Access the entire webinar series here:
https://files.asprtracie.hhs.gov/documents/lessons-learned-in-healthcare-operations-during-a-pandemic-speaker-series-summary.pdf

Access this webinar here:
https://attendee.gotowebinar.com/recording/8802173735205789456

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HEALTHCARE EMERGENCY PREPAREDNESS INFORMATION GATEWAY

Healthcare Operations during the COVID-19 Pandemic- Speaker Series

March 2021

ASPR
ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE

Access Dr. Kuhlmann's bio here:
https://files.asprtracie.hhs.gov/documents/healthcare-operations-speaker-series-bio--kuhlmann.pdf

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Creating a COVID-19 Specialty Hospital

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Introduction

On March 20th, 2020, our healthcare facility was a long-term, acute-care hospital. Less than a week later, we made history when it became one of the nation's first, and only, hospitals dedicated solely to treating people with severe, confirmed cases of COVID-19.

The Ask

The transformation followed 72 hours of around-the-clock work by top engineers, construction workers, environmental service employees, infection prevention experts, and other professionals to prepare the facility to serve COVID-19 patients.

Benefits of Cohorting

- Protect uninfected patients
- Provide specialty care
- Conserve PPE

1. CDC. Interim Guidance for Healthcare Facilities. 2020 February 29. https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/guidance-hcf.html
2. WHO. Operational Considerations for Case Management of COVID-19 in Health Facility and Community: Interim Guidance. 2020 March 19. https://apps.who.int/iris/bitstream/handle/10665/331492/WHO-2019-nCoV-HCF_operations-2020.1-eng.pdf
3. Grasselli, *JAMA*. 2020 Mar 13
4. Zhu et al. *Anesthesiology*. 2020 Mar 27

Creating the Hospital

In preparation we had to discharge the LTACH population to one of our acute care hospitals in order to repurpose the hospital for the COVID population.

Creating the Hospital

- 40 negative flow ICU rooms
- Electrical wiring
- Radiology
- Staffing models
  - Travelling RN, RT
- Implementation: 9 days

Creating the Hospital

Hard-to-clean carpet throughout the facility was removed and replaced with durable surfaces flooring because of the inability to clean in a sterile fashion.

Employee Safety

We made scrubs, showers, lockers available to staff to use so they felt safe going home after work.

New Processes

We partnered with our EMS team to practicing how to safely transport a patient into the hospital without exposing persons to airborne COVID.

Creating the Hospital

Incident Command Structure with twice daily calls that allowed us to escalate issues.

System leaders pooled resources to solve problems.

Creating the Hospital

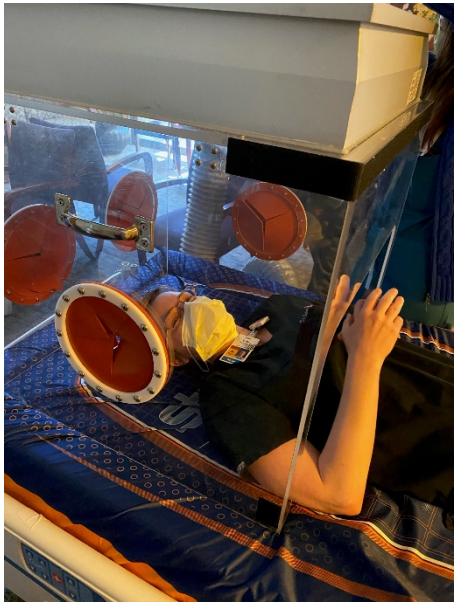
Pooled all available ventilators from the operating rooms and the acute care hospitals.

New Negative Airflow

Engineers created negative airflow rooms in the ICU by cutting a hole in the wall of the room to the outside and installing a fan to create the negative flow. This allowed us to run the ventilators without a HEPA filter and conserve our supplies.

Creating the Hospital

UMN engineering students designed a negative airflow “hood” for procedures and comfort care extubation to lessen the exposure risks for family and staff.



Creating the Hospital

Donning and doffing stations for all doctors and nurses was a top priority.

Creating the Hospital

Ran drills for Code Blue Scenarios. And staff readiness.

Staff Safety

- Safety and care for our workers is a focal point at our hospital.
- With help from university experts, UV technology was developed, tested, and deployed to decontaminate N95 masks, allowing us to preserve PPE that was in short supply.
- Wound care nurses also consulted with our employees to minimize facial injuries from PPE.
- We took staff screenings seriously to maintain the healthiest environment possible.
- Our safety procedures included enhanced guidelines developed by experts from around the world.

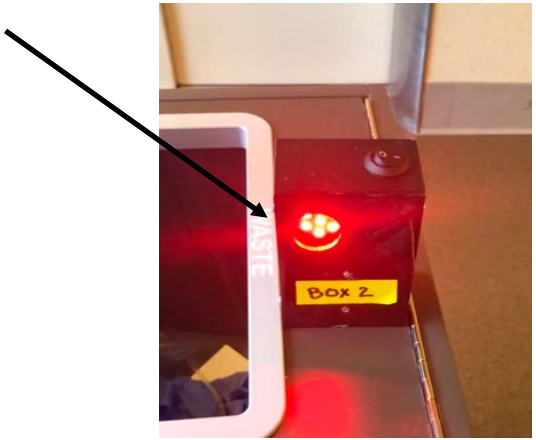
Creating the Hospital

- The patients were the sickest in the system.
- We had alarms for IV drips, ventilator, and bed alarms.
    - The N95 masks and the negative airflow fans did not allow the alarms to be heard outside the rooms and the doors had to be closed at all times.
- We created a visual alarm system that would strobe lights to alert the nurses and the nursing station that an alarm was going off.

Innovation

Problem: loud HEPA fans mask pump/vent alarms

Solution: Detect pump audio alarms, trigger a visual alarm outside the room



University of Minnesota Engineering

Outcomes

Characteristic		Floor Patients (n=149)	ICU Patients (n=138)
Age – Median (IQR)		69 (51 - 83)	64 (54 – 77)
Race – n (%)	White	94 (66)	53 (42)
	Black	21 (15)	25 (20)
	Asian	16 (11)	28 (22)
	Other	12 (8)	18 (16)
Sex (Male) – n (%)		79 (53)	56 (41)
Total Hospital Days - median (IQR)		7.7 (4.0-11.9)	8.6 (1.3-14.7)
Ventilator Days - median (IQR)		0	5.2 (1.5-14.7)
ICU Free Days - median (IQR)[1]			17.2 (3.4-28.3)
Death – n (%)[2]		10 (7)	36. (26)

475 patients as of July 9, 2020

Conclusion

Because of the strains of COVID, innovation was at the forefront of developing the hospital.

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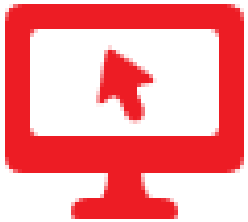
Contact ASPR TRACIE



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