



University of California Davis Health Systems
Enhancing Surge Capacity and Partnership Effort (ESCAPE)

UC Davis's Enhancing Surge Capacity and Partnership Effort (ESCAPE) addresses the challenging subject of healthcare surge capacity—the ability of the healthcare system to rapidly expand to accommodate an influx of critically ill or injured patients. Key aspects of this include: 1. refining the crisis standard of care across a large geographic region to maximize population health outcomes (rather than the focus being on the individual patient, the focus is on the population and doing the most good for the greatest number of people), 2. using technology to extend resources (people, equipment and supplies) through the use of telemedicine and RFID tracking.

The first concept, refining the crisis standard of care for surge events, seeks to improve population-based healthcare outcomes in a disaster by providing equal, ethical and coordinated care across the region. When an area becomes saturated with additional patients due to an event, healthcare organizations within the involved area, as well as those in adjacent areas, may need to provide care in a different way. There may not be enough supplies, people or space in existing healthcare facilities to accommodate patients while practicing care as usual. In order to maximize population outcomes, we will create a set of operational patient care standards that will be applied equally and uniformly throughout the partnership and region with the assistance of telemedicine. These standards will be in the areas of adult critical care, pediatric critical care, trauma, burns, and acute mental health care. This aspect of the project draws on the expertise of practicing clinicians and healthcare disaster specialists, using evidence-based medicine where available, to define a tiered standard of care system. This will allow resources to be maximized across the region for the best possible population outcomes.

The second concept, using technology to bridge the healthcare gaps that would be intensified by a surge situation, draws on UC Davis's innovative telemedicine program, which began in 1992. Currently, the program provides more than 40 specialty healthcare services remotely to over 85 predominantly rural sites in California both North and East of Sacramento. With its academic medical center in Sacramento, UC Davis provides direct clinical care using a variety of innovative telehealth applications, including video-based consultations, 'store-and-forward' services such as radiology, critical care advice and guidance, interpretation services, quality assurance in sexual assault exams, and home-health monitoring. Healthcare providers in counties throughout this region often take advantage of the wide array of specialists that can be reached for consultation via telemedicine through the use of tailored video conferencing equipment in the exam or treatment room. Telemedicine has not previously been used to increase care options in a healthcare surge event; however, expanded to additional hospitals and other types of healthcare providers, this capability could vastly improve both specialty care and the quality of medicine practiced by licensed medical professionals who might be called upon to practice outside their scope. In addition to this new application of telemedicine, ESCAPE will also look another innovative application of technology: the use of active RFID (radio frequency identification) tags to track pharmaceuticals, supplies, equipment, and even people. These RFID tags are able to track the ambient temperature around them, and this feature increases their usefulness in tracking temperature-sensitive items such as vaccines. Once the tag is activated, attached to the resource and specifically labeled according to its resource type, it can be accurately tracked to within 3-5 meters even while in transit.

Partnerships

ESCAPE is an ASPR Healthcare Facilities Partnership Program grant and will form or strengthen ties to twenty different “Implementation Sites”—other hospitals, clinics, a public health department, and the UC Davis School of Veterinary Medicine. Each Implementation Site will be located in either OES Mutual Aid Region III or IV—the partnership area for this grant. These sites will be the recipients of the model healthcare surge telemedicine program and equipment, and the targeted recipients of the standards and protocols developed by ESCAPE. Certain sites will also participate in the RFID tracking component of ESCAPE. Two additional stakeholder groups will be formed; an “Advisory Workgroup” and a “Functional Team” which will each review and advise on the overall work products created by ESCAPE. Furthermore, each theme leader may form advisory groups or have work peer reviewed.

Themes

To achieve the goals of ESCAPE multiple themes have been developed, each headed up by an expert theme leader at UC Davis Medical Center.

Standards: A successful response to a healthcare surge situation requires standardized care and resources that are uniformly and equitably distributed across the region and among all healthcare providers, including EMS, hospitals, clinics, alternate care sites and long term care facilities. In particular, ESCAPE will focus on creating bedside care standards for burn care, pediatric critical care, adult critical care, trauma, and mental health. Telehealth interpreting will also be reviewed as a way to remotely assist with the care of ESL patients in a healthcare surge.

Telemedicine and Technology: Telemedicine will be used to ensure the uniform delivery of the standard of care by bridging areas of limitation within the partnership (i.e. geographical, limited specialists, limited translation services). In addition, RFID tracking will be utilized to follow and locate equipment, supplies (such as pharmaceuticals) and patients; this technology will also assist in maintaining the standard of care in a healthcare surge event.

Computational Modeling: Healthcare data modeling can be used to predict certain outcomes in a surge situation. This type of computational model can be used to optimize the use of technology among the partnership members.

Patient Records/Informatics: Optimizing patient data exchange in a uniform manner is critical to producing the best possible surge capacity response. ESCAPE will create a best practices standard for creation and implementation of a “disaster” medical record across the partnership in multiple types of facilities.

Patient and Resource Tracking: Not only is it important to capitalize on existing technology to track patients, providers, equipment and supplies, it is also paramount to determine the most critical resources to track. Resource typing will be one important component of making these crucial decisions. In addition, best practices describing *how* the technology will track resources (what kind of label will be attached to the RFID in the computer system; what will this system actually look like) need to be developed.

NIMS Compliance & Training: It is important that all Implementation Sites are NIMS-compliant to facilitate the uniform provision of care throughout the region and to improve the use of all the products being developed by ESCAPE and the partnership. It will also be important to develop key just-in-time trainings for the use of the Implementation Sites describing how the standards and technology will be implemented in a manner consistent with SEMS and NIMS.

Project Manager

Ellie Anderson, BS

evanderson@ucdavis.edu

ellie.anderson@ucdmc.ucdavis.edu

Principle Investigator

Christian Sandrock, MD, MPH

cesandrock@ucdavis.edu

