Medicity®

HIE PREPAREDNESS:
LEARNING FROM RECENT HEALTH CARE DISASTERS

Walt Disney once said, "You may not realize it when it happens, but a kick in the teeth may be the best thing in the world for you."

A dozen years ago, the transition from paper-based to electronic medical records was well underway; however, digital records were still largely siloed. The first versions of health data exchange platforms were then fairly limited in scope and the Office of the National Coordinator for Health Information Technology (ONC) — the federal entity charged with coordination of nationwide efforts to promote health IT and data exchange — had only just been established in 2004.

Then came 2005's Hurricane Katrina, which devastated the great city of New Orleans. It was, at that time, a natural disaster of unprecedented scale — not only causing a massive demand for health care services, but also gutting the infrastructure necessary to provide them efficiently. In addition, lack of access to patient records severely hampered medical response.

Tens of thousands of people were displaced and cutoff from traditional pathways to needed medical interventions, as well as access to the basic resources — food, water, shelter — that would prevent deteriorating health conditions during the aftermath, worsening and extending the crisis.

Hurricane Katrina may have been the industry's "kick in the teeth."

In terms of large-scale crisis planning and preparedness in health care, Katrina drove home the urgency of the need to adopt the policies and technological architecture necessary for more efficient and widespread data sharing to improve disaster response.

Since Katrina, the industry has made great strides. The number and capabilities of health information exchanges (HIEs) have multiplied. Today, there are fewer digital silos and more communities that are clinically connected through HIEs and other data-exchange vendors.

HOW HIES CONTINUE TO EVOLVE: THREE USE CASES

Unfortunately, the efficacy and resiliency of the systems and infrastructure that clinically connect these communities has continued to be tested by more kicks — including natural disasters and other public health crises. Three recent (and ongoing) major public health events demonstrate both how far the industry has come, and how far there is yet to go:

- Hurricane Harvey
- The Flint, Michigan water crisis
- The national opioid abuse epidemic

By looking at these real-world, real-time use cases in more detail, stakeholders across the health care ecosystems in other communities can draw and apply lessons that can help them become better prepared if and when disaster strikes.

NATURAL DISASTER: HOUSTON'S HURRICANE HARVEY

SITUATION: Hurricane Harvey's torrential rains and sustained high speed winds caused widespread flooding and destruction in Southeast Texas last August, illustrating that the highest demand for health care services often occurs when local health systems are least able to provide it.

Much of the health care needed was acute, resulting from injuries. Physical issues and emotional trauma related to large-scale and long-term evacuation — particularly among vulnerable populations, such as the elderly and those with chronic conditions — were also a major challenge. Many people did not have access to ERs and had to be treated in non-traditional settings, such as relief centers and shelters, without needed technology. Some evacuees were transported to other localities, which complicated continuity of care.

RESPONSE: The regional HIE, Greater Houston Healthconnect (GHH), quickly deployed an emergency response team to the largest shelters at the George R. Brown Convention Center and NRG Stadium. Coordinating with state and federal disaster response groups, GHH provided real-time look-ups of medical information to healthcare providers, right at the point of care. Providers were able to access needed patient records through EHR systems, even from remote locations, using laptops and WIFI. As a result, the response to acute medical needs, and continuity of care for the affected population was maintained at a high level. Moreover, GHH worked with the other regional HIEs — such as Healthcare Access San Antonio (HASA) — to support shelters across the state, and a 24x7 hotline to assist providers delivering care to displaced Texans.

At times, the response went beyond medical needs. At one shelter, a volunteer found a young boy wandering alone and scared. He had been separated from his family and needed medical attention but had no identification. The volunteer contacted HASA through the temporary online portal and HASA staff was able not only to relay important medical history on the boy, but also find his mother's contact information and safely reconnect them.

CONSIDERATIONS: Access to comprehensive patient information is a critical need in a disaster scenario. Traditional workflows don't apply from remote settings where even basic technology may not be available; therefore, disaster planning should take into account how clinicians working from such remote settings will get access to patient data, whether through temporary HIE portals or phone-based apps.

In addition, large numbers of evacuees often exacerbate medical needs while relocation to other localities — even across state lines — may complicate access to data. Flexibility in policies and network contracts across localities can help ensure continuity of care for displaced patients, as can advance planning among community organizations and care settings. For example, a long-term care (LTC) facility can make pre-arrangements with a LTC facility in another locality should the need arise to transfer patients.

HIE leaders in Texas are also promoting the concept of a "patient-centered data home," which maintains a list of zip codes covered by each HIE. When a displaced patient receives care in a facility outside that zip code, the HIE sends notification of the patient's home state, providing a more precise way to share data across states or localities. It's advisable to develop, implement, and test emergency access plans for medical and prescription data ahead of time.

COMMUNITY PUBLIC HEALTH CRISIS: FLINT, MICHIGAN WATER CRISIS

SITUATION: Flint, Michigan — a community of nearly 100,000 people in the Genesee County region — is in the midst of a public health crisis stemming from lead contamination in the city's water supply. The crisis began in 2014 when the city changed its water source and is ongoing because of the long-term adverse health effects of lead exposure, which can include impairment of the brain and nervous systems, kidney damage, high blood pressure, and developmental delays in children. At high levels, lead toxicity can lead to death.

RESPONSE: Great Lakes Health Connect (GLHC), Michigan's HIE, and its partners across the region and state invested $250,000 to enhance information exchange capabilities among health care stakeholders across the Genesee County region. The initiative is designed to build up the region's technology infrastructure in order to better support Flint residents and mitigate the long-term health effects that may arise due to lead exposure.

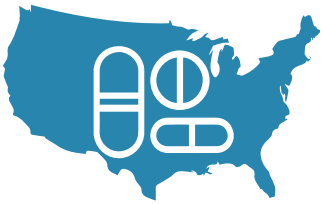
But the initiative also enhances health care connectivity, coordination and communication among providers on behalf of all of Genesee County's 420,000 residents. GLHC registries and solutions can now be accessed by more than 4,000 provider offices and 128 Michigan hospitals, which represent 100 percent of hospitals in Genesee County and 85 percent of acute care beds in the state. This enhanced connectivity bolsters the ability of public health officials to conduct syndromic surveillance and better manage disease outbreaks, while ensuring that the affected population receives timely, coordinated care.

CONSIDERATIONS: Disaster planning and preparedness should not be limited to the possibility of natural disasters. Potential breakdowns in the social determinants of health (SDOH) — defined by the CDC as conditions in the places where people live, learn, work and play that affect a wide range of health risks and outcomes — should also be considered. In Flint's case, the city was

unprepared for the breakdown in access to clean water, a basic SDOH, leading to an epidemiological crisis that will require long-term management.

Stakeholders across health ecosystems should take a careful look at the SDOH in their communities for vulnerabilities that could lead to breakdowns and develop strategies for prevention and mitigation. Beyond access to food, clean water, and health care resources, these SDOH could include economic stability; neighborhood/physical environmental safety; educational resources; and, community and social integration and engagement.

NATIONAL PUBLIC HEALTH CRISIS: OPIOID ABUSE EPIDEMIC



SITUATION: Since 1999, opioid use (both legal and illegal) has been steadily rising. According to 2015 statistics from the National Institute on Drug Abuse, drug overdoses now account for more deaths that gun homicides and car crashes combined. Two-thirds of these deaths are attributable to opioid abuse. The crisis has severe public health, safety, and economic impacts to communities across the country. The severity of the problem led the White House to declare the opioid crisis a national emergency. There are a number of causes for the crisis, including over-prescribing of opioid medications by providers; drug-seeking behaviors of patients that aren't easily recognized; the availability of illegal opioids such as heroin; and, the highly addictive nature of opioid drugs.

RESPONSE: Combating opioid dependence is a complex problem with no easy answers. It requires a multi-pronged approach, which includes leveraging clinical and medication data to identify high-risk behaviors and usage trends among both providers and patients in order to develop effective treatments, interventions, and outreach and education efforts. One health system in California is using data aggregation to determine a baseline of opioid usage across a specific geographic region. The data is then analyzed and insights leveraged to better understand populations at risk for opioid dependency and identify inappropriate prescribing and overuse of opioid drugs and other controlled substances. Streamlined reporting for assessing progress on community interventions and usage trends was also developed.

CONSIDERATIONS: Because the opioid crisis is national in scope, very few communities across the country have gone untouched by its negative effects. By the same token, its national scope means that no single community effort will solve the problem. At the community level, a collaborative, multi-disciplinary care approach is required and that requires leveraging technology to mine a variety of data sources in order to bridge the knowledge gap among different providers and disciplines.

DATA TO INSIGHT TO RESPONSE

What all of these use cases have in common is the need for data. The ability to aggregate comprehensive data and then apply analytical tools to derive insight from the data is key to developing appropriate and timely care responses that mitigate disasters or public health crises and ensuring the best possible outcomes at both the individual patient and population health levels.

But although HIEs and other data-exchange vendors have vastly improved connectivity since Hurricane Katrina, interoperability between systems is still largely at the first generation level — Interoperability 1.0.

At this level, comprehensive patient data may be returned, but in the form of many different files and formats. Clinicians may still have to hunt through dozens of records to find the information they need. This makes the path from data to insight to response longer and less efficient than it has to be. In times of crisis, when time is of the essence, this could be particularly problematic.

Medicity's proprietary solutions solve this problem by enabling next-level interoperability — Interoperability 2.0 — that not only aggregates complete patient data, but enhances its usability. With a single click, clinicians are presented with a single, comprehensive patient CCD. All relevant patient data—medical history, medications, recent encounters, etc.—is easily accessible from a single record, quickening clinical response.

Natural disasters and public health crises aren't going away. Planning and preparation is key to ensuring your care community stays connected, shifts from being reactive to being responsive, and provides the best possible care during and after a crisis. The experience of recent disasters and crises can serve as a learning tool for your emergency preparedness efforts.

For more information, please view www.medicity.com