Clinical question.
In adult cardiac arrest (prehospital [OHCA], in-hospital [IHCA]) (P), does the use intravenous fluids (I) compared with not using fluids (or standard resuscitation (C)), improve outcomes (eg. ROSC, survival) (O).

Is this question addressing an intervention/therapy, prognosis or diagnosis? Intervention/therapy

State if this is a proposed new topic or revision of existing worksheet: Revision

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).
The search will include electronic searches of the Cochrane Central Register of Controlled Trials (CENTRAL) on The Cochrane Library, MEDLINE and EMBASE databases, and the ECC EndNote X Master Library. The searches will be limited to English abstract and are presented below

CENTRAL search strategy (Issue 1, 2010)
#1 MeSH descriptor heart arrest explode all trees
#2 heart next arrest*
#3 cardiac next arrest*
#4 heart next attack*
#5 sudden next death*
#6 (#1 or #2 or #3 or #4 or #5)
#7 MeSH descriptor Infusions Intravenous this term only
#8 MeSH descriptor Fluid Therapy this term only
#9 fluid next resuscitat*
#10 volume next replace*
#11 crystalloid
#12 colloid
#13 (#7 or #8 or #9 or #10 or #11 or #12)
#14 (#6 and #13)

MEDLINE on OVID (1950 to 28 January 2010)
1 exp Heart Arrest/
2 heart arrest$.tw.
3 cardiac arrest$.tw.
4 sudden death$.tw.
5 heart attack$.tw.
6 or/1-5
7 Infusions, Intravenous/
8 Fluid Therapy/
9 fluid resuscitat$.tw.
10 volume replace$.tw
11 crystalloid.tw
12 colloid.tw
13 or/7-12
14 6 and 13

EMBASE on OVID (1966 to 2010)
1 Heart Arrest/
2 sudden death/
3 heart arrest*
4 cardiac arrest*,
5 sudden death*
6 heart attack*
7 or/1-6
8 Infusions, Intravenous/
9 Fluid Therapy/
10 fluid resuscitation
11 volume replacement

12 crystalloid
13 colloid
14 or/8-13
15 7 and 14

ECC EndNote X Master Library

1 Intravenous Fluid (ti)
2 Volume (anyf)

• State inclusion and exclusion criteria

Inclusion:

Trials (human, published (or accepted for publication) studies) comparing the use of intravenous fluids with no intravenous fluids in the management of cardiac arrest
All patients (any age) experiencing in-hospital and/or prehospital cardiac arrest
Studies comparing the use of any type of intravenous fluid
Studies examining ROSC or longer term survival as their outcome of interest

Exclusion:

Language other than English papers (except those with English abstract)
Animal studies
Unpublished (unless accepted for publication) studies

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

No studies met criteria for further review.
Summary of evidence

Evidence Supporting Clinical Question

<table>
<thead>
<tr>
<th>Level of evidence</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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:

There were no published human studies evaluating the effect of routine fluid administration during normovolemic cardiac arrest. There is insufficient evidence to recommend routine administration of fluids to treat cardiac arrest.

Acknowledgements:

Citation List