COMMENTARY

Ensuring Doctor of Pharmacy Graduates Have the Essential Competencies for Innovative Practice

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As the pharmacy profession continues to evolve from product oriented to patient centered, pharmacy programs have been transitioning from a traditional pharmacy curriculum to a competency-based education pedagogy. Competency-based education has been developed to instill the required clinical competencies in graduates to better meet the contemporary role of pharmacists in accordance with the latest scientific knowledge and evidence-based practices in an ever-evolving health care landscape. While these ideas have helped shape the new Accreditation Council for Pharmacy Education (ACPE) Standards and Center for the Advancement of Pharmacy Education (CAPE) Educational Outcome domains, recent publications have indicated that it is integral for these Standards to include public health emergency preparedness and response. Updated Standards and Educational Outcomes must be integrated longitudinally in pharmacy curricula to ensure that graduates will be practice-ready health care professionals. This commentary highlights the strategic use of workforce development of population health based on two perspectives: emergency preparedness and response and digital health.

Keywords: competency-based education, public health, accreditation, educational outcomes, pharmacy curricula

INTRODUCTION

As the pharmacy profession continues to evolve from product oriented to more patient centered, pharmacy programs have been undergoing a transition from a traditional pharmacy curriculum to competency-based education.1 Competency-based education has been developed to instill the required clinical competencies in graduates to better meet the contemporary role of pharmacists in accordance with the latest scientific knowledge and evidence-based practices in an ever-evolving health care landscape.1

Since 1992, the American Association of Colleges of Pharmacy (AACP) Center for the Advancement of Pharmacy Education (CAPE) has pioneered the development of key Educational Outcomes. These Educational Outcomes have been periodically revised to guide curriculum planning, delivery, and assessment within colleges and schools of pharmacy.2 Of important note is that the CAPE Educational Outcomes are included as Standards 1 through 4 in the Accreditation Council for Pharmacy Education (ACPE) 2016 Standards for accrediting Doctor of Pharmacy (PharmD) programs.3 However, to remain abreast with the evolving role of pharmacists in public health, especially during the COVID-19 pandemic, the incorporation of new domains is essential.

This commentary highlights the strategic use of workforce development of population health based on two perspectives: emergency preparedness and response as well as digital health. The public health focus can help address services needed by patients. The evolving digital health landscape of disruption highlights the need to adapt pharmacy education to render digital literacy for all learners. It is also important to foster competency and build innovators at the forefront who can be proactive in emergency response planning and also embrace change through digital health innovations.

Domains related to emergency preparedness and response are critical, as many public health emergencies have emerged throughout the years. For example, in 2002-2003 there was a global outbreak of severe acute respiratory syndrome (SARS). In 2009-2010, the H1N1 influenza pandemic occurred. In 2013 to 2016, the Ebola virus outbreak
happened in West Africa. Recently, the COVID-19 global pandemic occurred. All these public health emergencies highlight the critical and integral role that pharmacists can play in emergency preparedness and response to pandemics as well as other public health emergencies. Since pharmacists are the most accessible health care professionals, they can serve as frontline health care workers who provide primary, secondary, and tertiary public health services.

During public health emergencies, pharmacists in all sectors, including community, hospitals, long-term care facilities, and outpatient clinics, are involved in emergency response planning and execution where they play a vital role on interprofessional health care teams. In fact, pharmacists can improve public health through various services including developing strategies to continue access to medications and supplies, supporting health care needs and services, providing clinical care to affected patients, educating the community, and serving as reliable information sources.

Pharmacists, through operation management, can optimize delivered services and ensure continuity of care for patients, health care teams, and communities during pandemics and emergencies. This can be accomplished by managing inventories, ensuring adequate medications, providing health care products and supplies, addressing medication shortages, and making therapeutic substitutions. In addition, pharmacists are involved in packaging, storing, dispensing, and administering medical countermeasures such as antivirals, antibiotics, and antitoxins. These services result in optimizing pharmaceutical care to improve patients’ quality of life and health outcomes.

Pharmacists are also involved in point-of-care services, including screening, testing, and providing immunizations. Moreover, pharmacists provide innovative digital health services, including applying digital communications, telemedicine, clinical services, and education on evidence-based information that counters misinformation during public health emergencies and pandemics.

An effective and strategic response to emergencies and pandemics depends on adequate education, training, and planning. Therefore, pharmacy curricula should incorporate aspects of global public health and emergency preparedness and response to yield pharmacists with the expertise, knowledge, and skills needed to enable them to combat pandemics. In addition, training is specifically important for pharmacists to prepare them for their new roles to effectively respond to emergencies. Specifically, pharmacists need to be trained in planning, supporting, and disseminating evidence-based information. Pharmacists must be equipped with interdisciplinary skills, mental health education, and knowledge on resources management as well as implementation of best practices.

Hannings and colleagues’ research has shown that there is a gap in emergency response training of pharmacy students. Specifically, a call to action for emergency preparedness training was published by the Washington State University’s College of Pharmacy based on their experience working with the Metropolitan Medical Response System. Similarly, the University of Georgia’s College of Pharmacy described two emergency preparedness simulations that they conducted as part of their introductory pharmacy practice experiences. In addition, there are several guides for pharmacists on pandemic response issued by pharmacy organizations, including the Pharmacist's Guide to Pandemic Preparedness and the COVID-19 Vaccine Confident playbook.

On the global level, in 2020 the International Pharmaceutical Federation (FIP) published a revised Global Competency Framework. This framework included emergency response as one of its competencies, which promotes the participation of pharmacists in multidisciplinary health care teams in response to public health emergencies. Additionally, a framework by Aruru and colleagues has been recently published to help expand pharmacists’ roles in emergency preparedness during the pandemic and beyond. The proposed framework includes five areas of competency: emergency preparedness and response; operations management; patient care and population health interventions; public health pharmacy education and continuing professional education; and evaluation, research, and dissemination for impact and outcomes.

Given these recent publications, it is integral for emergency preparedness and response to be part of the new ACPE Standards and CAPE Educational Outcomes domains. Updated Standards and Educational Outcomes should be integrated in pharmacy curricula to ensure that the graduates will be equipped with the essential skills needed for frontline responders to effectively execute the response plans during public health disasters and emergencies.

The second area in which new Standards and Educational Outcomes should be considered is digital health. During the COVID-19 pandemic, digital health has influenced the ability to scale, test, coordinate, manage data, contact trace, and quarantine. The countries that melded these strategies with appropriate policy and health care services had lower per capita mortality rates and flattened incidence curves. In addition, wearable devices have been studied to help track recovery from and predict COVID-19 with self-reported symptoms, as demonstrated by the DETECT (Digital Engagement & Tracking for Early Control & Treatment) study.

Antwerp and colleagues’ report on the future of health that was published by Deloitte included interviews with industry experts, representing independent pharmacies,
The evolution of digital health necessitates that countries and stakeholders consider including digital health in the health professions curriculum. Some believe that the content related to reviewing electronic medical records is sufficient to cover the digital health concepts in a curriculum. In addition, major large pharmacy chains and payers have not pushed for growing digital health applications at this time. College of pharmacy can lay a foundation of digital health concepts and foster creativity by highlighting ongoing and new digital health applications. This would result in practitioners who have the ability to not only navigate but also innovate to improve population health and positively influence the perception and future of the profession. Rather than being reactive in updating the curriculum, pharmacy education can proactively welcome disruption and innovation that includes pharmacists as key players in digital health applications.

CONCLUSION

Based on the evidence provided above, pharmacists are poised to effectively use digital health to expand their roles in public health. The authors recommend the following ways to integrate public health emergency preparedness and response as well as digital health in pharmacy: include emergency preparedness and response and digital health competencies in the 2025 ACPE Standards; integrate emergency preparedness and response and digital health domains in the new CAPE Educational Outcomes; provide training for pharmacists to expand their services in digital and public health; educate patients on the skills, knowledge, and competencies of pharmacists to provide primary, secondary, and tertiary services; collaborate with other health care professionals on using digital health to monitor patients’ outcomes; provide telehealth to underserved patients in rural, urban, and suburban areas; and advocate on the state, regional, national, and global levels to recognize pharmacists as essential health care providers.

REFERENCES

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