

Assessing and Planning Health Actions During a Crisis

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SUMMARY

Initial stage of a disaster is managed with existing resources. The following stages of disaster response often involve assistance from outside of the disaster zone. This may consist of mutual aid from neighboring communities for small-scale incidents but in major disasters, the response is from federal or international agencies or often both. Rapid needs assessment after an incident is a collaborative effort between responding agencies and local emergency preparedness and health authorities. Ideally, a team from responding agencies with intimate knowledge and experience regarding the capabilities and assets of the responding entity along with local authorities, with decision making capacity, who have knowledge of the community, the limitations of the responding agencies and can obtain near real-time information about the incident and subject matter experts (engineering, medical, law enforcement, etc.) comprise the needs assessment team.

Keywords: Crisis; health action; disaster planning.

The initial hours following a disaster are almost always chaotic. Crises arising during this period are managed by resources immediately available in the community. Community preparedness allows for a rehearsed response and may mitigate some of the unforeseen complications in management of the crisis. The current recommendations for hospitals suggest an internal 72-hour reserve for medications, supplies and personnel needs in order to respond to disasters without outside support. Recommendations also specify a plan to increase capacity rapidly (surge) and have a plan to utilize alternate sites for patient care if facilities are damaged or overwhelmed during a disaster.^[1]

This initial stage of the disaster is managed with existing resources. The following stages of disaster response often involve assistance from outside of the disaster zone. This may consist of mutual aid from neighboring communities for small-scale incidents but in major disasters, the response is from federal or international agencies or often both. There

is no well-established universal paradigm for coordinating this response.^[2]

In many instances, the local authority involved in receiving aid is charged with coordination and it is during the chaotic initial response that a needs assessment must be carried out. However, this can be challenging since local authorities are often overwhelmed with response and cannot allocate appropriate resources to properly assess needs and request proper aid.

It is essential to complete a thorough, comprehensive, accurate and rapid needs assessment to properly match the requirements of a community after a disaster to the available resources.^[3] From relatively small events that effect a community profoundly, such as the Station nightclub fire in Rhode Island, which resulted in a mass casualty burn incident^[4] to large movements of internally or externally displaced populations, seen in refugee crises after conflict,^[5-6] analysis of

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needs and resources must be completed prior to a response and continually reassessed. The nature of the incident whether it is a natural disaster like the devastating tsunami in the Indian Ocean in 2004 or a man-made event related to terrorism such as the destruction of the World Trade Center in NYC in 2001,^[7] can determine the specific detailed content of the needs assessment, but a standard comprehensive analysis utilizing predefined variables and checklists is required for each event.^[8]

Rapid needs assessment after an incident is a collaborative effort between responding agencies and local emergency preparedness and health authorities. Ideally, a team from responding agencies with intimate knowledge and experience regarding the capabilities and assets of the responding entity along with local authorities, with decision making capacity, who have knowledge of the community, the limitations of the responding agencies and can obtain near real-time information about the incident and subject matter experts (engineering, medical, law enforcement, etc.) comprise the needs assessment team. Even prior to arriving on the scene, the team may be able to gather essential information. Sources of information may be from news outlets, radio or phone communications, sources on the worldwide-web, satellite images, or even classified information in certain cases. The team should utilize checklists, triage, survey and other tools to systematically review the impact of the disaster on the community akin to a hazard and vulnerability analysis. The team should have access to ground and air transportation and any resources, which could aid in a complete assessment, such as street cameras, access to health care facilities, etc. While priority should be given to medical system assessment, initially, shelter, food and water assessment should also be performed simultaneously by subject matter experts. Often, each large aid organization and different branches of federal agencies will perform a needs assessment separately. While in some cases, this is appropriate due to the vastly different types of services provided by different agencies, coordination and information sharing should be conducted. If a unified incident command system is utilized the joint incident command center can facilitate this function.

While assessment if initial health needs should be a rapid assessment to facilitate initial movement of health care teams into the disaster site, periodic reassessment is necessary to optimize resources. Also, after the initial broad assessment, follow-up appraisals may be necessary to identify specific niche needs such as evolving infectious disease outbreaks, need for mass vaccination or specialty needs such as “burn nurses” as in the Station Night Club Fire incident in RI. These follow-on assessments may utilize data collection or survey methods and may take longer to complete.^[9] An example

of a needs assessment leading to a focused response was during the Station nightclub fire in Rhode Island. Following the incident all emergency departments were involved in the acute care of patients, which were transported from the scene. The acute phase of the response was over in 8 hours. However, the trauma and burn center, Rhode Island Hospital had admitted many of the patients with large surface area burns. A rapid needs analysis conducted revealed the requirement specialty burn nurses to augment the nursing staff at Rhode Island Hospital. The National Disaster Medical System was able to deploy these specific assets to assist the hospital staff rather than activating an entire Disaster Medical Assistance Team (DMAT).

Some of the assessment categories include:

- Environmental and building assessment

- Egress and access assessment

- Communications assessment

- Safety issues for responders

- Cultural issues for responders

- Responder needs (water, food, shelter, safety, specialty items such as hard hats, respirators, etc.)

- Current impact on local health care structure (can it provide day to day basic health maintenance needs?),

- Impact on local health care workers (are they able to go to work?)

- Support structures

Vulnerable populations are often those, which suffer the most in the wake of a disaster. Children, the elderly, those who are bed-bound or with limited mobility, suffering from chronic debilitating illness and the mentally ill are some examples of the most vulnerable in the aftermath of a disaster. A thorough assessment must take into consideration the special needs of this population such as mobility requirements, accessibility, reliance on electrical power (respirators, LVAD, refrigeration for insulin), dialysis, daily wound care (diabetic ulcers, burn care, etc.).^[10-11] While emergency healthcare is at the forefront of response considerations, often the lack ongoing daily preventative care and health maintenance provided by community and primary care organizations can lead to down-stream health crises. For example, during the widespread structural devastation seen after hurricane Katrina, many primary care offices were closed, health records destroyed and pharmacies inaccessible for a prolonged period. Many patients who relied on ongoing health maintenance, particularly for diabetes, cardiovascular disorders and hypertension were unable access their healthcare provider, get refills on their medications or even fill their prescriptions. This led to increase use of emergency

care facilities, set up by responding agencies, which were geared for acute care. These facilities were ill-prepared, equipped and staffed to manage chronic care issues.

Over the past decade there has been increasing experimental use of advanced technology in disaster medicine. These technologies may be utilized in the assessment after disasters. Utilizing existing sources of large data deposits, such as real-time surveillance systems and hospital electronic medical records, illness and injury patterns in a community after a disaster can be discerned. Other technologies such as drones, which have been utilized to aid in search and rescue operations can also be used for birds-eye viewing.^[12] and mass electronic communication schemes utilizing texting or social media may aid in the initial and follow-up needs assessments. Coupled with advanced mathematical modeling and use of global information systems (GIS) may lead to a more thorough and systematic appraisal.^[13-15]

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