eBook

How to Improve Care Coordination During Natural Disasters

A Guide for Healthcare and Public Health Emergency Response Communities

Get Started

PointClickCare®

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Introduction

In recent years, natural disasters have increased in frequency and severity, highlighting critical gaps in local, state, and federal capacities to deliver coordinated healthcare when routine infrastructure is compromised and populations are displaced. From severe and frequent hurricanes in the Atlantic, to wildfires in the west, as well as the COVID-19 pandemic in 2020, public health officials, health systems, and state and local government public health resources have been tested like never before.

While the use of health information technology (health IT) to advance coordinated patient care is well established in the healthcare sector, this approach has not been fully adopted in disaster and emergency response solutions.

As the number of disasters per year continues to increase, it is crucial for jurisdictions to prepare for potential public health and clinical impacts to their communities.

In this e-book, we look at learnings from past disasters, identify key challenges, and look at ways states have leveraged care coordination technology designed for emergency response to address the unique needs of disaster responders.

When Trouble Rolls In...

Limited access to routine healthcare is a leading cause of mortality after disasters. During times of emergency, people may be unable to access their typical healthcare network and healthcare services may be delivered in non-routine settings, often called alternate care sites.

These alternate care sites often lack the infrastructure of routine health settings, including access to electronic health records (EHRs) and may be staffed by volunteers or emergency responders who do not have access to the Health Information Exchange (HIE) network. This can lead to difficulties in making informed treatment decisions.

Compounding this issue is the fact that, during emergencies, patients can be displaced from their communities, sometimes ending up several hundred miles away from their normal healthcare providers.

Learning from Past Disasters: Hurricane Katrina

Previous disasters illustrate the importance of interoperable EHRs and medication history in providing coordinated care during an emergency. In 2005 **when Hurricane Katrina occurred**, tens of thousands of patients lost their entire medical histories as paper files were disintegrated or washed out by the rising waters. At least 10,000 people needed immediate care across states and jurisdictions but did not have any past health information available for emergency responders, other than providing an oral history.

Health information technology (health IT) is the area of healthcare that manages and maintains the technology systems that store patient data. The field of health IT has grown increasingly advanced over the last 15 years and data interoperability has become more common. If appropriately leveraged, these advances in routine care coordination can also support patient care during disasters and public health emergencies.

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Learning from Past Disasters: Hurricanes Irma and Maria

Hurricanes Irma and Maria highlighted deficiencies in planning for and conducting patient evacuation and tracking. Chronic and acute health issues were exacerbated in individuals disconnected from hospitals or displaced by the storm damage.

After Hurricane Irma, the federal government was called upon to assist in the coordinated evacuation of approximately 800 critical care and dialysis patients from the U.S. Virgin Islands to Puerto Rico. Less than two weeks later, Puerto Rico suffered the direct effects of Hurricane Maria, resulting in the need to evacuate these and additional patients from Puerto Rico to the continental United States.

According to a **2019 GAO** report, the final status and locations of around 200 evacuated patients remains unknown due to poor planning and the delayed deployment of tracking teams. Federal officials were not able to determine if patients were appropriately discharged and sent back to the U.S. Virgin Islands, left the medical facilities against medical advice, or were otherwise unaccounted for.

Disaster Response Challenge #1: Facility Evacuations

When there is a disaster, healthcare facilities may need to be evacuated for a variety of reasons, including destroyed or at-risk infrastructure, physical damage to the building, power or technology system outages, and blocked access to locations. Facility power outages may disable key pieces of medical equipment, impact access to health information systems, and compromise access to food and water, forcing patients to relocate or hospital leadership to order evacuations.

Facilities that are often forced to move patients include hospitals, skilled nursing facilities, nursing homes, hospice care, psychiatric and substance use treatment facilities, and home health facilities.

When moving patients, there are real risks to consider:

Physical risk to moving vulnerable or unstable patients (such as those in the ICU or NICU)

Patients may not be able to access equivalent levels of care at locations to which they are relocated

The receiving facility may not have access to patient health records

Disaster Response Challenge #2: Family Reunification

Family reunification centers are employed after a disaster to reunite separated family members. Key parts of a reunification plan are registration, intake, and tracking of displaced persons. In most cases, this is a manual and disjointed effort that is often conducted by phone and utilizes significant personnel resources.

While family reunification is sometimes considered a non-clinical issue, it has significant overlap with healthcare during emergency situations.

Furthermore, delayed family reunification is also **estimated to increase** the cost of inpatient care for children by a factor of over 20.

During the Hurricane Katrina and Rita disasters of 2005, more than **12,500 adults and 5,000 children were reported as missing**. Efforts to reunify children with their families took over 6 months.

Disaster Response Challenge #3: Medication Nonadherence

Medication maintenance is one of the most common healthcare needs following disasters, and medication interruption for even a short period of time can be of great risk to people living with chronic conditions.

Medication "non-adherence" is defined as a medication adherence rate of 80% percent or less. **Common reasons for non-adherence after disasters** are increased barriers to medication, including physical access to medications or pharmacies, and information gaps, meaning patients receive care from providers who do not know their full medication history.

Non-adherence is a significant public health problem. In fact, any interruption in medication adherence during a disaster can lead to low compliance with medication regimens in the future.

Despite advances in health IT, it remains common for providers in alternate care sites to rely on oral histories or to show patients pictures of different pills to determine what medications they are taking for acute or chronic disease maintenance.

Non-adherence is a significant public health problem that can result in:

- Medication waste
- Disease progression
- Lowered quality of life
- Increase in healthcare utilization/costs
- Negative health outcomes (including morbidity and mortality)

Disaster Response Challenge #4: Locating Patients

The **Agency for Healthcare Research and Quality** notes that when No Advanced Warning Events like earthquakes, fires, and other accidental and terrorist events occur, healthcare facilities may have to evacuate and assess evolving threats to patient and staff safety. Pre-planning is critical as the majority of these disasters have little to no warning before they occur.

In 2016, the Centers for Medicare & Medicaid Services (CMS) issued the **Emergency Preparedness Requirements for Medicare and Medicaid Participating Providers and Suppliers (CMS-3178-F)**. This CMS Preparedness Rule is intended to establish consistent emergency preparedness requirements for healthcare providers participating in Medicare and Medicaid to increase patient safety during emergencies and implement a more coordinated response to both natural and human-caused disasters.

According to the U.S. Department of Homeland Security's Federal Emergency Management Agency, **the most frequent causes of evacuations each year are fires and floods.**

Disaster Response Challenge #4: Locating Patients

CMS Preparedness Rule: Facility Requirements

A key element of the rule is patient accountability. While the preparedness rule ensures that patient accountability is a part of emergency planning, many facilities are utilizing outdated mechanisms to comply with the rule, which makes locating a patient during and after disasters difficult within and across emergency response systems.

Patient accountability requirements are based on the type of facility impacted. CMS **requires** that all hospitals, including critical access hospitals, must document the specific name and location of the receiving facility or location for patients who are relocated during an emergency. In addition, hospitals must maintain accountability for on-duty staff and patients who shelter-in-place at the hospital.

Other facilities, like long-term care facilities, End-Stage Renal Disease (ESRD) facilities, Program of All-Inclusive Care for the Elderly (PACE) organizations, and community mental health centers are required to account for both staff and patients during and after an emergency. This includes documenting the specific name and locations of the receiving facilities or locations of staff and patients if they have been relocated.

Leveraging Technology: PULSE Enterprise

Leveraging the same health IT used in routine care settings in a shelter environment can enable more informed clinical decision-making and remove the need for staff resources to manually track down clinical records through phone or fax. As a leader at the intersection of health IT and emergency preparedness, PointClickCare has taken on the mission to empower providers and emergency responders with the necessary information to support and coordinate patient care during natural disasters and public health emergencies.

PointClickCare's **Patient Unified Lookup System for Emergencies (PULSE Enterprise)** was developed to address emergency response challenges and to facilitate the exchange of health information during disasters. PULSE Enterprise is a cloud-based software solution built for public health and emergency management authorities and other entities that solve critical gaps in patient care during emergencies.

By working with federal and state partners, **PULSE Enterprise was created to be uniquely adapted for care coordination challenges during disaster response.**

The History of PULSE Enterprise

2014 – Laying the Groundwork

The Office of the National Coordinator for Health IT (ONC) and the U.S. Department of Health and Human Services (HHS), Administration for Strategic Preparedness and Response (ASPR) received a joint HHS Ventures Award and engaged PointClickCare to evaluate the use of HIE infrastructure for disaster preparedness and response.

2015 – PULSE Enterprise is Developed

The first version of PULSE was developed for use in California. It had been deployed by the California Emergency Management Services Authority during the 2017, 2018, and 2019 wildfire seasons.

2019 – Expanding the PULSE Platform

The ONC awarded PointClickCare a new contract to expand the PULSE platform to improve usability, scalability, and flexibility to support integration with the national health information networks.

Today – PULSE is a Fully Supported Suite of Tools

PULSE is now a comprehensive set of tools, enabling unparalleled connectivity to thousands of health care organizations across the country, solving critical health care coordination problems during disasters and public health emergencies.

National Network Connectivity: PULSE Enterprise

The use of electronic systems in disaster response has been shown to assist with the documented problems of **lost or missing clinical data**. National health information exchange networks connect hospitals, health systems, and other sources of patient medical data, enabling secure exchange of clinical records. Major national networks including eHealthExchange, Carequality, and Commonwell, have become increasingly interoperable over the last decade, connecting more than 75% of hospitals, 77% of regional HIEs, and 85% of dialysis centers in the U.S.

PULSE Enterprise leverages these national networks that include clinical data for over 205 million individuals. PULSE Enterprise also supports connections to custom and local data sources, including regional, state, or territorial HIEs.

Authorized users, including providers in alternate care sites and public health authorities, can view clinical documents that contain information about a patient's medications, allergies, diagnoses, and lab results, which may not be included in the oral history during triage.

ODHS Leverages National Network Connectivity in 2024 Ice Storm

The Oregon Department of Human Services (ODHS) has been utilizing PULSE to access patient records to supplement emPOWER data from the HHS ASPR. Historically, ODHS has leveraged emPOWER data for lifesaving outreach during wildfire response to perform outreach for individuals who may have access and functional needs. However, sometimes the data is missing key information such as phone numbers and addresses.

Pairing the emPOWER data with information from PULSE allows Oregon to protect the health of at-risk Medicare beneficiaries, including individuals who live independently and rely on electricity-dependent durable medical and assistive equipment and devices, and/or certain essential healthcare services.

In the 2024 winter season during a large ice storm that heavily impacted three counties, ODHS was able to utilize PULSE to look up over 7,000 individuals from the emPOWER data and provide contact information to first responders conducting wellness checks.

Medication History Access: PULSE Enterprise

PointClickCare has partnered with Surescripts to allow emergency responders to provide the best medical care possible during disasters. Seamless integration of Surescripts Medication History solution into PULSE Enterprise enables emergency response personnel working in non-routine care settings to view patients' consolidated medication history during declared emergencies with other clinical documents. Surescripts Medication History feed gives healthcare providers essential information to continue patient access to routine medications for chronic disease management and reduces the likelihood of medical errors or interruptions in medication adherence with data coverage across all 50 States, the District of Columbia, United States Virgin Islands, and Puerto Rico.

The Surescripts nationwide health information network is connected to 80 percent of pharmacies in the U.S. and includes data on 314 million patients representing 95 percent of the U.S population. The dispensed information displayed in PULSE Enterprise covers the past 12 months of data sourced from pharmacy benefit manager claims and pharmacy fill data. The data includes prescriptions that were paid for (if applicable) and received by the customer.

Having access to clinical information can save lives during emergencies. In patient triage, knowledge of a person's medical history can help direct the patients who need higher acuity care to an emergency department and patients who need more routine care to more appropriate destinations.

Medication and Clinical History Lookup During California Wildfires

In response to the **September 2018 wildfires** in the city of Redding, CA, the California Emergency Management Services Authority activated PULSE. Providers were authenticated through California's Disaster Healthcare Volunteers database, allowing them to use PULSE to view clinical documents from state health information organizations and giving them access to patient medical histories, allergies, and prescriptions.

During the Redding wildfires, one man with diabetes was running out of insulin and unable to get a refill after being displaced because the filling pharmacy could not find his records. He explained that he couldn't get the correct medication name and dose from his doctor because—in addition to his home being lost to the fire—his doctor's practice burned down, as did his local pharmacy and hospital with his records.

During the **2018 California Camp Fire**, practitioners were able to look up a newborn baby's medical record to confirm he had a viral infection, which allowed them to avoid giving him unnecessary antibiotics.

Locating Patients: PULSE Enterprise Missing Persons

Authorized users of Missing Persons can upload a list of missing people to automatically search against the real-time admit, discharge, and transfer data of hospitals, emergency departments, shelters, and alternate care sites. When a missing person is identified as having presented to a participating facility, the user receives an alert that a match has been made.

Missing Persons is a web browser-based portal that can be accessed anywhere with Internet access, including temporary shelters. The technology can help providers and facilities to comply with the CMS Preparedness Rule and identify patients who are at a hospital or alternate care site/shelter receiving medical care. It can also provide family reunification centers with information about the current or recent locations of missing individuals.

Missing Persons searches for patients across emergency rooms and hospitals, allowing systems that have traditionally been disconnected to share who is in their care.

Locating Missing Persons in Florida Hurricane Response

In Florida, where hurricanes have devastated communities in recent years, PointClickCare supported Florida Agency for Health Care Administration and county agencies in locating missing individuals after disasters using PULSE's Missing Persons application. The app searches across data for over 95% of Florida's acute care facilities, 89% of rehabilitation hospitals, and over 150 skilled nursing facilities. Today, Florida is prepared to deploy Missing Persons for both patient-provider and family reunification purposes, and the state exemplifies best practices for using health IT infrastructure to solve critical care coordination challenges in disaster response.

Hurricane Michael

In 2018 when Hurricane Michael hit Florida, information for over 5,000 missing individuals was recorded and loaded into the system. Within one hour, 400 people were located.

Hurricane Ian

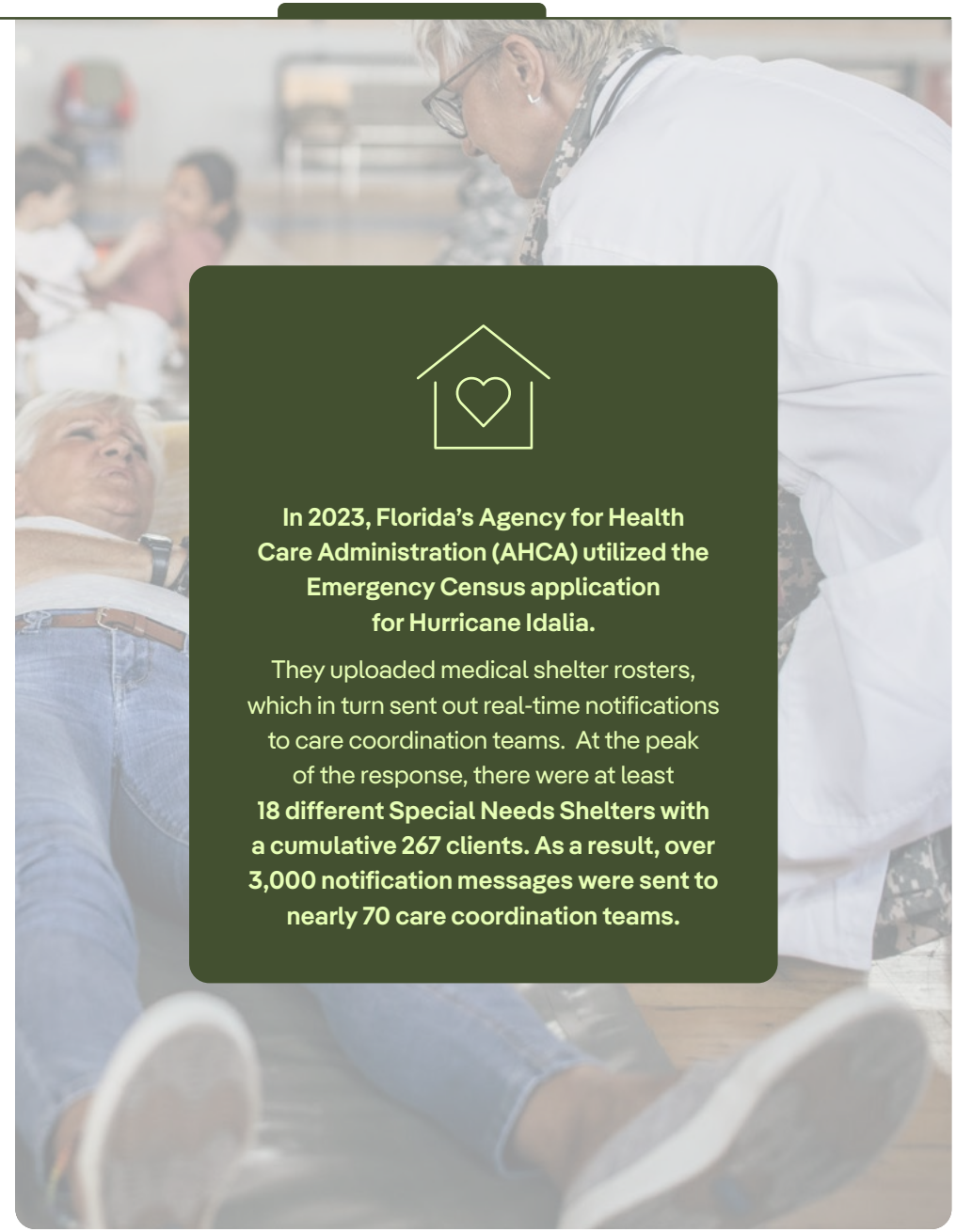
During Hurricane Ian in 2022, Florida used Missing Persons to successfully find nearly **50% of dialysis patients who were unaccounted** for in the days following landfall.

Situational Awareness for Care Coordination Teams: PULSE Enterprise

Patient situational awareness includes identifying victims, registering data at the scene, updating physical location information, initial medical assessment records, and real-time alerts of patient status at both regular provider facilities and emergency response locations like alternate care sites.

When chronic care management is interrupted, patients can quickly accelerate to higher acuity. The faster care coordination teams can identify their displaced patients, the faster they can focus on getting patients back to routine care.

The PULSE Emergency Census application is interoperable with PointClickCare's care collaboration network, which can send notifications to care coordination teams, informing them that their patient has been displaced and admitted to an emergency shelter or alternate care site. With this information pushed to them, care coordination teams can be proactive in managing their displaced patients.



In 2023, Florida's Agency for Health Care Administration (AHCA) utilized the Emergency Census application for Hurricane Idalia.

They uploaded medical shelter rosters, which in turn sent out real-time notifications to care coordination teams. At the peak of the response, there were at least **18 different Special Needs Shelters with a cumulative 267 clients. As a result, over 3,000 notification messages were sent to nearly 70 care coordination teams.**

How PointClickCare Can Help

As the nation prepares for more disasters, PULSE Enterprise is available for emergency preparedness and public health stakeholders to best meet community, state, and federal needs. Advances in health IT have led to a more coordinated and interoperable flow of patient and health information to improve patient outcomes at the point of care. PULSE aims to leverage these advances in routine healthcare to better prepare the U.S. for when disasters strike.

PointClickCare is continuously working to help local, state, and federal government agencies adopt health IT for natural disasters and emergencies and to adequately prepare for the activation of these technologies during and after emergencies. PULSE Enterprise is available in any geographic area to support healthcare professionals and first responders caring for displaced individuals, as well as volunteer healthcare workers who are deployed to a disaster outside of their normal health IT environment.

Start preparing now

Learn how PointClickCare's PULSE Enterprise supports medical providers and emergency responders with real-time data to provide safe and timely medical care for displaced individuals and improve patient tracking.