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Baltimore Convention Center Field Hospital: One State's Experience during COVID-19



ASPR TRACIE met with the joint leadership team from the Baltimore (MD) Convention Center Field Hospital (BCCFH), a joint effort to establish an alternate care site (ACS) created to help manage the patient surge from the COVID-19 pandemic. The team included representatives from the State of Maryland, the University of Maryland Medical Center (UMMC), and Johns Hopkins Hospital (JHH). This case study highlights their experiences standing up and maintaining this ACS. ASPR TRACIE grouped the challenges and considerations by category in the hopes that the information can be helpful to stakeholders engaged in similar planning and response efforts.

For more information on ACS and COVID-19, visit the [ASPR TRACIE COVID-19 Alternate Care Site Resources](#) page.

Key Takeaways

- The State of Maryland contracted with major health systems that had substantial assets available to support the joint establishment of an ACS in augmenting an entire region's surge bed capacity.
- There was excellent cooperation between all parties involved, making the operation an overall success.
- Since the ACS utilized a healthcare system's financial and administrative backbone, (e.g., their existing electronic medical record (EMR) system, billing process, and human resources and hiring infrastructure) operations were able to begin quickly.
- The Centers for Medicare & Medicaid Services (CMS) was able to conduct a rapid and abbreviated survey to allow for billing.

Background and Initial Decision Making

- In early March 2020, state officials and healthcare facility leadership were concerned about increasing case counts in MD and surrounding states, as well as the potential for the National Capital Area becoming a COVID-19 hot spot.
- State leaders reviewed lessons learned from ACS in other locations, including the [Javits Center](#).
- BCCFH was established and licensed by the state; and operated and managed by staff from JHH and UMMC. This ACS increased hospital capacity by accepting convalescing non-intensive care patients with COVID-19 and complicated medical and surgical conditions that do not allow them to be cared for at home.

Initial Design and Structure

- The Baltimore Convention Center was identified early on as an available and suitable structure of opportunity as it is publicly owned and operated and included multiple needed resources (e.g., space, electrical capacity, easy ingress and egress, plumbing, etc.).
- A modular build out was constructed based on the U.S. Department of Health and Human Services (HHS) [Federal Medical Station](#) (FMS) 250 bed model. Each bed space needed to be laid out within the 120,000 square foot area.
- The FMS design was adapted in the following ways to serve as an acute care facility:
 - The initial equipment package was supplemented with wheelchairs, walkers, hard stretchers, and similar items to facilitate patient mobility.
 - Staff purchased hospital grade mattresses with guard rails or auto recline.
 - Staff provided patients with recliners instead of hard metal chairs.
- The FMS design and set up was very linear. To facilitate patient monitoring and staff work flow, the BCCFH incorporated components from other states' models and replaced centralized beds with pods of 10 beds in the middle (5 facing out each side). Care providers were stationed on either side. Staff also created a U shape in three PODs so that staff could look at patients (and patients could not see each other). [Review the layout of the BCCFH at the end of this document.](#)
- The BCCFH was overseen by a Governance Committee and an Advisory Committee comprised of members from the state and senior staff from each facility.

Operations

- An operations manual that specified workflows and procedures needed to be developed for every aspect of the ACS. In addition to clinical care services, operations planning needed to include:
 - Facility management.
 - Security.
 - Food service.
 - Supply chain.
 - Laundry service.
 - Environmental services and waste management.
 - Infection prevention and control.
- Patient safety was a critical priority – BCCFH published a weekly safety report with a formal review for process and safety improvements.
- Staff from JHH and UMMC that were caring for COVID-19 patients in those institutions were included in policy, process, and clinical protocol meetings, so the knowledge gained at each institution could flow back and forth and to the BCCFH.
- The BCCFH staff chose to use the disaster documentation module from UMMC's EPIC EMR system; the charting was as abbreviated as possible.

Capabilities

- The facility was designed to handle low acuity, step down patients and provided mostly supportive care such as medication administration and oxygen therapy. Patient admission criteria included:
 - Less than four (4) liters of oxygen needed to maintain saturation.
 - No hemodialysis requirement.
 - Not acutely psychotic.
 - No evidence of current or history of dementia or altered mental status.
 - Able to ambulate, not entirely bed bound.
- All patients were admitted to the BCCFH from an inpatient facility; no walk-ins or pre-hospital emergency medical services transports were allowed.
 - The sending hospital arranged transport to BCCFH and a hand off was conducted via telephone between the sending registered nurse (RN) and the receiving RN.
 - BCCFH staff conducted a "re-triage" or assessment upon arrival to the ACS.

Maryland had its first confirmed COVID-19 patient on March 5, 2020 and determined they needed to establish the BCCFH on March 23, 2020. The first patient was admitted to the BCCFH on April 27, 2020.

As of November 2020, the BCCFH had admitted 330 patients total, with an average length of stay of five (5) days.

- The BCCFH operated in a Joint Commission “sufficiency of care model.” Not all tools were available, but the ACS was as close to a hospital as possible.
 - No ventilated patients were admitted.
 - No blood bank services were provided.
- Physical therapy services were critical to patient recovery and mobility programs were built in from the beginning of patient arrival to prevent blood clots.
- All patients were COVID-19 positive and most had other comorbidities including diabetes and substance use disorders.
- Social work staff were engaged early on and were onsite in the BCCFH to work on discharge planning, as many patients in the BCCFH did not have alternate locations in which to recover properly.
- The facility operated eight (8) patient care pods with 30-36 beds per pod and a dedicated patient care team per pod.
 - There was initially a 1:8 nurse to patient ratio, but that could have been increased or decreased depending on staffing levels, patient acuity, and census levels.
 - In addition to licensed or certified medical staff, BCCFH also used lay people who wanted to assist but had no medical background in support positions.
- The Baltimore Convention Center is now being used for community COVID-19 testing in another area of the convention center as well as testing at local community sites. The staff has performed more than 42,000 tests and operates the State’s largest walk-in testing site.
- There has only been one 36-hour period where there were no patients in the hospital.
- The number of patients are expected to surge again in the winter of 2020.

Information Technology (IT) and Telemedicine

- The largest IT undertaking related to the activation of the ACS was the initial build out and continuous evolution of the EPIC EMR modules.
 - Weekly meetings between IT staff, billing staff, and clinical staff enabled IT to adjust and customize the EPIC system to the operations at the BCCFH.
- Interpreter services were provided via video conferencing.
- There was no available public address system, so all team communication was conducted through phones or walkie talkies.
- Medical specialty consultations were mostly conducted over the phone, rather than through video or a formal telemedicine system. Should the BCCFH be used more long term, staff are considering building out a more robust telemedicine capability to augment and increase level of care.
- Patients were able to talk with family and friends on their personal phones, but no additional devices were provided.
- IT support was exceptional and mapped what the ACS needed. They only included the necessary parts of EPIC (and this significantly streamlined the process). IT also evolved with the needs of the center and participated in all of the meetings to ensure their solutions met the teams’ needs.

Staffing

Recruitment

- Responsibility for staffing was split between the two hospitals. JHH took the lead in recruiting provider staff and UMMC recruited for clinical nursing and other position types.
- Staff was identified from a variety of sources:
 - Academia - some were clinical professors that were not practicing.
 - Clinical locations that either shut down or had low census such as ambulatory locations.
 - Unemployed clinicians.
 - Staff who simply volunteered to work extra shifts at the BCCFH.
 - Local staff recruiting firms.

- Human Resources from both facilities used existing hiring practices and policies to ensure no key steps were missed.
- Interviews were conducted with all staff to ensure new hires were accurately placed.
- There was no need to fly people in from other states; there were plenty of available staff in Maryland.
- There was no need to take experienced critical care staff from current hospital operations; BCCFH staff were able to “train up” staff from other settings (primarily outpatient settings that were below census).
- The Medical Reserve Corps (MRC) and State Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) programs were not needed by the ACS (though they were being actively used by other state entities).
- Additional staff and staffing sources were identified through locums’ tenens programs and other recruitment agencies, but those sources were not needed as of October 2020. BCCFH staff kept those sources on the list to meet possible future needs.
- All staff were licensed by the state, and privileges were granted through JHH’s system for providers and the State of Maryland for nursing.
- The onboarding process was abbreviated and consisted of the following steps:
 - Review of resume or CV.
 - Facetime interview.
 - Background checks, including license and certification.
 - Offer made.
- The pace was so fast and onboarding occurred twice a day.

Training

- BCCFH staff conducted a full day-long mock opening to test procedures and workflows. Staff tested hot zones, security, among other areas to ensure it operated as it needed to.
- Once the BCCFH was operational, all staff were put on the schedule at least once in the first two weeks so they could be trained in site operations in the initial round.
- One EMR system was used (EPIC from UMMC).
 - To ensure all staff were able to use EPIC, BCCFH provided training materials, lectures, and used a buddy system that paired “super users” with less experienced staff.

Staff Support

- Staff were provided one meal per shift so they did not have to leave the convention center or manage food storage during shift. A large cafeteria (“canteen”) was set up for staff. Each table had a charging station and only two chairs > 6’ apart were allowed at each (double) six foot table.
- Hotel accommodations were provided to staff that needed lodging due to travel distance or inability or unwillingness to return home. Staff showers were provided on site and BCCFH staff were eligible for a reduced rate for parking.

Financial Operations and Administrative Considerations

Costs

- The BCCFH spent approximately \$2.5 million in initial set up costs and incurred an approximately \$1 million per month run rate (\$200,000 of this is set aside for testing).
 - \$300,000-400,000 per month in addition to above was used for wrap around services (e.g., food, security).

Billing

- Based on the way the BCCFH was established—as a state hospital with the state as the licensee—they are actively billing CMS and other payors.
 - UMMC essentially served as a third-party facility cost biller for the state and remitted bills to the state.
 - JHH is billing for provider time.

- It took a long time for the state to get a Medicare provider number. This was a significant challenge, which requires the facility to be operational before applying for a certification and site visit. Additional information on the steps to enroll as a new hospital are included in Appendix B of CMS' [ACS Fact Sheet](#).
- The state paid for the initial buildout of the ACS.
- They were able to bill some overhead (e.g., financial and IT) to the state. BCCFH now has a set formulary for supplies purchased and the inclusion of some Federal assets. Federal resources primarily included the equipment for the FMS provided by the federal government. The Maryland State National Guard provided assistance in equipment set up.
- The CMS assessment survey process was as follows:
 - CMS has issued 1135 Waivers for certain hospital conditions of participation (CoPs) and other policies during the public health emergency. CMS has provided a [comprehensive list of COVID-19 waivers](#).
 - The reduction in CoPs has helped existing entities expand capacity inside their existing hospital footprint and to temporary expansion locations / ACSs including field hospitals.
 - State surveyors assess compliance with the CMS hospital CoPs in effect during the public health emergency (and would not survey against waived requirements). The Maryland Office of Health Care Quality (CMS State Survey Agency) / BCCFH survey was focused on the sufficiency of care therefore an abbreviated survey was conducted and the BCCFH was not expected to meet all CoPs.
 - The Maryland Office of Healthcare Quality was on site at the end of June when a day-long survey of the site was conducted. The survey was split into site safety events and quality.

Legal/Administrative Considerations

- The pharmacy in the ACS needed a new Drug Enforcement Administration (DEA) number to dispense controlled substances (because it was considered a new hospital / location).
- The BCCFH needed a site-wide plan for how to handle a fire alarm, flood, and other local hazards.
- Maryland has additional liability protection that covers providers working in ACS.

General Site Overview from the BCCFH Concept of Operations Plan

