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

**Worksheet author(s)**

<table>
<thead>
<tr>
<th>Jonathan L. Epstein, MEMS, NREMT-P</th>
<th>Date Submitted for review:</th>
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<td>January 26, 2010</td>
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**Clinical question.**

Can the First Aid Provider Appropriately Recognize the Signs and Symptoms of Anaphylaxis?

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

This question is addressing a diagnosis.

**State if this is a proposed new topic or revision of existing worksheet.**

This is a new topic.

**Conflict of interest specific to this question.**

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

**Search strategy (including electronic databases searched).**

PubMed: “Anaphylaxis” AND “First Aid” as MESH (headings). 63 Hits

PubMed: “Anaphylaxis” and “First Aid” as non-Mesh. 92 Hits

AHA EndNote Master Library: “Anaphylaxis” 160 Hits

Cochrane database for systematic reviews, Central Register of Controlled Trials, Review of references from articles: “Anaphylaxis” 1 Review – No Randomized Controlled Trials

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### State inclusion and exclusion criteria

Studies included for further review were directly related to the diagnosis and/or recognition of Anaphylaxis including the signs and symptoms of anaphylaxis. Additional studies were found by searching the references to key articles and reviews.

The majority of studies were excluded, as they did not address the ability of an individual to recognize the signs or symptoms of anaphylaxis or its relationship to provide care.

Studies in languages other than English were excluded if a translation was not available.

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

27 full abstracts were selected for review resulting in the review of 12 full text articles. 8 studies and/or review articles were considered for inclusion. These articles included studies pertaining to the recognition and management of anaphylactic reactions.
# Summary of evidence

## Evidence Supporting Clinical Question

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<th>Level of evidence</th>
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<th>3</th>
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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

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### Evidence Opposing Clinical Question

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

First Aid providers are taught to assist in the administration of an epinephrine auto-injector to patients experiencing an anaphylactic reaction. No previous worksheets have addressed the question of whether a lay rescuer (first aid provider) could accurately recognize the signs and symptoms of such a reaction. The evidence evaluated does not support expanding the role of the first aid provider to “diagnose” an anaphylactic reaction in a victim not previously diagnosed with anaphylaxis. There is evidence that even trained medical professionals (Klein 1995 (LOE 5) and Gaca 2007 (LOE 5)) have difficulty making a correct assessment and diagnosis. An additional review article (Sicherer 2007 (LOE 5)) highlights the confusion of diagnosis and management of anaphylaxis to include the use of auto-injectors as well as a lack of a standardized definition of Anaphylaxis. There remains limited evidence that with experience and training parents of children with a previous diagnosis of anaphylaxis can appropriately administer an auto-injector based upon observed signs and symptoms (Gold 2000 (LOE 4)).

### Acknowledgements:

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**Citation List**


Parental use of EpiPen for children with food allergies.

Kim JS, Sinacore JM, Pongracic JA.

Department of Pediatrics, Northwestern University Feinberg School of Medicine, Chicago, IL, USA. jskim@childrensmemorial.org

PMID: 15990790 [PubMed - indexed for MEDLINE]


Quandaries in prescribing an emergency action plan and self-injectable epinephrine for first-aid management of anaphylaxis in the community.

Sicherer SH, Simons FE.

Division of Allergy/Immunology, University of Manitoba, Winnipeg, Canada. scott.sicherer@mssm.edu

Comment in:


PMID: 15753907 [PubMed - indexed for MEDLINE]


Parental knowledge and use of epinephrine auto-injector for children with food allergy.
Fatal asthma or anaphylaxis?

Rainbow J, Browne GJ.

Department of Emergency Medicine, The Children's Hospital at Westmead, Cnr Hawkesbury Road and Hainsworth Street, Westmead NSW 2145, Australia.

PMID: 12204988 [PubMed - indexed for MEDLINE]

Self-injectable epinephrine for first-aid management of anaphylaxis.

Sicherer SH, Simons FE; Section on Allergy and Immunology, American Academy of Pediatrics.

Erratum in:


Comment in:


PMID: 17332221 [PubMed - indexed for MEDLINE]

Underreporting of anaphylaxis in a community emergency room.

Klein JS, Yocum MW.

Division of Allergic Diseases, Mayo Clinic, Rochester, MN 55905.

PMID: 7852677 [PubMed - indexed for MEDLINE]

Enhancing pediatric safety: using simulation to assess radiology resident preparedness for anaphylaxis from intravenous contrast media.

Gaca AM, Frush DP, Hohenhaus SM, Luo X, Ancarana A, Pickles A, Frush KS.

Division of Pediatric Radiology, Department of Radiology, Duke University Health Systems, 1905 McGovern-Davison Children's Health Center, Box 3808 DUMC, Durham, NC 27710, USA. ana.gaca@duke.edu

Comment in:

PMID: 17885191 [PubMed - indexed for MEDLINE]

8)


**First aid anaphylaxis management in children who were prescribed an epinephrine autoinjector device (EpiPen).**

Gold MS, Sainsbury R.

University Department of Pediatrics, Women's and Children's Hospital, North Adelaide, Australia.

PMID: 10887321 [PubMed - indexed for MEDLINE]