New England Society of Disaster Medicine holds annual meeting at Brown

Preparing for epidemics and natural disasters

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PROVIDENCE – At the third annual meeting of the New England Society of Disaster Medicine held December 1, DR. SELIM SUNER welcomed colleagues from Brown, Harvard, the University of Massachusetts and other institutions for a day of talks on topics such as Ebola, bioterror and the importance of simulations in improving preparedness.

Dr. Suner, a professor of emergency medicine, surgery and engineering at Brown, is one of the group’s founders and has deployed to help in disasters such as the September 11 attacks and Hurricane Katrina. He shared his insights about what’s on the mind of the region’s disaster medicine experts and the key role academic study plays in a crisis.

What are the hot topics in disaster medicine in New England?

We’re particularly concerned about hurricanes, winter storms causing prolonged power outages, emerging infections and pandemics, active shooter incidents and terrorism. Unplanned information technology downtimes and cyber attacks are also emerging threats we are discussing.

Disasters, with their urgency and chaos, seem like an inhospitable set of conditions for careful study. What is the role of academics in disaster medicine?

While it is difficult to apply the scientific method to study disasters – the gold standard being the double-blind, randomized, placebo-controlled clinical trial – it is imperative to utilize proper processes to study disaster epidemiology and response. The U.S. spends a lot of money on disaster response recovery; less so on preparedness. We need to understand the epidemiology of illness and injury during disasters in order to prepare more effectively, and we need to know what works in terms of disaster response to allocate scarce resources more efficiently.

So far, most studies have been retrospective reviews of past disasters and response. The data in these studies are mostly low quality, and the retrospective methodology leads to biases and problems with validity. Simulation and exercises are used often to study certain aspects of response or preparedness or how specific events can be best managed. But these scenario-based mock events are never a substitute for true events.

As a group of academicians and also disaster response experts with field experience, the New England Society of Disaster Medicine has the goal of bridging the gap between academics and field response. This evolution is
somewhat akin to emergency medical services research, which has a history slightly longer than disaster medicine.

Tell us about the society. How does its existence help you as a physician and a researcher working in Rhode Island?

The society was first formed in 2014 as a collaboration of Brown University, Harvard (Beth Israel Deaconess Medical Center) and University of Massachusetts Worcester disaster medicine programs. We expanded to include Massachusetts General Hospital this year. The goal is collaboration among the programs for education – we all have active fellowship training programs – and response. There are thoughts of future directions in terms of a research agenda and perhaps the establishment of a scientific journal.

Because the disaster medicine community is small and funding sources scarce, pooling resources is beneficial to all programs. Also, disaster research requires a strong infrastructure and collaborative efforts.

Are there lessons and studies from disaster medicine that help to inform patient treatment in more isolated emergency cases?

As clinicians, we use our experiences to guide patient care in the emergency department. Having taken care of patients in austere conditions with limited resources during disaster response operations, one gains confidence and flexibility to practice everyday emergency medical care. Also, working after specific disasters gives us experience and knowledge in taking care of medical conditions that are not frequently seen in the emergency department – from blast injuries and severe burns to crush injuries and certain infectious diseases, such as Ebola.

The Great Storm of 1938

Area hospital flooded with casualties; lights shone on in Rhode Island Hospital

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On September 21, 1938, in a time before hurricanes were named, the Great New England Hurricane and Tidal Wave, as many of that era later referred to it, caught New Englanders by surprise.

Also dubbed the “Long Island Express,” it barreled into the Ocean State at approximately 3 p.m. Records of The Blue Hill Observatory outside Boston document measured sustained winds of 121 miles per hour and gusts as strong as 186 miles per hour.

The majority of damage was from storm surge. Approximately 700 people died, about 600 of them in Rhode Island. Property loss was immense. This photograph shows downtown Providence, Rhode Island. It was taken by the Army Corps of Engineers.
covered with rubber sheets and aprons. Ambulance sirens added to the wail of the winds as storm victims poured in. “We turned to the task of repairing torn, bruised and bleeding humanity,” the RIH nurse recalled in the RIMJ article. “The bravery of the patients was astounding. Little or no anesthesia was used for the most part. Perhaps the stunning fury of the storm had dimmed the pain. The fright of what the next blast might bring may have caused patients to forget their battered, painful, broken bodies.”

Well past midnight, the victims of the storm continued to arrive. The wards overflowed, until an “annex was opened in Dr. Peter’s old apartment.” And the usual emergency patients arrived as well, with cases of tonsillitis and ruptured appendixes operated on by weary physicians.

Tidal surge and the storm’s aftermath
Reports of the storm drifted in by word of mouth as the phone and radios were silent. News arrived in the morning, when Dr. Harry C. Messinger rushed in with a two-page emergency bulletin from the Providence Journal, which reported on the tidal flood.

The storm came ashore at the time of the high tide, during the autumnal equinox, which added to the surge of water being pushed ahead by the hurricane. Seaside homes all along Narragansett Bay were submerged under 12 to 15 feet of water, and Providence was inundated with 20 feet. Union Station in downtown Providence served as a refuge and hospital for hundreds of people that night.

Amidst the chaos and carnage wrought by the great storm, local newspapers reported the following day that, “Rhode Island Hospital is ablaze with lights and all departments functioning,” and had enough diesel fuel to keep its generators running for two or three days.

Police and firefighters served as initial responders. In the aftermath of the storm, 2,000 National Guardsmen and Works Progress Administration (WPA) workers were also deployed in search-and-rescue missions. For days after the hurricane, bodies washing up on the beaches and shoreline would be conveyed to temporary morgues in several towns. Embalming fluid and blood supplies were sent from unaffected neighboring cities and states into needed areas.

Throughout the state, disaster relief committees took steps to provide all physicians with anti-tetanus serum and other medicines and alert the public of tainted drinking water and other dangers. Ultimately, it is estimated anywhere from 600 to 800 people died in the great storm, most by drowning.