Health Law Daily Wrap Up, STRATEGIC PERSPECTIVES: Climate change adaptation and resilience: How health facilities can weather the storm, (Sept. 3, 2020)

Health Law Daily Wrap Up
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Hospitals should adapt to the effects of climate change to avoid suffering damage and reduced profits. In the midst of a climate-related event such as an extreme storm or flooding, it is important that hospitals and other health facilities remain functional to provide critical services to the public. To maximize resilience and adaptation to climate events and disasters, health facilities—whose large carbon footprints contribute to the climate crisis (see Health facilities contribute to climate change, can be leaders in mitigation, April 3, 2020)—must analyze their risks and implement measures such as energy-efficient infrastructure. With wildfires and hurricanes of historic proportions seeming to be the norm, facilities that fail to take measures to ensure resilience risk not only financial effects due to revenue loss and major emergency repairs, but also possible permanent closure.

What Risks Does Climate Change Pose to Health Facilities?
Climate-related events—including severe storms, flooding, wildfires, extreme heat, and drought—pose a number of operational risks to health care facilities, as outlined Health Care Without Harm’s (HCWH) 2018 analysis, Safe Haven in the Storm:

- Extreme weather events can make the operating conditions for a facility more difficult, and facilities might be forced to evacuate patients or shut down operations temporarily or permanently.
- Hospitals can experience a surge in patients and acute-care needs.
- The facilities themselves might incur costly damage. For example, Feather River Hospital remained closed after the 2018 Camp Fire severely damaged the facility, and East Houston Regional Medical Center permanently closed after sustaining extensive damage during Hurricane Harvey.
- Natural disasters and extreme weather events can damage infrastructure, including utilities, transportation, and communication, and make hospitals inaccessible.
- According to Juanita Constible, Senior Advocate, Climate and Health, Climate & Clean Energy Program, at the Natural Resources Defense Council (NRDC), extreme events can disrupt supply chains, making it harder and more expensive to secure critical medications and other supplies. For example, hospitals across the U.S. experienced serious shortages of IV fluid after Hurricane Maria damaged a key manufacturing facility in 2017.
- Constible also noted that climate-fueled extremes such as severe heat waves and storms put staff under increased mental and physical duress and, as extreme weather events get more frequent and severe, high-risk facilities may have trouble attracting and retaining talent.

In addition, health facilities can suffer financial consequences due to unoccupied beds and loss of revenue from elective procedures halted during crises or from unusable facilities. The report also found that natural disasters increase the number of uninsured or underinsured patients because the economic devastation caused by a disaster can cause many to lose employer-sponsored coverage and "the hardest-hit neighborhoods are almost always the poorest."

How to Be Resilient and Adapt
According to Constible, the costs of climate adaptation will vary by geographic region and facility and could be particularly tough for facilities operating on a thin economic margin. "However, two things are clear from both the scientific literature and media reports: Adaptation will get harder and more costly as climate hazards intensify, and health care facilities are already paying a high price for a hotter and more extreme world." Constible advised that, at minimum, health care facilities should "proactively assess their climate-related risks and routinely incorporate those risks in everything from short-term staffing and supply plans to long-term construction projects." Assessments and plans should account for "both catastrophic events such as wildfires and more chronic climate hazards such as sea level rise and increases in average temperature."

The Sustainable and Climate-Resilient Health Care Facilities Toolkit, released by the Obama Administration in 2014, provides guidance on ways to manage the hazards presented by climate change. The toolkit includes a guide document, Primary Protection: Enhancing Health Care Resilience for a Changing Climate, which is organized around five elements that illustrate specific health sector resilience principles and practices:

1. climate risks and community vulnerability assessment
2. land use, building design, and regulatory context
3. infrastructure protection and resilience planning
4. essential clinical care delivery planning
5. environmental protection and ecosystem adaptations

Robyn Rothman, J.D., Associate Director, State Policy Programs, Health Care Without Harm U.S., noted that climate-resilient health care facilities look different depending on the geographic region and risks, but those thinking about a resilience strategy typically, after identifying the best available climate data for planning purposes, focus on improving energy efficiency and generating renewable energy onsite. Pairing the onsite renewable energy with a microgrid, battery storage, and cogeneration capacity makes the local grid more resilient and allows the facility to continue operating if the grid goes down in an emergency.

In addition, facilities should (1) incorporate resilient design features into infrastructure planning, such as moving generators and other critical mechanical and communications equipment from the basement to the roof to avoid damage during flooding events; (2) ensure air filtration capacity is sufficient to filter hazardous air in case of nearby wildfires; and (3) undertake a vulnerability assessment of hospital and related health care infrastructure and participate in regional planning with critical stakeholders in the community to ensure that transportation systems and infrastructure are sufficiently resilient to allow patients and staff to reach the facility during an emergency.

Other measures include designing redundancy into power systems, selecting building materials that can withstand extreme conditions such as strong winds and surging water, and considering the future to ensure maximum adaptability.

Facilities that have taken adaptation measures. Rothman noted that extreme weather events have caught even the best hospital systems off guard, but hospitals are adapting quickly and learning from their experience. The Safe Haven report described how NYU Langone lost power due to a storm surge during Superstorm Sandy, requiring the evacuation of all patients. Later, it installed a new combined heat and power (CHP) plant, moved critical infrastructure to higher floors, and made campus perimeter protection and flood prevention measures like submarine doors between buildings.

All of Texas Medical Center’s (TMC) 23 hospitals were shut down after Hurricane Allison brought a 1,000-year flood that left three feet of rain, 22 dead, and $5 billion in damages. TMC invested $50 million to upgrade infrastructure with resilient and sustainable design features like an onsite CHP and moving all critical infrastructure above projected flood elevations. These systems have since withstood several hurricanes; however, during Hurricane Harvey most patients and emergency vehicles were unable to reach the complex because the streets in Houston were flooded, which underscores the need to work with the community to ensure the resilience of transportation systems and infrastructure.

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Spaulding Rehabilitation Hospital is vulnerable to hurricanes, storm surges, and sea-level rise and potential coastal flooding due to its location on the waterfront in Boston. To maximize its resiliency to these factors, the first floor was built 30 inches above the 500-year flood elevation and mechanicals were installed on the roof or in a penthouse. The underground parking garage is protected by a berm and a barrier system.

The Government’s Role in Promoting Resilience

Both Rothman and Constible stressed the need for financial incentives to help hospitals implement climate adaptation. For example, the government should condition federal funding for hospitals and other health care facilities on climate vulnerability assessments and adaptation plans. Rothman noted that because nearly two-thirds of U.S. health systems are nonprofit or public, they cannot always directly use tax-based incentives.

Constible also stressed the importance of ensuring credible climate information and guidance remain publicly accessible and easy to find. Similarly, Rothman said, "One of the barriers to achieving climate-resilient healthcare infrastructure is access to accessible and accurate climate projections. Health care organizations cannot rely on projections for extreme weather based on historical data that is currently available from FEMA."

Constible suggested that Congress increase funding for the Hospital Preparedness Program, which has been identified as "the only source of federal funding for health care system readiness," direct all federal agencies to update and implement their climate adaptation plans, most of which are at least six years old, and modernize federal laws and regulations to better protect health care workers from climate-related hazards.

Rothman emphasized the importance of a resilient infrastructure in the surrounding community, since facilities can be negatively affected by disruptions in transportation, fuel, telecommunications, and power systems during extreme weather. Policies should prioritize investments in and/or incentives for health systems to participate in regional transportation planning, and consider public transportation access when siting new buildings; building design that incorporates electric vehicle charging and bike parking; and design that incorporates solutions such as tree canopy, rain gardens, permeable pavement, and other natural improvements for overall community resilience. States should prioritize hospitals and health care as critical infrastructure that must remain operational, especially during climate-caused extreme weather events.

HCWH also provided policy suggestions to the House Select Committee on the Climate Crisis.

Looking Ahead

Climate-related disasters, including wildfires and hurricanes, are occurring in the middle of another crisis, the COVID-19 pandemic. Both crises, said Rothman, have common causes, adversely affect similar populations, suffer from a lack of consensus on whether the issue should be taken seriously, and have exposed a lack of resilience. "As we understand the factors that are making people sick are the social, racial and environmental conditions that they face in their daily lives, we need to marry healthcare and public health and see the community as the ‘patient,’ and the planet as the environment which sustains people’s health."

Constible added that the COVID-19 pandemic has illustrated how much work is still needed to prepare the health care system for climate-fueled disasters. "The cracks in the system are unfortunately widening this summer as hospitals and other health care facilities deal with the collision of the COVID-19 pandemic and weather extremes. We haven't seen a major breakdown yet, but I hold my breath with every story about wildfires burning out of control in the West and the parade of tropical storms targeting the Southeast." She concluded, "The good news is that addressing some of the shortcomings in the current response to COVID-19 will also help the U.S. cope with the climate crisis. We need consistent and clear risk communication from all levels of government, more investment in our public health and health care systems, and better data collection to prioritize aid to those most in need..."

Companies: Health Care Without Harm; Natural Resources Defense Council; NYU Langone; Texas Medical Center; Spaulding Rehabilitation Hospital

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