



# Prehospital Evidence-Based Guidelines Fact Sheet

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### **EBG FAQs**

#### *What is an evidence-based guideline (EBG)?*

In the context of EMS, evidence-based guidelines (EBG) are systematically developed statements developed to assist EMS systems, medical directors, and field personnel in making decisions about appropriate health care for patients in specific clinical situations.

Multidisciplinary teams develop EBGs by using rigorous methods to appraise clinical evidence. The EBG approach emerged from the discipline of evidence-based medicine, which involves conscientiously, explicitly, and judiciously using current best evidence in making decisions about patient care, combining individual clinical expertise with the best available clinical evidence from published research. EBGs are an important element for providing an expert synthesis of the evidence and improving the quality of EMS, where practice often varies among locations. Because they promote a consistent approach by prehospital providers for a given clinical scenario, EBGs can facilitate creation of standards for measuring the quality of prehospital care.

*(Taken from the [National Emergency Medical Services Advisory Council Summary Report \[2010-2012\]](#), pages 12 & 14)*

#### *What does GRADE stand for?*

**Grading of Recommendations Assessment, Development and Evaluation**

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### *What is the evidence supporting the concept of EBGs and more standardized prehospital care?*

There is considerable evidence in the scientific literature that the implementation of statewide guidelines and protocols result in improved patient outcomes and in the more equitable provision of specialty care to women, minorities and the elderly. The evidence is strongest for the adoption of statewide transport protocols for STEMI and severe trauma, but there is additional evidence supporting Statewide protocols for the prehospital treatment of brain trauma and the use of AEDs; similarly there is evidence that the implementation of statewide protocols for spinal immobilization can safely reduce the number of spinal immobilizations performed in the field without jeopardizing patient safety. Finally, significant cost savings from widespread protocol implementation have also been demonstrated. An advantage of using a methodology that provides separate appraisals for the quality of the evidence and the strength of the recommendation, as recommended in the EBG Model Process, is that it provides latitude for policy-makers to revise and contextualize the guidelines without altering their fundamental intent.

### *Why are some of the recommendations for this Guideline “Weak” and the quality of evidence described as “Low” or “Very Low?”*

The GRADE methodology requires guideline developers to choose between strong and weak recommendations – there’s no middle ground. A strong recommendation indicates that the benefits of a treatment clearly outweigh the risks; a weak recommendation means that the balance between benefit and risk is less clearly defined, or that there is a greater level of uncertainty surrounding the strength of the effect, based on the available evidence. Another way to say this is that for a strong recommendation, the guideline developers think that nearly all fully informed patients would make the same choice of treatment, whereas weak recommendations indicate that some informed patients might make other treatment choices. GRADE’s objective system for appraising the quality of evidence allows for four categories of evidence: high, moderate, low, and very low. As with most systems to rate evidence, the highest ratings are reserved for systematic reviews or meta-analysis of relevant randomized control trials, which are particularly difficult to conduct in the prehospital setting. For this reason, the strength of evidence for most EMS research is categorized between moderate and very low.

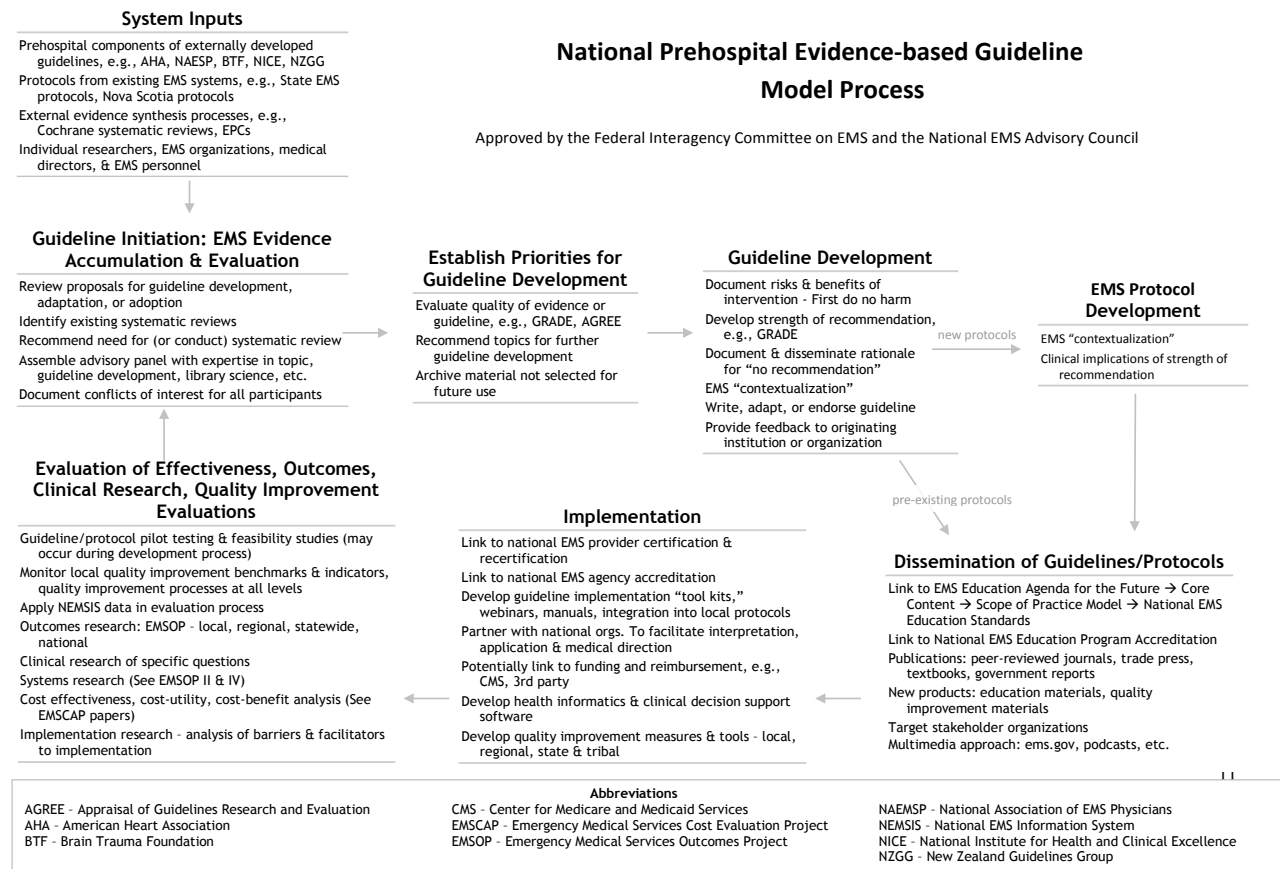
*Additional FAQs from the GRADE Working Group are located [here](#).*

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## National EBG Model Process

The National Prehospital EBG Model Process was developed with input from national EMS stakeholder organizations and endorsed by both the Federal Interagency Committee on EMS (FICEMS) and the National EMS Advisory Committee (NEMSAC). It is an 8-step process designed to bring a “systems approach” to the development, implementation, and evaluation of EBGs.

Click [here](#) for a larger version of this diagram.



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## The GRADE Process

The Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system is a standardized method for summarizing and evaluating the quality of evidence and strength of a given recommendation on two distinct rating scales. High quality evidence does not necessarily imply strong recommendations, and strong recommendations can arise from low quality evidence. The quality of evidence rating is based on whether or not future research is likely to change the recommendation. The strength of the recommendation considers the quality of evidence, but also takes into account contextual factors, such as the balance between desirable and undesirable effects, the variability in values and preferences, and whether or not the intervention represents a wise use of resources. *(From the National EMS Advisory Council Medical Oversight and Research Committee: [“The Next Steps for Prehospital Care Evidence-Based Guidelines”](#). May 30, 2012)*

The GRADE process is an increasingly important mechanism to review and rate the medical literature and is gaining popularity due to its many benefits, including transparency with its process and definitions.

The first part of this process includes searching and appraising the evidence. For this Guideline, clinical questions were framed in **PICO** (patient, intervention, comparison, outcome) format. Using the GRADE methodology and asking PICO questions, the core-working group was able to draft recommendations with proposals for strength of recommendation (strong or weak) and strength of evidence (high, moderate, low, or very low).

The weight of the evidence is ONE of the factors leading to the strength of recommendations. Another factor is the estimation of risk and benefit of a given intervention based on the incidence of the illness and the preferences and values delineated in the first steps of the process. Currently, evidence-based guidelines may often reflect “low quality evidence”, but as mentioned above, this does not mean that there is not any evidence to support the recommendation. Because of this rigorous process, and the fact that there are so few randomized clinical trials of prehospital, EMS research, findings will frequently be rated as “low quality.”

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## Additional Information

### Articles

[\*An Evidence-Based Guideline for Prehospital Analgesia in Trauma\*](#). Published in Prehospital Emergency Care, January 2014, this article outlines the process in creating the guideline used in this project.

[\*An Evidence-based Guideline for Pediatric Prehospital Seizure Management Using GRADE Methodology\*](#). Published in Prehospital Emergency Care, January 2014.

[\*Grading Quality of Evidence and Strength of Recommendations\*](#). Published in the British Medical Journal, June 2004.

### Resources

[\*GRADE Working Group\*](#). The GRADE working group began in the year 2000 as an informal collaboration of people with an interest in addressing the shortcomings of present grading systems in health care. This website has a wealth of useful information on GRADE.

[\*Progress on Evidence-Based Guidelines For Prehospital Emergency Care\*](#). Update from the National Highway Traffic Safety Administration (NHTSA) Office of EMS (OEMS).

[\*Reviewing Evidence Using GRADE\*](#). A thorough summary of reviewing evidence using the GRADE methodology created by the Institute for Clinical Systems Improvement.

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