TITLE: Closed Intensive Care Units: Clinical and Cost-Effectiveness, Safety, and Guidelines

DATE: 28 April 2014

RESEARCH QUESTIONS

1. What is the clinical effectiveness and patient safety associated with closed intensive care units (ICUs)?

2. What is the comparative cost-effectiveness of closed versus open ICUs?

3. What are the guidelines associated with closed ICUs?

KEY MESSAGE

Eleven non-randomized studies were identified regarding the clinical effectiveness and patient safety associated with closed intensive care units. No relevant cost studies or guidelines were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 4), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and April 10, 2014. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines.

Eleven non-randomized studies were identified regarding the clinical effectiveness and patient safety associated with closed intensive care units. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, economic studies, or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Eleven non-randomized studies were identified regarding the effectiveness and safety of closed intensive care units (ICUs). Results regarding mortality were conflicting. In-hospital mortality rates were significantly lower for trauma patients, general surgical patients, and cancer patients admitted to closed intensivist-led ICUs. Additionally, the observed-to-expected deaths ratio improved for critically ill pediatric patients after the implementation of a closed ICU policy in one non-randomized study. Decreased morbidity was also observed for high risk surgical patients admitted to closed ICUs. In contrast, the authors of one non-randomized study reported that twenty-four hour intensivist coverage in closed ICUs was not associated with lower annual ICU mortality. In addition, intensive care unit census on the day of patient admission was associated with increased mortality and that increase was greater in closed than in open ICUs.

Patients admitted to closed ICU with intensivist-led care had shorter hospital stays while patients treated in closed ICUs were observed to have longer times to readmission than in open ICUs. There was a trend towards decreased mortality for patients in closed ICU. One study suggested that closed ICUs may be overwhelmed by patient influx. When adjusted for disease severity, costs were similar between closed and open ICUs.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


PubMed: PM21861878


Economic Evaluations
No literature identified.

Guidelines and Recommendations
No literature identified.

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APPENDIX – FURTHER INFORMATION:

Systematic Reviews and Meta-Analyses – Unclear if Included ICUs were Closed


Non-Randomized Studies – Intensivist-Led ICUs; Unclear if ICUs were Closed


Economic Evaluations – Intensivist-Led ICUs; Unclear if ICUs were Closed


Guidelines and Recommendations – Methodology Unclear


Review Articles


Additional References


