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BRIEF REPORTS

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Creating COVID-19 alternate care site trainings for interprofessional teams

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Abstract

Purpose: To describe the planning and development of alternate care site (ACS) trainings for community COVID care delivery.

Methods: A timeline of activities by the core training team is presented from the lens of the State of Colorado Emergency Operations, leading to the pilot test of a templated training that was completed during the first week of June 2020. Lessons learned and training topics are described.

Conclusion: This case study of the Colorado experience developing training for community-based COVID care delivery sites can inform other public health planners creating the same in their locales. And, public access materials from this project may supplement training for both public health and community health nurse educators.

KEYWORDS

COVID-19, emergency preparedness, workforce education

History may look back on the month of March 2020 as a true turning point for public health practice in the United States. Most notably, state and local public health departments were forced to face the COVID-19 crisis in stunningly nimble and innovative ways, tapping into long-established emergency preparedness plans and executing Incident Command Structures to quickly respond to public and political needs. One element of the COVID-19 response was planning for community-based Alternate Care Sites (ACSs), specifically the staffing and training needs of this diverse, emergency workforce (U.S. Department of Health and Human Services [US DHHS], 2020). The purpose of this brief report is to describe the rapid development of ACS workforce training in Colorado from March through June 2020.

1 | INITIAL RESPONSE: COLORADO EMERGENCY OPERATIONS

Colorado declared a state of emergency related to the COVID-19 pandemic on March 11, 2020. Two Incident Command Structures—one from the Colorado Department of Public Health and Environment (CDPHE) (2020) and one from the Office of Emergency Management—joined as one to form the Colorado Emergency Joint Operations Center (CEOC; http://www.coemergency.com/) to lead the COVID-19 crisis effort in early March 2020. Initial work of the CEOC included the main operations of: disease surveillance; procurement of personal protective equipment (PPE) and mechanical ventilators for the state response; purveying evidence-based messaging for the public on websites and social media; and planning for surge capacity (US DHHS, 2007), while also serving as experts and advisors to the Governor's Office.

Initial surge capacity planning in Colorado was largely a partnership of the CEOC and the Colorado Hospital Association with an emphasis on tracking the numbers of available hospital beds, critical care beds (and ventilators), and organizing facility and staffing resources across the acute care health system network, particularly on the Front Range of Colorado that includes a majority of the state's population base along the I-25 corridor. Hospital-based surge planning fell largely into the Tier 1 and Tier 2 categories (Figure 1) of facility types, Tier 1 comprising of the most critically ill COVID-19 patients requiring mechanical ventilation, and Tier 2 patients acutely ill and requiring hospital-based medical and nursing care. At this time, pre-"Stay at Home" order, state epidemiologists anticipated needing over 5,000 Tier 1 beds to meet surge capacity needs (Polis, 2020a).

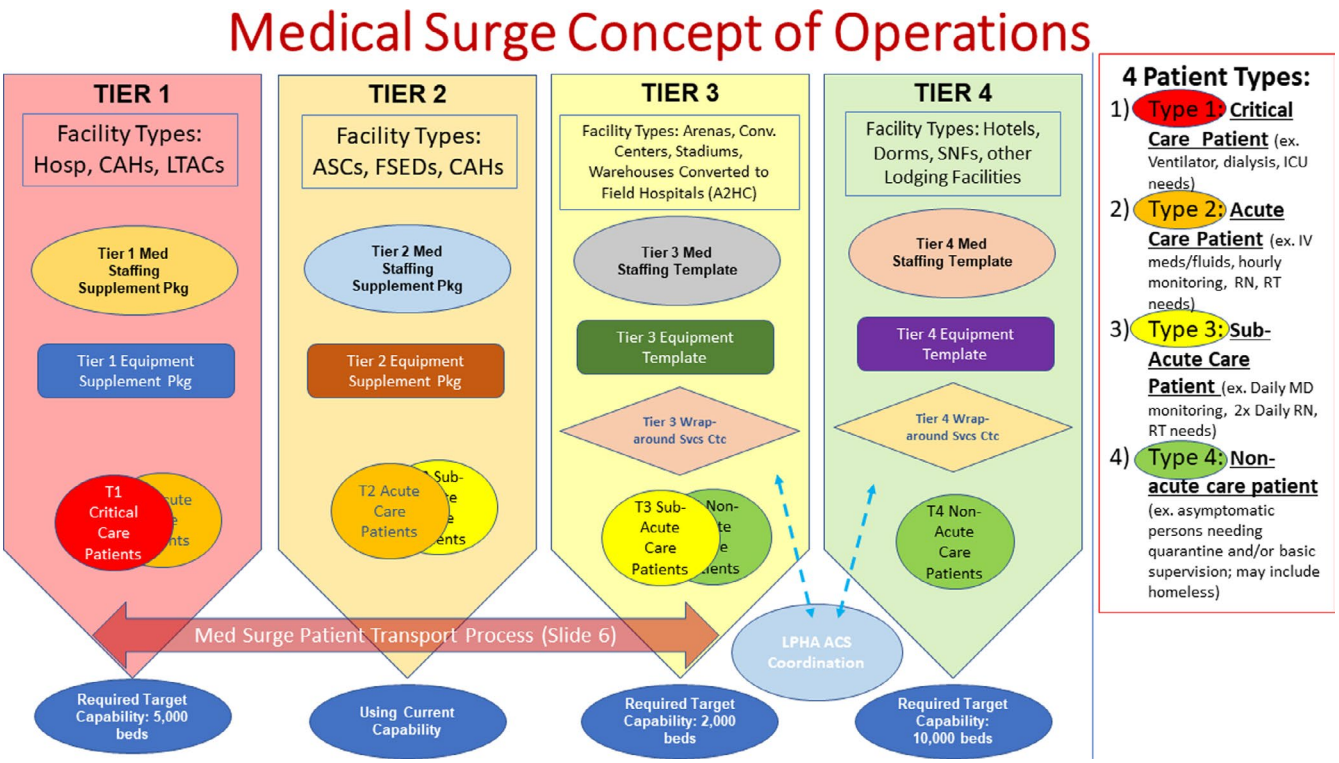

FIGURE 1 Medical surge concept of operations, tier 1 through tier 4 settings [Color figure can be viewed at wileyonlinelibrary.com]

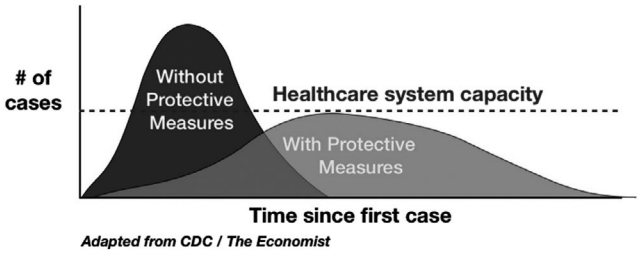

FIGURE 2 COVID-19 population incidence curve model, "Flattening the Curve"

On the third week of March, the CEOC expanded its organizational chart and planning efforts to begin preparation for ACSs (US DHHS, 2020) across the state. ACSs are defined as subacute facilities that typically are community-based in arenas, stadiums, convention centers, dormitories, and even converted hotels (US Army Corps of Engineers, 2020). It was estimated at the time that if the population illness curve was not flattened (Figure 2), a range of 15,000–30,000 beds would be needed for COVID+ Coloradans (Polis, 2020b).

2 | RAPID TRAININGS FOR CRISIS RESPONSE IN ACSS

When planning for the ACSs became a priority on the third week of March, CDPHE public health planners were redeployed to the CEOC to lead the effort. A public health nurse educator (Harpin) was invited to consult on the planning efforts to bring training expertise, to bring "an eye" to interprofessional education, disaster care expertise (I was deployed to Louisiana in 2015 for Hurricane Katrina relief work), and a focus on nursing education as a primary workforce under consideration for ACSs. A series of topics (Table 1) were identified first from a brainstormed list by the entire training team, then finalized after a review of topics in Colorado's Crisis Standards of Care (2020). These most critical lessons would support in-person, Just-In-Time Training when workers would later arrive at an ACS. These first trainings were brief 10–15 min recorded lectures and handouts that ACS workers would review prior to arrival on-site, to prepare them quickly in addition to the deeper training they would receive in-person with skills check-off. Trainings were developed so that they could easily also be integrated into undergraduate nursing education coursework in case universal COVID nursing education would be of use as standard curricula. Initial topics identified as critical included: COVID 101; introduction to Incident Command Structure; nursing care of the COVID-19 Patient; PPE for COVID care standards; provider self-care; body mechanics; caring for adults with low-mobility; and access and functional needs framework of patient care. We planned for all content to be publically accessible, at least initially, without password protection.

Over the course of the first week of April 2020, trainings were developed with the assistance and expertise of four undergraduate senior nursing students (whose clinical placements were canceled due to the crisis; work on these modules were counted as community health clinical time), recorded, and stored on the CU Nursing university server "cloud", then curated on a new webpage dedicated

TABLE 1 ACS training topics

Original modules for rapid training	In-person training topics (*notes non-patient facing training topics)
COVID 101; Intro to COVID clinical basics	Overview of Colorado ACS planning*
Nursing care of COVID patients	Incident Command Structure; ACS job descriptions*
Intro to incident command structure	Orientation to facility and check-in*
Orientation to facility and check-in	COVID 101*; Intro to COVID clinical basics
PPE standards	Nursing care of COVID patients
Self-care during crisis	Admission, discharge, deterioration criteria*
Access and functional needs considerations	PPE standards*
Caring for those with mobility adaptations (recommended, not required)	Self-care during crisis*
Clinical delegation (recommended, not required)	Access and functional needs considerations*
Patient transfer, body mechanics (recommended, not required)	De-escalation of patients
	Pharmacy services

to COVID-19 on the CU Nursing website (https://nursing.cuanschutz.edu/coronavirus/covid-nursing-care). As these trainings were developed for the state response, there was debate on where these should be housed. It was quickly determined that keeping them branded and accessible to changes by university webmasters would be far more nimble than hosting on the State of Colorado website. Still, a link to the trainings was created on the State's COVID-19 homepage.

3 | CURVE FLATTENED, TRANSITION TO IN-PERSON TRAINING

While a number of ACS sites were being planned across Colorado, the primary location developed with the most attention was at the Colorado Convention Center with a capacity for 2,000 Tier 3 beds. Engineers partnered with CEOC leaders to build the site over the course of 9 days, framing patient spaces with 8-foot drywall to give each patient a 10 × 10 foot room, each supplied with an oxygen regulator akin to other ACSs already deployed in other U.S. cities. Concurrent with the build-out (details of which are beyond the scope and aim of this paper) and statewide stay-at-home order, state epidemiologists relayed the good news that incident COVID-19 cases were decreasing and the population curve muted, thus tempering the crisis nature of opening the ACSs. These new case projections gave our training team more time to thoughtfully plan for more detailed in-person trainings, and to shift efforts on creating standard operating procedures for ACSs that would reflect more acute care hospital functioning rather than disaster care.

In mid-April, Denver Health and Hospital Authority (DHHA) was named the clinical care coordinator for the response at the Colorado Convention Center (CCC), which added a new element of oversight for ACS trainings. A Chief Medical Officer and Chief Nursing Officer was named and hospital nurse educators were invited to add expertise and hospital-specific COVID-19 care knowledge to trainings. Finally, a Colorado-based emergency management consultant group was engaged by the CEOC to partner on live simulations as well as to help organize ACS training efforts into a single toolkit for the State of Colorado.

As the date for opening the CCC continued to be delayed, the original training team worked closely with DHHA leaders and the consulting group to prepare for a 4-day training exercise during the first week of June. Two groups of ACS workers—*patient-facing* and *non-patient facing*—were identified with each having specific training needs depending mostly on whether they would be working in the "hot zone" of the COVID+ area of the facility. Didactic trainings and required skills check-off were identified for each profession and staff person type; didactic in-person training was fine-tuned based on the original rapid training videos from late March, now with standard operating procedures information embedded.

The original team of training specialists decided on a strategy of creating a team of master trainers who would become familiar with all training material, didactic, and skills check-off training, and be available to the State of Colorado for trainings that might need to be mustered and completed quickly at any ACS across the state. A variety of mostly clinicians and health care educators were identified from a state volunteer database and vetted by three CDPHE staff for teaching skill and availability to be present during training dates. A date was chosen for the Master Trainer Training, the week before the in-person training pilot test for CCC workers. That training was curated and led by the original CU Nursing faculty lead (Harpin) and the core team of CDPHE trainers (named in "acknowledgments"); the training team gathered together for the first time in-person *and socially-distanced*, for that training on May 27, 2020.

4 | IN-PERSON TRAINING PILOT TEST

The first half-day training for non-patient facing CCC staff was held on June 1, 2020 and included the topics noted in Table 1. The second full-day training was for patient-facing (clinical) staff and included topics and skills check-off for the topics listed in Table 1. All master trainers were utilized for didactic or skills check-off over these 2 days, each contributing their personal areas of expertise to the training. For example, two RN master trainers had just completed work deployment with COVID+ patients in other cities. They led trainings on nursing care of the COVID+ patient and were PPE experts for skills check-off. One physician master trainer updated and further developed the original COVID 101 training with new science

and clinical implications she had mastered. And one nurse educator master trainer took all didactic material and incorporated active learning strategies using smart phone quizzing technologies. All master trainers debriefed (or *hotwashed*) didactic and skills check-off at the end of each training day. Days 3 and 4 were led by the management consulting group, and were each full-day simulations with immersion time in the clinical space and clinical scenarios with patient actors.

5 | PRELIMINARY OUTCOMES

In addition to the core training team, 21 trainers were ordained as master trainers for the ACSs. In the pilot training, 25 participants attended the non-patient facing training and 47 in the patient-facing sessions. At this writing in mid-June 2020, no formal program evaluation has been distributed to either master trainers or participants, though the core training team has plans to create and distribute a survey evaluation for all participants after the next round of trainings, especially to elicit process evaluation data to improve training. Anecdotal evidence from master trainers and clinical staff who have worked in COVID+ settings was very positive in terms of content, training format, and length of training. One RN said simply "I wish I had had this training when I showed up to work the COVID unit in California."

5.1 | Lessons learned

COVID-19 has perhaps reminded public health practitioners of two character traits critical for preparedness and response work: *humility* and *nimbleness*. The training team had to be humble in not knowing what we do not know about the virus and its impact, and perhaps admitting that we as a society were underprepared to deal with this pandemic. Within the Incident Command Structure, there is humility in functioning within an individual's roles and lanes, and know when to call on help when needed. Being nimble has been as important for the system as it is for teams and individuals. Emergency operations planning has often had to shift focus quickly depending on epidemiological data and political forces playing into the pandemic.

The training team has learned to manage assets and leverage networks to make planning work easier. The State of Colorado uses Google software and videoconferencing software which made document sharing and meetings very efficient for those within and outside their agency. A key collaboration was CDPHE accessing university faculty content and teaching experts to supplement their vast knowledge. The nursing faculty lead quickly found assets in the experiences and knowledge of fellow faculty and students who were already "on the front lines" of COVID-19 work on hospital clinical units. Finally, in terms of student learning, this was a fantastic clinical opportunity for a handful of senior-level nursing students who were then shut-out of clinical placements and mere weeks from graduation.

6 | CONCLUSION

History will inform COVID-19 response in the short-term as importantly as it will long in the future, akin to how lessons were uncovered from the Spanish Flu pandemic in writings such as John Berry's classic *The Great Influenza* (Berry, 2004). That historical narrative has been as important for workforce education as has recommended emergency preparedness training for undergraduate nursing students (American Association of Colleges of Nursing, 2008) and public health nursing practice (Association of Public Health Nurses, 2014). Indeed, these public access trainings have been shared within and outside our university for others to consider embedding in curricula. The purpose of this paper was to share an experience in Colorado to help others who might be concurrently developing or adapting ACS training as we prepare for a likely second wave of COVID-19 cases in the United States. Ultimately, a fantastic outcome would be that training and ACS facilities would not be needed, making these written words merely history. In the words of Colorado Governor Jared Polis at an April 10 (2020) Press Conference: "I really hope we don't have to use this facility at all. But we prepare for the best, hope for the best, and not be caught flat-footed."

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REFERENCES

American Association of College of Nursing. (2008). The essentials of baccalaureate education for professional nursing practice. American Association of Colleges of Nursing. Retrieved from https://www.aacnnursing.org/Portals/42/Publications/BaccEssentials08.pdf

Association of Public Health Nurses, Public Health Preparedness Committee. (2014). The role of the public health nurse in disaster preparedness, response, and recovery: A position paper. Retrieved from http://www.quadcouncilphn.org/documents-3/2014-aphn-role-of-phn-in-disaster/

Berry, J. M. (2004). *The great influenza: The epic story of the deadliest pandemic in history*. New York, NY: Viking.

Colorado Department of Public Health and Environment. (2020). CDPHE all hazards internal emergency response and recovery plan. Retrieved from https://drive.google.com/openid=1pH6RF2Wi4h0vTE6Bb5uBUzeTspUZhNhQ

Polis, J. (2020a). Governor Jared Polis COVID-19 press conference. March 27, 2020. [Press Conference]. Retrieved from https://docs.google.com/presentation/d/1AnNiE_bwfuEpRgjxxCt_zxC1qZZDaNpw

Polis, J. (2020b). Governor Jared Polis COVID-19 Press Conference: April 10, 2020 [Minute 8:50 in video.]. Retrieved from https://www.facebook.com/jaredpolis/videos/589888168542401

.US Army Corps of Engineers. (2020). Alternate care sites (ACSs). Retrieved from https://www.usace.army.mil/coronavirus/alternate-care-sites/

US Department of Health and Human Services. (2007).Medical surge capacity and capability: A management system for integrating medical and health resources during large-scale emergencies (2nd ed.). Retrieved from https://www.phe.gov/preparedness/planning/mscc/handbook/documents/mscc080626.pdf

US Department of Health and Human Services. (2020). Federal healthcare resilience task force alternate care site toolkit (2nd ed.). [White Paper.] Retrieved from https://asprtracie.hhs.gov/technical-resources/48/alternate-care-sites-including-shelter-medical-care/47

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