

Emergency Preparedness Considerations for COVID-19

Sepsis and septic shock are life-threatening conditions that can complicate respiratory illnesses caused by viruses such as COVID-19 and influenza. As your hospital revisits its emergency preparedness plan, it is important to consider readiness for addressing septic shock.

Recent reports of critically ill COVID-19 patients show that many may present with or develop hypotension and shock.¹⁻⁴ The first U.S. case series published in *New England Journal of Medicine* indicated that a majority of patients presented with shock and hypotension requiring vasopressors.⁴ Patients in this series evaluated by ECHO did not have myocardial dysfunction,⁴ though elevated troponin levels consistent with myocardial injury have been noted in other COVID-19 case series.⁵ Newly updated Surviving Sepsis Campaign COVID-19 guidelines advise careful bedside assessment of fluid responsiveness to avoid fluid overload in the ICU.³ SSC, WHO, and other COVID guidelines recommend a careful and controlled fluid resuscitation strategy for acute shock and hypotension using crystalloid fluid boluses of 250-500 mL, with frequent bedside monitoring of patient response following each bolus, followed by a conservative fluid management strategy.^{3,6-9}



LifeFlow® Rapid Infuser

Early and targeted fluid resuscitation for septic shock reduces risk of endotracheal intubation, shortens duration of mechanical ventilation, decreases organ injury and hospital length of stay, and saves lives.¹⁰⁻¹² In fact, patients who receive their fluid bolus early in their course of treatment have shown the lowest likelihood of requiring endotracheal intubation.¹³ In hospitals experiencing a sudden influx of critically ill patients, immediate response to those with hypovolemic shock or suspected sepsis may be a key factor in stabilizing patients and reducing subsequent complications, including death.

LifeFlow is a single-patient-use, portable device that can deliver a 250ml fluid bolus in <1 minute.

- Ideally suited for the anticipated large numbers of patients in contact and droplet isolation rooms
- Offers user-titrated fluid administration, which facilitates rapid reversal of shock while preventing fluid overload for patients with severe respiratory illness

WHO Recommendations for suspected COVID-19 patients with septic shock:⁸

- **Adults: 250–500 mL crystalloid fluid and reassess after each bolus**
- **Children: 10–20 mL/kg crystalloid fluid and reassess after each bolus**

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5 Arentz M, et al. Characteristics and Outcomes of 21 Critically Ill Patients With COVID-19 in Washington State. *JAMA*. Research Letter. Published online March 19, 2020. DOI:10.1001/jama.2020.4326.
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