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HARVEY EVACUEES LEAVE THEIR BELONGINGS—AND HEALTH RECORDS— BEHIND



A patient is taken to the St. Josephs hospital after evacuating when Hurricane Harvey caused heavy flooding in Houston on August 28, 2017. MARK RALSTON/AFP/GETTY IMAGES

DIGITIZING THE WORLD'S medical records was supposed to make doctors' lives easier and patients' lives longer. But unlike banking and shopping, medicine has had a rough time transitioning to the new digital order. Because health care providers use different systems for their electronic health care records, it's still difficult for a patient's data to follow them through the medical ecosystem.

Most of the time, siloed medical information is more of a nuisance than anything else. But when Hurricane Harvey hit the Houston area last week, evacuations and rescue efforts forced patients to seek treatment anywhere they could. And most of the time, their health records didn't go with them. That information void can be almost as catastrophic as the catastrophe itself.

When Hurricane Katrina smashed into New Orleans in 2005, only about a quarter of doctors in the US reported using electronic medical records. Tens of thousands of patients lost their entire medical histories—boxes of paper files disintegrated or washed out to sea by the rising waters. Widespread data loss won't be as much of a problem for Houston. Today, about 75 percent of providers keep records electronically. But patients still may have trouble accessing their records when it matters most: in the middle of crisis and recovery.

That's because most EMRs stay behind walls only certain people can access. Your primary care doc might have the key to your most recent check-up and labs, while a cardiologist across town has your latest EKG and a pharmacist your list of current medications. If you checked into an emergency room outside your normal provider network, your attending physician would need your consent to get in touch with each doctor before getting things faxed—yes, faxed—over.

In the decade since Katrina, federal health officials have thought long and hard about how to take those walls down in the event of a national emergency. And earlier this summer, they actually finished the first big test of such a technology. Called Pulse, for Patient Unified Lookup System for Emergencies, it would allow disaster workers to find and view patient documents—prescriptions, recent test results—for anyone that walked into an emergency room, pop-up field hospital, or evacuation shelter.

That would be a really useful thing for Texas to have right now.

Over the last week, as Harvey dumped 9 trillion gallons of water across the southeastern corner of Texas, the physical infrastructure of the state's health care system has weathered the storm pretty well. Thanks to post-Katrina fortifications like submarine doors, flood gates, and above-ground backup generators, only about 20 of the 110 hospitals in the hardest-hit counties in and around Houston

evacuated some portion of their patients—about 1,500 people.

Also thanks to lessons learned from Katrina, Houston is doing a better job of keeping track of its ill and injured. “Even with all the exercising we’ve done to prepare this city for another hurricane, we never expected a storm that could produce this much water and do this much damage,” says Darrell Pile, CEO of the Southeast Texas Regional Advisory Council, which established a Catastrophic Medical Operations Center to coordinate patient evacuation, placement, and transport in the 25-county region affected by Harvey. WIRED reached him Thursday morning, while he navigated flooded streets in downtown Houston on his way to the main shelter at the George R. Brown Convention Center. “But we’re happy to say that the hospital systems are about 90 percent back up.”

By 2012, when Hurricane Sandy hit the northeastern US, nearly half of the country’s health care systems had adopted EMRs. But some hospitals in New York City were still unable to access health records, because of power outages and flooding in buildings where patient data servers were stored. Pile said he was unaware of any hospitals in Houston losing access to their health records. But patients have been facing challenges navigating an overwhelmed system throughout the city this week.

Dan Jenson, who oversees 11 primary care clinics serving 160,000 people in the VillageMD Houston Network, said on Thursday that there has been a much higher volume of patients than usual at the nine clinics VillageMD has up and running (two closed due to flooding). “For lots of these patients, these are not their normal clinics,” he said. “We can try to pull data on some of them, but it’s very limited what we can get. A lot of times we have to start from scratch.”

Starting from scratch is pretty much the last thing you want your first responder doing, especially in the immediate aftermath of a

disaster. But you also don't want it to be easy for just anyone to see your medical records whenever they choose. So how do you solve for both data security and ease of access? Make it a function of timing.

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That's the idea behind Pulse. Started in 2014 with nearly \$3 million in grants from the US Department of Health and Human Services, Pulse builds a data-sharing network that can be switched on during a crisis. Imagine a world where every health care provider in the country is connected to Pulse, either directly or through existing channels, for secure health information exchange. Those connections wouldn't be live all the time. An emergency would activate only the relevant nodes—say, the Gulf Coast during a hurricane event or Northern Rockies during wildfire season.

Then any registered doctor, nurse, pharmacist, or EMT accessing Pulse in that geographical area could look up a patient (first name, last name, birth date, and gender), and they'd get records for every area clinic and hospital where the patient had received care. They could sign in through a secure EMR portal onsite. Or if they're at a field hospital or shelter, their login from the federal registry of volunteer health professionals will get them hooked up online. No one wants to be doling out new usernames and passwords during a

disaster.

Over the past 12 months, the state of California has been running the first large pilot of Pulse, culminating in a day-long drill in June with 40 fictitious victims of an imaginary earthquake. It went so well that the California Emergency Medical Services Authority plans to keep the system in place for further testing and could activate it in the event of a disaster. “The intent was always to design something that would be applicable outside of California,” says Robert Cothren, who coordinated the pilot with four of the state’s largest medical information exchanges. Because Pulse uses these existing data infrastructures, it could reasonably be scaled up from a single state to a national asset for a price on scale with what the federal government has already spent on Harvey. As of Wednesday, FEMA had sent \$35 million to survivors in Houston. “If Harvey had come next year it might have deployed in Texas,” says Cothren. “They’re doing a good job of tracking patients, but retrieving medical records is a capability they don’t have.”

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