

# Telemedicine In ICU Saves Lives– Tele-Intensivist Care Linked To 18% Lower Mortality Over A Decade

A study recently found that in facilities where 24/7 intensivist care was not available, outcomes for patients were better when care was delivered by “tele-intensivists” compared to traditional care models.

Within the Cleveland Clinic Health System, patients treated by ICU telemedicine at one of their hospitals were found 18% less likely to die and were released from the hospital an average of 2 days sooner than patients who received traditional ICU care, without round-the-clock on-site intensivist care.

The study included around 154,000 ICU patients and the findings were presented at the Society of Critical Care Medicine’s virtual 50th Critical Care Congress.

The COVID-19 pandemic put the spotlight on ICU Telemedicine, noted Cleveland Clinic intensivist Chiedozie Udeh, MD, who presented the findings.

“In an ideal world, patients would have an intensivist at the bedside 24/7, but the reality is that even if we had all of the money in the world, we don’t have enough trained professionals to do the job,” Udeh said.

Thanks to technological advancements, the intensivist monitoring a patient via telemedicine has access to monitors, medical records and test results and can do everything that an on-site clinician can do, with the exception of having physical contact with the patient, Udeh said.

The intensivist stays stationed at a remote command center and monitors a dashboard of patients at different hospitals, using real-time audio-visual, two-way communication to interact with bedside nurses.

Software can help identify patients who are quickly deteriorating and need immediate care.

In an interview with *MedPage Today*, Udeh said ICU telemedicine, now used in roughly 20% of U.S. hospitals, offers an intermediate treatment strategy between 24/7 intensivist care, which is rare outside large academic centers, and the more traditional ICU care model, in which an intensivist may be on site at certain times of the day, but not others.

But why is ICU-telemonitoring leading to fewer deaths? Udeh says more research is needed in order to uncover this.

“If I had to speculate, I would imagine this would probably be due to patients’ receiving more timely needed interventions,” he said.

The Cleveland Clinic Health System installed an ICU telemedicine program in 2014 to support ICUs within the system.

The study performed by the clinic measured 20-day mortality among the ICU’s patients treated at the hospital from 2010 to 2019.

During the period, registry data recorded just over 642,000 patients treated in the various ICUs. The current analysis covered 153,987 patients with available data on predicted mortality, measured through APACHE IV scores.

During the decade of follow-up, 108,482 patients included in the study (70%) received ICU telemedicine care during hours when an intensivist was not on-site.

Patients in the ICU telemedicine group were slightly older on average (68.9 years vs 66.7 years), and were more likely to be non-white and to have pulmonary ICU diagnoses, ICU admission for cardiac arrest, or emergency and/or weekend admission.

The main study found the following:

- 30-day mortality among the telemedicine patients was 5.5% compared to 6.9% in the standard care group ( $P < 0.0001$ )
- 30-day mortality per 1,000 patient days was 2.45 in the ICU group and 3.18 in the non-ICU group ( $P < 0.0001$ ).
- Variables associated with increased 30-day mortality included non-white race, a diagnosis of sepsis or cardiac arrest, emergency admittance and weekend admittance.
- ICU length of stay was significantly shorter in the ICU telemedicine group, as was total hospital stay

“We think these findings provide further reassurance about the value of ICU telemedicine, particularly in light of our collective experience in 2020,” Udeh said. “With the COVID-19 pandemic, telemedicine in general assumed greater prominence.”

Udeh told *MedPage Today* that ICU telemedicine can benefit both large hospital systems and smaller, individual hospitals.

“Smaller hospitals may have no intensivist at all or they may have only one,” he said. One recent survey, he said, found that about half of U.S. hospitals do not have an intensivist on staff.