


Alfredo Morabia, MD, PhD, and members of the SexTEAM at the University of Puerto Rico—Medical Sciences Campus for helpful comments on earlier versions of this editorial.

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# After Harvey, Irma, and Maria, an Opportunity for Better Health—Rebuilding Our Communities as We Want Them

 See also Zolnikov, p. 27; Lichtveld, p. 28; Rodríguez-Díaz, p. 30; and Woodward and Samet, p. 33.

Damage from Hurricanes Harvey, Irma, and Maria is likely to cost hundreds of billions of dollars. Countless homes, schools, hospitals, vehicles, and critical infrastructure have been damaged or wiped out. Rebuilding will take years, even decades. There is no silver lining in this crisis, but there is a once-in-a-lifetime opportunity: to rebuild the affected communities in ways that make Americans safer, healthier, and better prepared for the next challenge and to remind all communities of the importance of engaging in preplanning for disasters so they are more resilient and better able to realize healthier communities.

## KATRINA AND NEW ORLEANS

Major disasters—including weather events, disease outbreaks, and terrorist attacks—reveal

both strengths and weaknesses in our communities' ability to respond and recover. They are, thus, important opportunities to learn and improve. After Hurricane Katrina, New Orleans, Louisiana, experienced an 80% reduction in hospital capacity, and more than 75% of safety net clinics closed, leaving hundreds of thousands without access to care. The storm was a catastrophe of unimaginable proportions; yet, in the words of Karen DeSalvo, former acting US Assistant Secretary for Health and former health commissioner of New Orleans, it was “an unprecedented opportunity to redesign a major American health care sector from the ground up.”<sup>1(p223)</sup>

The fact was that New Orleans and the surrounding region were not very healthy before Katrina struck. A huge percentage of the population was uninsured, and rates of

heart disease, stroke, and diabetes far exceeded the national average. For Medicare patients in the state, quality of care ranked both lowest in quality and highest in expense. So, when Katrina provided a clean slate, the region decided to make the most of it.

The Louisiana Health Care Redesign Collaborative was established to improve health and health care in the state by rebuilding with a focus on four key areas: primary care and prevention, quality of care, use of health information technology, and broader insurance coverage. Within five years of the storm, the region was seeing results. More than 300 000 patients had visited new primary care facilities, and emergency department visits

declined. In 2010, 74% of patients in New Orleans reported satisfaction with care quality, compared with a 39% national average.

## SOCIAL DETERMINANTS OF HEALTH

The September supplement of *AJPH* dedicated to preparedness reviews the progress achieved since 2001. However, although access to high-quality health care is an important prerequisite for strong and resilient communities, attending to social determinants of health—such as adequate housing, ample opportunity for recreation and exercise, access to healthy food, and robust social networks—is just as essential. After Katrina, communities revitalized flooded areas as family parks and meeting centers and engineered berms that also serve as walking trails. Just outside the French Quarter, the newly constructed Crescent Park Trail offers a safe place for walking and biking and features a pedestrian bridge with access to shared green

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This editorial was accepted October 15, 2017.

doi: 10.2105/AJPH.2017.304194

spaces previously isolated by railroad tracks.

## REBUILDING BY DESIGN

To tackle the food insecurity that plagued New Orleans before Katrina (a challenge that continues there and in many communities across the nation), one enterprising resident turned empty lots in the devastated Lower Ninth Ward, recognized as a food desert by the US Department of Agriculture, into community orchards. Through a new nonprofit organization, these rejuvenated lots provide healthy food to residents who need it, teach people to grow their own produce, and serve as a source of community unity and pride.

Events like Katrina provide a unique opening for innovation and creativity in building communities that are both healthier and more socially vibrant than they were before disaster struck. Indeed, after Superstorm Sandy devastated communities along the East Coast, the groundbreaking Rebuild by Design contest called on innovators and experts across

sectors to work with community members to envision, design, and build solutions to the region's most complex challenges. Attention to community factors that affect health figured significantly in those solutions.

Today, less than a month after Harvey, Irma, and Maria delivered back-to-back blows, funding and resources are coming into communities in Texas, Florida, and Puerto Rico. Amid the flurry of first response and the outpouring of compassion and support from across the nation and the world, we hope affected communities will capitalize fully on the rebuilding opportunities before them by using the funds and resources strategically. The blueprint should not be the status quo; it should be a vision for an infrastructure that also supports optimal health and resilience for every community.

## REBUILD OUR COMMUNITIES AS WE WANT THEM

Far too many communities in the United States are

suboptimally healthy and lack adequate health-supporting infrastructure, such as housing, high-quality health care, strong networks that prevent social isolation, and easy access to healthy, affordable food. Although no one wishes a disaster on any community, we know that, inevitably, they will continue to occur—and with them will come opportunity. As the famous saying goes: “Never let a serious crisis go to waste.” When planning for disasters, we should also plan for what we want our communities to look like as they recover—including careful consideration of what will promote and sustain good health.

Political leaders, health officials, preparedness and response professionals, and community organizations should act now to develop a shared vision of optimal health for their community. A long-term plan for health and resilience should be a forethought, rather than an afterthought, when a disaster occurs. A detailed framework to support this kind of planning was recommended in a 2015 consensus report from the Institute of Medicine (now the National Academy of Medicine), and

resources are available through the federal government's National Disaster Preparedness Framework (<https://www.nap.edu/read/18996/chapter/1>; <https://www.fema.gov/national-disaster-recovery-framework>).

As Harvey and Irma focus our national consciousness on the deadly impact of natural disasters, each of us should consider what can be done to make our communities safer, healthier, and more resilient places to live. **AJPH**

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# Climate Change, Hurricanes, and Health

 See also Zolnikov, p. 27; Lichtveld, p. 28; Rodríguez-Díaz, p. 30; and Dzau et al., p. 32.

The year 2017 has seen a devastating series of hurricanes across the Caribbean, Central America, and the United States—Harvey in August, Irma and Maria in September, and Nate in October. The first three caused devastation along their paths and reached the United States as Category 4 hurricanes.

Inevitably, there has been discussion on the role of climate change in increasing the severity of tropical storms generally and this series of hurricanes specifically.

We address the causal attribution of severe and extreme weather events to climate change and the associated health

## CAUSAL ATTRIBUTION OF EXTREME WEATHER EVENTS

The broad community of atmospheric scientists has brought increasing attention to the causal attribution of extreme weather events to human activities.<sup>1</sup> The underlying approaches will be consequences. This attribution is of primary scientific interest but comes with evident political implications.

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*This editorial was accepted October 16, 2017.  
doi: 10.2105/AJPH.2017.304197*