

Structured Evidence-Based Medicine Reviews: The structured evidence-based medicine (EBM) reviews are designed to provide answers to the clinical questions raised by emergency physicians in their day-to-day practice. These reviews are expected to identify and appraise high quality studies with designs most appropriate for the research question in hand. The structured format and methodical approach of these manuscripts ensure a unified stepwise evidence-based approach to translate the research findings into clinical practice. In the absence of high quality systematic reviews and meta-analyses, these reviews can cast light on numerous dilemmas that emergency physicians encounter in their practice.

A structured EBEM review consists of the following sections:

1. Abstract
2. Background/Introduction
3. Clinical scenario
4. Defining the research question
5. Defining the selection criteria
6. Searching the major medical databases and selecting the appropriate studies
7. Appraisal of the selected studies
8. Reporting the results
9. Extracting and summarizing the evidence

Abstract: Includes a brief summary of the review, its methodology, and the conclusions.

Background: Introduces the issue to the reader and provides some background information.

Clinical Scenario: The clinical scenario sets the stage for generating the clinical question. A clinical scenario pictures an emergency physician faced with a decision-making dilemma directly related to sensible clinical outcomes.

The research question: Research questions related to issues of therapy, diagnosis, prognosis, and harm with high clinical relevance to common problems in emergency medicine are suitable for a structured EBEM review. The research questions should directly involve patient-important outcomes. The preferred format for formulating the research question is **P** (population), **I** (intervention), **C** (comparisons), **O** (outcomes).

Defining the selection criteria: In this section, the author clarifies the criteria that will be used to determine applicability of any given study to solving the problem posed by the clinical scenario. The target study designs, inclusion/exclusion criteria, and defining the outcomes are mentioned in this section. This section will determine the characteristics of the studies that will be selected and included in the EBEM review.

Literature search: After designing the research question and defining the selection criteria, the next step is to design a search strategy. The literature search should cover all

the major databases (MEDLINE, EMBASE, Cochrane, etc.) and require designing search strategies for each database separately. Designing comprehensive search strategies may require consultation with a research librarian. In addition to searching the databases, authors are encouraged to screen the bibliographies of relevant articles in order to identify additional applicable studies.

After searching the various databases, the authors should report the total number of citations obtained from the search and provide information about how many citations were excluded based on reviewing the titles, the abstracts or the entire articles. At the end of this process, the authors will identify the trials that suit the EBEM review, meeting the requirements posed by research question and the selection criteria.

Appraisal of the selected studies: In this section, the authors describe the included studies (preferably in a table) and critically appraise the trials by using the available standard criteria, such as those published in JAMA Users' Guide series. For example, when the target study design is therapy, the selected trials should be assessed in regards to randomization, blinding, concealment, baseline characteristics, intention-to-treat analysis, follow-up, and co-interventions. Quality assessment of studies reporting diagnostic tests could be performed by "STAndards for the Reporting of Diagnostic accuracy" (STARD) criteria. The quality assessment of the included studies can be summarized in a table as well (Table 2).

Reporting the results: In this section the results pertaining to the pre-defined outcomes are reported. Authors are encouraged to present the outcomes using methods that maximize clinical applicability of the results, such as Number Needed to Treat (NNT), Likelihood Ratio (LR), and Confidence Intervals (CI). These numbers might not be directly reported in the original articles. The authors may need to extract the required information from the tables, texts, or graphs.

Extracting and the applying the evidence: In this section, the results of the trials are analyzed and their applicability to the clinical practice is discussed. At the end of this section, the emergency physician is provided with an answer to the question posed by the clinical scenario, assisting him in his decision-making.