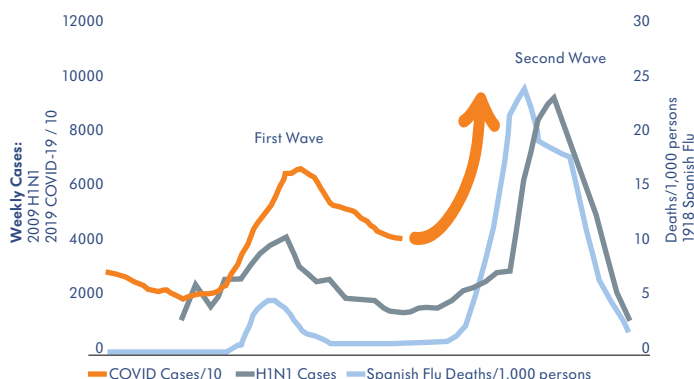


Ramp Up Intensive Care Capacity for Medical Suction



Comparison view of pandemic's second wave

The spread of the coronavirus is continuing in the US and experts warn of a second wave in the fall, similar to the 1918 Spanish Flu¹ and 2009 H1N1².



Several studies suggest that a second wave of COVID-19 infections can be expected in the next few months^{3,4}

In preparation for a second wave of the coronavirus, surge capacities in hospitals and alternate care facilities are critical.

"ICU/Critical Care Providers should consider a 1-1-1- setup of vital signs monitor, ventilator, and aspirator." Recommendation by the U.S. Department of Health and Human Services⁵

"My feeling is that there is a wave coming, and it's not so much whether it's coming but how big is it going to be."⁶
Eili Klein, epidemiologist at Johns Hopkins University School of Medicine.

Key facts about critical care capacity in the US⁷

- ▶ Approximately 97,000 ICU beds in the US
- ▶ 94% of ICU beds are located in metropolitan areas (that means only 6% in rural)
- ▶ Experts estimate that 30% of the population will get COVID-19
- ▶ **If so, that could put the ICU bed shortage over 24,000 beds**



SCCM's Report: Configuring the ICU in the COVID-19 Era

If there is one certainty during the COVID-19 pandemic, it is that this disease is like no other. The pandemic has overwhelmed intensive care units (ICUs), prompting the need to adjust to ensure the best possible care for critically ill patients while reducing the risk to healthcare workers.

SCCM has created the report

Configuring ICUs in the COVID-19 Era

1 <https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/three-waves.htm>

2 2009 H1N1 positive tests – Mummert A, Weiss H, Long L-P, Amigó JM, Wan X-F (2013) A Perspective on Multiple Waves of Influenza Pandemics. PLoS ONE 8(4): e60343. <https://doi.org/10.1371/journal.pone.0060343>

3 Causal empirical estimates suggest COVID-19 transmission rates are highly seasonal, Tamma Carleton and Kyle C. Meng, March 2020, <https://doi.org/10.1101/2020.03.26.20044420>

4 Annual Review of Virology Seasonality of Respiratory Viral Infections, Miyu Moriyama, Walter J. Hugentobler, and Akiko Iwasaki, March 2020, <https://www.annualreviews.org/doi/10.1146/annurev-virology-012420-022445>

5 Federal Healthcare Resilience Task Force. Alternate Care Site Toolkit. 3rd edition. 06/30/2020

6 https://www.washingtonpost.com/health/coronavirus-fall-projections-second-wave/2020/09/04/6edb3392-ed61-11ea-99a1-71343d03bc29_story.html?hpid=hp_hp-top-table-main-coronavirus-projections-second-wave/&hpid=hp_hp-top-table-main-coronavirus-projections-second-wave/&hpid=hp_hp-top-table-main-coronavirus-projections-second-wave/&hpid=hp_hp-top-table-main-coronavirus-projections-second-wave/&hpid=hp_hp-top-table-main-coronavirus-projections-second-wave/

7 Critical Care Surge Response Strategies for the 2020 COVID-19 Outbreak in the United States. Mahshid Abir, Christopher Nelson, Edward W. Chan, Hamad Al-Ibrahim, Christina Cutter, Karishma Patel, Andy Bogart, https://www.rand.org/content/dam/rand/pubs/research_briefs/RBA100/RBA164-1/RAND_RBA164-1.pdf, April 2020

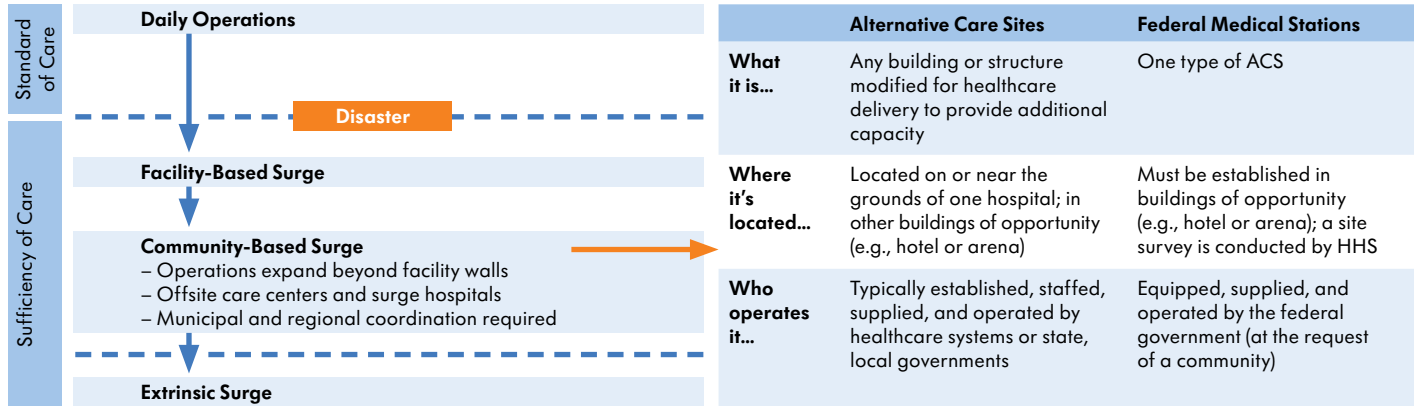
How equipped is your facility to treat COVID-19 patients?⁸

One of the Many Options for Medical Surge: Alternative Care Sites (ACS)⁹

- ▶ private hospital expansions with federal funding via FEMA
- ▶ structures of opportunity converted to provide additional capacity and capability for healthcare delivery outside the walls of a traditional, established healthcare institution

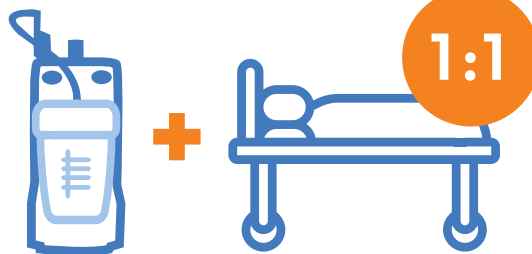
ACS Tool Kit Access¹⁰

Government's recommendations from a product/equipment perspective, includes a safety factor **requiring 80 aspirators for 50 acute care beds.**



COVID-19 patients require proper pulmonary hygiene: **Every bed requires suction!**

- ▶ The CDC suggests that alternate care facilities have a portable aspirator available for each bed.¹¹
- ▶ This corresponds with a CHEST journal publication stating that each treatment space requires an available vacuum source for airway care.¹²



Ventilation and airway suction in the ICU

Most severely ill COVID-19 patients will require **ventilation** in first 24 hours of intensive care. A portable suction source is recommended for every treatment space to cover multiple patient management processes.

8 <https://covid19.healthdata.org/united-states-of-america>
 9 COVID-19 Pandemic Response Fact Sheet. Healthcare Capacity Building: Alternative Care Sites and Federal Medical Stations. <https://www.fema.gov/disasters/coronavirus>
 10 Federal Healthcare Resilience Task Force. Alternate Care Site Toolkit. 3rd edition. 06/30/2020
 11 Federal Healthcare Resilience Task Force Alternate Care Site Toolkit, 2nd edition, April 2020, <https://files.asprtracie.hhs.gov/documents/acs-toolkit-ed1-20200330-1022.pdf>, p 150
 12 Surge Capacity Logistics: Care of the Critically Ill and Injured during Pandemics and Disasters: CHEST Consensus Statement, by S. Einav, et al., CHEST, 2014; 146, p 245



Vario 18 AC Powered Portable Suction

- ▶ Quiet airway suctioning minimizes patient and caregiver distraction while promoting healing
- ▶ Fast and reliable vacuum
- ▶ Lightweight and portable
- ▶ Virus filters reduce risk of cross-contamination for patients and staff
- ▶ Tested and proven technology for high endurance with over 50 years of experience in medical vacuum



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