Worst Case Scenario: Nursing Informatics Impact on a System Disaster Management Strategy

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CNIO, TEXAS HEALTH RESOURCES

Texas Health Resources

29 hospitals (17 using Epic)	Physician group (900 physicians and APPs)	7,500 nurses 5,500 physicians
>166,520 inpt visits/yr	> 1.5 million ambulatory visits/yr	$864 million in charity care

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Objectives

▶ Discuss ways provide total management of patients during an adversity event or disaster.

▶ Identify ways Nursing Informatics can help support identification and management of patients during an adversity event.

▶ Explain the importance of collaboration and following a multi-disciplinary approach to disaster management.

▶ Explore tools to help document and report on tracking of disaster patients for situational awareness and FEMA reporting.

SITUATION:

- Texas Health had an Emergency Management Office, who supported and oversaw the coordination between our hospital resources and the community, and provided reporting, but in the past there was no coordinated effort of what that meant.

- We had a couple of high profile disasters that necessitated a change in how we approached adversity management.

- In addition, during flu season we exceed our ED capacity and could not manage all the patients at all our entities, so we framed these adverse events into our framework.

- We now have a comprehensive System Preparedness and Response organization, (SPAR), that oversees Emergency Management Plans as well as coordinates all activities around system preparedness.

Background

▸ What do these have in common?

They both resulted in exposing our lack of a comprehensive disaster plan!

Background:

- In 2016 we brought on a VP of System Preparedness and Incident Management.

- In 2017 our first comprehensive Emergency Management Plan implemented.

- Much work with our hospitals to train them on System Preparedness and Emergency Management

- System Incident Management Committee established- the CIO is part of this Cabinet.

- Focus has been around developing guidelines, implementation of the Emergency Management Plan- establishing Command Center, notification, complying with federal guidelines etc.

Background: A couple of significant events for Informatics

- ▶ Increase in flu cases- 2016 we started reporting daily flu patients and the hospital impact.
  - Identified the need for ability to access data related to adverse events
  - This was a manual process that had to be run daily.
- ▶ Hurricane Harvey in Houston in 2017.
  - THR received several patients and there were varying ways of defining and managing them:
  - Did not have a standard approach for identifying and categorizing them.
  - Hospitals were manually tracking these patients and reporting them to our SPAR team
  - We were manually running reports to identify patients, using various data points, including zip code information for the Houston area.
  - Our Ambulatory Clinics and physician practices were submitting information on patient in their offices- many who were also sent to the hospital and counted there.

So is this a disaster patient to be tracked?

We realized it was not clear who was actually a patient to be designated as a "Disaster Patient."

- ▶ In a car accident while evacuating from Houston and sent to THR.
- ▶ Evacuee from Houston presents to THR Emergency Room with headache and dental abscess.
- ▶ 4 babies born in THR hospitals from evacuees.
- ▶ Patient having acute MI in Houston and air flighted to THR in hurricane aftermath.
- ▶ Physician in Houston refers a patient to a physician in Dallas, who admits the patient to the hospital.

We reported all of these in our situational awareness report for THR Leadership. None were reported regionally or federally.

ASSESSMENT:

▶ Following Hurricane Harvey, our Health Informatics Office reached out to form a group to look at disaster management and how we could better identify, management, document and report on patients impacted by an adverse event.

▶ Initially started as an internal IT and Informatics "Brain Trust" to look at our disaster documentation and determine the reporting requirements and automate the reports needed.

▶ This was led by Nursing Informatics.

Comments from 1st Meeting of the CHIO/ITS Brain Trust for Disaster Management:

- What is a disaster?
- Is there a difference between a disaster in our area, and patients that come from a disaster in another area?
- What are the reporting requirements?
- What about IT disasters- downtimes?
- Is there a difference in reporting whether or not the patient has an injury directly related to the disaster or secondary to the disaster?
- When does the disaster start and end?
- Who decides when to start identifying patients for the disaster?

Got ourselves organized:

▶ Expanded the group to include: Emergency Management, ED Staff, IT, Risk Management, Compliance, HIM, Physicians, Practice Management, Patient Access.

▶ Set goals

▶ Defined our work into 4 areas:

- Disaster initiation

- Patient Management

- Documentation

- Reporting

- Process Improvement

What we discovered:

- THR did have an Emergency Management Plan, but most of the work and effort had been with the hospital entities, and THR Corporate, while aware, did not fully understand the details.
- THR corporate, was not included in notifications of disasters (except the CIO, and CHIO).
- The SPAR Team was just being hired and organized, so there was some turnover in staff, and our representatives from that area changed a few times.
- The SPAR Team was not really sure what we were doing or why, and we had not done a good job of aligning our work with theirs.
- The SPAR Team was happy with the reporting we had provided them during Hurricane Harvey.
- We actually had pretty good documentation in our ED record to manage patients during a disaster.
- There is a way to flag a patient as a disaster patient when they come through the ED, but it was used inconsistently and without any guidance.
- There is no current way to identify patients in the EHR coming through Admissions, or Direct Admit from a physician office.
- Our existing triage of patients and identification of disaster victims is aligned to Federal Guidelines- ie: patient tags, naming conventions, color-coding within the EHR, etc.

RECOMMENDATIONS: What we did:

▶ Determined that all communication and decisions about initiating a disaster come through SPAR Team, and the hospital leadership. There are good plans for how communication is managed and the hospitals have been educated on them.

▶ Informatics and IT staff were added on the communication distribution list for disaster notifications.   This allows us to understand and communicate disaster documentation requirements in effect.

▶ Set up guidelines on how ED staff will know when and under what circumstances to used the Flag to identify disaster patients.

WHEN WE ARE TOLD TO BY SPAR

▶ Reviewed the documentation and are currently making changes to enhance all disaster documentation in one place and manage patients across all settings:

▶ Developed process for better identification and management of reporting

PATIENT MANAGEMENT and DOCUMENTION

▶ In the Emergency Department Triage documentation there is a choice of Disaster or Evacuee

▶ If this is chosen then more fields populate to allow staff to fill in the necessary information

PATIENT MANAGEMENT and DOCUMENTION

▶ With the next EHR upgrade, there will be ability to document decontamination procedures. This will be added to the current Disaster documentation.

PATIENT MANAGEMENT and DOCUMENTION

▶ On the Emergency Department board there is a button that will show only the designated Disaster patients. This helps the ED clinicians manage those patients during an event.

REPORTING:

▶ Several reports are available both to hospital leadership and ED clinicians to show current ED capacity, and volumes.

REPORTING:

▶ With Hurricane Harvey, we pulled data from our EHR, but since this was not a true disaster in our area, we did not have good and consistent documentation.

▶ However, we were able to get the information needed to send reports to the SPAR.

▶ We also used "Yammer" which is a collaboration tool within Microsoft Office Suite to provide broad discussion around the data.

– September 8, 2017 at 10:19 AM

I did a chart review of a sample of these 251 visits and confirmed that these were, in fact, evacuees. In some cases, I had to be very persistent to find confirmatory evidence, as the documentation was lacking in the physician and nursing notes. Here's an example, where the info was buried in the clinical info provided for ordering an x-ray.

08/26/17 1606   Chest 1 View (CHEST 1 VIEW) ONCE
Comments: Patient presents with:
Motor Vehicle Crash: pt was rearended at 1100 today while evacuating from Houston
Shoulder Pain: left
Knee Pain (Non-Traumatic): left

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I imagine that it is possible that the reason the evacuees/patients do not give an address in the Houston area that they no longer have a home there and now have a new local address.

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Mary Beth Mitchell – September 10, 2017 at 06:30 AM

Also, our existing registration workflows and Invision system limit our ability to discreetly capture address variances- such as a patient from Atlanta, moving to Houston, displaced by Harvey and evacuated to Dallas to stay with friends- we only have 1 address field we are capturing for this data, and mapping it to a zip code affected by Harvey-. This patient gave their Atlanta address, so our report did not identify him. We are working to make our data collection more robust on the front end and then awesome Tony and Clark can add those additional identifiers in their data. THis is also great pre-work as we can build more predictive screening tools into CC1 for capturing demographic information related to disasters.
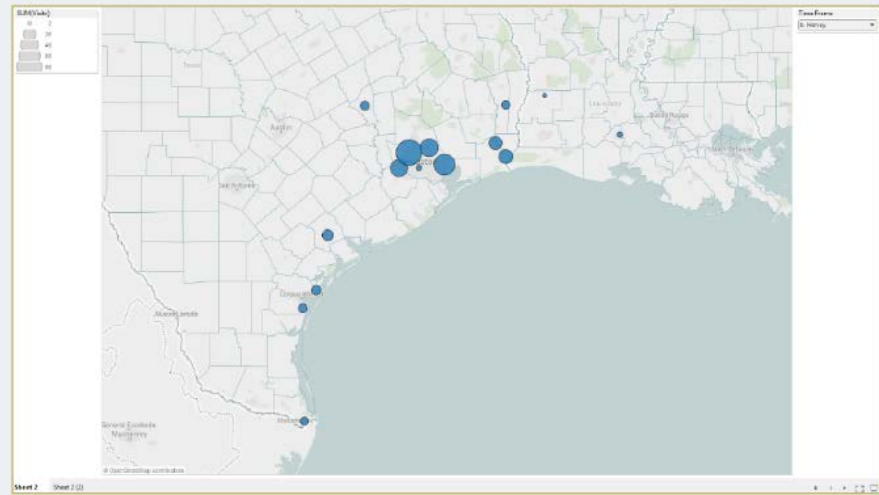
👍 LIKE   ↩ REPLY   ◄ SHARE   ✏ EDIT   •••

One additional validation that we applied to our methodology ("Disaster" flag + affected ZIP codes) was a comparison of the clinical activity captured the week after Harvey with that the week before as well as for the corresponding time period in 2016. What we found was a 340% increase from the week before and 238% increase from a year ago. (ED in this table corresponds to the "Disaster" flag. Notice that 7 patients had this flag the same time last year.)

Time Frame:	Harvey_combined	ED	zip codes	ED not in zip
Aug25-31,2017	220	69	210	10
Aug18-24,2017	50	0	50	0
Aug25-31,2016	65	7	58	7

████████ ████ – September 8, 2017 at 10:22 AM

████ █ ████ put together this Geomap visualization using Tableau showing the locations where the patients are originating from based on their address. We are finding, however, that not all affected patients are providing an address from these areas. In some cases, they're reporting the local address of a friend or relative their staying with. This is something we're working with patient access to address.

cc ████ █ ████

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████████ ████ – September 8, 2017 at 10:23 AM – Edited

Here's a note of appreciation from William C: "This is really great information. You and your team have defined a new level of interaction between emergency management and clinical informatics which will serve THR very well now and in future."
I also shared the analytics in my monthly meeting with ██ █████ yesterday, who was suitably impressed: "You and your team should be very proud of the analytic support you provided to William's team and all involved in monitoring and managing the disaster relief we provided over the last two weeks."

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████████ ████ – September 8, 2017 at 10:25 AM

Finally, to put a human story to all this analytical gymnastics, there were three expectant mothers who evacuated because of the hurricane who had their babies at THR entities last week. One of them even gave their daughter "Dallas" as a middle name! It's a touching story, so please read it. This is why we work in healthcare.
http://www.wfaa.com/weather/harvey/babys-middle-name-dallas-after-houston-family-finds-refuge-in-north-texas/470155922

Summary:

▶ Patient care is the most important aspect of Disaster Management!

▶ Collaboration is needed for a comprehensive Disaster Management program.

▶ Both technical and operational areas need to be addressed- TOGETHER!

▶ There are a lot of different stakeholders involved in supporting a system-wide Disaster Management program- USE THEM!

▶ Assure communication pathways are well-defined and include all relevant groups.

▶ Reporting is critical, and must be considered from the beginning- need to make sure there are clear expectations and goals around reports.