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CPPI Practice Forum

Preparing for the next generation pharmacists

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Abstract

To address the changes in health care and the needs of society related to medicines, we must redefine the profession of pharmacy. We have defined the next generation pharmacists (NGP) as “a health care provider and change agent on the interprofessional health care team, personalizing medication use, managing safe and effective medication systems, and creating healthier communities.” Schools and colleges of pharmacy should thoroughly examine their curriculum to ensure it is preparing pharmacists for this future. By creating a vision for the NGP and implementing the best curriculum, we ensure that pharmacists of the future will be up to the challenge of our society’s health care needs.

Keywords

Pharmacists; Education, Pharmacy; Schools, Pharmacy; Curriculum; Pharmaceutical Services; Medication Systems; Patient Care Team; Delivery of Health Care, Integrated; Interdisciplinary Communication; Public Health

This is not the best era for traditionalists in pharmacy. So much of what I learned in pharmacy school no longer is relevant, or it has been supplanted with new technologies and health care approaches. The science of medicine, delivery of health care, extent of corporatization, and health care financing are far different from what we envisioned years ago. Add to that the greater availability of health care data in electronic medical records and information for the health consumer. However, these changes by no means lessen the need for pharmacists. In fact, given all the problems that people have with medicines, there is greater need than ever for pharmacists’ skills and knowledge.^{1,2} No one can say that problems related to preventable adverse drug events, medication errors, drug misuse and addiction, poor adherence, high medication expense, and counterfeit or adulterated medications have gone away. To address these problems and the reality of what has changed in health care will require that we redefine our profession.

At the Virginia Commonwealth University School of Pharmacy, our faculty have set about the task of defining the next generation pharmacists (NGP) and determining the curriculum that will be needed to produce such individuals. The big goal is to ensure that pharmacists of the future are well-prepared to address the needs and problems related to medicines using the latest in medical science and technology tailored to individual patients.

Our definition of NGP was created by faculty members with input from our external national advisory committee (consisting mostly of pharmacists from various health care sectors and industry) and alumni. The NGP is defined as “a health care provider and change agent on the interprofessional health care team, personalizing medication use, managing safe and effective medication systems, and creating healthier communities.” We use “pharmacists” in the plural to indicate that there is more

than one type of pharmacist. Pharmacists’ careers span a wide range.³ While graduates tend to focus on a few job sectors, individual careers often progress into many different pharmacist roles over time.

As a health care provider, it is necessary to be a change agent. The NGP change agent is a trusted leader with clear vision and goals who is a critical thinker and an excellent communicator. As a change agent the pharmacist must be able to recognize medication-related problems and also identify opportunities to solve them. A change agent knows how to effectively work with people to marshal collective wisdom and achieve common goals. This has been called “leading change” and refers to a book of the same name that provides a useful framework for achieving organizational change.⁴ The 8-step Kotter approach to change begins with the need to develop a sense of urgency. People are usually reluctant to make a change if they do not understand the reason why it is necessary. In our school, we have spent multiple training sessions on leading change and understanding the change process for the purpose of revising our curriculum.

The NGP will think of their role and perform as part of a team as opposed to as independent practitioners. An interprofessional health care team includes all appropriate health professions and involves patients in their own care decisions. The NGP will value and respect the roles of other health professionals and use team-based care, laws and regulations, and financial systems to promote improvements in health care through patient-centered collaborative care. In addition to asking “How can I contribute to health care as a pharmacist?”, the NGP will ask “How can I enhance the effectiveness of other health care professionals and the health care system by being a team-oriented pharmacist?” While there will be many pharmacists who practice in acute-care settings, the greatest need and opportunity is to expand pharmacist-led care to patients with chronic diseases. Pharmacists are well trained to provide chronic disease management, and there is a great need for care of patients with diabetes, hypertension, asthma, dyslipidemia and other common chronic conditions.⁵

The NGP will promote personalized medication use. This requires integration of core pharmacy knowledge, the

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latest in biomedical research and technology (such as telehealth), cultural competence and patient characteristics with clear health goals to create individualized patient medication plans. There are practices that pharmacists have been doing for many years, such as individualized drug dosing, tailoring of patient education, and medication adherence plans, that are ways to personalize medication use. The future will require the best available information (such as genomic data), cultural factors and social determinants of health to personalize medication use.

Pharmacists have always managed medication systems, but the way this is done is changing and will be much different in the future. The NGP will transition their role from the “hands on” person within the medication systems to more often supervising the technical personnel who will have primary roles in preparing, dispensing and delivering medications. We do not envision that the pharmacists of the future will or should relinquish overall responsibility for medication systems but will spend more time on high-level tasks within the medication systems to match their training and expertise. Also, the NGP will need to be able to use automation and manage the human-technology interface. As pharmacies have become data-intensive organizations, the NGP will need to be competent in use of clinical data, electronic data and data systems. This is applied as informatics and analytics to assure safe and effective medication use and to, ultimately, improve health.⁶

Beyond the immediate physical pharmacy or health system, the NGP will recognize a greater responsibility to assure healthier communities. The NGP will recognize social, scientific, and economic challenges and demonstrate dedication to service to the community at large and to all segments of it related to age, ethnicity, economic status, geographic location, gender and sexual orientation. The nature of community pharmacies is changing as they have become recognized as centers for health and wellness rather than as “stores.” Providing care in a nontraditional setting (a barbershop) is another approach that was culturally relevant and can be successful in improving health outcomes.⁷ The NGP will promote healthy lifestyles and wellness. This is a change already in the making where

pharmacists provide immunization, smoking cessation services, diabetes prevention and weight reduction programs. As the most accessible health care professional, pharmacists can have significant influence over health and lifestyle behaviors. In some states, pharmacists can now test and treat common conditions such as streptococcal infection and influenza.^{9,10} Recent state and federal regulations have also allowed pharmacists to provide testing for COVID-19.¹¹

To achieve this vision of the NGP requires that schools and colleges of pharmacy thoroughly examine their curriculum to ensure that sufficient attention is paid to preparing pharmacists for this future. It is equally important to determine what can be removed from our curricula as it is to determine what should be added. It is more than the content alone. What method of instruction should be used to develop the proper skills and thinking of our graduates? Our current experience with remote teaching as a response to COVID-19 will inform us about improved methods to teach, combining remote with on-site approaches. How can practice experiences be reorganized to accomplish this? And how can practice experience in the pharmacy education be better coordinated with post-graduate training to maximize the learning and training experiences?

Pharmacists have had a valued role in the health care of their communities for many past generations. By creating a vision for the NGP and implementing the best curriculum to prepare student pharmacists, we ensure that pharmacists of the future will be up to the challenge of our society's health care needs. If some of the above description sounds familiar, it is because some pharmacists are already practicing as NGP. But this level of practice is not common enough; what we need is for all pharmacists to be NGP.

CONFLICT OF INTEREST

None.

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