TITLE:  Needle versus Surgical Cricothyroidotomy: Clinical and Cost-Effectiveness

DATE:  10 September 2015

RESEARCH QUESTIONS

1. What is the comparative clinical effectiveness of needle versus surgical cricothyroidotomy for patients who cannot be intubated or ventilated?

2. What is the cost-effectiveness of needle versus surgical cricothyroidotomy for patients who cannot be intubated or ventilated?

KEY FINDINGS

Two systematic reviews were identified regarding the comparative clinical effectiveness of needle versus surgical cricothyroidotomy for patients who cannot be intubated or ventilated.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, randomized controlled trials, non-randomized studies and economic studies. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and September 2, 2015. Internet links were provided where available.

SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.
Table 1: Selection Criteria

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<th>Table 1: Selection Criteria</th>
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<tr>
<td><strong>Population</strong></td>
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<tr>
<td>Patients (aged 8 and above) with respiratory distress who cannot be intubated or ventilated</td>
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<td><strong>Intervention</strong></td>
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<td>Needle cricothyroidotomy (also referred to as cricothyrotomy) (e.g., Melker Emergency Cricothyrotomy Catheter Set)</td>
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<td><strong>Comparator</strong></td>
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<td>Surgical cricothyroidotomy (e.g., CTOMS Surgical Airway Set)</td>
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<td><strong>Outcomes</strong></td>
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<td>Q1: Clinical effectiveness (e.g., success rates, provision of adequate airway, survival to discharge); Harms (e.g., rate of complications, mortality)</td>
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<td>Q2: Cost-effectiveness outcomes</td>
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<td><strong>Study Designs</strong></td>
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<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations</td>
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**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, and economic evaluations.

Two systematic reviews were identified regarding the comparative clinical effectiveness of needle versus surgical cricothyroidotomy for patients who cannot be intubated or ventilated. No relevant health technology assessments, randomized controlled trials, non-randomized studies, or economic evaluations were identified.

Additional references of potential interest are provided in the appendix.

**Health Technology Assessments**
No literature identified.

**Systematic Reviews and Meta-analyses**


**Randomized Controlled Trials**
No literature identified.

**Non-Randomized Studies**
No literature identified.

**Economic Evaluations**
No literature identified.
Needle versus Surgical Cricothyroidotomy
APPENDIX – FURTHER INFORMATION:

Randomized Controlled Trials – Simulation


Additional References

