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How to Set Up a Regional Medical Operations Center to Manage the COVID-19 Pandemic

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This Coronavirus Disease 2019 (COVID-19) pandemic has stressed health care systems across the globe, and is currently impacting many U.S. cities. The modeling from University of Washington Institute for Health Metrics and Evaluation indicates we are still weeks away from the peak in the number of patients who will require hospitalization. Estimates as of April 2, 2020, suggest at peak capacity, a need for more than 260,000 hospital beds and more than 87,000 intensive care unit (ICU) beds across the U.S. (www.healthdata.org/covid). As a result, all hospitals and health care systems are engaged in this battle and alternate care sites are being rapidly built in the major cities across the U.S.

Large-scale disasters pose numerous problems for health care systems including fragmented command structure; lack of effective communication between agencies, providers, and facilities; inadequate and fragmented data concerning patient location and condition; limited or absent medical surge capacity; limited integration of public health with acute care private and public health care; inadequate integration between local and federal emergency management systems; and lack of ability to coordinate and track patient movement.¹⁻⁵

The relatively governmental function of public health, including epidemiology, food and environmental safety, vector control, mass prophylaxis/vaccination and other community health issues is vastly different from the largely private function of emergency medical and acute care provided by physicians, hospitals, and emergency medical services (EMS) agencies. The agencies that provide public health on a daily basis and the agencies and organizations that provide acute medical care on a daily basis do not routinely work together, and neither of them routinely work with the federal emergency management system. In the face of a wide-scale serious event, these three broad groups are expected to seamlessly work together. Coordination among the disparate response agencies that comprise Emergency Support Function #8 (Public Health and Medical) is essential to proper response, and no amount of

goodwill, expertise, and independent resources will achieve this goal without significant structure and organization.

Experience with previous disaster events has taught us that regional coordination of the health care system is vital to match resources with patient needs. A few trauma and emergency health care systems have this infrastructure in place, but most do not, and now more than ever a coordinated response is needed to save lives. This guidance document seeks to define the role of a regional medical operations center (RMOC) and to provide support to those seeking to establish this infrastructure in preparation for the ongoing and anticipated surge of critically ill patients with COVID-19.

What is a Regional Medical Operation Center?

A RMOC is a single point of shared situational awareness and information that can implement effective command and control for the medical response to a large-scale mass casualty incident or other scenario. The region is defined based on the scale of the incident, which may involve a single county or scale up to an entire state or multi-state region. The RMOC allows coordination across all EMS agencies, hospitals, public health representatives, and emergency management leadership needed to respond. The most important piece of a RMOC is communication and coordination among and between the public health authority, acute and chronic care health systems and EMS.

A key component of the RMOC is fault-tolerant communication systems and software to track patients and resources. These systems must allow real-time reporting of critical data elements such as EMS and transportation resources, hospital bed capacity, resource availability (such as PPE and ventilators) and patient volume and acuity. These systems create a regional dashboard to facilitate the optimal redistribution of patients and resources to meet the needs. In a resource limited environment or small region, this could be done with spreadsheets and non-specialized file sharing and collaboration software. The RMOC is also optimally structured to perform surveillance of health care infrastructure elements that are disproportionately burdened. In the current pandemic, these include long term care facilities and those hospitals located near them. This surveillance can identify at risk facilities and work to level load patients and assets over a wider geographic region. The RMOC provides a single point of contact for hospitals seeking to transfer patients or for those in need of additional resources to support patient care.

Operationally, the RMOC must have the authority to make decisions regarding patient movement and resource allocation. Practically, this means the RMOC must be a component of the local/regional Emergency Operations Center (EOC) which must report seamlessly to the State EOC.

Who Needs to Be at the Virtual Table

- EMS chiefs/medical directors
- Representatives from aeromedical services
- Representatives from all area hospitals/health care systems
- Representatives from long-term care facilities (particularly relevant to the COVID-19 response)
- Public health representatives
- Emergency management coordinators
- Managers of alternate care facilities

The Role of the RMOC

- Situational awareness
- Coordination between governmental agencies, stakeholders, and health care institutions
- Communication between agencies and stakeholders
- Distribution of resources
- Information sharing
- Patient tracking and patient distribution
- Deployment of medical assets to the scene of a disaster
- Under a governmentally declared Crisis Standards of Care scenario, establish a Crisis Standards of Care Regional Triage Team

How to Set Up an RMOC Now

- Establish the infrastructure
 - Many trauma and emergency health care systems and health care coalitions have established mechanisms to coordinate with EMS and area hospitals for the response to mass casualty events. This existing infrastructure can be scaled up to a full RMOC implementation.
 - Basic infrastructure needed:
 - Designated representatives from all key stakeholders identified above—enough human resources to meet continuously if needed
 - Web-based communication platform for “virtual” meetings
 - Web-based data platform to track patient volume, acuity, bed capacity, and critical resources (more detail below*)
 - A single phone number to contact for assistance
 - Experienced staff to field calls with physician support for triage decisions
 - Fault tolerant communications to the local/regional Emergency Operation Center
- Convene all relevant stakeholders and agree on operating principles
 - All entities must agree to submit data to support situational awareness and respond in a timely manner to requests for data

- All entities must agree to provide staff who can communicate with each other and communicate back with their organizations
- Acute care facilities agree to accept patients based on the triage decisions of the RMOC
- Facilities agree to minimize the number of “reserved” or “closed” beds and maximize additional surge capacity
- Agree that patients may need to travel long distances to align with fair and equitable processes
- Facilities seeking assistance will establish communication with the RMOC as early as possible and all patient transfers related to the incident (COVID-19) will be coordinated through the RMOC during this crisis.
- Aeromedical services and EMS ground transport agencies agree to support patient movement as directed by the RMOC
- All representatives agree to participate in regular “virtual” briefings and hold each other accountable for the principles and processes previously described

*Web-Based Data Support

Local IT expertise can be leveraged to support the rapid development of software to facilitate data submission by health care entities for situational awareness. Resources include:

- The Southwest Texas Regional Advisory Council RMOC has adapted WebEOC software to support their RMOC and would be willing to share their expertise with respect to WebEOC (Contact: info@strac.org)
- The Northwest Health care Response Network has partnered with Microsoft to create a data platform specifically for the COVID response (Contact: Mr. Gary Bird, Principal Program Manager, Microsoft Power Platform Engineering; garybird@microsoft.com)

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