

Effect of a multiple-site intensive care unit telemedicine program on clinical and economic outcomes: An alternative paradigm for intensive care medicine

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FEATURE ARTICLES

Effect of a multiple-site intensive care unit telemedicine program on clinical and economic outcomes: An alternative paradigm for intensive care medicine

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The addition of a supplemental, telemedicine-based, remote intensivist program was associated with improved clinical outcomes and hospital financial performance.

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Abstract

Objective

To examine whether a supplemental remote intensive care unit (ICU) care program, implemented by an integrated delivery network using a commercial telemedicine and information technology system, can improve clinical and economic performance across multiple ICUs.

Design

Before-and-after trial to assess the effect of adding the supplemental remote ICU telemedicine program.

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W. MD

7 and Critical Care
Healthcare, Norfolk,

Setting

Two adult ICUs of a large tertiary care hospital.

Patients

A total of 2,140 patients

Interventions

The remote care program for management of ICU patients. Supporting software, including computer-based decision support, was used to improve economic performance before the intervention.

Measurements and Main Results

Hospital mortality for ICU patients was 0.73; 95% confidence interval [CI], 0.32–1.14 vs. 1.21 [95% CI, 0.81–1.61] vs. 4.35 days [95% CI, 3.21–4.04] vs. 4.35 days (from increased case volume).

Conclusions

The addition of a supply of intensivists to a hospital improved clinical outcomes similar to those reported in studies examining the impact of implementing on-site dedicated intensivist staffing models; however, factors other than the introduction of off-site intensivist staffing may have contributed to the observed results, including the introduction of computer-based tools and the increased focus on ICU performance. Although further studies are needed, the apparent success of this on-going multiple-site program, implemented with commercially available equipment, suggests that telemedicine may provide a means for hospitals to achieve quality improvements associated with intensivist care using fewer intensivists.

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