Developing a Burn Mass Casualty Incident (BMCI) Plan for Louisiana - (First Steps)

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Introduction

A burn mass casualty incident (BMCI) occurs when a disaster involves many injured patients who have specific burn injuries. There are four burn centers. They range from 4-15 beds

The hazards associated with Louisiana include:

- The Deepwater Horizon disaster occurred 40 miles (35NM) off the Louisiana coast.
- There are 89 barge and land rigs drilling for either oil or natural gas in Louisiana.
- Of the 175 rigs operating in the Gulf of Mexico in international waters, 60 rigs are served by personnel based in Louisiana
- 3 of the 6 largest US petroleum refineries are in Louisiana
- 18 chemical facilities are located within 60 miles of New Orleans

The aim of this work is to develop the basic components for a more comprehensive and coordinated state response to a BMCI in Louisiana

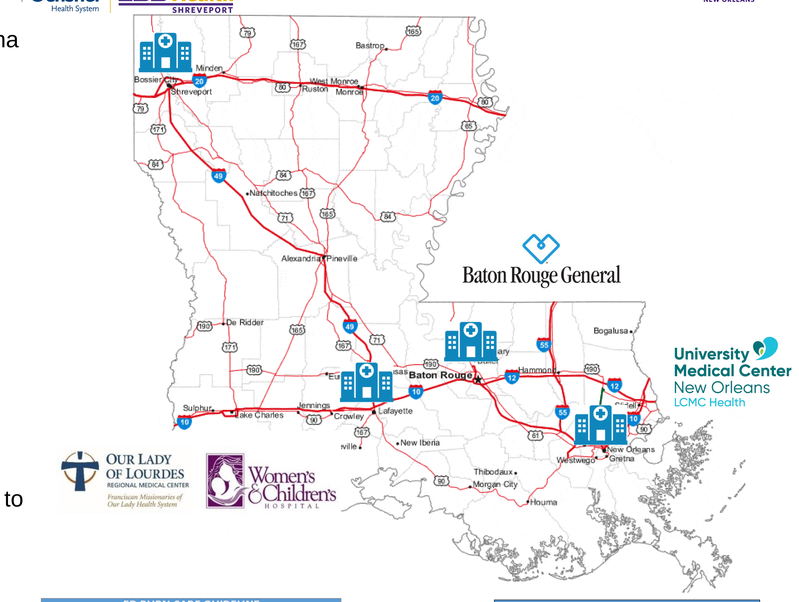
Methods

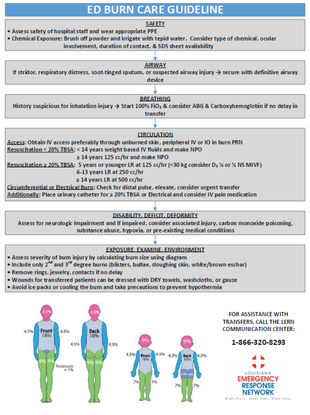
Initial creation of Guidelines and Protocols

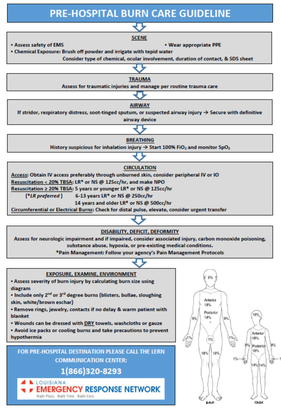
- Emergency Department burn care guidelines were created and distributed to referring hospitals for care of a burn injured patient before transfer.
- EMS Treatment protocols were created and distributed to assure common care of a burn injured patient.
- ABLS Courses were scheduled around the state

An exercise was created to identify trigger points for plan activation. A meeting was arranged for the burn center directors to either attend at the University Medical Center in New Orleans or connect to the group by conference call. The exercise followed a meeting that discussed efforts to standardize emergency medical services (EMS) care in the state, and route burn patients through Louisiana Emergency Response Network (LERN) (the statewide call center to aid hospitals and EMS with appropriate destinations) to the most appropriate burn center.

- Burn surgeons, along with burn center nursing staff, evaluated a series of “predefined patients” distributed over a compressed timeline during the hourlong exercise.
- The participants were unaware of the “patients” nor were they aware of their injuries until the exercise controller released the information.
- The exercise controller was provided by LERN
- Upon exercise conclusion, a “hot-wash” (debriefing) was conducted.







Disaster planning: the basics of creating a burn mass casualty disaster plan for a burn center.
Kearns RD, Conlon KM, Valenta AL, Lord GC, Cairns CB, Holmes JH, Johnson DD, Matherly AF, Sawyer D, Skarote MB, Siler SM, Helminiak RC, Cairns BA.
J Burn Care Res. 2014 Jan-Feb;35(1):e1-e13. doi: 10.1097/BCR.0b013e31829afe25.

Disaster Preparedness and Response for the Burn Mass Casualty Incident in the Twenty-first Century. Kearns RD, Marcozzi DE, Barry N, Rubinson L, Hultman CS, Rich PB. Clinics in plastic surgery. 2017;44(3):441-449.

Results

- Emergency Department Guidelines are now available for all hospitals
- EMS Treatment protocols have now been reviewed and adopted at each of the regional councils
- 200+ have now successfully completed an ABLS Course
- Regarding the exercise: the scenario included 20 patients staggered over the morning with each surgeon considering capacity and capability to manage the theoretical patients who ranged in age from 1 month to 81 years old (Median 24, Mean 28.2) with a TBSA range of 0 to 73 (Median 6, Mean 12.85). There were 4/20 patients intubated on arrival, and an additional 7/16 had “soot tinged sputum.” 16/20 arrived by EMS.

Assuming this was a Type III Burn Disaster (meaning burn event only), all four burn center directors reported under ideal circumstances; they could absorb these patients into their respective hospital systems. However, it was also clear that while all could admit, sustaining all of these patients over an extended period may be problematic and potentially require a transfer. It was also discussed that had the severity of burn injury changed for two or more patients, it could have led to exceeding the capability/capacity for most of the burn centers.

Conclusions

Every burn center has limitations. Some reach that limitation before others and depending on the current census, that capacity will vary from day to day. The key to this event was to identify a trigger point for each facility. Every disaster plan requires a trigger or triggers meaning an activation point to begin treating an event based on their BMCI (or burn surge) plan. All of the surgeons and nurses involved in this exercise are highly skilled in the care of a burn patient. However, a BMCI is rare and requires planning to assure the standards of care are met, to the extent possible, for all who may be injured. The next logical step in this process is to analyze further the capabilities and capacities that will inform the planning process as it evolves.

Applicability of Research to Practice

Given the scarcity of burn centers and available burn beds at any given time in the United States and specifically in Louisiana, it is important to identify thresholds for when facilities would exceed capacity triggering the need for mutual aid or transfer. This work focuses on the initial steps of the disaster planning process.

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