WORKSHEET for Evidence-Based Review of Science for Emergency Cardiac Care

Worksheet author(s)

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Clinical question.

EIT 021 AB - In participants undergoing BLS/ALS courses (P), does end of course testing (I), as opposed to continuous assessment and feedback (C), improve outcomes (eg. improve learning/performance) (O)?

Is this question addressing an intervention/therapy, prognosis or diagnosis? Intervention
State if this is a proposed new topic or revision of existing worksheet: New

Conflict of interest specific to this question

Do any of the authors listed above have conflict of interest disclosures relevant to this worksheet? No

Search strategy (including electronic databases searched).

PERKINS 10 OCT 2009

Strategy 1: (testing OR assessment OR examination) AND (cardiopulmonary resuscitation [Mesh] AND training)

Databases searched: Cochrane library; Medline; OVID; EMBase; AHA endnote

Strategy 2: "Cardiopulmonary Resuscitation/education"[Majr] AND ("Educational Measurement"[Mesh] OR "Feedback"[Mesh]) OR "Retention (Psychology)"[Mesh] Database searched: Medline

Embase: (defibrillation OR 'heart arrest' OR 'resuscitation'/exp) AND (bls OR als OR course OR 'training'/exp)AND (testing OR end-of-course OR final AND exam* OR 'continuous assessment' OR feedback OR 'ongoing assessment' AND [embase]/lim)

Strategy 3 "cardiopulmonary resuscitation"[MeSH] AND ("Educational Measurement"[Mesh] OR "Feedback"[Mesh] OR "Retention (Psychology)"[Mesh]) Databases searched: Medline via pubmed

BHANJI

Databases searched (up to Oct 16 2009)

Pubmed, EMBASE, AHA endnote library and cochrane library.

Pubmed (up to Oct 16th 2009)

("Cardiopulmonary Resuscitation"[Mesh]
OR
Pediatric Life Support OR Paediatric Life Support OR pediatric resuscitation OR paediatric resuscitation OR Neonatal Resuscitation OR Advanced Trauma Life Support OR basic life support Field: Text Word)
AND
"Educational Measurement"[Mesh]

n.b. since educational measurement is a Mesh subheading of "education", limiting the first part of the search to "education" did not result in a narrowing of the results
n.b. a 'text word' search was completed for terms that did not have readily identifiable Mesh terms.

Embase Classic and EMBASE (1947 to Oct 16th 2009)

("Resuscitation" [Subject heading]
OR
(pediatric life support OR paediatric life support OR pediatric resuscitation OR paediatric resuscitation OR neonatal resuscitation OR advanced trauma life support OR basic life support) [Keywords])
AND
"Education" [Subject heading]

AHA endnote library (2009 library)

Searched for keyword ‘education’

State inclusion and exclusion criteria

Perkins:

Inclusion criteria: studies evaluating impact of continuous versus end of course assessment on learning outcomes during advanced or basic life support training.

Training involving face to face instructor led, self instruction, electronic learning, skills training, simulation

Basic life support and advanced life support type courses addressing cardiac resuscitation. Other courses addressing principles of resuscitation training (e.g. Advanced trauma life support; neonatal life support etc).

Exclusion criteria: studies not examining assessment in the context of resuscitation training in its broadest sense

Bhanji:

Inclusion criteria: studies evaluating impact of assessment on learning outcomes during advanced or basic life support training.

Training could involve face to face instructor led, self instruction, electronic learning, skills training, simulation or other form of resuscitation training

Included basic life support and advanced life support type courses addressing cardiac resuscitation (including neonatal and pediatric resuscitation). Also included other courses addressing principles of resuscitation training (e.g. advanced trauma life support).

Exclusion criteria: studies not examining assessment in the context of 'resuscitation training'

- Number of articles/sources meeting criteria for further review:

Perkins:

Search strategy 1: Cochrane library – no hits; : Medline / Embase; Cardiopulmonary resuscitation AND training : 1008 hits Testing OR assessment OR examination : 1317892 hits Combined: 188 Removal of duplicates 187 Strategy run Feb 2009

From review of titles and abstracts 5 papers were identified as potentially relevant. After detailed review of the papers – none addressed the PICO question

Search strategy 2 (Jan 2009):

"Cardiopulmonary Resuscitation/education"[Majr] AND ("Educational Measurement"[Mesh] OR "Feedback"[Mesh]) OR "Retention (Psychology)"[Mesh] – Medline – 232 hits

(defibrillation OR 'heart arrest' OR 'resuscitation'/exp) AND (bls OR als OR course OR 'training'/exp)AND (testing OR end-of-course OR final AND exam* OR 'continuous assessment' OR feedback OR 'ongoing assessment' AND [embase]/lim) EMBASE – 71 hits

This search strategy similarly failed to identify any relevant articles

Search strategy 3 (run 10-10-09): 429 articles identified, of which review of abstracts identified 6 articles studies for further review. However, review of full text failed to identify any articles relevant to this PICO question

Bhanji:

1098 hits from Pubmed and Endnote searches (740 from Pubmed and 377 from Embase)
1059 hits from AHA endnote library
No hits from Cochrane library

Summary of evidence

Evidence Supporting Clinical Question

Good					
Fair					
Poor					
	1	**2**	**3**	**4**	**5**
Level of evidence					

A = Return of spontaneous circulation
B = Survival of event
C = Survival to hospital discharge
D = Intact neurological survival
E = Other endpoint
Italics = Animal studies

Evidence Neutral to Clinical question

Good					
Fair					
Poor					
	1	**2**	**3**	**4**	**5**
Level of evidence					

A = Return of spontaneous circulation
B = Survival of event
C = Survival to hospital discharge
D = Intact neurological survival
E = Other endpoint
Italics = Animal studies

Evidence Opposing Clinical Question

Good					
Fair					
Poor					
	1	**2**	**3**	**4**	**5**
Level of evidence					

A = Return of spontaneous circulation
B = Survival of event
C = Survival to hospital discharge
D = Intact neurological survival
E = Other endpoint
Italics = Animal studies

REVIEWER'S FINAL COMMENTS AND ASSESSMENT OF BENEFIT / RISK:

No studies have compared the impact of continuous versus end of course assessments in the context of resuscitation training

Knowledge gaps: There is a need for further studies to examine the role and optimal type of assessments as tools to promote learning resuscitation skills

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Citation List