ILCOR Beyond 2015 – Point and Click
Continuous Evidence Review

Laurie Morrison
Rescu, Li Ka Shing Knowledge Institute
St Michael’s Hospital
ILCOR Chair Continuous Evidence Evaluation
COI Declaration

Industry and ROC

ALS Taskforce ILCOR
Advise on CEE

Author – AHA Guidelines
2005, 2010 and 2015
The Role of ILCOR

- Brief history
- The Utstein-style templates
- Internal science reviews
- Resuscitation guidelines
- Future access to evidence
Early international collaboration

- June 1990
- Mosteroy, Norway
- American Heart Association
- European Resuscitation Council
- Heart and Stroke Foundation of Canada
- Australian Resuscitation Council
Recommended guidelines for uniform reporting of data from out-of-hospital cardiac arrest: the 'Utstein style'

Prepared by a Task Force of Representatives from the European Resuscitation Council, American Heart Association, Heart and Stroke Foundation of Canada, Australian Resuscitation Council

Task Force Co-Chairmen: Douglas Chamberlain and Richard O. Cummins


With contributions from: Peter Safar and Tore Laerdal
Utstein Recommendations on data to be reported on cardiac arrest

- Resuscitation attempted by emergency personnel
  \[ N = \]

- Cardiac aetiology verified \[ N = 100\% \]
  - Non-cardiac aetiology

- Collapse witnessed
  \[ \% \]
  - Unwitnessed

- Found in VF/VT
  \[ \% \]
  - Asyst
  - PEA

- Bystander CPR
  - No CPR

- ROSC
  \[ \% \]

- Admitted ICU/ward

- Disch’ alive
  \[ > 1y \]

Resuscitation
1991;22:1-26
Utstein style template for Reporting data on out-of-Hospital cardiac arrest

1. Population served by EMS system  N=____

2. Confirmed cardiac arrests considered for resuscitation  N=____

3. Resuscitations not attempted N=____

4. Resuscitations attempted  N=____

5. Cardiac etiology  N=____

6. Non-cardiac etiology  N=____

7. Arrest witnessed (bystanders) N=____

8. Arrest not witnessed  N=____

9. Arrest witnessed (EMS personnel) N=____

10. Initial rhythm VF* N=____

11. Initial rhythm VI* N=____

12. Initial rhythm asystole N=____

13. Other initial rhythms N=____

14. Determine presence of bystander CPR: yes or no for each subset

15. Any Return of Spontaneous Circulation (ROSC) N=____

16. Never achieved ROSC N=____

17. Efforts ceased: a. expired in field N=____
   b. transported N=____
   c. expired in ED N=____

18. Admitted to ICU/ward  N=____

19. Expired in hospital:
   a. total N=____
   b. within 24 hrs. N=____

20. Discharged alive  N=____

21. Expired within one year of discharge. N=____

22. Alive at one year  N=____

*VF and VT should be reported separately through template
Utstein-style international consensus statements

- Out-of-hospital cardiac arrest 1991
- Paediatric cardiac arrest 1995
- Laboratory CPR Research 1996
- In-hospital resuscitation 1997
- Neonatal resuscitation 1999
- Update and simplification 2004
- Update and refresh 2014
International Liaison Committee

- First meeting at end of ERC Congress
  - American Heart Association
  - European Resuscitation Council
  - Heart and Stroke Foundation of Canada
  - Australian Resuscitation Council
  - Resuscitation Council of Southern Africa
Evolution of ILCOR

- 1993 – ‘Liaison Committee on CPR’
  - “To provide a consensus mechanism by which the international science and knowledge relevant to emergency cardiac care can be identified and reviewed.
  - ...provide consistent international guidelines on emergency cardiac care for Basic Life Support (BLS), Paediatric Life Support (PLS) and Advanced Life Support (ALS).”
Evolution of ILCOR

- 1996 – ‘International Liaison Committee on Resuscitation (ILCOR)’

- 1997 – ILCOR Advisory Statements
The Universal ALS Algorithm

An Advisory Statement by the Advanced Life Support Working Group of the International Liaison Committee On Resuscitation

W. Kloeck, R. Cummins, D. Chamberlain, L. Bossaert, V. Callanan, P. Carli, J. Christenson, B. Connolly, J. Ornato, A. Sanders, P. Steen
Cardiac Arrest

- Precordial Thump if appropriate
- BLS Algorithm if appropriate
- Attach Defib-Monitor
- Assess Rhythm

VF/VT
- Defibrillate X 3 as necessary
- CPR 1 min
- +/- Check Pulse

Non-VF/VT
- CPR 3 min*
- * 1 min if immediately after defibrillation

During CPR
Correct reversible causes
If not already:
• check electrodes, paddle position and contact
• attempt / verify airway & O₂ i.v. access
• give epinephrine every 3 min
Consider:
amiodarone, atropine / pacing buffers

Universal ALS Algorithm
ILCOR 1997
International Guidelines 2000

• 1st attempt to achieve global, standardised CPR guidelines
• Feb 2000, Dallas
International Guidelines 2000
MILD THERAPEUTIC HYPOTHERMIA TO IMPROVE THE NEUROLOGIC OUTCOME AFTER CARDIAC ARREST

THE HYPOTHERMIA AFTER CARDIAC ARREST STUDY GROUP*

Abstract

Background Cardiac arrest with widespread cerebral ischemia frequently leads to severe neurologic impairment. We studied whether mild systemic hypothermia increases the rate of neurologic recovery after resuscitation from cardiac arrest due to ventricular fibrillation.

Methods In this multicenter, randomized, blinded assessment of the outcome, patients who had been resuscitated after cardiac arrest due to ventricular fibrillation were randomly assigned to undergo therapeutic hypothermia (target temp., 33° to 34°C, measured in the bladder) over a period of 24 hours or to receive standard treatment with normothermia. The primary endpoint was a favorable neurologic outcome within six months after cardiac arrest; secondary endpoints were mortality within six months and the rate of complications within seven days.

Results Seventy-five of the 136 patients in the hypothermia group survived the acute phase of cardiac arrest and were available for follow-up; 16 (21.3%) of these patients had a favorable neurologic outcome, as compared with 4 (9.6%) of the 42 patients in the control group (P = 0.07). Overall, 44 (31.9%) of the 136 patients had a favorable neurologic outcome; 32 (23.5%) of these patients were in the hypothermia group and 12 (28.6%) in the control group (P = 0.30).

Conclusions Mild systemic hypothermia in patients who have undergone cardiac arrest, whether due to ventricular fibrillation or to other causes, is associated with an increased rate of favorable neurologic outcome, as compared with normothermia.
ILCOR Advisory Statement

Therapeutic Hypothermia After Cardiac Arrest
An Advisory Statement by the Advanced Life Support Task Force of the International Liaison Committee on Resuscitation

Writing Group
J.P. Nolan, FRCA; P.T. Morley, MD; T.L. Vanden Hoek, MD; R.W. Hickey, MD

Members of the Advanced Life Support Task Force
W.G.J. Kloeck, MBBCh, DipPEC(SA), Chair*; J. Billi, MD†; B.W. Böttiger, MD‡; P.T. Morley, MD§; J.P. Nolan, FRCA‡; K. Okada, MD¶; C. Reyes, MD#; M. Shuster, MD, FRCPC**; P.A. Steen, MD†; M.H. Weil, MD, PhD†; V. Wenzel, MD†

Member of the Pediatric Life Support Task Force
R.W. Hickey, MD†

Additional Contributors
P. Carli, MD‡; T.L. Vanden Hoek, MD†; D. Atkins, MD†
Overview of the Process

2010 Consensus on Science

- ILCOR creates a TF i.e. ALS
- Looks at the Algorithm
- Derives the Questions – 150
- Recruits the Authors – 300
- Reviews all the Science
PICO Question

- Population, Intervention, Control, Outcome

- In adult cardiac arrest (prehospital [OHCA], in-hospital [IHCA]) (P), does the use of pacing (eg. TV, TC, needle) (I) compared with standard resuscitation (or no pacing) (C), improve outcomes (eg. ROSC, survival) (O)?
2010 Consensus on Science

- ILCOR creates a TF i.e. ALS
- Looks at the Algorithm - Defines the Domains
- Derives the Questions - 150
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- Reviews all the Science
# Evidence in Support

<table>
<thead>
<tr>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Davis (1990) B+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eray (2000)C'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kenyon (1988)C'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Madsen (1988) C'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Millikan (1980)D'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>O'Toole (1987)D'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roberts (1984)D'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Snover (1986)D'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tachakra (1988)C'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Taylor (2007)D'</td>
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<tr>
<td></td>
<td></td>
<td>Yahalom (1990)C'</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</table>

**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

* denotes external pacing (transthoracic), + denotes internal pacing (transvenous or needle), and ° indicates rhythmic percussion pacing.
## Overview of the Process

### Evidence Neutral to the Question

<table>
<thead>
<tr>
<th>Good</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td></td>
<td></td>
<td>Minutiello (1991)$^E$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of evidence</th>
</tr>
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<tbody>
<tr>
<td>A = Return of spontaneous circulation</td>
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</tr>
<tr>
<td>D = Intact neurological survival</td>
</tr>
<tr>
<td>E = Other endpoint</td>
</tr>
</tbody>
</table>

*Italicics = Animal studies*

* denotes external pacing (transsthoracic).
### Overview of the Process

## Evidence Opposing

<table>
<thead>
<tr>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
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<tr>
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</tbody>
</table>

- **Barthell (1988)** B⁺⁺
- **Cummins (1993)** C⁺⁺
- **Hedges (1987)** C⁺⁺
- **White, Brown (1985)** B⁺⁺
- **Dalsey (1985)** C⁺⁺
- **Falk (1983)** B⁺⁺
- **Eitel (1987)** C⁺⁺
- **Hazard (1981)** B⁺⁺
- **Knowlton (1986)** B⁺⁺
- **Laczika (2000)** C⁺⁺
- **Olson (1985)** B⁺⁺
- **Ornato (1984)** C⁺⁺⁺
- **Paris (1985)** C⁺⁺⁺
- **Syverud (1986)** D⁺⁺⁺
- **Tintinalli (1981)** B⁺⁺⁺
- **White (1983)** B⁺⁺⁺
- **White, Nowak (1985)** C⁺⁺⁺
- **Bartecchi (1979)** B⁺⁺⁺
- **Bartecchi (1979)** C⁺⁺⁺
- **Burgess (1979)** B⁺⁺⁺
- **Clinton (1985)** E⁺⁺⁺
- **Craddock (1991)** D⁺⁺⁺
- **Ochoa-Gomez (2002)** B⁺⁺⁺

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
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</tr>
</tbody>
</table>

* 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

† Denotes key study.  
⁺⁺ Denotes external pacing (transthoracic), and ++ denotes internal pacing (transvenous or needle)
Overview of the Process

2010 Consensus on Science

- ILCOR creates an ALS TF
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- Derives the Questions - 150
- Recruits the Authors - 300
- Reviews all the Science
- Formats the Consensus on Science and Treatment Recommendation
Overview of the Process

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- Formats the Consensus on Science and Treatment Recommendation
- Controversial topics - Dallas January 2010
- Submission to Circulation and Resuscitation June 2010
Consensus on Science

Three LOE 2 studies (Barthell, 1988, 1221-fair; Cummins, 1993, 1377-quality fair; Hedges, 1987, 1337-fair) and one LOE 3 study (White, 1985, 125-quality fair) address the efficacy of pacing in cardiac arrest. All of these studies observed no benefit from pacing in cardiac arrest patients. Use of pacing (TC, TV, needle) in cardiac arrest (in-hospital or out-of-hospital) does not improve outcome (ROSC, survival). There is no apparent benefit associated with the timing of pacing administration (early or delayed in established asystole), location of arrest (in-hospital or out-of-hospital), or primary cardiac rhythm (asystole, PEA).
Overview of the Process

ALS Summary

• 150 questions
• 300 authors
• 20 coaches + 2 co chairs
Then:
• 50 US and Canadian authors
• AHA Guidelines

• COSTR and Guidelines
  – October 18 2010 – epub Circulation and Resus
Systematic Reviews – What is the evidence?

Part 1: Executive Summary: 2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations

Guidelines – What to do?

Part 1: Executive Summary: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
2015 Output
Welcome to the GRADE working group

From evidence to recommendations – transparent and sensible
# GRADE: Making recommendations

## Factors to consider

<table>
<thead>
<tr>
<th>Quality of the evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance between benefits and harms</td>
</tr>
<tr>
<td>Patient values and preferences</td>
</tr>
<tr>
<td>Resource use (cost, human resources, etc.)</td>
</tr>
</tbody>
</table>

## Strength of recommendation

<table>
<thead>
<tr>
<th>Strength of recommendation</th>
<th>Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong</strong> recommendation for</td>
<td>We recommend...</td>
</tr>
<tr>
<td><strong>Strong</strong> recommendation against</td>
<td>We recommend not...</td>
</tr>
<tr>
<td><strong>Weak/conditional</strong> recommendation for</td>
<td>We suggest...</td>
</tr>
<tr>
<td><strong>Weak/conditional</strong> recommendation against</td>
<td>We suggest not....</td>
</tr>
</tbody>
</table>
C2015 PICO

**Population:**
Among adults and children who are in cardiac arrest outside of a hospital

**Intervention:**
does the ability of a dispatch system to provide CPR instructions

**Comparison:**
compared with a dispatch system where no CPR instruction are ever provided

**Outcomes:** change...
Outcomes:

- Survival with Favorable neurological/functional outcome at discharge, 30 days, 60 days, 180 days AND/OR 1 year 9-Critical
- Survival only at discharge, 30 days, 60 days, 180 days AND/OR 1 year 8-Critical
- ROSC 7-Critical
- Delivery of bystander CPR 5-Importatn
- Time to commence CPR 5-Important
- CPR parameters (VF/VT) 5-Important
Information Specialist to Run the Searches

PubMed: (Search Completed: November 26, 2013) Nov 26, 2013 - 197 results


Embase: (Search Completed: November 26, 2013) Nov 26, 2013 - 176 results

(telephone/exp OR 911:ab,ti OR 999:ab,ti OR 9-1-1:ab,ti OR 9-9-9:ab,ti OR dispatch-assisted:ab,ti OR dispatcher-assisted:ab,ti OR dispatch*:ab,ti OR "call-taker":ab,ti OR "operator":ab,ti) AND Instruct*:ab,ti AND ("out of hospital cardiac arrest"/exp OR "heart arrest"/exp OR "heart arrest":ab,ti OR "heart arrests":ab,ti OR "cardiac arrest":ab,ti OR "cardiac arrests":ab,ti OR "cardiovascular arrest":ab,ti OR "cardiovascular arrests":ab,ti OR "asystole":ab,ti OR "pulseless electrical activity":ab,ti OR "cardiopulmonary arrest":ab,ti OR "cardiopulmonary arrests":ab,ti OR "cardiopulmonary resuscitation":ab,ti OR CPR:ab,ti OR "heart stimulation"/exp) NOT ("animal"/exp NOT "human"/exp) NOT ([editorial]/lim OR [letter]/lim OR "case report"/de) AND [embase]/lim

Cochrane: (Search Completed: November 26, 2013) Nov 26, 2013 - 36 results

([mh "Emergency Medical Service Communication Systems"] OR 911:ti OR 999:ab,ti OR [mh "Emergency Medical Services"] OR [mh "Telephone"] OR telephone:ab,ti OR dispatch-assisted:ab,ti OR dispatcher-assisted:ab,ti OR dispatch*:ab,ti OR "call-taker":ab,ti OR "operator":ab,ti OR [mh "Hotlines])] OR Instruct*:ab,ti AND ([mh "Out-of-Hospital Cardiac Arrest"] OR [mh "Heart Arrest"] OR "cardiac arrest":ab,ti OR "cardiac arrests":ab,ti OR "cardiovascular arrest":ab,ti OR "cardiovascular arrests":ab,ti OR "heart arrest":ab,ti OR "heart arrests":ab,ti OR "asystole":ab,ti OR "pulseless electrical activity":ab,ti OR "cardiopulmonary arrest":ab,ti OR "cardiopulmonary arrests":ab,ti OR [mh "Heart Massage"] OR [mh "cardiopulmonary resuscitation"] OR [mh "cardiopulmonary resuscitation"] OR CPR:ab,ti OR [mh "Heart Massage"] NOT ([mh animal] NOT [mh humans])

Other: (Search Completed: ) No other search was used

Main Topics/Key Terms: protocol, T-CPR, bystander

Key Authors: vaillancourt C, Bohm K, Rea T

Key Articles: Comments not provided by reviewers

Inclusion/Exclusion Criteria: Included comparative studies (prospective and retrospective), case series and reviews reporting on dispatcher-assisted cardiopulmonary resuscitation for adult and paediatric cardiac arrest.

Excluded unpublished studies, and studies only published in abstract form, unless accepted for publication.
GRADE Evidence Tables for Each PICO

<table>
<thead>
<tr>
<th>Quality assessment</th>
<th>No of patients</th>
<th>Effect</th>
<th>Quality</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No of studies</td>
<td>Study design</td>
<td>Risk of bias</td>
<td>Inconsistency</td>
<td>Indirectness</td>
</tr>
<tr>
<td>1</td>
<td>randomised trial</td>
<td>not serious</td>
<td>not serious</td>
<td>serious ¹¹</td>
</tr>
<tr>
<td>1</td>
<td>observational cohort study</td>
<td>serious ²</td>
<td>not serious</td>
<td>not serious</td>
</tr>
</tbody>
</table>

Survival with Favorable neurological/functional outcome at hospital discharge (assessed with: Cerebral performance category 1 or 2) (Rea 2010, 423)²

Survival with Favorable neurological/functional outcome at 30 days (assessed with: Cerebral performance category 1 or 2) (Abraham 2012, 1410)¹
## Risk of Bias in studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Design</th>
<th>Total Patients</th>
<th>Population</th>
<th>Industry Funding</th>
<th>Eligibility Criteria</th>
<th>Exposure/Outcome</th>
<th>Confounding</th>
<th>Follow up</th>
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<tbody>
<tr>
<td>Akane</td>
<td>2012</td>
<td>Cohort</td>
<td>1,780</td>
<td>Any P-OHCA</td>
<td>No</td>
<td>High</td>
<td>Unclear</td>
<td>High</td>
<td>Low</td>
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<tr>
<td>Bang</td>
<td>1999</td>
<td>Cohort</td>
<td>473</td>
<td>OHCA</td>
<td>No</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
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<tr>
<td>Bray</td>
<td>2011</td>
<td>Before-after</td>
<td>3,122</td>
<td>OHCA</td>
<td>No</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>Culley</td>
<td>1991</td>
<td>Before-after</td>
<td>6,918</td>
<td>VF/VT OHCA</td>
<td>No</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
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<tr>
<td>Eisenberg</td>
<td>1985</td>
<td>Before-after</td>
<td>446</td>
<td>OHCA</td>
<td>No</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
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<tr>
<td>Kuisma</td>
<td>2005</td>
<td>Cohort</td>
<td>373</td>
<td>VF/VT OHCA</td>
<td>No</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
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<tr>
<td>Rea</td>
<td>2001</td>
<td>Cohort</td>
<td>7,265</td>
<td>OHCA</td>
<td>No</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>Stipulante</td>
<td>2014</td>
<td>Before-after</td>
<td>600</td>
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<td>Low</td>
<td>High</td>
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<td>Tanaka</td>
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<td>Before-after</td>
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<td>OHCA</td>
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<td>Unclear</td>
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<td>Vaillancourt</td>
<td>2007</td>
<td>Before-after</td>
<td>529</td>
<td>OHCA</td>
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<td>Low</td>
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<td>Van Vleet</td>
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<td>Cohort</td>
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<td>OHCA</td>
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<td>High</td>
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<td>Low</td>
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</tbody>
</table>
Consensus on Science

• For the critical outcome of survival with favorable neurological outcome, we have identified very-low quality evidence from 2 RCTs, 2 cohort studies, and 1 before–after study.

• The level of evidence was downgraded for risk of bias, indirectness, and imprecision.

• Four studies reported no benefit in neurological outcomes. The before–after study, which included dispatcher instructions to start compression-only CPR as part of a bundle of interventions used as part of a quality improvement initiative, noted improved neurologic outcomes at 12 months (odds ratio [OR], 1.81; 95% confidence interval [CI], 1.2–2.76).
There are good cohort study data to endorse dispatcher instruction in CPR and I agree with your treatment recommendations. (By the way the term telecommunicator may be mentioned in parentheses as “dispatcher” is technically the one who dispatches the responding vehicles and often not the person taking the call and giving the instructions - especially in large centers. The latter is often called a call receiver - thus the term telecommunicator is generic for all emergency alarm centers regardless of how many individuals are involved in any particular call. Another option is to state that dispatcher is used synonymous with telecommunicator)

I would urge your group to consider adding something along the following lines: It is important for all emergency alarm centers to establish performance standards and provide ongoing quality improvement to measure and improve performance. Clearly unless the telephone CPR instructions are delivered in a timely fashion (determined through ongoing QI) they are unlikely to be of any benefit. Furthermore ongoing QI is the only way to determine if the dispatchers (telecommunicators) are in fact identifying a high proportion of cardiac arrest in a timely fashion.
Treatment recommendation

- We recommend that dispatchers provide chest compression-only CPR instructions to callers for adults with suspected OHCA (strong recommendation, low-quality evidence).
Values, preferences and task force insights

- In making these recommendations, we placed a higher value on the initiation of bystander CPR and a lower value on the harms of performing CPR on patients who are not in cardiac arrest.

- We recognize that the evidence in support of these recommendations comes from randomized trials and observational data of variable quality.

- However, the available evidence consistently favors telephone CPR protocols that use a compression-only CPR instruction set, suggesting a dose effect—that is, quick telephone instructions in chest compressions result in more compressions and faster administration of CPR to the patient.
274 completed in 2010

391 potential

165 completed in 2015

232 reviewers

39 countries of origin
Part 4: CPR Overview: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Part 5: Adult Basic Life Support and Cardiopulmonary Resuscitation Quality

American Heart Association Guidelines Update Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
Implement, Implement, Implement
Audit and Feedback = Survival
ROC ALPS
Amiodarone, Lidocaine, or Placebo Study

Population
Persistent or recurrent VF/VT* after ≥1 shock
Vascular Access
Randomize
Intervention
Amiodarone
Lidocaine
Neither (saline placebo)
Outcome
Survival to hospital discharge

RESUSCITATION OUTCOMES CONSORTIUM
PARAmedic2

The Adrenaline Trial

South Central Ambulance Service NHS
West Midlands Ambulance Service NHS
London Ambulance Service NHS
Welsh Ambulance Services NHS Trust
North East Ambulance Service NHS
National Institute for Health Research
Warwick Medical School
CLINICAL TRIALS UNIT
University of Surrey

Early recognition - to prevent cardiac arrest
- to buy time
- to restart the heart
Design and implementation of the Resuscitation Outcomes Consortium Pragmatic Airway Resuscitation Trial (PART)☆

Henry E. Wang a,*, David K. Prince b, Shannon W. Stephens a, Heather Herren b, Mohamud Daya c, Neal Richmond d, Jestin Carlson e,f, Craig Warden c, M. Riccardo Colella g, Ashley Brienza f, Tom P. Aufderheide g, Ahamed H. Idris h, Robert Schmicker b, Susanne May b, Graham Nichol b

a Department of Emergency Medicine, University of Alabama School of Medicine, Birmingham, AL, United States
b Clinical Trials Center, Department of Emergency Medicine, Clinical Trials Center, Department of Emergency Medicine, Clinical Trials Center, Department of Emergency Medicine, Clinical Trials Center, Department of Emergency Medicine, Clinical Trials Center, Department of Emergency Medicine

HTA - 12/167/102: Cluster randomised trial of the clinical and cost effectiveness of the i-gel supraglottic airway device versus tracheal intubation in the initial airway management of out of hospital cardiac arrest (Airways-2)
Reduction of oxygen after cardiac arrest: The EXACT trial

Funding: 2015 NHMRC Project grant application – successfully funded

Contact Investigator: Professor Steve Bernard

We aim to conduct a Phase 3 multi-centre, randomised, controlled trial to determine whether reducing oxygen administration to target a normal level as soon as possible following successful resuscitation from out-of-hospital cardiac arrest, compared to current practice of maintaining 100% oxygen, improves patient survival at hospital discharge.
Patient / public partnership
CPR Review Meeting

Host: KT Moderator
Meeting number: 198 346 399

Connected to Audio
Future ILCOR Timeline

Current Task Forces

Continuous Evidence Evaluation

New Task Forces

SRs and KSU Expert Teams

2016

2017

2018

2019

2020

May 2017
Adelaide
Continuous Evidence Evaluation

RESEARCH METHODS & REPORTING

A multicomponent decision tool for prioritising the updating of systematic reviews

PMID: 24336453

RESEARCH METHODS AND REPORTING

OPEN ACCESS

When and how to update systematic reviews: consensus and checklist

PMID: 27600762
PICO Triage

Retire
- No new literature anticipated in the future
- PICO no longer relevant

Repose
- PICO wording is appropriate
- ILCOR COSTR still relevant

Revisit
- Existing and Revised PICOs and reword
- New PICOs generated by ILCOR
- Neglected and/or Revised PICOs from 2010
Enlisting SRs and KSUs

- Systematic Reviewers
  - Simple PICOs
  - Meta

- Knowledge Synthesis Units
  - Complex
  - Meta
  - Sensitivity analyses
  - Network meta
www.ilcor.org
Trial of Continuous or Interrupted Chest Compressions during CPR

Graham Nichol, M.D., M.P.H., Brian Leroux, Ph.D., Henry Wang, M.D., Clifton W. Callaway, M.D., Ph.D., George Sopko, M.D., Myron Weisfeldt, M.D., Ian Stiell, M.D., Laurie J. Morrison, M.D., Tom P. Aufderheide, M.D., Sheldon Cheskes, M.D., Jim Christenson, M.D., Peter Kudenchuk, M.D., Christian Vaillancourt, M.D., Thomas D. Rea, M.D., Ahamed H. Idris, M.D., Riccardo Colella, D.O., M.P.H., Marshal Isaacs, M.D., Ron Straight, Shannon Stephens, Joe Richardson, Joe Condle, Robert H. Schmicker, M.S., Debra Egan, M.P.H., B.S.N., Susanne May, Ph.D., and Joseph P. Ornato, M.D., for the ROC Investigators*
• Continuous compressions versus CPR
• Compression to ventilation ratio
• Setting
  – Dispatcher CPR
  – Bystander CPR
  – EMS
• Age – Adult and Paeds
• EMS response interval
• Aetiology
ILCOR 25 years old .... 2017

Consensus on Science

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Thank you,