

# Considerations for the Use of Temporary Surge Sites for Managing Seasonal Patient Surge

Created February 2018  
Updated October 2019

In the U.S., fall and winter are typically the seasons that result in increased viral illness. Influenza activity tends to peak from [December through February, but could occur as early as October or run as late as May](#). In addition to flu, [other illnesses](#) tend to be more prevalent in the fall and winter, such as respiratory syncytial virus (RSV), croup, pneumonia, strep throat, norovirus, and the common cold. Many of these illnesses have common symptoms and differentiating between them is difficult for patients and providers. The surge in these illnesses can lead to increased patient volume in private practices, urgent care centers, and emergency departments across the country.

The [2017-2018 flu season](#) was severe. Coupled with increases in other upper respiratory infections, many hospitals surpassed routine surge management measures and initiated temporary surge solutions. These solutions include the use of non-patient care areas (e.g., waiting rooms), the use of tents, and the use of other mobile facilities, like trailers placed adjacent to their emergency departments, to triage and/or treat patients.

This [ASPR TRACIE](#) fact sheet describes the major considerations healthcare facility emergency planners should take into account when developing patient surge management solutions for longer-duration events, such as weeks to months of managing seasonal illness surge. These considerations are different than those of planning to handle surge from a no-notice, short duration event.

Even if your healthcare facility is not considering such options at this time, this document provides an opportunity to review your plans and procedures to ensure readiness for potential future patient surges.

For the purposes of this document, the term “hospital” is used to describe acute care hospitals with emergency departments and critical access hospitals with emergency department capability. The term “surge site” is used to describe a non-patient care area either inside the walls of the facility or a site **immediately adjacent** such as a tent, trailer, or other mobile and temporary facility. This document does NOT address the use of alternative care sites in the community or off-campus that may be used for patient screening or for overflow of hospitalized patients. Please contact your state licensing agency and Centers for Medicare &

Medicaid (CMS) Regional Office for information about your specific licensing and certification requirements.

## **Prevention/Mitigation**

There is little an individual hospital or health system can do to prevent patient surge from seasonal illness, but a region or healthcare coalition, in partnership with public health, can use coordinated strategies to help provide situational awareness to support patient surge management throughout the community. These strategies could include implementing the use of telehealth, telephone prescribing, virtual information, community paramedicine programs, and risk communications. Hospitals could coordinate with community health centers, primary care providers, urgent care clinics, and other primary care locations to expand their hours of operation to provide service to individuals who may otherwise seek care in the emergency department during non-business hours. Media campaigns encouraging vaccinations, handwashing, cough and hand hygiene, and other good public health measures have also proven helpful. Other key messages can include when to seek care in the emergency department, when to go to urgent care or a primary care provider, and when to stay home and treat with over the counter medications. Such efforts may reduce unnecessary patient visits and direct those who do need medical care to the most appropriate treatment site.

## **Preparedness**

There are steps individual healthcare facilities can take to prepare for surge and to initially mitigate the effects.

All hospitals must have an emergency operations plan and these plans should include immediate bed availability and patient surge strategies. Strong consideration should be given to activating these plans and implementing incident management whenever usual strategies to manage patient demand are inadequate. Surge is never an “emergency department” problem, but should be addressed through facility-wide strategies, including in-patient and out-patient services.

## **Internal Surge**

As part of their emergency operations plans, hospitals should have a plan to internally increase their ability to manage a surge of patients. There are a number of resources available that describe conventional internal surge strategies. These include:

- Increase/expand normal clinic hours to include evening and weekends to keep clinic patients from coming to the emergency department

- Planning for early discharge, including using discharge holding areas
- Canceling elective procedures to free up beds for emergency department admissions
- Transitioning some patients to care in observation areas (or the Post Anesthesia Care Unit, for example)
- Using geri-chairs rather than full beds for short-term/observation admissions and for administering hydration, bronchodilators, and similar treatments
- Reviewing patient care plans for those whose care plan could be altered to accommodate a different room
- Converting private rooms licensed as semi-private rooms to accommodate two patients
- Opening closed but licensed additional beds or units
- Using supervisors or teaching staff to provide direct patient care
- Canceling training or classes to increase staffing
- Being able to flex staff to changing needs

### *Resources*

#### ASPR TRACIE Topic Collections:

- [Alternate Care Sites](#)
- [Crisis Standards of Care](#)
- [Disaster Ethics](#)
- [Emergency Public Information and Warning/Risk Communication](#)
- [Epidemic/Pandemic Flu](#)
- [Hospital Surge Capacity and Immediate Bed Availability](#)
- [Incident Management](#)
- [Information Sharing](#)
- [Healthcare-Related Disaster Legal/ Regulatory/ Federal Policy](#)
- [Virtual Medical Care](#)

In [this interview with ASPR TRACIE](#), doctors from NYC Health + Hospitals discuss the development of surge sites, tents, and mobile medical units to help decompress their emergency departments during the 2017-2018 seasonal illness surge.

[ASPR TRACIE Healthcare Coalition Influenza Pandemic Checklist](#)

[Patient Surge Strategies: 2018 Lehigh Valley Health System](#)

[Patient Surge Strategies: NYC Health and Hospitals](#)

## **Use of Temporary Surge Sites on Facility Property**

Many hospitals developed surge management plans that involve the traditional options described in the preparedness section above. For some hospitals, these strategies were not been sufficient to address the increased daily demand on their facilities during the 2017-2018

influenza season. ASPR TRACIE received a number of inquiries for information related to establishing “surge sites” such as tents or mobile facilities located adjacent to emergency departments to augment existing patient care areas.

The following information has been gathered from open source materials, discussions with ASPR TRACIE Subject Matter Expert Cadre members, and interviews and site visits conducted with facilities that have deployed these types of units.

## Planning Considerations

### Hospital-wide Engagement

Many of the facilities ASPR TRACIE interviewed discussed using a hospital-wide approach for addressing surge that, once activated, becomes the incident command structure. Partners include emergency management, nursing leadership (chief nursing officer or representative), physician leadership (chief medical officer or representative), emergency department leadership, inpatient clinical leadership, daily nurse supervisor, infection control practitioner, pharmacy, environmental services, supply chain and facility management, and patient registration. Daily meetings (huddles) with these partners to discuss census and actual volume versus expected volume, coordinate discharge planning, and address staffing issues will help leadership forecast surge needs. For integrated health systems, data from primary care and internal medicine clinics, as well as urgent care clinics could also be used to anticipate surge. As the intensity of the response increases, these daily huddles may need to occur more frequently. Other information that can improve the surge response includes emergency department wait times, chief complaints, and numbers/ percentage of patients who left without being seen (tracked over time). Visitor restrictions can also be activated to limit potential exposure of infectious disease to immunocompromised patients or newborns and to visitors themselves.

In [this interview with ASPR TRACIE](#), Ryan Hay, Director of Emergency Preparedness for Lehigh Valley Health System, describes their surge management strategies for the 2017-2018 seasonal illness surge.

Activating the hospital incident command structure will assist in providing a coordinating entity to manage patient surge. Once activated, implement on site positions, such as Surge Unit Leader, with physical identification (e.g., vests) so all staff can easily see and find staff in each position.

## Thresholds and Triggers

Every facility will have different thresholds and trigger points related to activating surge sites. Considerations may be based on emergency department volume only or could be affected by the inpatient volume and need to board admitted patients beyond the emergency department. Lack of flex space may also contribute to the need to surge outside the facility. Pre-identifying your facility's thresholds and triggers, then reconfirming them with a hospital-wide unified command, can ensure all parties can support the strategies and decisions.

## Regulatory and Legal Considerations

ASPR TRACIE cannot provide legal or regulatory advice on federal or state regulations, but we have compiled information that may be helpful in considering the use of flex space or surge sites to address seasonal illness patient volume. Waivers to section 1135 of the Social Security Act are only possible when a federal-level emergency has been declared by either the President or the Secretary of Health and Human Services. CMS has provided considerable information on ways to increase inpatient and outpatient capacity **without the need for 1135 waivers**. Inpatient surge activities include early discharge planning, opening already certified beds or units, and the use of remote locations. Outpatient surge activities include the use of tents or mobile facilities located on/within the hospitals' campus as a temporary means of allowing for the management of outpatient surge. These temporary facilities must meet all the conditions of participation for CMS AND must comply with all state and county licensure and life safety code requirements.

This information is described in detail in the fact sheet [Hospital Alternative Care Sites during H1N1 Public Health Emergency](#) starting on page 7 of 14 for inpatient surge, and page 9 of 14 for outpatient surge actions and impacts on conditions of participation permissible without waivers. Page 13 and 14 of this fact sheet describe implications of surge sites on Life Safety Code and discuss degraded but safe conditions.

As always, when using surge strategies, notify your state licensing agency and CMS Regional Offices to discuss the specifics of your facility's solution.

## Resources

[ASPR TRACIE CMS and Disasters: Resources at Your Fingertips](#)

[ASPR TRACIE EMTALA and Disasters](#)

[ASPR TRACIE Healthcare-Related Disaster Legal/ Regulatory/ Federal Policy Topic Collection](#)

[ASPR TRACIE Healthcare Coalition Surge Estimator Tool: Hospital Data Collection Form and Aggregator](#)

## Emergency Medical Treatment and Labor Act (EMTALA) Requirements and Options for Hospitals in a Disaster

### Hospital Alternative Care Sites during H1N1 Public Health Emergency

#### Notification and Coordination

Internal communication to staff is critical and ensures everyone understands what the surge site is and is not intended to do. For integrated health systems, communication and coordination with corporate headquarters should be ongoing during the surge event and be in accordance with emergency plans and policies and procedures. In addition to facility-wide engagement and communication, external communication and coordination is required for a successful surge response. Hospitals should notify their state licensing agencies and CMS Regional Offices of the activation of emergency operations plans and use of surge sites.

Hospitals should also notify their local emergency medical services providers, especially if the location of the new surge site will impede the traditional flow of traffic or is designed as an initial triage point. Hospitals should notify and work with their primary care providers in their community as well as local free standing urgent care centers. This should include standardized handouts for patients as well as recommended guidelines for referrals to emergency departments. Hospitals should coordinate with their local healthcare coalition, public health agency, and emergency management agency as well to address consistency of care strategies and distribution of patient demand across the regional facilities. If local emergency operations centers are activated, Joint Information Centers can be a helpful coordinating point for public messaging. Finally, hospital executive leadership should be visible to the public through personal visits to the surge site and through media interviews and appearances.

Hospitals enacting surge management strategies should also communicate with other healthcare facilities or agencies that may be impacted (e.g., early discharges that require additional

#### Supporting Staff Working a Surge Event

- Encourage and support short breaks
- Stock the break room with:
  - Healthy snacks and drinks
  - Calming music or areas where staff can listen to short stress management podcasts or music
  - Antibacterial wipes, spray, and gel
  - Posters that encourage self-care and hand and cough hygiene
- Provide on-site behavioral healthcare/ faith-based support for staff (and patients)
- Maintain adequate supply of protective gear and encourage its use
- Offer on-site childcare for staff working extra hours

homecare support). Long-term care facilities and home health agencies that might be asked to surge their staff to accommodate additional patient volume in the hospital should be engaged to ensure remaining staffing levels are sufficient to accept the discharges.

## **Behavioral Health Considerations for Staff and Patients**

An infectious disease outbreak is stressful for patients, loved ones, and staff. People are tired, worried, and not feeling well. Patients are concerned about their health and their healthcare. They may be worried about being in the hospital in the first place and being treated in a “flu tent” or other non-traditional setting may exacerbate their stress and fear. Patients’ loved ones likely have the same concerns about safety and quality of care. Staff are likely tired and may be working extended or extra shifts; being told they need to provide care in an environment in which they are not familiar can add to this stress. Plans for surge events must include how to handle both patient and staff behavioral health needs. Monitoring staff absenteeism rates is recommended to ensure that continuity of care can be provided. Employees who are ill should remain home for adequate rest and recovery, without retribution by facilities.

### *Resources*

[ASPR TRACIE Disaster Behavioral Health Resources at Your Fingertips](#)

[ASPR TRACIE Disaster Behavioral Health Self Care for Healthcare Workers Modules](#)

[ASPR TRACIE Mental/Behavioral Health Topic Collection](#)

[ASPR TRACIE Tips for Retaining and Caring for Staff after a Disaster](#)

[Psychological First Aid – Healthcare Professionals](#)

[Disaster Behavioral Health](#)

[Applying the Lessons of SARS to Pandemic Influenza](#)

[The Mental Health of Hospital Workers Dealing with Severe Acute Respiratory Syndrome](#)

[Psychosocial Effects of SARS on Hospital Staff: Survey of a Large Tertiary Care Institution](#)

## **Operationalizing a Surge Site**

These issues should be taken into consideration when deciding to open an on-site surge facility to manage outpatient care.

### **1. Will the demand be sustained long enough to warrant set up?**

### **2. Have you exhausted other options?**

- Expanded to other areas of the hospital/campus (e.g., creating additional outpatient capacity in on-site clinics, same-day surgery, or observation/short-stay areas)
- Increased and/or redeployed staff
- Increased throughput by reducing length of stay (e.g., expedited charting, moving patients to “results pending” area after tests obtained)

- Expanded hours and capabilities of on-site clinics
- Encouraged, through public education, that patients utilize the proper level of care through urgent care centers, local clinics, or primary care physicians. This must be done proactively, as once they arrive to the emergency department they must be evaluated.
- Planned early/coordinated discharge for both inpatients and outpatients
- Coordinated with local healthcare coalition, emergency operations center, emergency medical services dispatch or communications system, if possible, to manage patient distribution throughout the community,

### 3. What are the costs?

- Do you own or will you need to rent/borrow the tent or mobile unit?
- How much will it cost to operate the surge site in addition to your normal operations (e.g., overtime, additional staffing, generator fuel, lighting, security)?
- Would the change in treatment site affect reimbursement rates?
- If renting the structure, will staff come with the rental to set up and operate the generator, HVAC, and other systems and to assemble and take down the structure?

### 4. What are the “optics” of the on-site surge facility?

- Plan for working with the media and managing community expectations.
- Prepare for patient perceptions.

Consider having a “media day” that allows the press and local leadership the opportunity to look around prior to opening the facility for patient care. This could also provide the opportunity to message your community about wait times and where to seek care.

- i. All of the facilities interviewed by ASPR TRACIE indicated that patient perception of the surge facility was mostly positive, with an appreciation of shorter wait times. The “left without being seen” numbers dropped dramatically after these facilities initiated a surge site. Some of the specific negative comments included:
  1. Concerns about receiving lower level of care
  2. Fear or perception of being placed in an “Ebola tent” or “quarantine or isolation”
  3. Some patients (including people experiencing homelessness) felt “pushed out” quickly, since overnight boarding might be temporarily unavailable during surge times
- ii. Establish patient expectations at the initial point of care; tell them their experience may include being seen in a surge facility, and that this may decrease their wait time. Emphasize that patients are directed to the surge

site based solely on their symptoms and not other factors, such as ability to pay.

- Inform employees – those working in the emergency department as well as those staffing the surge site – of the purpose of the surge site and the types of patients that can be seen.

#### **5. Do you have plans and procedures in place?**

- Does your hospital emergency operations plan or emergency department standard operating procedures include the use of a surge space or surge facility to manage emergency department surge? Do you have the ability to develop a just-in-time comprehensive surge plan?
- Have your staff been trained in how to set up and function in an on-site surge facility? Consider a staff training day if you have the time and ability, otherwise ensure there is adequate time for on the job training.
- Are your staff trained in incident command? Have you identified who will fill the incident command system roles?
- How have you integrated your surge site into your active shooter and evacuation protocols?
- Are you considering any changes in protocols (e.g., not running labs on everyone, treating based on symptoms)?

#### **6. Do you have an appropriate location for the surge site?**

- What is the purpose of the surge site (e.g., waiting room, triage only, isolation, treatment)
- What is the size of the footprint of the surge site and all of its associated equipment?
- How safe/ convenient is the location for employee and patient movement between the surge site and the emergency department?
- Is it possible to provide overhead cover to employees and patients moving between the surge site and the emergency department?
- What is your extreme weather plan (e.g., snow, high winds, electrical storms), especially if using a tent?
- What security mechanisms are in place to restrict access to the surge site?
  - i. How will you provide security services to the surge site during operational hours?
  - ii. How will you secure the surge site during non-operational hours if you are not planning round-the-clock operations?
- Will the proposed location impede access to the emergency department or other entry points to the hospital?

- If considering purchasing a mobile facility versus temporarily renting or borrowing, do so with respect to modular scalability and compatibility with other locally owned assets. This would allow the equipment to be combined in future emergency situations, if necessary.



*Exhibits 1 and 2. Different views of a mobile tent adjacent to an emergency department main entrance.*

## Clinical Care Delivery in a Surge Facility

1. Will you need to modify your electronic medical records (EMR) system to allow for additional beds or a new pod?
2. Which patients will be treated?

Determine what types of patients are appropriate for the surge site. Options include:

- Any low acuity, regardless of chief complaint
- Influenza-like illness (ILI) only (to reduce transmission risks)
- Fast track only

In our discussions with facilities using these surge sites, they all elected to use them for all low acuity patients regardless of whether they have ILL, making triage similar to that of a Fast Track unit that is already in place in their emergency departments with a few additional restrictions outlined in question 3.

### 3. Which patients will be excluded?

Determine whether some types of patients may be inappropriate for the surge site. The facilities we talked with all excluded patients with the following conditions/symptoms from their surge sites:

- Behavioral health complaints
- Diarrheal illness (those that will require frequent use of a restroom if one is not available in the surge site)
- Obstetric or gynecological complaints or pregnant patients
- Extreme ages, such as under 8 or over 80 years of age

### 4. What will your operating hours be?

Determine whether you will operate the surge site 24/7, only during pre-defined hours, or on an as-needed basis. Consider the following questions:

- Does your census data suggest times when the surge site is most needed?
- If you do not operate the surge site 24/7, what is your plan for securing and maintaining the surge site during non-operational hours?
- If you plan to operate the surge site on an as-needed basis, what is your procedure to determine the need and how will staffing be shifted to accommodate the need?

The facilities we spoke with encouraged other facility planners to review their last several weeks of census data to determine if there are surge times that could dictate when the surge site would be most needed. One facility was operating 24/7 due to demand, and others operated in a mid-day to late night staggered shift because that is when they see their surge. Early to mid-morning was not as busy and did not necessitate the staffing, but the surge site remained stood up, so they could activate it if needed in the off hours.

### 5. How will you integrate the surge site with the hospital?

Consider the following questions to implement efficient patient flow.

- Where/how will patients be registered?
  - i. Will this include a “mini-registration” at check-in and a full registration at the bedside in the surge site?
  - ii. Should a full registration occur at check-in based on available staffing?

- Will your facility be able to manage discharge from within the surge site?
- Will the patient stay in the cube/examination area waiting for test results or is there a “flow” from care space to waiting space?
- Do you have sufficient signage? If not, have you considered how to maximize the use of volunteers?
- How will accompanying family members/friends of patients be managed or restricted in the surge site?



*Exhibit 3. Ensure there is adequate space for movement and patient care areas.*

## 6. What capabilities are available at the surge site?

Consider whether the following capabilities will be available in the surge site. If not, determine how your hospital can support them and if you need to limit the types of patients you care for at the surge site.

- Power
  - i. Is power supplied by generator or electrical connections?
  - ii. Are there sufficient charging stations for cell phones and other devices?
  - iii. Is there lighting capability both inside and on the exterior of the surge site?
- Climate control with regular monitoring from staff familiar with portable equipment
- Staffing (If the surge site is acquired via a contract, are any personnel included?)

- Laboratory capabilities (e.g., basic point-of-care urine, urine pregnancy, blood glucose, rapid strep and influenza testing, and point-of-care blood tests)
- Radiology services
- Oxygen
- ECG
- Suction
- Crash cart
- IV fluids/lab draws
- Pharmaceuticals
  - i. Likely meds on hand (e.g., acetaminophen, ibuprofen, anti-emetics)
  - ii. Ability to get other medications from main emergency department or pharmacy
  - iii. Secure location for medication
- Positive/negative airflow area(s)
- Layout
  - i. How many beds?
  - ii. Is there adequate storage space?
    - 1. Is there an ability to keep a limited amount of resupply for frequently used items (e.g., linen, gloves, masks)?
  - iii. Is there staff space or desk space for sitting or charting?
  - iv. Are there restrooms?
  - v. Can you protect patient privacy?
  - vi. How are you preventing cross-contamination/cross-infection?
- Computer access and other information technology and biomedical technology needs
- Overhead paging
- Hospital phone reception/radios
- Carts and other equipment graded for austere environment
- Personal Protective Equipment (PPE)
- Handwashing stations or hand sanitizer dispensers
- TV/radio in waiting area, if separate from main area
- Trash cans, biohazard receptacles, sharps containers, and laundry bins
- Chairs in treatment area for visitors
- Beds, elevated cots or geri-chairs for patients

One facility we interviewed suggested using hardware or utility carts from hardware stores rather than medical grade carts, since you need durability in an austere environment.



*Exhibits 4 and 5. Consider heavy duty carts for austere environments.*

## 7. How will you support the surge site with staffing and other resources?

- Clinical staff
  - i. The facilities we interviewed had surge sites in the range of 12-14 additional beds which they staffed with roughly 1-2 registered nurses (RNs), 1 technical partner (nursing assistant, patient care technician), and 1 advanced practitioner (nurse practitioner, physician assistant, or physician). No facility used residents in the surge site.
  - ii. An adequate number of providers should be present to maintain maximal throughput. With relatively low acuity and templated charting, patient turnover can be very rapid. Provider/RN teams often can “tag-team” visits within minutes, particularly if “downtime” or template paper charts are used and a rapid registration process is already completed prior to placement.
- Registration/charting/discharge. (Note that these same strategies can be employed within the usual patient care space as well to expedite care in those areas as possible for ILI cases.)
  - i. Expedited registration
  - ii. Templated clinical charts for ILI on EMR or paper forms

- iii. Custom discharge instructions and pre-printed prescriptions
  - iv. Default billing/coding
  - v. Use of scribes should be considered when the providers are not accustomed to managing high throughput
  - vi. Ensure a plan to integrate data from the surge site back into EMRs
- Environmental services
  - i. Will the nursing staff turn over the rooms or will environmental services handle? Do you have the supplies available to clean and turn over without environmental services?
  - ii. What are the cleaning expectations?
  - iii. How do you plan to manage laundry, garbage, and biohazard disposal?
  - iv. Have you reviewed the surge site for essential environmental health standards relating to management of the water supply, sanitation, hygiene, and waste?
- Laboratory services
  - i. Will you adjust protocols to limit labs on these patients or adjust triage?
- Radiology services
  - i. Can your nursing staff use standing orders to order all urinalysis, labs, and radiological tests prior to the patient being placed in the surge site?
- Pharmacy
  - i. What is the location and what are the protocols for the administration of common medications?
  - ii. Can you expedite prescription medications?
  - iii. Can your medication carts/machines be repositioned near or in the surge site?
- Social work
  - i. Set up a separate “desk” to avoid consultation in clinical spaces
- Resupply

## Maintenance of Surge Site Operations

Ongoing communication and monitoring are needed to ensure smooth functioning of the surge site. Consider the following to assess your daily functioning as well as to inform decision-making on when to deactivate/demobilize the surge site.

- Establish key metrics and review data from multiple sources (e.g., lab results, x-rays, admissions, syndromic surveillance).

- Ensure there is a strong grounding and understanding among hospital leadership and staff of potential impacts on facility operations. This information should be shared during shift changes, operational period briefings and any daily ‘huddles’
- Compare key metrics and data with previous time periods to identify trends and indicators on the need for the surge site.
- Hold daily (or more frequently as needed) calls or huddles with multi-disciplinary teams to quickly identify and solve challenges such as staffing, pharmaceuticals, and supply shortages or distribution disruptions.
- Collect and retain operational documentation, daily logs, etc. for use during after action review process.
- Collect and retain capital, staffing, and general costs associated with the event

## Deactivation

When planning to activate a medical surge site, it is also important to consider what your process will be for deactivation. The following steps can help guide your deactivation planning:

- Identify the criteria by which you will make the decision to close the surge site.
- Define the term “temporary” for your facility. The general consensus among those interviewed by ASPR TRACIE is that this is less than 30 days, at which point there may be regulatory considerations and other factors for continued operation.
- Notify in advance of the closure the partners/authorities you contacted when establishing the surge site.
- Inventory supplies/equipment.
  - If the supplies came from your disaster cache, replenish as needed prior to storage.
  - If supplies came from your normal inventory, replace and restock as needed.
  - Return all surge site supplies to their designated containers for future use.
- Turn off the surge module of your EMR.
- Conduct a terminal cleaning of the surge site.
- Complete an after action review to capture lessons learned and areas for improvement.

The following subject matter experts contributed to/ reviewed this document in 2018, when it was originally published (listed alphabetically):

**Eric Alberts**, BS, FPEM, CHS-V, CDP-1, CHPP, CHEP, SEM, CFRP, FABCHS, Manager, Emergency Preparedness, Orlando Health, Inc. (Hospital System); **Eileen A. Blake**, MPH, Associate Director, Yale New Haven Health System Center for Healthcare Solutions/Center for Emergency Preparedness and Disaster Response; **Caecilia J. Blondiaux**, Regulations Coordinator/Emergency Prep Lead, Quality, Safety, and Oversight Group, Center for Clinical Standards and Quality, Centers for Medicare & Medicaid Services; **Julie Bulson**, DNP, MPA, RN, NE-BC, Director, Emergency Preparedness, Spectrum Health; **Craig DeAtley**, PA-C, Director, Institute for Public Health Emergency Readiness, MedStar Washington Hospital Center, and Administrative Director, D.C. Emergency HealthCare Coalition; **Ryan M. Hay**, BSN, CEN, PHRN, CEM, Director, Emergency Preparedness, Lehigh Valley Health Network and Chair, Northeast PA Health Care Coalition / Health and Medical Committee; **John Hick**, MD, U.S. Department of Health and Human Services (HHS), Office of the Assistant Secretary for Preparedness and Response (ASPR) and Hennepin County Medical Center; **Richard Hunt**, MD, Senior Medical Advisor, National Healthcare Preparedness Programs, HHS ASPR Office of Emergency Management; **Mark Jarrett**, MD, MBA, MS, Sr. Vice President & Chief Quality Officer, Associate Chief Medical Officer, North Shore-LIJ Health System, Professor of Medicine, Hofstra – North Shore LIJ School of Medicine; **Rachel Kaul**, LCSW, CTS, Senior Policy Analyst, Behavioral Health Lead, HHS ASPR Office of Policy and Planning; **Joseph Lamana**, Director, Operations Division, HHS/ASPR/ONE; **Syra Madad**, DHSc, MSc, MCP, Director, System-wide Special Pathogens Program, New York City Health + Hospitals; **Kelly Nadeau**, RN, MN, EMHP, Director, Healthcare Preparedness Program, Emergency Preparedness and Response, Georgia Department of Public Health; **James Paturas**, CEM, CBCP, EMTP, FACCP, Director, Yale New Haven Health System Center for Emergency Preparedness and Disaster Response; **Luis Puentes**, RN, BSN, MA, PHRN, Administrator, Department of Public Safety and Emergency Operations, Lehigh Valley Health Network; **Mary Russell**, EdD, MSN, Emergency Services, Boca Raton Regional Hospital; **Susan Schmitz**, MAIDP, Senior Project Director, Veterans Emergency Management Evaluation Center, Veterans Health Administration Office of Patient Care Services; **Kevin Sheehan**, MPH, MBA, CIH, CSP, REHS, Captain, U.S. Public Health Service, ASPR, Office of Emergency Management, Division of National Hospital Preparedness, Region IX; **Sean Studer**, MD, Deputy Chief Medical Officer of NYC Health + Hospitals; **Meghan Treber**, MS, Principal, Public Health Preparedness Practice, ICF, ICF ASPR TRACIE Project Director; **Mark Van Dyke**, M.Ed., Manager, Emergency Preparedness, Spectrum Health; and **Lori M. Wood**, MSEM, EMHP, Director, Emergency Management, Grady Memorial Hospital.

## Additional Resources

### ASPR TRACIE Resources

#### Topic Collections

- [Alternate Care Sites](#)
- [Crisis Standards of Care](#)
- [Disaster Ethics](#)
- [Emergency Public Information and Warning/Risk Communication](#)
- [Epidemic/Pandemic Flu](#)
- [Healthcare-Related Disaster Legal/ Regulatory/ Federal Policy](#)
- [Hospital Surge Capacity and Immediate Bed Availability](#)
- [Incident Management](#)
- [Information Sharing](#)
- [Virtual Medical Care](#)

#### Other Resources

- [Disaster Behavioral Health Self Care for Healthcare Workers Modules](#)
- [Healthcare Coalition Influenza Pandemic Checklist](#)
- [Healthcare Coalition Surge Estimator Tool: Hospital Data Collection Form and Aggregator](#)
- [Tips for Retaining and Caring for Staff after a Disaster](#)
- [EMTALA and Disasters](#)

### External Resources by Agency

#### California Department of Public Health

- [CHPH Guidance: Approval for Health Care Facility Use of Surge Tents](#)
- [Standards and Guidelines for Healthcare Surge During Emergencies: Volume 1: Hospitals and Volume 2: Government-Authorized Alternate Care Sites](#)

#### Florida Department of Health, Bureau of Preparedness and Response

- [Alternate Care Site Standard Operating Procedure](#)

#### Joint Commission

- [Surge Hospitals: Providing Safe Care in Emergencies](#)

Kansas Department of Health and Environment, Bureau of Public Health Preparedness

- [Alternate Medical Care Site Emergency Operations Plan](#)

New York City Department of Health and Mental Hygiene, Office of Emergency Preparedness and Response

- [Emergency Department Capacity Expansion Tool \(EDCET\)](#)

Summit County Health District, Summit County Emergency Management Agency, Akron Regional Hospital Association

- [Development of an Alternate Care System: A Workbook for Community Planners Preparing for Medical Surge](#)