

# Progress of Evidence-Based Guidelines for Prehospital Emergency Care

Office of Emergency Medical Services, National Highway Traffic Safety Administration

## INTRODUCTION

Since 2008, the National Highway Traffic Safety Administration (NHTSA) Office of Emergency Medical Services and the Emergency Medical Services for Children Program (Health Resources and Services Administration), have been fortunate to work with EMS stakeholders to create and pilot test a model for developing and implementing evidence-based guidelines (EBGs) for prehospital emergency care. NHTSA is pleased to share the progress (Appendix A) of the project with the EMS community.

## BACKGROUND

In 2006, the Institute of Medicine (IOM) released a report on the Future of Emergency Care in the United States, which called for several specific recommendations on improving prehospital emergency care, including the following:

“...Convene a panel of individuals with multidisciplinary expertise to develop evidence-based model prehospital care protocols for the treatment, triage, and transport of patients, including children.”

A nationally-accepted set of evidence-based model guidelines would allow state EMS officials and local EMS agencies to provide patient care based on the best available scientific knowledge of prehospital care practices. Such EBGs would be flexible and generic enough to allow state and local guidelines that take into account local population needs and available resources. While the evidence base for prehospital care is growing, there is considerable variation in the treatment interventions and response approaches used as well as timely implementation of new knowledge among EMS systems. Furthermore, there is frequently a lack of evidence on the impact of current practices on patient outcomes. Careful analysis of the available evidence can identify those interventions that have been proven to be effective and are optimal for application. EBGs are an important element in improving the quality of prehospital care, as they promote a consistent approach by prehospital providers for a given clinical scenario, and thus facilitate creation of standard for measures to evaluate the quality of prehospital emergency care.

## ACTIVITIES TO-DATE

### *National Stakeholder Meeting*

In September of 2008, NHTSA convened a National EMS Evidence-Based Guidelines meeting, cosponsored by the Federal Interagency Committee on EMS (FICEMS) and the National EMS Advisory Council (NEMSAC). The conference was attended by representatives of EMS stakeholder organizations who heard presentations by a panel of international experts with extensive, multidisciplinary expertise in EMS, research, and EBGs.

### *Development of Draft EBG Model Process*

Input from conference attendees was used to draft a national EBG Model Process (Appendix B) for the development, implementation, and evaluation of EMS guidelines. The draft EBG Model Process emerging from this conference was subsequently approved by both FICEMS and NEMSAC. One feature of this model is the reliance on an objective and transparent process for appraising the quality of clinical evidence, such as the process used in the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system.

### *EBG Model Process: Beta-Test*

- With funding provided by the Health Resources and Services Administration EMSC program, in 2008, the EMSC National Resource Center beta-tested the development phase of draft EBG Model Process to develop an EBG for prehospital management of pediatric seizures.
- NHTSA, with supplemental funding from EMSC, competitively awarded a cooperative agreement to Children’s National Medical Center (CNMC) to further test the EBG model process in September of 2009.

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- CNMC convened a group of experts in adult and pediatric emergency medicine, guideline development, trauma surgery, pain management, medical library science, prehospital care, and nursing. These experts used the EBG Model Process to develop EBGs for prehospital pain management for adults and children and for decisions related to the utilization of helicopter transport of injured patients.
- As part of the cooperative agreement, CNMC submitted the draft EBGs for review by the protocol review committee of the Maryland Institute for Emergency Medical Services Systems (MIEMSS). Both guidelines were reviewed by MIEMSS as part of their existing statewide protocol development process. The MIEMSS review committee adopted the pain management protocol, but chose not to adopt the proposed HEMS guideline, which was nearly identical to the existing Maryland protocol with the exception that it did not mandate on-line medical direction in order to activate a helicopter transport. Online educational materials were developed and completed by all Maryland prehospital providers for the adopted pain management guideline. Data are being collected on patient outcomes, acceptance and compliance for the implemented protocol; the preliminary analysis of these data is underway.

### FUTURE PLANS

A manuscript describing the development of the EBG Model Process was recently accepted for publication in *Academic Emergency Medicine* and will be published in 2012. The final report for the CNMC study, including the EBGs and model guidelines on prehospital pain management and helicopter utilization for injured patients, is currently in development and will be disseminated to the EMS community when available. Also in development are separate manuscripts for each of the three prehospital guidelines that were developed using the EBG Model Process and these will be submitted for publication in peer-reviewed journals in 2012. Future plans also include examining the implementation process of EBGs at the State level. Finally, based on the recommendations of the CNMC study and stakeholder input, the EBG Model Process will likely be modified to enhance its adoption and implementation by local, state, and national EMS stakeholders.

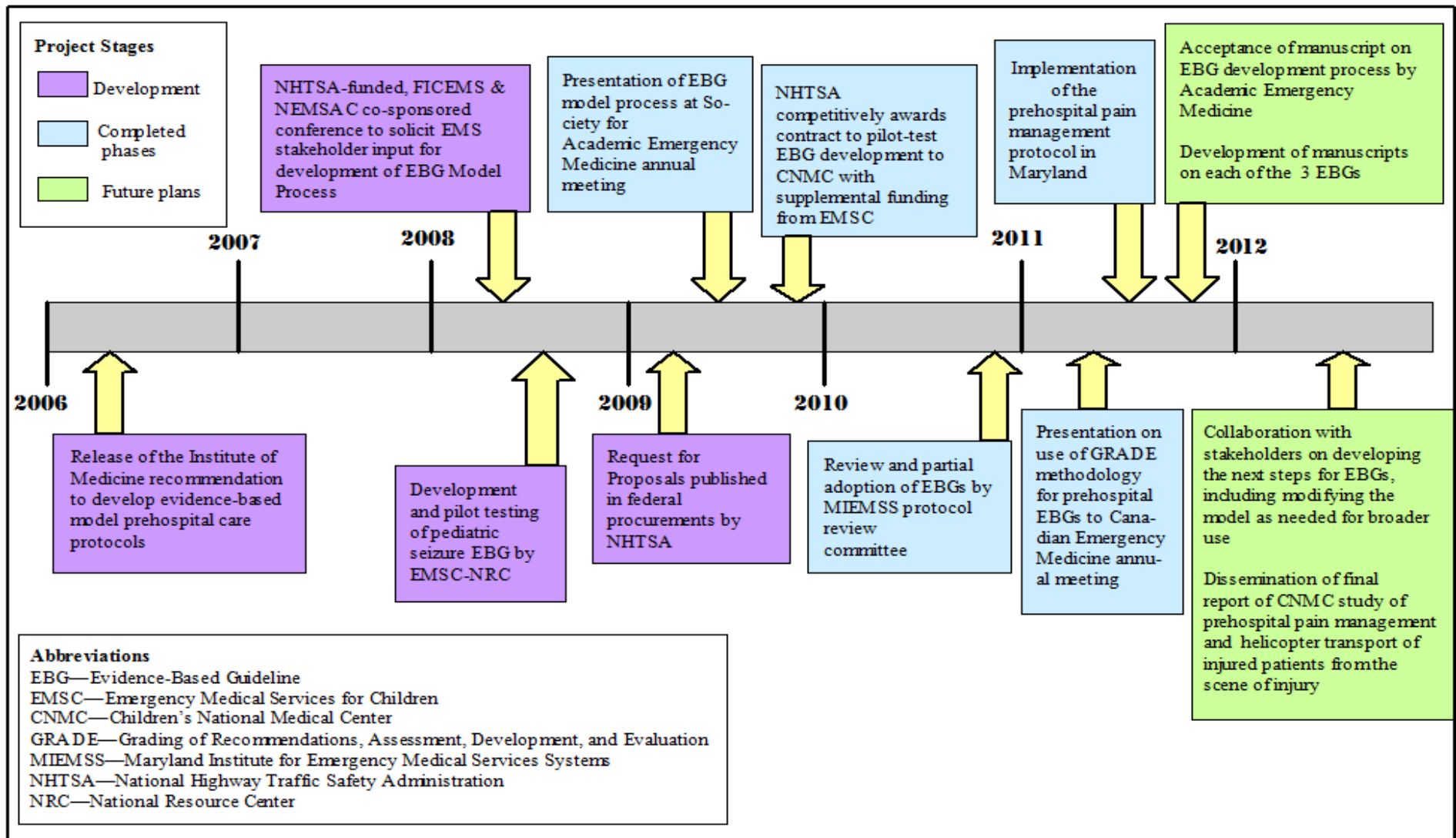
### DECISION-MAKING CULTURE IN EMS

The EMS National Research Agenda, the IOM, and several national organizations have repeatedly voiced the need for more research in EMS. As the body of research grows, the importance and feasibility of making patient care decisions based on existing scientific evidence in the prehospital setting will also increase. The process for developing clinical guidelines, based on an unbiased, transparent, and rigorous appraisal of the scientific evidence, is substantially different from basing patient care decisions on historical consensus, local convention, individual opinion, or anecdotes. This EBG Model Process project will serve as a resource and model for national, state and local EMS organizations in a time of transitioning culture and growing research in EMS. Such a model brings together professionals on a multidisciplinary level to enhance and support guideline development from a comprehensive knowledge base around the scientific evidence that exists for EMS. The EBG Model Process will serve to clearly and systematically identify knowledge gaps, focusing future prehospital research to promote more robust prehospital care guidelines. A nationally-utilized set of guidelines will help to ensure more consistency in prehospital care, while accommodating varying EMS system resources and environments.

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## Appendix A: PROJECT TIMELINE



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*Approved by the Federal Interagency Committee on EMS and the National EMS Advisory Council*

- Link to EMS Education Agenda for the Future → Core Content
  - Scope of Practice Model → National EMS Education Standards
- Link to National EMS Education Program Accreditation
- Publications: peer-reviewed journals, trade press, textbooks, government reports
- New products: education materials, quality improvement materials
- Target stakeholder organizations
- Multimedia approach: ems.gov, podcasts, etc.