

Community Preparedness for Public Health Emergencies: Introduction and Contents of the Volume

Although there are a number of definitions of “community preparedness,” we conceptualize it as the ability of communities to prepare for, withstand, and recover from natural or human-made disasters.¹ Community preparedness has no bounds; a crisis, whether contained at the local level or as far reaching as a pandemic, will affect diverse community populations. Preparedness planning must account for and use the multitude of complex organizational and socioeconomic components that contribute to building community resilience following a large-scale tragedy. This supplement samples the broad-ranging topics that comprise the body of scientific and programmatic information available on the subject.

Editorials in this edition present thoughtful reflections about considerations for hurricane and evacuation planning, engaging stakeholders and resources such as community and faith-based organizations (CFBOs), organizing clinical trial networks aimed at creating community tolerance and resilience, and methods to better assess whole population planning for building resilient communities. Public health practice articles highlight strategies initiated by small district health departments to meet the needs of at-risk populations. Research articles

focus on outcomes associated with integrating CFBOs for planning and response efforts: how partnerships can ameliorate the impacts of large-scale disasters whether related to acute infection or chronic diseases. Further, research articles illustrate the use of novel and established methods to address individual, household, and pandemic preparedness plans.

OPINION EDITORIALS

Children require special consideration during public health emergencies. In this editorial, Leeb et al. (p. S260) describe the formation of the Children’s Preparedness Unit (CPU) at the Centers for Disease Control and Prevention. The US Congress recently codified the CPU during the approval of the Pandemic and All Hazards Preparedness and Advancing Innovation Act (2019, Pub L No. 116–22; <https://www.congress.gov/bill/116th-congress/senate-bill/1379>).

The CPU prioritizes and focuses efforts to ensure that infants’ and children’s issues are addressed during all phases of a response (from plans to recovery). The evolution of the CPU from the H1N1 pandemic (2009) to hurricane response (2018) is described and validated. This

editorial focuses on the unique characteristics of this population and the importance of addressing their needs during response efforts. The CPU also collaborates with public health partners to improve pediatric preparedness capacity at state and local levels year round; the CPU is expanding the public health infrastructure to include more of children’s needs in emerging challenges.

The editorial by Der-Martirosian et al. (p. S263) considers military veterans as untapped resources who, with some training, could be effective public health response volunteers. Veterans familiarity with crisis, search and rescue operations, hazardous material, and terrorist incidents make them uniquely suited to be successful volunteers in a public health crisis. Additionally, integrating veterans into meaningful response efforts uses expertise and experience while providing avenues for social integration, community inclusion, and individual resilience.

The editorial by Schoch-Spana et al. (p. S265) relates the practical utility of the Composite of Post-Event Well-being (COPEWELL) project, which enables communities to evaluate and enhance factors influencing resilience after disasters. This editorial describes how the assessment model can predict community resilience by combining social, natural, and physical elements. The model accounts for pre-event community functioning across 10 domains (e.g., health care and public health, food and water, communication); resistance as a measure of community function that accounts for vulnerability, inequity, deprivation, systems, and countermeasures; recovery as measured by social capital and cohesion, preparedness and response, and resources; and resilience, defined as the ability to adapt to changing conditions. The computational model uses publicly available data at the county level, thus facilitating the potential for national resilience values.

Cobb (p. S268) describes the formation of the Resilience Intelligence Network, a collaborative investigator-initiated clinical trial network to foster resilience, preparedness, and response. Communities should

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develop and sustain resilience so that they will be able to withstand and recover from public health threats, and the network hopes to develop community-based competencies that minimize the impact of unpredicted public health stressors.

Hurricanes and other severe weather patterns are important issues in emergency preparedness. Mainzer et al. (p. S271) offer editorial perspectives on applying the 10 Essential Public Health Services framework in the response to the 2017 Puerto Rico hurricane. The framework is useful for developing a recovery strategy that can restore measurable population health protection capacity, identify community needs, define goals, select objectives, implement interventions, and evaluate outcomes, costs, and effects.

Community and faith-based organizations (CFBOs) provide support and critical services and often liaise between neighborhood residents and government entities. Also, CFBOs often provide vital services that address gaps in a plethora of social, economic, and public health interventions.² Santibañez et al. (p. S274) offer perspectives about the Centers for Disease Control and Prevention's progress in integrating CFBOs into public health preparedness, response, and recovery efforts. They provide examples from pandemic influenza (2009), Ebola (2014) and Zika (2016) responses that illustrate CFBOs involvement. The authors issue a call for federal planners to continue active engagement and build synergies with CFBOs for community preparedness.

Communities are often required to evacuate to avoid morbidity and mortality associated with natural disasters. Kruger et al. (p. S279) present an editorial on enhancing public

health's role in preparing communities to evacuate. They emphasize the importance of using trusted agencies such as those in public health to engage with community partners before disaster strikes; conveying accurate information is key to promoting public action. A study conducted after Hurricane Irma in Florida (2017) found that less than one third of people under mandatory evacuation orders assessed information accurately.³ Improved communication and safety education strategies before an evacuation order will increase public confidence when issued by trusted agents.

Amobi et al. (p. S277) describe the Association of State and Territorial Health Officials' president's challenge for building community resilience. The challenge issues a call for fostering community leadership, building social connection, and "bouncing forward" to advance health equity by encouraging state and territorial public health officials to invest in community-led, place-based, and cross-sector approaches. Examples of this call to action from Los Angeles, California's 100 Resilient Cities Network, Tulsa, Oklahoma's resilience strategy for eliminating systemic discrimination, and Rhode Island's Health Equity Zone are described. Increasing inclusion of community leaders in health official's work to address factors such as racial equity, language barriers, and income inequality encourage community preparedness and resilience.

Dodgen (p. S281) also focuses on ways to advance community preparedness through health equity and highlights the need for preparedness planning to ameliorate the impact of adverse mental health consequences that might result following the stress of a large-scale disaster. True

community preparedness is achieved when efforts support interplay between all levels of government and private and public partners.

PRACTICE

In a public health practice brief, Schroeder and Bouldin (p. S283) address an important aspect of rural preparedness by describing a 3-county Appalachian District Health Department strategy for building a comprehensive all hazards emergency plan to reach and meet emergency requirements of community members with access and functional needs. Conducting a tabletop and full-scale exercise with a focus on supporting people with access and functional needs during emergency mitigation, preparedness, and response and recovery efforts helped public health officials operationalize plans that supported the whole community.

Peters et al. (p. S286) also address the planning needs of at-risk populations through a public health practice brief. The authors describe a quantitative assessment tool that weights the risk of a hazard on the basis of the planning necessary to ensure whole community access to emergency response resources in addition to assessing hazard impacts on health care and public health services.

RESEARCH

Rivera et al. (p. S290) focused their research on CFBOs and present findings of a needs assessment conducted by the New York Department of Health and Mental Hygiene to identify indicators of preparedness in two community sectors: human

services and faith-based organizations. Results of the needs assessment informed recommendations for CFBOs, such as including preparedness plans as a routine component of standard operating procedures, developing emergency checklists, and maintaining emergency contacts and vital vendors. These recommendations aim to ensure that CFBOs sustain or quickly restart essential functions during and following disasters.

In 2017, a widespread hepatitis A outbreak was linked to individuals experiencing homelessness (an often overlooked population at risk for adverse outcomes) or those who use illicit drugs. Snyder et al. (p. S297) conducted semistructured interviews with health officials from the nine local health departments involved with the widespread outbreak. Several themes emerged that addressed common challenges and solutions for mitigating the transmission of the disease, from provision of vaccines to workforce surge capacity. Preparedness concerns were notable, particularly those related to financial constraints and contingency plans for funding vaccine procurement during a widespread epidemic. The need for enhanced preparedness plans for homeless populations facing adversities is evident.

The Community Assessment of Public Health Emergency Response (CASPER) facilitates assessment of household-based public health in a timely, inexpensive, and representative manner. Schnall et al. (p. S303) present results from multiple CASPERs conducted from 2017 to 2018 in the US Virgin Islands. In 2017, the island experience two large-scale hurricanes (Irma and Maria). Findings include notable food shortages among

one third of households three to six days after the hurricane's impact. CASPER results were disseminated to relevant sections of the health department and other agencies, which promoted data-driven efforts to strengthen the emergency preparedness capacity on in the US Virgin Islands.

Pollock et al. (p. S309) present results from the first phase of a qualitative research study on the basis of key informant interviews from 47 community-based organizations engaged in Louisiana's Community Resilience Learning Collaborative and Research Network study, which aims to improve community resilience to threats to the disaster-prone area. Guided by the National Health Security Strategy and Implementation Plan, several themes emerged regarding communication strategies, coordination of partnerships and sustained relationships, community education, and areas of challenges.

Using Medicaid data, Phillippi et al. (p. S316) present a research article that examines behavioral health care utilization among a large sample of adults before and after the 2016 flood in Baton Rouge, Louisiana. Their findings demonstrate gender differences in diagnosis patterns and increased utilization of behavioral and mental health services after the flood. This study documents common postdisaster behavioral health issues (substance-related and addictive disorders, trauma- and stress-related disorders, and anxiety and depressive disorders) in adults and highlights areas for focused community support to promote resilience and recovery.

More than 50% of US adults have at least one chronic disease and are at risk for being disproportionately affected by a large-scale disaster.⁴ Holt et al.

(p. S325) present a method for estimating how many individuals in a population will have access and functional needs following a public health emergency. The authors describe a near, real-time method that uses a flexible small area estimation methodology, which relies on geographic information system tools and data from the Behavioral Risk Factor Surveillance System. By combining an innovative, validated, and flexible small area estimation methodology with an ongoing nationwide health survey in the geographic information system, they demonstrate a feasible way to produce detailed estimates of residents with chronic conditions who might be affected by a natural disaster; such information can be used for a range of planning and response scenarios.

BRIEF

The threat of an influenza pandemic is a primary public health preparedness concern. Not only does a pandemic increase mortality rates, it also threatens the supply chains for critical, life-saving medical countermeasures. Carias et al. (p. S322) present the Pandemic Vaccine Campaign Planning Tool (PanVax Tool). The PanVax Tool demonstrates the impact of community partnerships for pandemic vaccination readiness and identifies areas for improved partnerships for pandemic response. The PanVax Tool is customizable and allows real-time inputs for the target population coverage, vaccine provider characteristics, and vaccine allocation. The report includes a case study, which uses hypothetical data to illustrate how the PanVax Tool is used.

The articles presented in this supplement span a range of topics

but just begin to touch the surface of community preparedness. Our goal with this publication is to provide a forum for advancing evidence-based practice for analysis, reflection, consideration, and potential implementation. We hope that these articles stimulate continued scientific inquiry of public health emergency preparedness and encourage future investigations focused on improving community preparedness, recovery, and, ultimately, a resilient nation. **AJPH**

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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