

COMMENTARY

Applications of the Health Belief Model and Continuing Professional Development for Emergency Preparedness and Response

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The COVID-19 pandemic is the public health emergency of the 21st century. During these unprecedented times, pharmacists have been playing a critical role as frontline healthcare workers, drug information experts, and essential health care professionals. Although pharmacists are not recognized as health care providers, they continue to offer essential health care services in their communities. Consequently, this leads us to a key question: Are pharmacists willing, ready, and able to become health care providers?

To answer these critical questions, it is beneficial to examine application of the Health Belief Model (HBM),¹ which is one of the first and still most commonly used frameworks or theories of health behavior. There have been successful applications of the HBM in health and wellness programs, including immunizations and chronic diseases management (Table 1). The following questions reflect some of the most important HBM concepts. What is the likelihood or susceptibility of getting infected by COVID? How severe is the infection among the patient populations? What are the potential benefits for giving pharmacists “provider status”? What are the barriers for achieving this legislative milestone for the pharmacy profession? What is the level of self-efficacy among pharmacists to assume provider status? What is the role of internal and external stakeholders in this initiative (ie, patients, pharmacists, other healthcare providers) for cues to action? How does the media perceive the role of pharmacists in public health? Based on these HBM concepts, how do these factors lead to a “Call to Action”?

In 2006, the American Public Health Association Policy Statement on the Role of the Pharmacist in Public

Health recognized the pharmacists’ expertise and contributions in patient-centered care, including pharmacotherapy, access to care, and preventive services. Additionally, one of the policy statement’s desired actions is to encourage the US Congress to charge Centers for Medicare and Medicaid Services (CMS) with recognizing pharmacists as health care providers in its programs (eg, under Medicare) to deliver and receive reimbursement for their public health services.²

According to the 2013 Center for the Advancement of Pharmacy Education (CAPE) educational outcomes³ and the 2016 Accreditation Council for Pharmacy Education (ACPE) Standards,⁴ student pharmacists need to be prepared to provide patient-centered care and population-based services on the micro and macro levels of public health, respectively, as outlined in the essentials for practice and care domains of CAPE 2013 outcomes. Specifically, student pharmacists need to educate their patients on health and wellness initiatives as well as promote these programs at the population-based level. Using effective health and wellness frameworks, including the Health Belief Model (HBM), would increase the likelihood of successful health promotion programs such as testing, treating, and vaccinations for pandemics (eg, COVID-19).

As healthcare professionals, role models, and life-long learners, pharmacists should continue to be willing, ready, and able to prepare themselves to meet the emergent needs, ie, roles in addressing the COVID-19 pandemic for diverse patients and populations. During these unprecedented times, pharmacists may benefit from reflecting on their attitudes, knowledge, and skills to ensure that they are able to care for their patients in-person and through telehealth. Pharmacists have engaged in emergency preparedness and response activities, yet there could be additional specific guidance or recommendations

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Table 1. Application of the Health Belief Model¹ to Emergency Preparedness and Response (COVID-19 Pandemic)

Concept	Definition	Application to Pandemic (COVID-19)	Potential Changes or Strategies
Perceived susceptibility	Beliefs about the chances of getting a condition	I am young and/or healthy, and I will not get sick.	Educate on the risks for all ages.
Perceived severity	Beliefs about the seriousness of a condition and its consequences	It's just like the flu. It's not a serious illness. I will not die from it.	Educate about mortality and morbidity regardless of other respiratory infections.
Perceived benefits	Beliefs about the effectiveness of taking action to reduce risk or seriousness	Is there current scientific evidence that wearing a mask, washing hands, and maintaining social distancing help to reduce the risks of an infection and/or the transmission of the virus?	Educate that wearing masks, washing hands, and practicing social distancing enable individuals to become socially responsible and conscious global citizens to protect loved ones, frontline healthcare workers, and society at large.
Perceived barriers	Beliefs about the material and psychological costs of taking action	Lack of access to healthcare and monetary resources. Living and working in crowded spaces and/or inability for social distancing. Wearing a mask is an inconvenience.	Educate about and/or provide access to free health care and safety-net clinics or social assistance programs. Educate about resources available for comfortable, free masks.
Self-efficacy	Confidence in one's ability to take action	COVID-19 is an unprecedented "super-spreader" disease. Pharmacists have limited education and training in emergency preparedness and response. Individual, family, and social support are needed to obtain training and expand confidence.	Provide information resources and support for education and training. Recruit and train as volunteers with first responders and Medical Reserve Corps. Provide telehealth for resources and training.
Cues to action	Factors that activate "readiness to change"	Continue to advocate for the role of the pharmacist in public health as one of the most accessible health care professionals, including expanding scope of practice to enable them to educate, test and administer vaccination when available.	Advocate and educate on accurate, evidence-based scientific information; Highlight the essential role of pharmacists among internal and external stakeholders, including the media. Provide direct payment and/or reimbursement for essential services.

for pharmacists' continuing education and professional development in the area of emergency preparedness and response.

Continuing Professional Development as a Strategy for Emergency Preparedness and Response

Given the current pandemic, this is an opportune time to apply the Continuing Professional Development (CPD) model to assess and facilitate pharmacists' readiness and ability to adequately serve their patients and

communities. Emergency preparedness and response require self-motivation, commitment, and efforts to identify areas in need of improvement and plan of action to close the gap in attitudes, knowledge, and skills.

Continuing professional development is an approach to lifelong learning that requires active planning and implementation of formal and informal learning activities to help the pharmacist maintain professional competence to support achievement of their career goals and growth. Components of the CPD cycle, including reflect, plan, learn/act, evaluate, record, and review.⁵

Continuing professional development can be applied to facilitate and support pharmacist educators, practitioners, and students to expand knowledge, skills and competencies in the area of emergency preparedness and response during disasters and pandemics (eg, COVID-19) to provide more effective patient-centered care and population-based services. In pursuing CPD, pharmacists also contribute to the quality improvement of an organization and the pharmacy profession. Application of the CPD components related to emergency preparedness and response is illustrated in Table 2.

One approach to pursuing CPD is through volunteering for a local or regional Medical Reserve Corp to prepare for and respond to disasters and emergencies. Doing so further supports that CPD activities can be within and outside of the typical practice or work setting. Finally, practitioners and educators, especially young pharmacists who apply the CPD model for their lifelong learning, further demonstrate and support the “seven-star pharmacist” concept. This concept, which was introduced in

2014 by the World Health Organization, highlights the importance of being a “lifelong learner, in addition to caregiver, decision-maker, communicator, manager, teacher, and leader” to remain as a competent healthcare team member.⁶

It is also important to be proactive to empower, promote, and facilitate opportunities and resources for pharmacists in emergency preparedness and response. Educators and pharmacists can lead by example and use the CPD model to set goals and plans for their lifelong learning, including further training and/or volunteering to prepare and respond to public health emergencies, and to further advance and document the pharmacist’s contributions and impact in public health.

Call to Action to Address Emergency Preparedness and Response During a Pandemic

Given the unprecedented impact of the COVID-19 pandemic on the healthcare system, pharmacists’

Table 2. Application of the Continuing Professional Development (CPD)⁵ to Emergency Preparedness and Response to the COVID-19 Pandemic

CPD Component	CPD Component Definition	Application to Emergency Preparedness and Response: Strategies and Opportunities
Reflect	“Self-appraisal” or “self-assessment” based on internal motivation factors and being proactive.	Reflect and assess the relevance and urgency of the pharmacist’s current role and contributions to address emergency preparedness and response, specifically to the pandemic (COVID-19).
Plan	Structured process for personal growth and/or career development with relevant outcomes.	Utilize the CPD approach to reflect on potential involvement to address the pandemic. Develop a plan to gain knowledge and training in emergency preparedness and response and volunteer to help.
Learn/Act	Builds on the continuing pharmacy education (CPE) process to identify learning methods and actions to achieve specific competency outcomes.	Enroll in emergency preparedness and response training (eg, www.ready.gov). ⁷ Sign-up to volunteer with emergency preparedness and response team (eg, local, regional or national Medical Reserve Corps). ⁸
Evaluate	Formal process for ongoing or cyclical self-evaluation to identify areas in need of improvements, in addition to receiving feedback from mentors and/or role-models.	Complete training to achieve competency prior to volunteering. Evaluate the effectiveness of the training and assess self-efficacy and readiness to respond appropriately and meet the needs of patients and the public during the pandemic.
Record	Professional CPD electronic portfolio and/or hardcopy; current Curriculum Vitae (CV).	Maintain an accurate record and document training in CPD portfolio and CV.
Review	Ongoing review or at least twice a year during midpoint and annual performance evaluation to monitor outcomes and adjust CPD plan based on self-identified goals.	Review the overall CPD portfolio, including CV, with mentor(s) to compare current competencies and identify gaps in knowledge and skills for future professional development opportunities.

readiness must be expanded to include education and continuing professional development in emergency preparedness and response. Thus, we recommend that the call to action should be applied to education and practice at three levels: education and CPD, patient-centered care at the micro level, and population-based interventions at the macro level.

Recommendations for education and continuing professional development include: encourage a wider adoption, application, and use of CPD and incorporation of HBM in education and continuing professional development for pharmacists and pharmacy-based training programs. For example, HBM is currently used in the American Pharmacists Association's pharmacy-based immunization certificate training program and should also be used in addressing COVID-19 testing and preparing for vaccinations as outlined in Table 1. The International Pharmaceutical Federation has recommended that continuing professional development be a requirement for practicing pharmacists to maintain competence.⁹ This will ensure pharmacists' readiness as frontline responders for public health emergencies.

At the micro level, applying the Pharmacists' Patient Care Process (PPCP)¹⁰ is essential to enhance patients' outcomes during public health emergencies as outlined in the Pharmacy Organizations' Joint Policy Recommendations to Combat the COVID-19 Pandemic.¹¹ Specifically, encourage pharmacists to utilize the CPD model and provide training for them to expand their knowledge and skills to test, treat, and vaccinate patients during a pandemic. These expanded scopes for pharmacists will enable them to enhance patients' economic, clinical, and humanistic outcomes (ECHO) as reflected in this healthcare outcome model.

At the macro level, engagement in population-based interventions and policy-decision-making is becoming more critical for developing policies and programs related to emergency preparedness and response. Specifically, continuing to advocate for expanding pharmacists' roles and scope of practice is vital during public health emergencies and beyond. Pharmacists' contributions and documentation of their value-added services during emergencies will enable and strengthen the case for provider status. Moreover, it is important to identify strategies to overcome challenges, educate legislators and policy-makers, and employ sustainable business models for direct reimbursement for pharmacists' services during and after the pandemic, as suggested in the Joint Policy Statement.¹¹ In summary, pharmacists' response to this call to action will further support their ongoing contributions and expansion of their role in public health to better meet the needs of patients on the micro level and society on the macro level.

On August 18, 2020, the Healthy People 2030 Initiative was launched.¹² This initiative of the United States Department of Health and Human Services includes the

establishment of the vision, mission, and principles to achieve the main goals, specific objectives, and plan of action. Specifically, one of the objective is to increase the percentage of adults who are ready for a disease outbreak after getting information on emergency preparedness - PREP-D02." Moreover, there is a developmental status to increase the percentage of adults who participate in emergency preparedness for outbreaks of an infectious disease after recently receiving information the outbreaks.¹²

Heeding our call to action as outlined herein will empower student pharmacists and pharmacists to continue their professional development toward the achievement of Healthy People 2030 goals. Ultimately, this will enhance the preparedness and response to public health emergencies for the nation during the pandemic and beyond.

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