

## Community Resilience and Public Health Practice

There is emerging consensus among US policy leaders that community resilience is fundamental to disaster preparedness, response, and recovery. Building resilience is one of the two major focuses of the National Health Security Strategy of the US Department of Health and Human Services.<sup>1</sup> According to the National Health Security Strategy, resilient communities are composed of “healthy individuals, families, and communities with access to health care and the knowledge and resources to know what to do and care for others in both routine and emergency situations.”

While multiple constructs of resilience abound and all offer important perspectives, none alone are likely sufficient to enable a community to withstand the stresses of a disaster or to improve the quality of life for its residents in the aftermath. Originally a concept derived from the field of physics, resilience has been defined as “the capability of a strained body to recover its size and shape after deformation caused especially by compressive stress,” or “an ability to recover from or adjust easily to misfortune or change.”<sup>2</sup>

From a public health perspective, several domains of resilience may contribute to the overall resilience of a community. Physical resilience, or resilience in the built environment, refers to the “functionality of community buildings and infrastructure systems after an event.”<sup>3</sup> This type of resilience is affected by building codes, engineering standards, land use planning, and environmental

threats (e.g., weather, vulnerability to earthquakes), among other factors. Resilient individuals are both physically and psychologically healthy. Good health prior to disasters supports greater resilience in the disaster setting.<sup>4,5</sup> Those with chronic or poorly treated health conditions have found it more difficult to reestablish housing and health care following a catastrophe.<sup>6</sup> Psychological resilience is the ability to maintain positive adaptation and mental health despite stressors in the immediate and broader environment. Disasters can also impair psychological resilience if they disrupt social networks, thereby worsening overall population health.<sup>7</sup> Neurobiological factors may also play a role in psychological resilience.<sup>8</sup>

Organizational resilience is an essential attribute of a resilient community’s governance structure and of the public and private sector entities within it. Resilient organizations are capable of improvisation<sup>9</sup> and invest in their client base, their leaders, and all levels of their workforce.<sup>10</sup> Resilient organizations also have redundant systems that avoid a single point of failure.<sup>11</sup> Economic and environmental resilience are two additional aspects that are vital to the health of a community.

Two recent publications highlight underlying factors involved in resilience. A National Academy of Sciences report<sup>12</sup> on resilience largely focuses on physical infrastructure. It covers the need for improved weather and geophysical risk prediction

modeling technologies, the development of novel private–public insurance products to better shield communities from the devastating impacts of disasters of varying types, and the insurance-based financial incentives to promote disaster-resilient structural engineering. Largely missing from this book, however, is a discussion about the important roles of human resilience and social capital. This perspective is outlined by Daniel Aldrich in *Building Resilience*.<sup>13</sup> Aldrich studied resilience and recovery in four catastrophic disasters from the past century: the 1923 Tokyo earthquake, the 1995 Kobe earthquake, the 2004 Indian Ocean earthquake and tsunami, and the 2005 Hurricane Katrina disaster in New Orleans. Through careful qualitative and quantitative analysis, he found that the presence of strong social capital, both among people and among individuals and organizations, is a prerequisite for and a predictor of recovery and may trump both the degree of infrastructure damage and the amount of aid received by an area.

### RESILIENCE POLICY IN PUBLIC HEALTH PRACTICE

The Los Angeles County Department of Public Health has recently embarked on initiatives to promote resilience through the development of social capital in communities by incorporating equity and social justice principles into a broad array of public health initiatives

relating to preparedness planning and response. Components include improving community engagement skills of health department staff, building sustainable community engagement processes, developing metrics for resilience-promoting interventions,<sup>14</sup> and launching a social media campaign.

In their articles, Plough et al. (p. 1190) and Chandra et al. (p. 1181) also advocate for government agencies to engage with community- and faith-based organizations as a way to build a buffer against disparities in population-based health outcomes following emergencies and disasters.<sup>15</sup> This engagement with community organizations may also help to dissolve barriers of distrust that exist in many communities toward government agencies.

As described by Wells et al. (p. 1172), the Los Angeles community has been involved in the design of this community resilience initiative. Building on concepts of community-partnered research, the group, in collaboration with community leaders and stakeholders, identified specific resilience-building strategies. These consisted of expanding upon the community engagement skills of emergency responders and increasing the preparedness knowledge of public health workers, using mapping tools to identify potential areas of vulnerability in community resilience, identifying and mentoring community resilience leaders, and developing a training module and toolkit currently being piloted in select communities. Establishing such day-to-day systems is critical because a community's successful recovery from a disaster

situation rests upon those strong foundations.

These three articles highlight essential social factors that contribute to community resilience. Building truly resilient communities will require significantly strengthening the ways that individuals in communities relate to one another as well as fundamentally expanding disaster preparedness policies to reach beyond physical capacity building to social capacity building.<sup>13</sup> This method will require a whole community approach, with government, private, and nonprofit sectors working together to promote the intelligent use of social media and existing technologies, to support informal social networks, to incorporate civic- and faith-based organizations into disaster plans, and to reform relationships within the private sector.

Other actions to build social capital are becoming more prominent. Following Hurricane Sandy, a public-private collaboration built Wi-Fi networks in shelters and disaster recovery centers to help survivors connect with their social networks and access help. Preparedness apps such as the bReddi Facebook App<sup>16</sup> (created from the US Department of Health and Human Services Life-line Challenge Award) and the American Red Cross Hurricane App<sup>17</sup> identify friends to serve as lifelines. These designated friends are responsible for ensuring one's well-being in the event of a disaster and for informing family and friends that one is safe and well. Services that help survivors access psychological support (e.g., crisis counseling, Disaster Distress Helpline<sup>18</sup>) are additional components of a comprehensive approach to supporting resilience. Multiple

Geographic Information System technology-based social vulnerability maps identify communities most vulnerable to disasters based on a variety of local, social, and economic factors,<sup>19</sup> which policymakers can then prioritize for resilience and social capital growth initiatives.

## CONCLUSIONS

Building truly resilient communities requires a fundamental expansion from traditional approaches (emphasizing physical capacity building and material disaster relief) to longer-term social capacity building. Strategies to enhance social capital may prove to be high-yield components of community resilience. Time and again, local organizations and networks have proven far more adaptable and responsive than outside agencies in responding to disasters. The work described in this issue lays out some of the important steps along the path of partnering with communities as they build their own resilience. ■

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This editorial was accepted March 16, 2013.  
doi:10.2105/AJPH.2013.301354

## Contributors

M. J. Morton drafted the editorial, contributed to the content, and edited all versions. N. Lurie conceptualized and edited the editorial and organized the content.

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