be counted counts.” The key question that should be asked is whether we are successfully preparing pharmacy students for the wide variety of roles and career tracks available to them now and in the future. As ACPE has initiated a review of accreditation standards, now is the appropriate time to reorient the process to one focused less on details and more on outcomes.
- (3) *We urge ACPE to further expand its efforts to allow and proactively encourage experimentation in pharmacy education.* While public statements by ACPE staff members provide unquestioned support for experimentation, a clearly articulated path for doing so without jeopardizing accreditation would provide stronger encouragement for such experimentation. For example, we recommend that ACPE explore a system of exceptions to standards granted to long-accredited established programs for the purpose of experimentation, coupled with an obligation to formally measure and publish the results of any experiment. One fruitful area to explore is the expectations for acceptable introductory pharmacy practice experience and advanced pharmacy practice experience sites, including the fractional requirements for core experiences. Current expectations are driven by the context of present-day practice and leave marginal flexibility. For example, the current

requirement that all core practice experiences take place in the United States is out of step with the increasing globalization of education, health care, and the biomedical industry.

- (4) *We urge that the ongoing national/international discussions (especially through the Joint Commission on Pharmacy Practice) about the future of pharmacy practice and health care include a focus on how to prepare students to be innovative and create nontraditional career paths.* This discussion must go beyond our core role as healthcare practitioners to include non-practice positions for which a pharmacy degree would be useful (eg, managed care or hospital administrator, pharmacy benefits management, small business owner, or member of a pharmaceutical product marketing team). In particular, students need greater exposure to innovators, perhaps through nontraditional practice experiences, cooperative programs, or summer internships. A particular focus should be on how to prepare students for or expose them to interdisciplinary, team-based care, population-based health, and the global delivery of healthcare services.

One of the great privileges we have had as deans of longstanding pharmacy programs whose alumni span over a century is the opportunity to engage with graduates across a wide spectrum of ages and career paths. We have been struck by the frequency with which our graduates have launched or been enabled toward a nontraditional, entrepreneurial career path specifically because they were exposed to and spent significant time in areas of study beyond those which would prepare one for a traditional role. We believe that the fast pace of change, increasing opportunities for pharmacists in health care, and explosive growth of new educational programs all necessitate that we ensure the continuation of such exposures in the future. Care must be taken to minimize the unintended negative long-term consequences of our current efforts to guarantee competencies for existing practice settings. Otherwise the “invisible hand” (and our own lack of imagination) could lead us to an end no one truly desires. The profession of pharmacy will suffer greatly if we create an educational system that produces followers and obstructionists rather than leaders and agents of change.

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