LEVERAGING PARTNERSHIPS AMONG COMMUNITY PHARMACISTS, PHARMACIES, AND HEALTH DEPARTMENTS TO IMPROVE PANDEMIC INFLUENZA RESPONSE

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Response to public health emergencies requires coordination across multiple sectors and effective use of existing resources in communities. With the expanded role of community pharmacists in public health during the past decade, their participation in response to emergencies has become increasingly important. Local health departments play a lead role in local public health emergency responses, and their ability to develop and leverage partnerships has become increasingly vital given their funding and personnel shortages. This article offers insight and recommendations on how local health departments can most effectively develop and maintain relationships with community pharmacies and pharmacists that will allow for a more coordinated and resourceful public health response to emergencies, and specifically to pandemic influenza outbreaks. Additionally, state and local health departments should reach out to pharmacies in a synchronized way to incorporate them into their pandemic influenza planning and response efforts. As pharmacists continue to expand their role as part of the public health system, pharmacy staff can be active participants with public health agencies to improve community public health emergency response.

The public health system, once thought to consist mainly of government public health departments, now more broadly includes public and private-sector organizations whose actions can significantly affect the health of the public. Given modern realities, a community’s public health infrastructure and capability to respond to public health emergencies depends on more than officially designated government officials. Emergency planners are now looking to community partners such as pharmacists and pharmacies to participate in public health planning efforts to enhance community resilience. During severe pandemic influenza outbreaks that may stretch the capacity of a local government response, health departments and communities could benefit from engaging pharmacists and pharmacies in response efforts. In fact, some pharmacies are already developing procedures for continuity of operations.

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to minimize disruptions of patient care during a disaster, which is a valuable first step toward becoming more integrated in public health preparedness and response.¹

Health departments and pharmacies need to develop and maintain strong relationships to strengthen the community's health and medical surge capacity during public health emergencies. Innovative and mutually beneficial partnerships between pharmacies and state and local health departments can be built and sustained on the inherent strengths of each sector and tailored to meet the specific needs of a population, from rural towns to big cities. Although some communities have successfully built and implemented such partnerships to improve activities such as risk communication and medical countermeasure distribution and dispensing during pandemic emergencies, other health departments are still striving toward that same goal.³ Continued progress is needed, as a recent study showed that 68% of pharmacists working in community settings reported no contact with health department staff in the past year.⁴ This finding underscores the necessity for improved engagement between pharmacy and public health professionals to enhance a future pandemic influenza response.

The Case for Partnerships

According to the Institute of Medicine, “Enlisting pharmacists in public health responses increases the capacity of the health care system.”⁵ However, despite this recognition of pharmacists’ value, a recent report from the Office of the Chief Pharmacist, US Public Health Service, to the US Surgeon General stated that pharmacists are “remarkably underutilized in the U.S. healthcare delivery system given their level of education, training, and access to the community.”⁶ The general public and healthcare professionals largely equate pharmacists’ roles and responsibilities solely with dispensing prescriptions and medication counseling.⁷ This view fails to take into account the training and capabilities of pharmacists in areas such as pharmacology, pharmaceutics, and medication and disease management. Some pharmacists also have advanced clinical training through residencies or board certification in pharmacy specialties, while other pharmacists perform medication management services in collaboration with physicians in primary care settings.⁸ Public health personnel and the public need to have increased awareness of pharmacists’ qualifications and a broadened understanding of how pharmacists’ skills can contribute to and support emergency response efforts.⁹

Expanding Roles for Pharmacists

Pharmacies have always been an essential component of the nation’s healthcare and public health infrastructure. They are part of an efficiently functioning medical supply chain and pharmaceutical distribution system that are crucial components of overall community health and preparedness. Pharmacies can serve as a “first line” resource for health because they provide access to trained pharmacists at numerous convenient locations that provide pharmacists with continuous access to the public.⁶ The role of pharmacists has expanded to include prevention activities such as immunizations, laboratory testing, chronic disease medication management, and selected primary care services under protocols and supervision from physicians.⁸⁻¹¹ Public health and healthcare partners that typically bear many of these responsibilities in their communities may be surged in a severe influenza pandemic, making the modern pharmacist’s wider breadth of experience extremely valuable. Pharmacists can assist with response activities not just through their traditional role of dispensing medications, but also in other areas such as disease surveillance, risk communication, and community outreach.

A number of steps can be taken to improve partnerships with public health agencies and to communicate to the public about a broader role for pharmacists. Public health officials can invite pharmacists and pharmacy managers to participate in ongoing community planning for response to a pandemic or other public health emergency. If it is part of approved practice in the pharmacy, a dedicated workspace can be set aside, with appropriate signage to show that a pharmacist is available to the public for consultation on medication management, immunizations, chronic disease management, and preventive health issues. Additionally, integration of pharmacists into community-based healthcare teams in physician practices or clinics can also raise their visibility with the public.⁷

As of 2009, all 50 states allow pharmacists to administer influenza vaccine to adults, up from 22 states in 1999.¹² During the 2010-11 flu season, 18.4% of adult influenza vaccines were administered in community pharmacies, a 2.6-fold increase from the 2006-07 flu season and a 3.7-fold increase from the 1998-99 flu season.¹³ Pharmacists, who are largely perceived as trusted health professionals in their communities,¹⁴ have readily embraced this new expanded role of administering vaccinations.¹⁰⁻¹² Given their role in managing medication, pharmacists can also augment response efforts as part of the public health system by identifying high-risk people who may be targeted to receive medical countermeasures.

Expanding pharmacists’ scope of practice is also currently under discussion,⁷¹¹ in the context of national healthcare reform.¹⁵ The Affordable Care Act aims to enroll 30 million Americans, potentially leading to a large number of newly insured individuals with access to medical care.⁷ This new demand for care provides an opportunity for pharmacists to collaborate with physicians and other health professionals as part of a care delivery team.⁷
Emergency Response Roles

By incorporating pharmacists into community emergency response planning and preparation prior to an emergency, local and state health departments can more thoroughly identify and leverage pharmacists’ resources and abilities for community emergency response efforts. Through normal pharmacy practice (eg, providing immunizations, compounding, drug dispensing, medication management) and activities associated with patient outreach and education, surveillance, and communications, pharmacists can help improve public health emergency response efforts.

Practice of Pharmacy

Pharmacists and pharmacies have previously been integrated into many community emergency responses, including playing significant roles in assisting communities in natural disasters and providing vaccinations during the 2009 H1N1 pandemic. Pharmacists can be relied on to participate in an emergency response; in one study that surveyed healthcare workers, researchers found that 93% of pharmacists would be willing to report to work during a future pandemic. The participation of pharmacists in public health responses is particularly important given their specialized skillset and knowledge.

For example, a benefit of increasing the involvement of pharmacists and pharmacies in a pandemic response is the potential to improve the availability of compounded antiviral formulations. Depending on the emergency, certain drug formulations, specifically those targeted for use in pediatric patients, may be in short supply because of an increase in demand for products, as was the case during the 2009 H1N1 pandemic, when there were shortages of pediatric formulations of oseltamivir. In these instances, pharmacists are uniquely qualified to compound more readily available adult formulations of medicines into suspensions for children. The increased involvement of pharmacists in a pandemic response may improve the availability of compounded formulations in pharmacies. Public health professionals and pharmacists need to communicate prior to severe influenza pandemics to share their expectations of potential roles each partner may fulfill during a response.

In addition to their professional responsibilities at work, pharmacists have also demonstrated an interest in volunteering their time and skills during public health emergencies. Some pharmacists have already registered through volunteer networks to respond to emergencies. The National Association of County and City Health Officials (NACCHO) surveyed 962 active Medical Reserve Corps (MRC) unit leaders to develop a comprehensive and accurate picture of MRC unit infrastructure and practice. According to the survey data, the MRC has an estimated 2,396 pharmacists and 530 pharmacy technicians enrolled (totals weighted for nonresponse to represent the entire network). These health professionals are trained in emergency response and can be asked to volunteer their time in the event of a public health emergency.

Outreach to the Public

Pharmacists are also uniquely positioned to assist with outreach activities during an emergency. State and local health departments have established reliable communication channels in their communities through the routine provision of health services, such as vaccination administration, and through health promotion and disease prevention campaigns. They have also established mechanisms to reach at-risk populations, including individuals who are uninsured, underinsured, and part of traditionally underserved populations. In a large response, however, the magnitude of community needs may be so great that any health department, no matter how well prepared, will need to work with partners to meet the needs of the population quickly and efficiently. The public health community must embrace work that spans across systems and sectors to identify opportunities to achieve its mission.

Pharmacy practice can provide a convenient arena for public health community outreach during an emergency. Consumers shop at food and drug retailers an average of 1.9 times each week, and about 93% of those consumers live within 5 miles of a community pharmacy. The availability and accessibility of community pharmacies make them an ideal location to offer public health messages. Health departments can increase the reach of their health education and promotion materials by collaborating with pharmacies to provide those materials to the public. The broad reach of pharmacies can also make them valuable partners for reaching at-risk populations. The Louisiana Department of Health and Hospitals, for example, used retail pharmacies to equitably distribute free antivirals to uninsured and low-income individuals during the 2009 H1N1 outbreak. The coordination between health departments and pharmacies to offer health education materials to the public can ensure more consistent, coordinated messaging that reaches all populations in a community and can also improve access to needed medication.

Surveillance and Information Sharing

Health departments routinely conduct surveillance activities to monitor any increases of disease in a community, and pharmacies have access to information that can enhance these surveillance efforts. Pharmacies may be able to inform public health authorities about a surge in over-the-counter medication purchases to augment public health surveillance. A handful of communities have laid the groundwork for this type of collaboration by including pharmacies and wholesalers in monitoring sales of certain products, such as antidiarrheal medications, to help detect local disease outbreaks. Combining public and private-sector surveillance data has the potential to enhance real-time “situational awareness” of the health in a community, especially during...
times of public health emergencies. Both pharmacy and public health professionals have expressed the belief that by leveraging multiple data streams available in different settings, health departments and pharmacies can work together to project demands, conduct disease surveillance, decrease the likelihood of medication shortages, and plan for supply chain disruptions.

In addition to real-time surveillance of an outbreak, pharmacies that conduct immunizations can also contribute to the comprehensive collection of immunization data statewide. Such participation is extremely useful, as the public health community uses the data from such registries to guide leadership action with the goal of improving vaccination rates and reducing vaccine-preventable diseases. Of those state or project areas that responded to a recent survey of Immunization Information System (IIS) CDC grantee projects, 80% of pharmacies reported administering and reporting vaccine doses administered to the IIS, even though only 49% were required to do so by law. While reporting to the IIS may present challenges to some pharmacies, doing so completes a critical link in the patient care continuum and improves the public health community’s ability to conduct assessment and surveillance activities. As the public increasingly uses pharmacies as a more common site for influenza vaccination, among other types of vaccination, state pharmacy associations can play a key role in encouraging pharmacists to report all vaccinations to their state registry.

**Case Studies**

Some health departments have extensive experience partnering with pharmacies and putting partnership ideas into practice. These case studies provide examples of varied approaches local health departments have taken to develop and strengthen relationships with community pharmacies. In all examples, agreed-on plans and protocols were established long before a public health emergency to maximize benefits of a partnership.

**Public Health–Seattle & King County (PHSKC)**

The longstanding collaboration between public health and pharmacies in the Seattle, Washington, area began in 2006 as a way to share critical information with the public during a severe winter storm. Pharmacies served as “community hubs” to let the public know about the safety hazards of carbon monoxide poisoning, which at the time caused the greatest health threat to the community. Since 2006, PHSKC has greatly expanded its partnership with pharmacies and pharmacists.

PHSKC hosted 2 pharmacy summits in 2010 and 2011 and built an approach to partnership that has become a model for other communities. In addition to engaging community and ethnic pharmacies, PHSKC also engaged the University of Washington School of Pharmacy to collaborate in partnership efforts. Furthermore, PHSKC had a full-time chief of pharmacy who focused on growing these relationships in a dedicated capacity and offered increased credibility when the health department approached the pharmacy community.

Instead of one county working with individual pharmacies on its own, PHSKC spearheaded the effort to engage neighboring communities, the Washington State Department of Health, and the Washington State Pharmacy Association to collaboratively discuss and plan for responses to public health emergencies. King, Pierce, Snohomish, and Kitsap counties have made it easier for pharmacies to partner with local health departments by regionally standardizing medical countermeasure practices and tools, including medication screening forms, forms to track medication dispensed, and sample dispensing plans. It may be difficult for individual pharmacies that are part of a large chain to contract with individual jurisdictions, and independent pharmacies may be best known by their local communities, so a regional, standardized, and coordinated approach is an ideal way to engage all partners and create more streamlined relationships.

PHSKC brought together a workgroup with representatives from the top 5 pharmacy chains in their region that covered about two-thirds of their population and a representative from 1 independent pharmacy to discuss such coordination issues. Those pharmacy workgroup members provided input on memorandum of understanding (MOU) drafts, in coordination with local and state governments. Based on that initial exploration, in December 2012, the Washington State Department of Health established a statewide, standardized MOU that could be used for dispensing medications rapidly in an emergency and that several local health departments and chain pharmacies signed. Once the MOU was signed, PHSKC worked with the Washington State Board of Pharmacies, the Washington State Pharmacy Association, and the University of Washington School of Pharmacy to reach out to additional independent and chain pharmacies to share this new framework. The PHSKC case study shows the value of engaging key stakeholders, building credibility in the pharmacy community, and standardizing practices among local health departments through a coordinated, regional approach before public health emergencies occur.

**Palm Beach: 2009 H1N1 Response**

During the 2009 H1N1 response, the Palm Beach County Health Department (PBCHD) of Florida collaborated with hospitals, community pharmacies, and pharmacy-based community health clinics on an informational “Flu Ready” card distribution campaign. One side of the card contained information on influenza prevention, including hygiene practices, as well as food supplies to purchase in
meetings.26,28 on a local multidisciplinary pharmacy task force, and ing them in community emergency planning, participating strong working relationships with pharmacists by includ- for a coordinated public health education campaign during emergency and growing that relationship can be the basis establishing contact at each pharmacy retailer before an population, especially children.29 While many pharmacies Health received reports that many primary care providers tionwide. In the early months of the 2012-13 flu season, there was an increasingly shrinking vaccine inventory na- tional qualified healthcare professionals in the public health response, increasing vaccine administration, and increasing vaccine access to vulnerable populations without medical homes.18 The PBCHD case study exemplifies that establishing 1 contact at each pharmacy retailer before an emergency and growing that relationship can be the basis for a coordinated public health education campaign during a pandemic response. PBCHD continues to maintain strong working relationships with pharmacists by includ- ing them in community emergency planning, participating on a local multidisciplinary pharmacy task force, and sending representatives to monthly pharmacy association meetings.26,28

New York: Enhanced Use of Pharmacists as Immunizers

The 2012-13 flu season was marked by widespread flu activity and significant media attention. In January 2013, there was an increasingly shrinking vaccine inventory na- tionwide. In the early months of the 2012-13 flu season, New York State had more than 19,000 confirmed cases of seasonal influenza, an increase of about 400% over the entire previous year.29 The New York State Department of Health received reports that many primary care providers did not have enough vaccine to meet the demand of the population, especially children.29 While many pharmacies still had inventory of vaccine, New York had age restrictions on the patient populations that pharmacists could immu- nize. To address this challenge, the governor issued an emergency order waiving age restrictions imposed on pharmacies and allowing pharmacists to immunize children aged 6 months through 17 years old.29

Altering the age restrictions is a very important first step to allow for more immunizations and meet the demand for vaccine to reduce the further spread of influenza. However, rapidly implementing this type of waiver during an actual event proved difficult because pharmacies did not have sufficient time to revise standing orders, ensure they had sufficient vaccines and syringes, and ramp up their ability to immunize younger people. At the time of this writing, prior executive orders that allowed pharmacists to administer influenza vaccine to children, along with protocol and standing orders administered by the commissioner of health, had expired.30 While current New York State education laws §§6527, 6801, and 6909 no longer permit li- censed pharmacists to administer influenza vaccinations to children,30 recent coordinated disaster responses with pharmacists and health officials have demonstrated the value of such a policy change and emphasized the impor- tance of coordinated advance planning. The actions taken by New York State at the time of the event increased access to immunizations for children, but these efforts would have had far greater impact had these policies been implemented beforehand.

Recommended Actions

Successful incorporation of pharmacists into a pandemic influenza response requires a long-term investment of time and energy starting well before an outbreak. To obtain the maximum benefit of partnership with phar- macies and pharmacists, health departments must culti- vate these relationships over time in a way that builds credibility, enables trust, and is mutually beneficial. This includes not only larger community pharmacies, but also smaller independent and ethnic pharmacies that are vital healthcare resources for some communities and in specific populations. Health departments must identify the “win-win” scenario that allows both entities to help each other meet strategic goals.

Before approaching community pharmacists to initiate partnerships, local health departments should already have established consistent and coordinated pandemic planning at the state and affiliated local levels. Consultation with neighboring local jurisdictions is also an important step to synchronize planning efforts and set the stage for future regional collaborations. Developing consistent planning among jurisdictions prior to meeting with pharmacists will enable public health officials to speak with “one voice,” reduce confusion, and increase the likelihood of a successful partnership.

To provide specific recommendations for establishing public health and pharmacy partnerships, we have developed several action steps based the NACCHO Report Building and Sustaining Strong Partnerships between Phar- macies and Health Departments at State and Local Levels.31

- Get to know your state pharmacy board and state phar- macy association—Health departments and pharmacies share a public health mission and likely will provide many of the same healthcare services to the community during a pan- demic, including antiviral medication dispensing and vac- cination. Before reaching out to community pharmacies, relationships should be established between local and state health departments, the state board of pharmacy, and the state pharmacy association. Some pharmacy associations
have their own emergency preparedness coordinators, providing a natural point of contact for local and state health departments.\textsuperscript{32}

State pharmacy associations can also help connect public health with state and divisional leaders of chain pharmacies to improve a coordinated partner outreach effort. State and local health department officials may consider including a pharmacist, such as a department employee or a representative from the state pharmacy association, in meetings with community pharmacies to propose partnerships. These relationships can facilitate the joint development of protocols before an emergency, leading to a stronger partnership and more robust response. For example, a strong relationship with the state board of pharmacy, the regulatory body of pharmacists, can be used to develop protocols for legal changes that sometimes are needed during an emergency, such as a governor’s issuing an emergency order waiving age restrictions for immunizations. Additionally, state pharmacy associations are key partners to facilitate the building of relationships with local pharmacists and help create awareness about the full range of public health services that community pharmacies can provide. Additional resources and examples for initiating relationships and engaging pharmacy partners can be found on the Rx4prep website (http://rx4prep.org/),\textsuperscript{33} developed by NACCHO and the Montgomery County Advanced Practice Center.

- **Engage academic pharmacy partners**—Health departments can also build relationships with pharmacists by reaching out to universities and colleges that have pharmacy programs. Eighteen dual doctor of pharmacy/master of public health degree programs exist in the United States, according to the American Association of Colleges of Pharmacy,\textsuperscript{34} which could offer increased opportunity for understanding and collaboration. Many colleges of pharmacy have a specific public health focus, which not only offers opportunities for building relationships but could also become a base of volunteers for students who may want public health emergency response experience. One successful example of an academic partnership involves the City of Houston Department of Health and Human Services, which collaborated with 2 local colleges of pharmacy to train students to respond to public health emergencies and add preparedness courses to the school curricula.\textsuperscript{35}

- **Understand available resources**—Effective partnerships must be structured around a mutual understanding and appreciation of each partner’s resources, strengths, and limitations. Health departments and pharmacies should communicate their baseline capacity to one another to best estimate and plan for projected surge capacity.\textsuperscript{36} Partnerships can achieve greater efficiency by building on familiar and existing everyday processes, rather than developing multiple new processes to be used only for emergencies. Public health officials in Montgomery County, Maryland, conducted a telephone survey of local pharmacies to better understand

- **Establish roles and responsibilities**—Successful partnerships require clearly defined roles and responsibilities for each partner. Establishing expectations in advance sets the stage for coordinated action and mitigates potential conflicts.\textsuperscript{38} Partners should hold each other accountable for the responsibilities they have been assigned.\textsuperscript{39} Furthermore, state and local health departments along with community pharmacies should develop policy statements that guide internal work and solidify partnership endeavors. For example, chain pharmacies could distribute policy statements from headquarters to individual pharmacies so that leaders at these pharmacies are aware of corporate partnership expectations and guidelines at the local level. Chain pharmacies regularly use internal communication channels to ensure stores in a given state are aligned and understand key policy messages.

- **Consider legal implications and opportunities**—To anticipate any problems that may arise during an emergency, health department professionals should familiarize themselves with the legal and regulatory framework in their state that clarifies the role of pharmacists in emergency responses. Through collaborative emergency planning efforts, health departments and pharmacies can enhance accessibility and provision of medication and vaccines to targeted populations. Legal and regulatory considerations include impacts of state and federal disaster declarations on response activities, the current national and state regulatory environment regarding pharmacist provision of patient care services under a public health emergency, and the legal framework that may allow for pharmacists to evaluate and order medication during an influenza pandemic. Based on the legal frameworks in specific states, some may choose to formalize partnerships with pharmacies through collaborative practice agreements (CPAs) or collaborative drug therapy agreements (CDTAs). CPAs are written agreements between pharmacists and authorized prescribers, most commonly physicians, allowing for the issuance, modification, or termination of drug therapy for patients.\textsuperscript{40} During an emergency, a physician who is a state or local health official may develop and issue a formal CPA, allowing for pharmacists that sign such an agreement to dispense medication under a specified protocol. This issuance may provide a critical service to the community by reducing the burden on the healthcare system during an emergency.

Tools exist to help facilitate the development of these types of agreements. For example, Public Health–Seattle & King County collaborated with the Northwest Center for Public Health Practice, the Washington State Pharmacy Association, and the Washington State Board of Pharmacy to develop a collaborative drug therapy agreement toolkit that can be used to educate local health departments to use CPAs to more effectively dispense medications during
emergency events.\textsuperscript{40} As part of pandemic preparedness activities, local health departments should review the legal and regulatory framework in their state to determine the most appropriate action to improve access to antiviral medication during a pandemic and determine if a CPA would be feasible and improve response efforts.

Health departments should also understand the implications of the Emergency Prescription Assistance Program (EPAP), a section of the Stafford Act that can be used in federally identified disasters to provide prescription medication and durable medical equipment for individuals living in affected areas and who do not have health insurance. EPAP was developed to leverage fully the resources of the private sector (pharmacies) to allow for efficient drug distribution during emergencies. Health departments should explore the potential benefits of EPAP prior to an emergency and understand the processes required to use the program.\textsuperscript{41}

- \textit{Take action}—After health departments and pharmacies have established the groundwork for a successful partnership, the next step is to act. Pharmacists can also be included in training and exercises and given roles in response, such as participating in the emergency operations center or providing key information through online reporting tools. Evaluations of joint efforts such as exercises, responses, and planned events must be conducted in a timely manner, and partners should act on any recommendations for improvement. Optimally, partnership activities should advance the strategic objectives of all partners.\textsuperscript{20}

- \textit{Plan for long-term goals and continuous involvement}—Partnerships must be maintained over time to remain fruitful and relevant to partners’ needs. Partners must continue to prioritize regular ongoing interactions to keep lines of communication consistent and open. Once pharmacists have been successfully engaged as partners with health departments for public health preparedness and response, partners can use several strategies to maintain relationships. Within a healthcare coalition, a pharmacy working group could be developed to include health department professionals in addition to community pharmacists from chain, independent, and hospital pharmacies. Partners should attend regularly scheduled planning meetings to ensure consistent communication and planning efforts. As an example, both PHSKC and PBCHD continue to regularly meet and engage with their pharmacy partners and stakeholders, to continue collaborative pandemic influenza planning efforts.

\section*{Conclusion}

Since “all disasters begin locally”\textsuperscript{42} and are managed at the local level, public health must engage community pharmacists and pharmacies as key participants in an emergency response. Because of the unique resources offered by public health agencies and pharmacies, increased coordination will result in more successful outcomes. Health departments should develop consistent plans on the local and state levels and reach out to pharmacies to incorporate them into emergency planning and pandemic influenza response efforts. As the public health community recognizes and embraces the expanded role of pharmacists in the US public health system, pharmacists may be encouraged to participate in pandemic influenza responses. Such collaboration may allow the entire community to obtain the maximum benefit of pharmacists’ skills and resources.

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