ASSOCIATION BETWEEN ICU PHYSICIAN STAFFING AND OUTCOMES: A SYSTEMATIC REVIEW

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Introduction: We conducted a systematic review to quantify the effect of ICU physician staffing on outcomes. Methods: We searched MEDLINE, Health-Star, Cochrane. We identified trials that met the following criteria: population, critically ill adults or children; intervention, intensivist involvement (none; elective consult; mandatory consult; or primary attending) outcomes, hospital and ICU mortality and LOS and costs; design, controlled; analysis, quantitative. We reviewed the proceedings of scientific assemblies of SCCM, ATS, ACCP (1994-1999). Two independent reviewers assessed eligibility and abstracted data.

Results: Electronic search identified 1407 studies, 12 meet entry criteria, and hand search identified 4 abstracts. None were randomized trials and 11 used historical controls. Fourteen of the studies used a physiology-based risk adjustment. In all studies, intervention was a higher level of intensivist involvement. In 15 of 16 studies, the control group had either no intensivist involvement or an elective consult. There was no consistent evaluation of costs. Ten of 12 studies (83%) reported a reduction in inhospital mortality (range 30% increase to 50% reduction) and 6 of 6 studies reported a reduction in ICU mortality (range 33% to 58% decrease) with higher level of intensivist involvement. Similarly, 8 of 8 studies (75%) reported a reduction in Hospital LOS (range 30% increase to 42% decrease) and 7 of 11 studies (64%) reported a reduction in ICU LOS (range 50% increase to 56% decrease) with higher level of intensivist involvement. In no study was an increase in the level of ICU physician staffing associated with a statistically significant increase in mortality or LOS. Because study design varied widely, we did not mathematically pool the study results. Conclusion: Studies of the impact of intensivist on outcomes are largely observational. There is a consistent finding of decreased mortality and LOS with increased intensivist involvement. Because the observed impact of intensivist staffing on mortality is greater than the effect of most ICU therapies, rigorous evaluation and standardization of optimal ICU staffing should be an immediate priority.
Intensive care unit errors: detection and reporting to improve outcomes.
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