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Mass evacuations: Using TRAIN matrix to triage patients

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You can modify the Triage by Resource Allocation for IN-patient (TRAIN) matrix to suit your facility's needs in case of a mass evacuation. Hospitals across California and other areas, including the Sharp HealthCare system in San Diego, have modified the matrix for use as part of their all-hazards preparation for emergencies, including wildfires.

Sharp HealthCare has been working with other community organizations as part of a healthcare coalition in the San Diego area to improve communication during emergencies like wildfires, which can necessitate quick evacuations.

Sharon Carlson, RN, director of emergency preparedness at Sharp HealthCare, has been working on a committee that is reviewing how evacuations are carried out in the community. She and others are using lessons learned during a massive fire in 2007 that forced several hospitals, nursing homes, and behavioral health hospitals in San Diego County to evacuate, as well as the Cedar Fire in 2003—and, of course, the devastating Camp Fire of last year.

While Sharp HealthCare facilities did not have to evacuate in 2007, they did have to take in patients from other facilities. And after the Cedar Fire, Sharp and other organizations realized that communications overall were a concern. "We needed to make some improvements," Carlson says.

Today San Diego has a strong disaster coalition that meets once a month to share plans and best practices and look for ways to improve.

The coalition has two sub-committees that work on identifying best practices, including for evacuations. "Then we share those tools with all the other hospitals and healthcare entities to make sure that people are on the same page," says Carlson.

The tools include using TRAIN as a way to identify "what kind of transportation your patient needs to be evacuated. For instance, if it's someone in the ICU who has a ventilator to help them breathe and IVs and tubes coming everywhere, they aren't going to be able to get out of bed and walk to a school bus to be evacuated," she says.

Medical records integration

Developed by the Lucile Packard Children's Hospital at Stanford in Palo Alto, California, the TRAIN matrix is combined with the hospital's electronic medical records system to allow quick assessment of patients and the types of transportation needed to evacuate them to safety.

"Caregivers have prompt access to a fully automated report that categorizes patients in terms of their specific needs, such as what types of intravenous medication they receive, whether they're on ventilators or whether they need an intensive care unit bed," according to the Stanford Medicine News Center in announcing the program in 2015.

According to Lucile Packard, the matrix allows a hospital to:

- Quickly assess and accurately request the right resources from the emergency operations center
- Streamline communication with a common code
- Implement a standardized and automated inpatient hospital evacuation triage system with minimal impact to workflow
- Increase awareness and disaster preparedness across the institution

System is color-coded

"TRAIN helps determine what vehicles and equipment are necessary for continuous patient care during a crisis event and simplifies communicating patients' needs to other hospitals or command centers coordinating

transfers," according to the news center article. "For instance, TRAIN helps the hospital decide whether cars or vans are needed, how many ambulances or specialty transports are required and even how many IVs and ICU beds should be in place at the receiving facility.

"Under TRAIN, patients are assigned a color, with red designated for patients in critical condition. These patients need specialized transport, such as an ambulance or military vehicle, in addition to life-support equipment, such as ventilators and multiple intravenous drips for medication. TRAIN allows care teams to communicate the medical needs of this patient, as well as the severity of his or her condition, with a single word: red," the article states. "In comparison, patients marked with blue tags are considered stable and can be transported in a car or bus, without any specialized equipment."

Matrix maximizes response

"We color-code our patients on a regular basis so if it's 3 a.m. and you have to evacuate, we can say, 'OK, I have 10 red patients,' " explains Carlson. "That immediately tells the people we work with on transportation that they're going to need specialized ambulances [or whatever kind of transportation we need]."

"We also have an arrangement with local public health that if a hospital has to evacuate, we will share the TRAIN colors with them ('15 reds, 13 blues,' for example), and they'll arrange the transportation and we'll wait to hear from them," says Carlson.

But sometimes evacuations happen fast. During the recent Camp Fire, media reports told of healthcare staff using personal vehicles to transport patients when the swift-moving flames overtook hospitals, nursing homes, and other health facilities within a couple of hours.

While the TRAIN system helps coordinate evacuation response communitywide, Sharp's preparedness plan includes ways for facilities to evacuate on their own, if community resources are not available.
"And because [Sharp HealthCare] is a big system, we have a lot of our own vehicles. Not ambulances—but patient care vans and pickup trucks, cars, shuttle buses, and things we use every day for transportation," says Carlson.

"We've written those into the plan, and we have someone who oversees that and ensures that at the end of the day those vehicles are filled with gas, and those drivers have agreed to take calls. That way if something happens at 2 a.m. and we need to move people or stuff or supplies or staff, we can activate those ourselves and move patient A to hospital A," says Carlson.

"And because we have multiple hospitals, before I request patients to go elsewhere, we try to [relocate] them in our own healthcare system."

Review toolkit

The toolkit is available through the HHS Assistant Secretary for Preparedness and Response's Technical Resources, Assistance Center, and Information Exchange (ASPR-TRACIE) collection of evidence- and experience-based resources for emergency management.

It is part of the Healthcare Facility Evacuation/Sheltering collection of resources, which also includes guidelines and protocols as well as exercise materials tested by other facilities.

One "must read" item identified by ASPR-TRACIE includes the California Emergency Medical Services Authority, Hospital Incident Command System's "Incident Planning Guide: Evacuation, Shelter-in-Place, & Hospital Abandonment."

That guide "addresses planning issues associated with evacuation, shelter-in-place, and hospital abandonment. Hospital emergency planners may customize it for their specific requirements. It includes a checklist of items to ensure are included in a facility's emergency management program, including mitigation, preparedness, response, and recovery actions," according to information on the website.

We've also attached a copy of TRAIN used by Sharp HealthCare for you to see (see PDF.)

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