Evolution of Public Health Emergency Management From Preparedness to Response and Recovery: Introduction and Contents of the Volume

The events of September 11, 2001, forever altered how disaster preparedness was perceived and understood in the United States.[1] Rapidly evolving technology, increasing globalization, social and economic crises, and the natural evolution of infectious diseases increased the complexity of public health preparedness and emergency response.[2] In 2011, the Centers for Disease Control and Prevention (CDC) published the *Public Health Capabilities: National Standards for State and Local Planning*[3] as the foundation for successful public health preparedness programs. The articles in this volume of *AJPH* provide detailed accounts of preparedness in action, showcasing competencies in 15 capabilities that are summarized across six domains: biosurveillance, incident management, community resilience, information management, countermeasures and mitigation, and surge management.

SEVENTEEN ORIGINAL ARTICLES

This supplemental issue of *AJPH* advances the scientific and programmatic discourse on public health preparedness as a discipline by highlighting innovative and effective evidence, strategies, policies, and transformational practices. We assembled a varied collection of offerings from academia, public health departments, federal agencies, and public and private partnerships with first responders. There are 17 original articles covering each of the public health preparedness capabilities domains.

The articles include commentaries on preparedness policy, funding, and best practices; analytic essays on preparedness capabilities and emergency operations; briefs and public health practice articles about community resilience and pandemic influenza planning; and research that highlights the impacts of preparedness across infectious disease, countermeasure planning and evaluation, community planning and interventions, and risk communication.

PERSPECTIVES

Describing a case example of the Zika virus response, Iskander et al. (p. S122) review and comment on the critical responsibilities that scientists play in capturing, analyzing, and interpreting data during public health emergencies to advance the science and inform decision-making for continual program improvement.

As a discipline, emergency management is in its infancy and is evolving rapidly with increasing complexity. Rose et al. (p. S126) analyze the structural and functional components associated with the emergent field of practice and suggest three pillars emblematic of its conceptualization: (1) professional competencies, (2) programmatic standards, and (3) the incident management system. Their essay concludes with predictions and questions on the future of this field.

Vulnerable populations are likely affected disproportionately by emergency events. Dziuban et al. (p. S134) highlight preparedness planning for children. Their article provides review and commentary on progress and gaps in planning for and inclusion of pediatric requirements during emergencies.

Summers and Ferraro (p. S138) describe and comment on the National Association of County and City Health Officials Project Public Health Ready. This project strengthens the public health infrastructure by equipping local health departments with sustainable tools to plan for all hazards, train the workforce, and exercise using a continuous quality improvement model. Since its start in 2003, the project has accumulated a repository of best practices, tools, and templates, all available for response planners around the country.

POLICY

Jaffe Levy et al. (p. S142) apply the 15 CDC preparedness capabilities in the context of a Washington State tuberculosis outbreak. They demonstrate how this model for response produced positive outcomes and effectively protected the community from additional cases.

Federal policies and regulations relevant to and the resources needed for public health emergencies are not always understood fully. Katz et al. (p. S148) describe legal authorities and funding mechanisms that affect

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federal support for responses to biological events.

Horney et al. (p. S153) assess five contextual factors (leadership, partnership, organizational structure, resources and structural capacity, and data and evaluation) pertaining to state and local health departments that shape the way the CDC's 15 preparedness capabilities are perceived and used. Their results are presented with instructive policy implications.

PRACTICE

Cuervo et al. (p. S161) provide an example of resilience enhancement using community-based organizations that serve a Latino immigrant worker community. They describe the development and implementation of an intervention to address recovery following Hurricane Sandy.

Watson et al. (p. S165) provide a different perspective on legal and funding mechanisms and chains of authority that support responses to mass biological threats in the Department of Health and Human Services.

Swift et al. (p. S168) convey the results of a real-time, one-day mass influenza vaccination event conducted at an academic medical center. Using a closed point of dispensing model with the hospital incident command system allowed thousands of people to be rapidly vaccinated. The methods used in this model of vaccine delivery may inform future programs.

RESEARCH

Fitzgerald et al. (p. S177) present pandemic influenza planning results from all 62 surveyed public health emergency preparedness jurisdictions. The authors provide suggestions for improving performance on providing and allocating vaccinations.

Murthy et al. (p. S180) conducted an evaluation of the CDC Public Health Emergency Preparedness program's progress toward achieving public health preparedness capabilities. They describe progress in state, local, and territorial health departments by analyzing Public Health Emergency Preparedness impact assessment data collected from 62 jurisdictional awardees. Results show significant improvements in the countermeasures and mitigation domain and highlight gaps in coordination among health systems and public health agencies.

The CDC's Community Assessment for Public Health Emergency Response is an important tool for implementing disaster epidemiology. Schnall et al. (p. S186) present data on all domestic activities using this tool, including CDC-conducted training and successfully implemented assessments during actual events. Results show the tool's utility for community skill enhancement.

Williams et al. (p. S193) present encouraging evidence from a survey administered to representatives of the primary care sector in New York City who are members or nonmembers of a public–private emergency preparedness network. Members had more fundamental indicators to respond to a medical surge than did nonmembers.

Savoia et al. (p. S199) conducted a systematic review of research on public health emergency preparedness and organized their findings by the four research priority areas defined by the Institute of Medicine's 2008 landmark report *Research Priorities in Emergency Preparedness and Response for Public Health Systems*[4]: (1) enhancing the usefulness of training, (2) improving timely emergency communications, (3) creating and maintaining sustainable response systems, and (4) generating effectiveness criteria and metrics. In addition, the authors delineate activity-specific subcategories within the four priorities to explore the range of research topics pursued by scientists from 2009 to 2015.

Renard et al. (p. S200) summarize 2007 to 2014 data from the Technical Assistance Review used to evaluate 50 states' and 72 local jurisdictions' medical countermeasures capability. Results show improved efficiency in this capability for the majority of sites.

Savoia et al. (p. S208) present a framework for evaluating emergency risk communication, a critical area for ensuring that public information warning and information sharing is meaningful and useful.

UNIQUE TRIUMPHS AND CHALLENGES

The articles included in this supplement demonstrate unique triumphs and gains in national preparedness while also suggesting areas for continued development and improvement. Challenges to advancing preparedness as a field of study suggest opportunities for growth and renewed vigilance to ensure that the nation is prepared and readily able to respond to the next unknown threat. Together, the original articles in this issue contribute to the overall impact of federal, state, local, tribal, and territorial public health agencies, departments, and communities on public health preparedness and national public health security. AJPH

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