Statewide Implementation of an Evidence-Based Guideline

General Toolkit V2.1

[This Toolkit contains resources developed for State EMS Offices participating in the NASEMSO Statewide Implementation of a Prehospital Care Guideline Project.]

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Introduction

Background & Significance of this Project

The Statewide Implementation of a Prehospital Care Guideline Project is an effort to study the process of statewide implementation of an evidence-based guideline (EBG) for prehospital care. The National Association of State EMS Officials (NASEMSO) was awarded this project grant through a competitive application process by the National Highway Traffic Safety Administration (NHTSA). NASEMSO has chosen a Management of Acute Traumatic Pain guideline to use for this project.

The EMS system in the United States requires direct medical oversight provided to prehospital providers as well as indirect medical oversight through the use of standardized patient care protocols. Currently, the treatment guidelines and protocols used to direct patient care vary by location, since each EMS agency, region or State establishes its own guidelines and policies. This can result in adjacent EMS jurisdictions with similar populations and resources that have different patient care guidelines for identical clinical conditions. Variations in clinical practice are known to result in variations in patient outcomes. In order to achieve a high standard of care, it is important to promote widespread adoption of prehospital guidelines that are based upon the best medical evidence available and believed to result in optimal outcomes.

In response to the documented variations in prehospital guidelines and patient outcomes, the Federal Interagency Committee on Emergency Medical Services (FICEMS) and the National EMS Advisory Council (NEMSAC) have sponsored the development of a draft national model process for the development and implementation of evidence-based guidelines for prehospital care.

Although the portions of this model that describe guideline development have been validated through several pilot projects, the implementation phase of the proposed model process remains largely untested. NHTSA’s Office of EMS (OEMS) has played a key role in these pilot projects through the contributions of technical and financial support. Because of its experience in these pilot projects, OEMS has technical expertise in the guideline development and implementation process that can be of great value to national
organizations, State EMS Offices and others wishing to promote adoption and implementation of statewide prehospital patient care guidelines.

NHTSA’s objective is to support the use and further refinement of the National Evidence-Based Guideline Model Process, developed under the auspices of FICEMS and NEMSAC.

Additional Information:

- A short history of the EBG Model Process can be found here.
- A draft advisory, The Next Steps for Prehospital Care Evidence-Based Guidelines, from NEMSAC’s Medical Oversight and Research Committee can be found here.
- Progress on evidence-based guidelines for prehospital emergency care can be found here.
- An Evidence-Based Guidelines Fact Sheet, created by the NASEMSO Project Team, can be found here.

Project Goals

- Stimulate development and dissemination of comprehensive statewide protocol implementation plans in five (5) States
  - These plans should address issues such as promoting the acceptance of an evidence-based guideline by State and local medical directors, for integration into their prehospital care protocols, training field providers, and assessing the impact of protocol changes
  - The project seeks to identify both successful strategies for and barriers to guideline implementation & dissemination in each state
- Support the development and dissemination of tool kits designed for use by State and local EMS medical directors in order to promote and facilitate the implementation of statewide prehospital care guidelines and protocols
- Explore the innovative use of communications technologies in order to facilitate ongoing and interactive communication among States seeking to implement statewide prehospital care guidelines
- Provide representatives from State EMS Offices an opportunity to share their experiences and lessons learned from the statewide patient care guideline implementation process
- Develop a report to serve as a reference to States seeking to implement evidence-based prehospital care guidelines
Project Purpose

This demonstration project endeavors to improve the quality and effectiveness of prehospital emergency care to persons injured in motor vehicle crashes or who have other health emergencies. The project will provide technical and financial support for these improvement efforts through the statewide adoption and implementation of an evidence-based prehospital care guideline (developed using the FICEMS- and NEMSAC-approved National EBG Model Process).
Toolkit Materials

1. **Evidence-Based Guideline Information**
   a. **EBQ FAQs**
   b. **National EBG Model Process**
   c. **GRADE Process**
   d. **EBG & GRADE Resources**
   e. **Guideline**
   f. **Pain Scales**
   g. **Guideline Key Elements**
   h. **Guideline Data Elements**
   i. **Example of Pain Management Protocol**

2. **References**
   a. **Essential Articles**
   b. **Recommended Articles**
   c. **Supplemental Articles**

3. **Talking Points / FAQ**

4. **Implementing a Statewide Guideline – How To**

5. **Educational Resources**
   a. **Agency/Provider Training**
   b. **Skills Testing**
   c. **Pain Assessment & Treatment Self-Efficacy Tool**
   d. **Hospital Training**
   e. **Pain Scale Educational Resources**
   f. **Additional Training Resources**

6. **Evaluation Resources**
   a. **Evaluation Components**
   b. **Agency Adoption Assessment Tool**
1. Evidence-Based Guideline Information

**EBG FAQs**

**National EBG Model Process**

**GRADE Process**

**EBG & GRADE Resources**

**Guideline**

**Pain Scales**

**Guideline Key Elements**

**Guideline Data Elements**

  - NEMSIS v2.2.1
  - NEMSIS v3

**Example of Pain Management Protocol Based on EBG**

**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
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.

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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 FICEMS and 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.)

National Prehospital Evidence-based Guideline Model Process

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

System Inputs
Prehospital components of externally developed guidelines, e.g., AHA, NAESP, BTF, HCE, HSOS
Protocols from existing EMS systems, e.g., State EMS protocols, Nova Scotia protocols
External evidence synthesis processes, e.g., systematic review, primary research
Individual researchers, EMS organizations, medical direction, & EMS personnel

Guideline Initiation: EMS Evidence Accumulation & Evaluation
Review proposals for guideline development, adaptation, or adoption
Identify existing systematic reviews
Recommend need for or conduct systematic review
Assemble advisory panel with expertise in topic, guideline development, library science, etc.
Document conflicts of interest for all participants

Evaluation of Effectiveness, Outcomes, Clinical Research, Quality Improvement Evaluations
Guideline/protocol pilot testing & feasibility studies (may occur during development process)
Monitor local quality improvement benchmarks & indicators, quality improvement processes at all levels
Apply NEMSIS data in evaluation process
Outcomes research (DSAGP: local, regional, statewide, national)
Clinical research of specific questions
Systems research (See DSAGP & IT)
Cost effectiveness, cost utility, cost-benefit analysis (See DSAGP papers)
Implementation research: analysis of barriers & facilitators to implementation

Establish Priorities for Guideline Development
Evaluate quality of evidence or guideline, e.g., GRADE
A.S.K.
Recommend topics for further guideline development
Archive material not selected for future use

Guideline Development
Document risks & benefits of intervention - First do no harm
Develop strength of recommendation, e.g., GRADE
Document & disseminate rationale for “no recommendation”
D.E.S. (“contextualization”)
Write, adapt, or endorse guideline
Provide feedback to originating institution or organization

Implementation
Link to national EMS provider certification & recertification
Link to national EMS agency accreditation
Develop guidelines for implementation: “hard copy,” websites, manuals, integration into local protocols
Partner with national orgs. to facilitate implementation, application & medical direction
Potentially link to funding & reimbursement, e.g., CMS, 3rd party
Develop health information & clinical decision support software
Develop quality improvement measures & tools - local, regional, state & tribal

Dissemination of Guidelines/Protocols
Link to Def Education Agenda for the Future 4 Care
Center - 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.

Abbreviations
AHA - American Heart Association
BTF - Brain Trauma Foundation
CMS - Centers for Medicare and Medicaid Services
DSAGP - Emergency Medical Services Cost Evaluation Project
EMS - Emergency Medical Services
GRADE - Grading of Recommendations Assessment, Development and Evaluation
HCE - Health Care Ethics
HSOS - High Value of Safety in Operations
IT - Information Technology
MS - Medical Society
NEMS - National EMS Information System
NEMSAC - National EMS Advisory Council
NEMSIS - National EMS Information System
NZGG - New Zealand Guidelines Group
STEPI - Emergency Medical Services Cost Evaluation Project

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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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**EBG & GRADE Resources**

*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.


**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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Guideline
The EBG used for this project was developed by a research team, led by the National Children's Medical Center, and utilized the FICEMS- and NEMSAC-approved National EBG Model Process.

Prehospital Protocol for the Management of Acute Traumatic Pain
This protocol excludes patients who are allergic to narcotic medications and/or who have altered mentation (GCS <15 or mentation not appropriate for age).

Assess pain as part of general patient care in children and adults.
Consider all patients as candidates for pain management, regardless of transport interval.
(Strong recommendation, low quality evidence)

Use an age-appropriate pain scale to assess pain:
(Weak recommendation, very low quality evidence for patients < 12 yrs, Moderate quality evidence for patients > 12 yrs)
Age <4 yrs: Consider using an observational scale such as FLACC or CHEOPS
Age 4-12 yrs: Consider using a self-report scale such as FPS, FPS-revised, or Wong-Baker Faces
Age >12 yrs: Consider using a self-report scale such as NRS

Serious Adverse Effects
GCS < 15
Hypotension
SpO₂< 90% on 15L O₂
Hypoventilation
Allergy
Condition preventing administration (blocked nose, no IV)
(Weak recommendation, very low quality evidence)

Use narcotic analgesics to relieve moderate to severe pain.
Analgesics proven safe and effective are:
IV Morphine (0.1 mg/kg), or
IV or IN Fentanyl (1 mcg/kg)
(Strong Recommendation, moderate quality evidence)

Reassess every 5 minutes.
(Strong recommendation, moderate quality evidence)

Evidence of serious adverse effects should preclude further drug administration.

If still in significant pain, redose at half the original dose.
(Strong recommendation, low quality evidence for repeat doses. Weak recommendation, very low quality evidence for redosing at half the original dose)

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Pain Scales

Observational:

- **FLACC**
- **CHEOPS**

Self-Report:

- **FPS**
- **FPS-Revised**
- **Wong-Baker FACES®**
- **NRS**

Faces, Legs, Activity, Cry, Consolability (FLACC) Behavioral Scale

Appropriate age for use (per guideline): <4 years

<table>
<thead>
<tr>
<th>Categories</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Face</td>
<td>No particular expression or smile</td>
</tr>
<tr>
<td>Legs</td>
<td>Normal position or relaxed</td>
</tr>
<tr>
<td>Activity</td>
<td>Lying quietly, normal position, moves easily</td>
</tr>
<tr>
<td>Cry</td>
<td>No cry (awake or asleep)</td>
</tr>
<tr>
<td>Consolability</td>
<td>Content, relaxed</td>
</tr>
</tbody>
</table>

Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.

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Instructions:

- **Patients who are awake:** Observe for at least 1-2 minutes. Observe legs and body uncovered. Reposition patient or observe activity, assess body for tenseness and tone. Initiate consoling interventions if needed.

- **Patients who are asleep:** Observe for at least 2 minutes or longer. Observe body and legs uncovered. If possible reposition the patient. Touch the body and assess for tenseness and tone.

**Face**

- Score 0 points if patient has a relaxed face, eye contact and interest in surroundings.
- Score 1 point if patient has a worried look to face, with eyebrows lowered, eyes partially closed, cheeks raised, mouth pursed.
- Score 2 points if patient has deep furrows in the forehead, with closed eyes, open mouth and deep lines around nose/lips.

**Legs**

- Score 0 points if patient has usual tone and motion to limbs (legs and arms).
- Score 1 point if patient has increase tone, rigidity, tense, intermittent flexion/extension of limbs.
- Score 2 points if patient has hyper tonicity, legs pulled tight, exaggerated flexion/extension of limbs, tremors.

**Activity**

- Score 0 points if patient moves easily and freely, normal activity/restrictions.
- Score 1 point if patient shifts positions, hesitant to move, guarding, tense torso, pressure on body part.
- Score 2 points if patient is in fixed position, rocking, side-to-side head movement, rubbing body part.

**Cry**

- Score 0 points if patient has no cry/moan awake or asleep.
- Score 1 point if patient has occasional moans, cries, whimpers, sighs.
- Score 2 points if patient has frequent/continuous moans, cries, grunts.

**Consolability**

- Score 0 points if patient is calm and does not require consoling.
- Score 1 point if patient responds to comfort by touch or talk in ½ - 1 minute.
- Score 2 points if patient require constant consoling or is unconsoled after an extended time.
Whenever feasible, behavioral measurement of pain should be used in conjunction with self-report. When self-report is not possible, interpretation of pain behaviors and decision-making regarding treatment of pain requires careful consideration of the context in which the pain behaviors were observed.

Each category is scored on a 0-2 scale, which results in a total score of 0-10

**Assessment of Behavioral Score:**

- 0 = Relaxed and comfortable
- 1-3 = Mild discomfort
- 4-6 = Moderate pain
- 7-10 = Severe discomfort/pain

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**Children’s Hospital of Eastern Ontario Pain Scale (CHEOPS)**

Appropriate age for use (per guideline): <4 years

<table>
<thead>
<tr>
<th>Item</th>
<th>Behavioral</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No cry</td>
<td>1</td>
<td>Child is not crying</td>
</tr>
<tr>
<td>Moaning</td>
<td>2</td>
<td>Child is moaning or quietly vocalizing silent cry</td>
</tr>
<tr>
<td>Crying</td>
<td>2</td>
<td>Child is crying, but the cry is gentle or whimpering</td>
</tr>
<tr>
<td>Scream</td>
<td>3</td>
<td>Child is in a full-lunged cry; sobbing; may be scored with complaint or without complaint</td>
</tr>
<tr>
<td><strong>Facial</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composed</td>
<td>1</td>
<td>Neutral facial expression</td>
</tr>
<tr>
<td>Grinace</td>
<td>2</td>
<td>Score only if definite negative facial expression</td>
</tr>
<tr>
<td>Smiling</td>
<td>0</td>
<td>Score only if definite positive facial expression</td>
</tr>
<tr>
<td><strong>Child Verbal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>Child not talking</td>
</tr>
<tr>
<td>Other complaints</td>
<td>1</td>
<td>Child complains, but not about pain, e.g., “I want to see mommy” or “I am thirsty”.</td>
</tr>
<tr>
<td>Pain complaints</td>
<td>2</td>
<td>Child complains about pain.</td>
</tr>
<tr>
<td>Both complaints</td>
<td>2</td>
<td>Child complains about pain and about other things, e.g., “It hurts; I want my mommy”.</td>
</tr>
<tr>
<td>Positive</td>
<td>0</td>
<td>Child makes any positive statement or talks about others things without complaint</td>
</tr>
<tr>
<td><strong>Torso</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
<td>Body (not limbs) is at rest, torso is inactive</td>
</tr>
<tr>
<td>Shifting</td>
<td>2</td>
<td>Body is in motion in a shifting or serpentine fashion</td>
</tr>
<tr>
<td>Tense</td>
<td>2</td>
<td>Body is arched or rigid</td>
</tr>
<tr>
<td>Shivering</td>
<td>2</td>
<td>Body is shuddering or shaking involuntarily</td>
</tr>
<tr>
<td>Upright</td>
<td>2</td>
<td>Child is in a vertical or upright position</td>
</tr>
<tr>
<td>Restrained</td>
<td>2</td>
<td>Body is restrained</td>
</tr>
<tr>
<td><strong>Touch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not touching</td>
<td>1</td>
<td>Child is not touching or grabbing at wound.</td>
</tr>
<tr>
<td>Reach</td>
<td>2</td>
<td>Child is reaching for but not touching wound</td>
</tr>
<tr>
<td>Touch</td>
<td>2</td>
<td>Child is gently touching wound or wound area</td>
</tr>
<tr>
<td>Grab</td>
<td>2</td>
<td>Child is grabbing vigorously at wound</td>
</tr>
<tr>
<td>Restrained</td>
<td>2</td>
<td>Child’s arms are restrained</td>
</tr>
<tr>
<td><strong>Legs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
<td>Legs may be in any position but are relaxed; includes gentle swimming or separate-like movements</td>
</tr>
<tr>
<td>Squirm/kicking</td>
<td>2</td>
<td>Definitive uneasy or restless movements in the legs and/or striking out with foot or feet</td>
</tr>
<tr>
<td>Drawn up/tensed</td>
<td>2</td>
<td>Legs tensed and/or pulled up tightly to body and kept there.</td>
</tr>
<tr>
<td>Standing</td>
<td>2</td>
<td>Standing, crouching or kneeling</td>
</tr>
<tr>
<td>Restrained</td>
<td>2</td>
<td>Child’s legs are being held down</td>
</tr>
</tbody>
</table>

**Instructions:**

- The CHEOPS pain score equals the SUM of points for all 6 parameters
- Interpretation:
  - Minimum score: 4
  - Maximum score: 13

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Faces Pain Scale (FPS)
Appropriate age for use (per guideline): 4-12 years

Instructions:
Have the patient indicate the face that best represents the severity of his/her current pain.

Scoring: Assign each face a number corresponding to the pain descriptor selected by the patient and keep a record of it. The neutral face is given a value of zero (0), and the most distraught face is given a value of six (6). You may either compute the patient's mean pain level over time or choose instead to track the pain score of the face selected by the patient and determine whether it decreases over time.

Note: Patients should view the figure without numbers.
Faces Pain Scale - Revised (FPS-R)

Appropriate age for use (per guideline): 4-12 years

Instructions:

In the following instructions, say "hurt" or "pain," whichever seems right for a particular child.

- "These faces show how much something can hurt. This face [point to left-most face] shows no pain. The faces show more and more pain [point to each from left to right] up to this one [point to right-most face] - it shows very much pain. Point to the face that shows how much you hurt [right now]."

Score the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so '0' = 'no pain' and '10' = 'very much pain.' Do not use words like 'happy' and 'sad'. This scale is intended to measure how children feel inside, not how their face looks.

More information about the FPS-R can be found here.

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Wong-Baker Faces®
Appropriate age for use (per guideline): 4-12 years

Instructions:
Explain to the person that each face is for a person who has no pain (hurt) or some, or a lot of pain.

- Face 0 doesn’t hurt at all.
- Face 2 hurts just a little bit.
- Face 4 hurts a little bit more.
- Face 6 hurts even more.
- Face 8 hurts a whole lot.
- Face 10 hurts as much as you can imagine, although you don’t have to be crying to have this worst pain.

Ask the person to choose the face that best depicts the pain they are experiencing.
Numeric Rating Scale

Appropriate age for use (per guideline): >12 years

Instructions:
The patient is asked any one of the following questions:

- What number would you give your pain right now?
- What number on a 0 to 10 scale would you give your pain when it is the worst that it gets and when it is the best that it gets?
- At what number is the pain at an acceptable level for you?

When the explanation suggested in #1 above is not sufficient for the patient, it is sometimes helpful to further explain or conceptualize the Numeric Rating Scale in the following manner:

- 0 = No Pain
- 1-3 = Mild Pain (nagging, annoying, interfering little with ADLs)
- 4-6 = Moderate Pain (interferes significantly with ADLs)
- 7-10 = Severe Pain (disabling; unable to perform ADLs)
Guideline Key Elements

The "Key Elements" were derived from the Prehospital Protocol for the Management of Acute Traumatic Pain Guideline to serve as a guide to the critical aspects of this EBG.

These elements are considered critical to the integrity of the protocol. It is understood that a State or an individual EMS agency may insert this EBG verbatim in their protocol for use, or they may choose to change it’s formatting and presentation to fit their existing protocol set. If such formatting changes are made, all five of these key elements must still be included in order to preserve the clinical and evidence-based integrity of the protocol.

These elements also may be used to highlight the most important teaching points during medic training on the protocol, or as quality assurance and performance improvement measures for monitoring the use of the protocol.

1. Documentation of pain score
2. Identification of contraindications
3. Administration of narcotic pain medication to patients in moderate to severe pain
4. Reassessment of pain score every 5 minutes
5. Re-dosing medication if still in significant pain

Evaluation Consideration

These five elements are critical to the State's ability to evaluate the protocol and its impact on the care of prehospital pain.

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Guideline Data Elements

Listed below are the NEMSIS data elements (both V2.2.1 and V3) that are relevant to the Key Elements of the Guideline, as identified above. These data elements may be used to assist in the monitoring of implementation of the guideline, and as quality assurance and performance improvement measures of the essential elements of the EBG, as EMS providers in the field use it. A Supplemental Data Dictionary can be found here.

NEMSIS Version 2.2.1

- Transport Time:
  - E05_06 “Unit Arrived on Scene Date/Time”
  - E05_10 “Patient Arrived at Destination Date/Time”

- Age
  - E06_14 “Age”
  - E06_15 “Age Units”

- Provider Impression / Cause of Injury / Possible Injury
  - E09_15 or E09_16 “Provider’s Impression”
  - E10_01 “Cause of Injury”
  - E09_04 “Possible Injury”

- Weight
  - E16_01 “Estimated Body Weight”
  - E16_02 “Broselow/Luten Color”

- Pain Score
  - E14_01 “Date/Time Vital Signs Taken”
  - E14_23 “Pain Scale”

- Vital Signs
  - E14_01 “Date/Time Vital Signs Taken”
  - E14_04 “SBP (Systolic Blood Pressure)”
  - E14_05 “DBP (Diastolic Blood Pressure)”
  - E14_07 “Pulse Rate”
  - E14_09 “Pulse Oximetry”
  - E14_11 “Respiratory Rate”
• Medication Information
  o E18_01 “Date/Time Medication Administered”
  o E18_03 “Medication Given”
  o **E18_04 “Medication Administered Route”
  o **E18_05 “Medication Dosage”
  o **E18_06 “Medication Dosage Units”
  o **E18_08 “Medication Complication”
  o **E18_10 “Medication Authorization”

• Destination Information
  o D04_14 “Destination Facility Number”

• Location
  o E08_15 “Incident Zip Code”

• Medical Direction
  o E17_01 “Protocols Used”

• Procedure Information
  o E19_02 “Procedure Performed Prior to this Units EMS Care”

**States may want to include the collection of these data points to evaluate proper dosing of medication, routes, complications, and other quality improvement evaluation questions.

⇒ Return to Guideline Information

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NEMSIS Version 3

• Transport Time:
  o eTimes.06 “Unit Arrived on Scene Date/Time”
  o eTimes.11 “Patient Arrived at Destination Date/Time”

• Age
  o ePatient.15 “Age”
  o ePatient.16 “Age Units”
- **Provider Impression / Cause of Injury / Possible Injury**
  - eSituation.11 or eSituation.12 “Provider’s Impression”
  - eInjury.01 “Cause of Injury”
  - eSituation.02 “Possible Injury”

- **Weight**
  - eExam.01 “Estimated Body Weight in Kilograms”
  - eExam.02 “Length Based Tape Measure”

- **Pain Score**
  - eVitals.01 “Date/Time Vital Signs Taken”
  - eVitals.27 “Pain Score”
  - eVitals.28 “Pain Scale Type”

- **Vital Signs**
  - eVitals.01 “Date/Time Vital Signs Taken”
  - eVitals.06 “SBP (Systolic Blood Pressure)”
  - eVitals.07 “DBP (Diastolic Blood Pressure)”
  - eVitals.10 “Heart Rate”
  - eVitals.12 “Pulse Oximetry”
  - eVitals.14 “Respiratory Rate”

- **Medication Information**
  - eMedications.01 “Date/Time Medication Administered”
  - eMedications.03 “Medication Given”
  - **eMedications.04 “Medication Administered Route”**
  - **eMedications.05 “Medication Dosage”**
  - **eMedications.06 “Medication Dosage Units”**
  - **eMedications.08 “Medication Complication”**
  - **eMedications.11 “Medication Authorization”**

- **Destination Information**
  - eDisposition.01 “Destination/Transferred To, Name”

- **Location**
  - eScene.19 “Incident ZIP Code”
• **Medical Direction**
  
  o eProtocols.01 “Protocols Used”

• **Procedure Information**
  
  o eProcedures.02 “Procedure Performed Prior to this Unit’s EMS Care”

**States may want to include the collection of these data points to evaluate proper dosing of medication, routes, complications, and other quality improvement evaluation questions.**

⇒ *Return to Guideline Information*

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**Evaluation Considerations**

- Are providers completing the appropriate data elements in run reports?
- Has there been an increase use of narcotics?
  - o Is there difference between pediatrics and for adults?
- Has there been an increase in the documentation of pain scores?
  - o Is there a difference between pediatrics and adults?
- Has there been an increase in the reassessment of pain score every 5 minutes?
  - o Is there a difference between pediatrics and adults?
- Has there been an increase in the re-dosing of medication?
  - o Is there a difference between pediatrics and adults?
- Did any pain scales identified in the protocol presented documentation barriers?

⇒ *Return to Toolkit Contents*
Example of Pain Management Protocol, Based on Pain Guideline

As part of a cooperative agreement with NHTSA and using the GRADE techniques for literature review, the Children's National Medical Center (CNMC) created the Pain Management Guideline. The final Guideline was submitted to the Maryland Institute for Emergency Medical Services Systems (MIEMSS) Protocol Review Committee.

Based on the evidence-based guideline, the Maryland Pain Management Protocol (seen below) was modified to include: pain scale assessment, increased dosing, removal of online medical consult requirements to administer narcotics, and focused on the use of morphine (fentanyl was added a year later). After adoption, all Maryland EMS providers were educated and tested on the new protocol over a five-month period.

A study of before and after implementation highlighted that patients meeting trauma criteria had increase in likelihood of receiving morphine and increased dosing (mg/kg). The initial pain scale documentation was slightly improved but not statistically significant.

The following Protocol is the final product. Maryland’s full protocols can be found here. This Pain Management protocol is found on page 101.

PAIN MANAGEMENT

1) Initiate General Patient Care.

2) Presentation
   Pain may be present in many different conditions. Management of pain in the field can help to reduce suffering, make transport easier, and allow the emergency department personnel to initiate specific treatment sooner.

3) Treatment Indications
   a) Measure level of pain. Ask adults to rate their pain on a scale from 0 (no pain) to 10 (worst pain imaginable). Young children can be asked to rate their pain using the FACES scale, which provides 5 levels of pain perception.
   b) Allow patient to remain in position of comfort unless contraindicated.
   c) Monitor airway and vitals signs every 5 minutes for unstable patients

Pain Rating Scale
PAIN MANAGEMENT (Continued)

\(d\) Mild pain

(1) Indications for pain management

(a) Isolated musculoskeletal injuries such as sprains and strains

(b) Pain related to childhood illnesses such as headache, ear infection, and pharyngitis

(2) Contraindications for pain management with acetaminophen

(a) Head injury

(b) Hypotension

(c) Administration of acetaminophen or medications containing acetaminophen within the previous four hours

(d) Inability to swallow or take medications by mouth

(e) Respiratory distress

(f) Persistent vomiting

(g) Known or suspected liver disease

(h) Allergy to acetaminophen

(3) Administer acetaminophen to patients ages 3 years and above judged to be in mild to moderate discomfort (2-5 on FACES scale) by child or parent.

(a) Standard unit dosing of liquid preparation:

(i) Less than 3 years of age: Not indicated

(ii) 3-5 years: Unit dose 160 mg/5 mL

(iii) 6-9 years: TWO unit doses of 160 mg/5 mL each for a total of 320 mg/10 mL

(iv) 10 years and above: FOUR unit doses of 160 mg/5 mL each for a total of 640 mg/20 mL

(b) Obtain on-line medical direction for appropriate dosing for patients who are significantly underweight or overweight

ADMINISTRATION OF ACETAMINOPHEN FOR MILD TO MODERATE PAIN DOES NOT ELIMINATE THE NEED FOR TRANSPORT OF THE PATIENT TO THE HOSPITAL TO RECEIVE A COMPREHENSIVE EVALUATION OF THE CAUSE OF HIS/HER PAIN AND APPROPRIATE DEFINITIVE TREATMENT.
PAIN MANAGEMENT (Continued)

e) Moderate to severe pain
(1) Indications for pain management
(a) The patient reports moderate to severe pain
(b) In the provider’s judgment, the patient will benefit from treatment with an
opioid analgesic, including patients that are MOLST and/or EMS/DNR
patients

(2) Contraindications for pain management
(a) Hypersensitivity or known allergy to the medication
   (morphine or fentanyl)
(b) Uncorrected respiratory distress or hypoxemia refractory to supplemental
   oxygen
(c) Uncorrected hypotension, defined as a persistent systolic pressure < 90
   mmHg.

(3) Administer agent
(a) Morphine IV/IM
   (i) Administer 0.1 mg/kg maximum single dose of 20 mg.
   (ii) Reassess in 5 – 10 minutes. If pain remains moderate to severe, then
        administer a second dose of morphine 0.05 mg/kg to a maximum
        additional dose of 10 mg.
   (iii) Obtain on-line medical direction for additional doses, if required.

   OR
(b) Fentanyl IV/IM/IN
   (i) Administer 1 mcg/kg to a maximum initial dose of 200 mcg.
   (ii) Reassess in 5-10 minutes. If pain remains moderate to severe, then
        administer a second dose of fentanyl 1 mcg/kg to a maximum dose of
        200 mcg.
   (iii) Obtain on-line medical direction for additional doses, if required

(c) Morphine IV/IM
   (i) Administer 0.1 mg/kg to a maximum initial dose of 20 mg.
   (ii) Reassess in 5 – 10 minutes. If pain remains moderate to severe, then
        administer a second dose of morphine 0.05 mg/kg to a maximum
        additional dose of 10 mg.
   (iii) Obtain on-line medical direction for additional doses, if required

   OR
(d) Fentanyl IV/IM/IN
   (i) Administer 1 mcg/kg to a maximum initial dose of 200 mcg.
      Administer at a rate of 0.5 mcg/kg/min.
(ii) Reassess in 5-10 minutes. If pain remains moderate to severe, then administer a second dose of fentanyl 1 mcg/kg to a maximum dose of 200 mcg.

(iii) Obtain on-line medical direction for additional doses, if required.

CHEST PAIN WHICH IS THOUGHT TO BE DUE TO ACUTE CORONARY SYNDROME SHOULD INITIALLY BE MANAGED WITH NITROGLYCERIN. IF PAIN REMAINS REFRACTORY TO NITROGLYCERIN, CONSIDER THE USE OF OPIOID ANALGESIA. AVOID OPIOIDS FOR PATIENTS WITH SUSPECTED EXACERBATION OF CONGESTIVE HEART FAILURE.

USE OPIOID ANALGESIA WITH CAUTION IN THE MANAGEMENT OF THE MULTIPLE TRAUMA PATIENT. OBSERVE FOR EVIDENCE OF HYPOTENSION AND CORRECT AS NEEDED WITH FLUID BOLUSES. REASSESS VITAL SIGNS AFTER ADMINISTRATION OF THE MEDICATION.

USE OPIOID ANALGESIA WITH CAUTION IN THE MANAGEMENT OF PATIENTS WITH ALTERED MENTAL STATUS. OBSERVE FOR RESPIRATORY DEPRESSION AND TAKE STEPS AS NEEDED TO ENSURE A STABLE AIRWAY.

4) Repeat - Measure level of pain and monitor the patient’s level of pain during subsequent treatment and transport.

5) Transport

PATIENTS RECEIVING A NEW OPIOID (EITHER WITHIN 1 HOUR OR GREATER THAN 1 DOSE WITHIN ANY TIME FRAME) FROM ALS OR BY THE SENDING FACILITY MUST BE TRANSPORTED BY ALS.

6) Continue General Patient Care

Return to Guideline Information

Return to Toolkit Contents
2. References

These are references relevant to this project. They include information regarding the evidence-based guideline development process, pain medication delivery and effectiveness in both the emergency department and in prehospital care, the safe use of narcotic analgesics for the treatment of traumatic pain, and pain scale usage.

The articles are divided into "Essential" reading (those articles that we feel are most important for individuals involved in the training and use of this EBG to be familiar with), “Recommended” reading (those articles which act as a foundation for the understanding of prehospital pain management), and “Supplemental” reading (those articles that provide background and more in-depth information regarding this topic).

**Essential Articles**

**Recommended Articles**

- Prehospital Pain Management – Background Information
- Evidence for the Need of Prehospital Pain Control
- Barriers to Offering Pain Control
- Safety of Narcotics in the Prehospital Environment
- Evidence Behind the Intra-Nasal Route of Application
- Evidence for the Use of Pain Scales in Adults and Pediatrics

**Supplemental Articles**

- Evidenced-Based Guidelines in EMS
- Evidence-Based Practice
- Evidence for the Need of Prehospital Pain Control
- Barriers to Offering Pain Control
- Safety of Narcotics in the Prehospital Environment
- Evidence Behind the Intra-Nasal Route of Application
- Evidence for the Use of Pain Scales in Adults and Pediatrics
- GRADE Process
Essential Articles


Full Article


Abstract


Abstract | Full Article

Recommended Articles

Prehospital Pain Management – Background Information


Full Article

Evidence for the Need of Prehospital Pain Control


Abstract | Full Article

Barriers to Offering Pain Control


Abstract | Full Article


Abstract
Safety of Narcotics in the Prehospital Environment


Abstract | Full Article

Evidence Behind the Intra-Nasal Route of Application


Abstract

Borland ML. Intranasal Fentanyl: A Novel Method of Analgesia Delivery in Children. Princess Margaret Hospital for Children, Western Australia.

Presentation


Abstract

Evidence for the Use of Pain Scales in Adults and Pediatrics


Abstract


Abstract


Abstract | Full Article

↩ Return to References
Supplemental Articles

Evidenced-Based Guidelines in EMS

Abstract | Full Article

Abstract | Full Article

Abstract | Full Article

Full Article

Evidence-Based Practice

Abstract

Abstract | Full Article

Abstract | Full Article

Presentation
Evidence for the Need of Prehospital Pain Control


Abstract (page 41)


Abstract | Full Article


Abstract

Barriers to Offering Pain Control


Abstract | Full Article

Safety of Narcotics in the Prehospital Environment


Abstract | Full Article

Evidence Behind the Intra-Nasal Route of Application


Abstract


Abstract | Full Article

Evidence for the Use of Pain Scales in Adults and Pediatrics


Abstract | Full Article


Abstract | Full Article
Abstract

Abstract | Full Text

Abstract | Full Text

Abstract

Abstract

Abstract

Abstract

Abstract

GRADE Process

Abstract | Full Article

Abstract | Full Article

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3. Talking Points / FAQs

Q: How is this project funded?

A: The Statewide Implementation of a Prehospital Care Guideline project was awarded to NASEMSO by the National Highway Safety Traffic Administration (NHTSA) through an open, competitive application process. Funding for the project is provided by NHTSA with supplemental funding from the Emergency Medical Services for Children Program (Health Resources and Services Administration).

 ⇐ Return to FAQs

Q: What is the heritage of this idea?

A: The Statewide Implementation of Prehospital Care Guidelines project was developed based on recommendations from the Institute of Medicine (IOM), the National EMS Advisory Council (NEMSAC) and the National EMS Assessment and as a logical next step to previously funded projects sponsored by the Federal Interagency Committee on EMS (FICEMS). The National Evidence-Based Guideline Model Process, a comprehensive model for the development and implementation of prehospital evidence-based guidelines (EBGs),
has been approved by both FICEMS and NEMSAC. A short history of the EBG Model Process, including a schematic diagram, can be found here.

The Statewide Implementation of Prehospital Care Guidelines project is proposed to further test the dissemination and implementation phases of the EBG Model Process and to provide evidence to support further evaluation and refinement of the model. While not prescriptive, the EBG Model Process is intended to provide a framework for the comprehensive integration of the highest quality medical evidence into the everyday practice of prehospital care and provider education.

The Federal Interagency Committee on EMS (FICEMS), in partnership with NEMSAC, has sponsored the development of a National EBG Model Process. Preliminary findings from three separate studies that have used the EBG Model Process have identified a need for additional resources to support the dissemination and implementation phase of the process.

**IOM Recommendation:**
In 2007 the Institute of Medicine’s Committee on the Future of Emergency Care recommended that “the National Highway Traffic Safety Administration, in partnership with professional organizations, convene a panel of individuals with multidisciplinary expertise to develop evidence-based model prehospital care protocols for the treatment, triage, and transport of patients.” (page 6)

**2011 National EMS Assessment Recommendations:**
The 2011 National EMS Assessment included recommendations from an expert panel selected in consultation with the National Association of State EMS Officials. The panel recommended that, “Statewide protocol implementations should be a goal for the future to standardize education, training, care, and evaluation.”

**NEMSAC Recommendation:**
In May 2012, NEMSAC recommended to NHTSA that “organizations developing evidence-based guidelines (EBGs) should form partnerships with EMS organizations, State and local EMS agencies, as well as EMS provider agencies in order to assist in decreasing the time to implementing EBGs in the field. Such organizations should also develop implementation toolkits or training curricula to ensure that the EBG is incorporated into providers’ clinical practice.”

↩️ [Return to FAQs](#)
Q: What is an evidence-based guideline (EBG)?

A: Multidisciplinary teams develop evidence-based guidelines (EBGs) by using rigorous methods to appraise scientific evidence. The EBG approach emerged from the discipline of evidence-based medicine (EBM), 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. Evidence-based guidelines 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)

↩ Return to FAQs

Q: What is the evidence supporting the concept of EBGs and more standardized prehospital care?

A: 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.

↩ Return to FAQs

Q: Which states are participating in this project?

A: Arizona, Idaho, Kansas, Tennessee, and Wyoming

↩ Return to FAQs
Q: Why is prehospital pain management important?
A: Severe pain is an emergency! Twenty percent (20%) of prehospital calls are for painful conditions and failure to treat pain in the prehospital setting can delay treatment in the emergency department by up to 90 minutes. EMS can provide the needed medication faster. Additional benefits include:

- Global Benefits
  - Alignment with IOM and Joint Commission pain management suggestions
  - Overall improved patient satisfaction in the care provided

- Immediate Benefits
  - Improvement of patient comfort
  - Improvement in patient vital signs
  - Improved patient assessment
  - Improved physiology
    - Example: In conditions such as chest wall injuries, control of pain improves respiratory effort

- Long-Term Benefits
  - Military research reveals decreased incidence of Post Traumatic Stress
  - Decreased long-term sequel in children
    - Proactive and early pain treatment may prevent the development of hypersenstized pain pathways in patients who have repeated pain stimuli

Q: What are the benefits of prehospital pain management?
A: There are immediate as well as long term benefits to early and aggressive pain management. Specific to EMS, the immediate benefits include improvement of patient comfort (happier patients), which in turn improves patient transport, improvement in vital signs and improved patient physiology. All of these effects may lead to improved patient assessment by the EMS provider as well as “down stream” health care providers.

Long-term benefits of early and aggressive pain control continue to be discovered but in military settings include decreases in post-traumatic stress disorder and in the pediatric population include decreased long-term pain sensitization.
Q: Do prehospital providers do a good job with prehospital pain management?
A: Prehospital providers are interested in treating pain, but there are multiple barriers in the prehospital setting for accomplishing this. However, education on pain assessment and treatment has shown to improve both pain score documentation and non-pharmacologic treatment.

⇒ Return to FAQs

Q: What are the barriers to treating pain in the prehospital environment?
A: There are a many barriers to pain management in the prehospital environment:

General Barriers*:
- Concern about serious side effects
- Perception of possible drug seeking
- Inability or difficulty in assessing pain
- Unfamiliarity with medication dosing
- Criticism by ED staff
- Need for online medical control; no standing orders
- Perception of insufficient need to due short transport time
- Low pain score (perceived lack of need)

*Resource information can be found here.

Barriers Magnified in Pediatrics:
- Higher anxiety among EMS providers
- Variable beliefs around importance of treating pain
- Difficulty obtaining IV access
- Inadequate education and training
  - Dosing recommendations
  - Pain scale assessment for younger patients
- Lack of pediatric specific protocol

⇒ Return to FAQs
**Q:** How can barriers to treating pain in the prehospital environment be overcome?

A: These barriers can be overcome in a few different ways:

- Offline protocols (standing orders, including pediatric patients)
- Training (specific to assessing)
- Ability to administer pain medication without the need to first start an IV in children
- Medical support and oversight
- Coordination with and education of receiving facilities

もらえ(Return to FAQs)

**Q:** How will I be able to give feedback about this project?

A: Feedback can be given to your state project champion. Additionally, a feedback form is posted on the Project webpage, located here.

もらえ(Return to FAQs)

**Q:** What will be the cost of the involvement in this program to State EMS Offices and EMS Agencies?

A: It is difficult to determine what the actual costs will be to State EMS Offices and EMS Agencies. The Project Team will try to minimize costs as much as possible. Tracking the program’s costs is an important consideration of the project. Your feedback will be invaluable in determining the overall cost of disseminating and implementing an evidence-based guideline.

もらえ(Return to FAQs)

mailto(Return to Toolkit Contents)
4. Implementing a Statewide Guideline – How To

Successful State Practices

*The NASEMSO Medical Directors Council provided the information for this section.*

- Protocol Adoption Incentive Ideas
- Protocol Dissemination and/or Implementation Activity Ideas
- Dissemination / Implementation Educational Activities Ideas
- Resources for the State Dissemination, Education or Implementation Process
- State Dissemination, Education, and/or Implementation Process Strategy Ideas
- Barriers to State Implementation in the Dissemination, Education, or Implementation Process

Protocol Adoption Incentive Ideas

- Continuing education credits made available for participation in training
- Mandatory protocol education (for both initial roll-out and updates)
- Required protocols exam
- Mandatory state-wide protocols
  - Protocols set scope of practice & medications
  - Loss of license (self and/or service) if:
    - protocol isn’t adopted
    - protocol update training doesn’t occur

*Return to Successful Practices*
Protocol Dissemination and/or Implementation Activity Ideas

Use of Online Resources

- Post protocols on state, regional, local websites
  - Keep website current with protocol updates
  - Keep a document updated with summary of changes
- Post trainings on a learning management system (LMS) with an exam
  - Orientation to protocol
  - Train-the-trainer
  - General training
- Make training free of charge
- Make model guidelines available online

Protocol Development

- Develop protocols with input from stakeholders
  - Protocol Development Committee with statewide membership
  - Allow for input from providers AND agencies
- Allow several committees/stakeholders (with widespread representation) to review drafts
- Produce a "change" document, summarizing protocol changes and rationale, make publicly available
- Advertise release of protocols
- All protocols must be approved by an EMS Office Paramedic; through process, services are informed of sample guidelines

Training/Education

- Create a training program; design based on degree of protocol changes:
  - Train-the-trainer presentation/videos with EMS educator involvement
  - Online training
- Use of learning management systems (LMS) to disseminate and track training
- Allow 3-6 month period for training before any protocol changes become effective
- Quality control on messaging (use a small core set of instructors)
- Regular presentations at EMS Instructors conferences (twice per year) allow representatives from all agencies to hear new information (basically a train-the-
trainer). Also, special regional updates on an ad hoc basis statewide, when new programs or initiatives are rolled out.

- State-wide protocols roll-out designed and implemented in conjunction with the EMS agencies via a variety of mechanisms (class room, on-line, video, etc.)
- Mandatory protocol education every 2 years

Return to Successful Practices

Dissemination / Implementation Educational Activities Ideas

State EMS Medical Directors determined that the following educational activities were useful in their states (either in the dissemination or implementation process): (n=15)

- On-line didactics/LMS
- State generated educational information
- Didactic presentation at conferences / training sessions
- CME
- Train-the-trainer sessions

Additional Comments

- Direct communication/word of mouth
- Mandatory refreshers, not CME hours
- The migration to on-line learning management system has dramatically improved the effectiveness and ease of training with standardized training

Return to Successful Practices
State EMS Medical Directors determined that the following educational activities NOT useful in their states (either in the dissemination or implementation process): (n=13)

Additional Comments

- Too many trainers in too many locations leads to multiple interpretations of protocols
- Individual trainers have differences of understanding and can lead to misinformation

☞ Return to Successful Practices
Resources for the State Dissemination, Education or Implementation Process

State EMS Medical Directors determined that the following resources were useful in their states (for the protocol/guideline dissemination, education, or implementation process): (n=16)

![Bar chart showing the number of states using each resource]

Additional helpful resource ideas:

- Resources need to match training, QA/QI and protocol changes or reinforcement
- Minor changes do not necessary require the same training efforts as significantly new protocols or new procedures
- State medical director’s interaction with the Regional Physician Advisory Boards
- On-line availability of education programs

♫ Return to Successful Practices
State Dissemination, Education, and/or Implementation Process Strategy Ideas

State EMS Medical Directors determined that the following strategies were helpful in their states: (n=10)

**Additional helpful strategy ideas:**

- Non-mandated protocols
  - more may adopt voluntarily (than you expect)
- Wide distribution of draft protocols (statewide) for comment and feedback before making them final
- Town hall meetings used to introduce the change in education standards (subject matter doesn’t have to be all about the protocols)

↩️ Return to Successful Practices
Barriers to State Implementation in the Dissemination, Education, or Implementation Process

State EMS Medical Directors indicated the following barriers in their states: (n=11)

Additional identified barriers:

- Cost of investing in a learning management system to deliver protocol education
- Lack of local medical director involvement, due to:
  - Funding
  - Authority lies with local medical direction
- Failure of State Fire Service (no medical providers involved) to implement BLS Medical Protocols due to various BLS provider "protective politics" requiring the involvement of the Governor
- Lack of resources to implement protocol changes (cost to monitor, additional equipment, training, medications, etc)
- EMS provider procrastination to meet timeline for completion of the protocol update
- The local EMS medical directors have authority over their protocols. As such, the state can only provide EMS clinical guidelines that are optional to adopt. The only mandated protocol that we currently have our state nerve agent guideline which only becomes a mandatory protocol during a CHEMPACK deployment.
- Regional resistance – know when 2% of the call volume doesn’t necessitate the fight for 100% acceptance
5. Educational Resources

Agency/Provider Training

Skills Testing

Scenario #1: Pediatric Long Bone Fracture
Scenario #2: Pediatric Burn
Scenario #3: Adult Pelvic Fracture
Scenario Checklist

Pain Assessment & Treatment Self-Efficacy Tool

Hospital Training

Pain Scale Education Resources

Additional Training Resources

Agency/Provider Training

The Project Team has created an interactive training program on the Prehospital Protocol for the Management of Acute Traumatic Pain Guideline. The training includes a pre- and post-test and should take no longer than an hour to complete.

The training PowerPoint with speaker notes is located on the NASEMSO Statewide Implementation of an EBG Project webpage, and can be accessed here. Additionally, each state will have a version posted to their individual learning management systems.

Terminal Objective

 Appropriately manage acute traumatic pain utilizing the prehospital guideline.

Enabling Objectives

Cognitive

- Identify trauma patients who are candidates for pharmacologic pain management.
- Describe the age appropriate pain scale to assess the pain level of traumatic patient.
- Explain the narcotic analgesics used to relieve moderate to severe pain in the trauma patient.
- Identify the serious adverse effects of pain medication.
• Identify the benefits of pain medication.
• Identify the patients that are excluded from the pain management protocol.
• Discuss the barriers to pain management in the pediatric patient and describe solutions to the barriers.
• Discuss the barriers to pain management in the adult patient and describe solutions to the barriers.

Affective
• Recognize the need to manage pain in the prehospital setting when caring for a trauma patient.
• Appreciate the beneficial effects of patient care and outcomes as a result of properly managing pain.

Pre- and Post-Tests
A pre- and post-test are available for agency use and have been provided to each state participating in the project.

 ACPI Return to Educational Resources
Skills Testing

The following scenarios are provided for those states or agencies that wish to deliver simulation-based learning opportunities to their prehospital personnel. Each scenario includes a skills checklist for proctor use.

**Scenario #1: Pediatric Long Bone Fracture**

**Scenario #2: Pediatric Burn**

**Scenario #3: Adult Pelvic Fracture**

**Scenario Checklist**

**Scenario #1: Pediatric Long Bone Fracture**

**Scenario Overview**
This prehospital training scenario describes a pediatric patient with orthopedic trauma requiring pain management. Hannah/Joey Johnson has fallen out of a tree and sustained a long bone fracture.

**Learning Objectives**

**Cognitive**
1. Recognize behavioral distress due pain
2. Identify appropriate age-based pain scale to use
3. Recognize contraindications to treatment with opioid narcotics in prehospital setting

**Technical**
1. Assessing level of GCS
2. Assessing pain score with age appropriate scale
3. IV access

**Behavioral:**
1. Teamwork including closed-loop communication
2. Gathering of critical resources-calling for additional help for critically ill patient
Patient Description

History (Medical, Surgical, Social)

Hannah/Joey is a 6 to 8-year-old female/male, previously healthy with no significant past medical history other than ADHD. Hannah/Joey was playing at a local park and climbing trees with other children. The mother called 911 because Hannah/Joey has a deformed arm after falling from a tree and she/he has never been hurt like this before. She/he has been screaming in pain since the fall occurred. No known head injury, no loss of consciousness associated with the fall. Seemed to have fallen on an outstretched hand.

On Arrival

- Vital Signs
  - HR 120
  - RR 25
  - T 98.9
  - BP 110/70
  - SaO2 on arrival RA 100%

- Child is crying and moaning in pain, rolling around holding arm
  - Facilitator Note: this could be live actor, or low-fidelity manikin with someone moaning and crying in pain (through a headset)

- Arm
  - Bruised
  - Swollen
  - Has good perfusion in the finger tips

Target Trainees (Learners)

- EMS training officers
- EMS educators
- EMS providers

Scenario Set-Up

Simulator/Actor

- Mother
  - Live actor
- Child:
  - Live actor
  - Low fidelity manikin with headset
**Equipment**

- Oxygen delivery
  - Nasal cannula
  - Simple face mask
  - Non-rebreather masks (various sizes)
- Airway management equipment
  - Laryngoscope
  - ETT
  - Suction
  - BVM
  - Oropharyngeal airway
  - Nasal trumpet
- Length-based tape
- IV/IN/IO modality
- Tape to secure patient to backboard
- Trauma shears
- Medications
  - Morphine
  - Fentanyl
  - Normal saline
- Pain assessment scales
  - FLACC or CHEOPS
  - FPS-R or Wong Baker FACES®
  - Numeric Rating Scale
- Moulage
- Splinting equipment
- C-collar (optional backboard)
- Monitors to demonstrate desaturations, tachycardia (cardiac leads, pulse oximetry, waveform capnography)

**Debriefing**

- Prehospital Protocol for the Management of Acute Traumatic Pain
Baseline Vitals: HR 120; RR 25; T 98.9; BP 110/70; SaO₂ on arrival RA 100%
Team performs patient assessment, including mental status

GCS is 15, patient is crying in pain
Team assesses pain score with appropriate age-based tool

Pain score is 8 on FPS-R scale
Team attempts splinting and movement to ambulance

Patient still crying in pain, cannot be splinted or moved to ambulance due to discomfort
Team measures the patient with a length based tape

Patient measures to 25 kg
Team identifies weight and appropriate dose of opioid analgesia

Administers pain medication

No atomizer available?
Obtain IV access & administer fentanyl or morphine

Carries mucosal atomizer?
Administer IN fentanyl

If successful dose, patient reports improvement in pain
Team re-assesses pain score in 5 minutes

Pain is now 6, still crying and moaning in pain, cries during bumps in ambulance
Team administers 2nd dose, re-dosed at half the original dose
**Expected Scenario Interventions**
1. Recognize significant distress due to pain
2. Review contraindications to treatment
3. Accurately assess GCS and pain score in patient
4. Appropriately measure with length based tape
5. Attempt IV access, if successful, administer IV dose of appropriate medication
   a. If unsuccessful, recognize intranasal route an option
6. Administer correct dose of medication
7. Reassess pain score in 5 minutes
8. Monitor for serious adverse events: rash, decreased respiratory effort

**Expected Endpoint**
- Improved pain score
- Appropriately splinted per protocol
- Uneventful transport to medical facility

**Distracters**
- None

**Optional Challenges for Higher Level Learners**
- Parent becomes agitated and upset about child’s pain not being managed

**Videotaping Guidelines**
- Standard

**Debriefing Points**

**Cognitive**
1. Recognize behavioral distress due pain
2. Identify appropriate age-based pain scale to use
3. Recognize contraindications to treatment with opioid narcotics in prehospital setting

**Technical**
1. Assessing level of GCS
2. Assessing pain score with age appropriate scale
3. IV access

**Behavioral**
1. Teamwork including closed-loop communication
2. Gathering of critical resources-calling for additional help for critically ill patient

♫ Return to Skills Testing
Scenario #2: Pediatric Burn

Scenario Overview

This prehospital training scenario describes a pediatric patient with burns requiring pain management. April/Omar Johnson is 12 months old. She/he was cruising around the kitchen and pulled hot soup off a table onto her/his face, chest, and arms.

Learning Objectives

Cognitive:
1. Recognize behavioral distress due pain
2. Identify appropriate age-based pain scale to use
3. Recognize contraindications to treatment with opioid narcotics in prehospital setting

Technical:
1. Assessing level of GCS
2. Assessing pain score with age appropriate scale
3. IV access

Behavioral:
1. Teamwork including closed-loop communication
2. Gathering of critical resources-calling for additional help for critically ill patient

Patient Description:

History (Medical, Surgical, Social)

April/Omar is a 12 month old female/male, previously healthy with no significant past medical history other than 1 prior febrile seizure. April/Omar climbed up on a chair to the kitchen table and accidently knocked over a bowl of soup onto her/himself. The mother called 911 because she was concerned about the severity of the burn. She/he has been screaming in pain since the fall occurred. No other known injuries noted by the mother.

On Arrival

- Vital Signs
  - HR 120
  - RR 25
  - T 98.9
  - BP 110/70
- \textit{SaO}_2 on arrival RA 100\%Child is crying, kicking legs, flailing arms
  - \textit{Facilitator Note:} this can be done with a high-fidelity manikin
Initial Assessment

- Facial and chest wall burns
  - Facilitator Note: burns indicated through moulage
- Moving all extremities equally
- No stridor on examination

Target Trainees (Learners)

- EMS training officers
- EMS educators
- EMS providers

Scenario Set-Up

Simulator/Actor

- Mother (live actor)
- Infant manikin (high-fidelity)
  - Crying
  - Moving legs

Equipment

- Oxygen delivery
  - Nasal cannula
  - Simple face mask
  - Non-rebreather mask (various sizes)
- Airway management equipment
  - Laryngoscope
  - ETT
  - Suction
  - BVM
  - Oropharyngeal airway
  - Nasal trumpet
- Length-based tape
- IV/IN/IO modality
- Medications:
  - Morphine
  - Fentanyl
- Pain assessment scales
  - FLACC or CHEOPS
  - FPS-R or Wong Baker FACES®
  - Numeric Rating Scale
- Tape to secure patient to backboard
- Moulage to simulate burns
- Splinting equipment
- Burn care:
  - Saline
  - Gauze
- Trauma shears
- Monitors to demonstrate desaturations, tachycardia
  (cardiac leads, pulse oximetry, waveform capnography)
Debriefing
- Prehospital Protocol for the Management of Acute Traumatic Pain

Scenario Logistics

Expected Scenario Flow

Baseline Vitals: HR: 120, RR 25, T: 98.9, BP: 110/70, SaO₂ on arrival RA 100%
Team performs patient assessment, including mental status

GCS is 15, patient is crying in pain
Team assesses pain score with appropriate age-based tool

Pain score is 8 on FLACC scale
Team begins to attempt to perform burn care

Patient still crying in pain, cannot perform burn care due to discomfort
Team measures with length based tape

Patient measures to 10 kg
Team identifies weight and appropriate dose of opioid analgesia

Administers pain medication

No atomizer available?
Obtain IV access and administers morphine or fentanyl

Carries mucosal atomizer?
Administer IN fentanyl

If successful dose, patient seems calmer
Team re-assesses pain score in 5 minutes

Pain is now 6 (FLACC)
Team administers 2nd dose, re-dosed at half the original dose
Expected Scenario Interventions
1. Recognize significant distress due to pain
2. Review contraindications to treatment
3. Accurately assess GCS and pain score in patient
4. Appropriately measure with length based tape
5. Attempt IV access, if successful, administer IV dose of appropriate medication
   o If unsuccessful, recognize intranasal route an option
6. Administer correct dose of medication
7. Reassess pain score in 5 minutes
8. Monitor for serious adverse events: rash, decreased respiratory effort

Expected Endpoint
- Improved pain score
- Appropriately splinted per protocol
- Uneventful transport to medical facility

Distracters
- None

Optional Challenges for Higher Level Learners
- Parent becomes agitated and upset about infant’s pain not being managed

Videotaping Guidelines
- Standard

Debriefing Points

Cognitive
1. Recognize behavioral distress due pain
2. Identify appropriate age-based pain scale to use
3. Recognize contraindications to treatment with opioid narcotics in prehospital setting

Technical
1. Assessing level of GCS
2. Assessing pain score with age appropriate scale
3. IV access

Behavioral
1. Teamwork including closed-loop communication
2. Gathering of critical resources-calling for additional help for critically ill patient

⇦ Return to Skills Testing
Scenario #3: Adult Pelvic Fracture

Scenario Overview

This prehospital training scenario describes an adult patient with a non-displaced pelvic fracture burns requiring pain management. Levi/Jennie is 25-years-old. She/he was involved in a rollover accident while riding an ATV on local forest trails.

Learning Objectives

Cognitive
1. Recognize behavioral distress due pain
2. Identify appropriate age-based pain scale to use
3. Recognize contraindications to treatment with opioid narcotics in prehospital setting

Technical
1. Assessing level of GCS
2. Assessing pain score with age appropriate scale
3. IV access, use of mucosal atomizer device

Behavioral
1. Teamwork including closed-loop communication
2. Gathering of critical resources-calling for additional help for critically ill patient

Patient Description:

History (Medical, Surgical, Social)
Levi/Jennie is a 25-year-old male/female, previously healthy with no significant past medical history, who was riding an ATV when he/she went over a log on the trail that they did not see and rolled over. The ATV rolled on top and then off him/her. He/she is in significant pain and is lying on the ground with a friend who watched the event. He/she was wearing a helmet, remembers the entire event, and there was no loss of consciousness at the time of the event. The friend present can attest to all of the information.

On arrival
- Vital Signs
  - HR 85
  - T 98.9
  - SaO₂ on arrival RA 100%
  - RR 18
  - BP 120/70
- Patient is moaning, verbalizing significant pain in right hip
  - Facilitator Note: This can be done with high fidelity manikin
Initial Assessment
- Significant bruising over the pelvis, unable to sit up and/or walk
- Alert and oriented x3
- Pelvis is stable to palpation
- No abdominal tenderness on exam

Target Trainees (Learners)
- EMS training officers
- EMS educators
- EMS providers

Scenario Set-Up

Simulator/Actor
- Friend (live actor)
- Patient (high-fidelity OR live actor)
  - Moaning
  - Able to verbalize

Equipment
- Oxygen delivery
  - Nasal cannula
  - Simple face mask
  - Non-rebreather mask (various sizes)
- Airway management equipment
  - Laryngoscope
  - ETT
  - Suction
  - BVM
  - Oropharyngeal airway
  - Nasal trumpet
- IV/IN/IO modality
- Backboard, straps, & C-collar

Debriefing
- Prehospital Protocol for the Management of Acute Traumatic Pain

- Trauma shears
- Medications
  - Morphine
  - Fentanyl
  - Normal saline
- Pain assessment scales
  - FLACC or CHEOPS
  - FPS-R or Wong Baker FACES®
  - Numeric Rating Scale
- Moulage to simulate bruising
- Monitors to demonstrate desaturations, tachycardia (cardiac leads, pulse oximetry, waveform capnography)
Scenario Logistics

Expected Scenario Flow

Baseline Vitals: HR: 85, RR 18, T: 98.9, BP: 120/70, SaO$_2$ on arrival RA 100%

Team performs patient assessment, including mental status

GCS is 15, patient is moaning/yelling in pain

Team assesses pain score with appropriate age-based tool

Pain score is 8 on NRS scale

Team asks for patient weight

Patient advises their weight is 155 pounds

Team identifies and appropriate dose of opioid analgesia

Patient still complaining of pain, cannot be moved to ambulance due to discomfort

No atomizer available? Obtain IV access and administers morphine or fentanyl

Carries mucosal atomizer? Administer IN fentanyl

If successful dose, patient seems calmer

Team re-assesses pain score in 5 minutes

Pain is now 6 (NRS)

Team administers 2$^{nd}$ dose, re-dosed at half the original dose
**Expected Scenario Interventions**

1. Recognize significant distress due to pain
2. Review contraindications to treatment
3. Accurately assess GCS and pain score in patient
4. Attempt IV access if IN administration not possible
5. Administer IN Fentanyl if within agency’s scope of practice
6. Administer correct dose of medication
7. Reassess pain score in 5 minutes
8. Monitor for serious adverse events: rash, decreased respiratory effort

**Expected Endpoint**

- Improved pain score
- Appropriately immobilized per protocol
- Uneventful transport to medical facility

**Distracters**

- None

**Videotaping Guidelines**

- Standard

**Debriefing Points**

**Cognitive**

1. Recognize behavioral distress due pain
2. Identify appropriate age-based pain scale to use
3. Recognize contraindications to treatment with opioid narcotics in prehospital setting

**Technical**

1. Assessing level of GCS
2. Assessing pain score with age appropriate scale
3. IV access

**Behavioral**

1. Teamwork including closed-loop communication
2. Gathering of critical resources-calling for additional help for critically ill patient

*Return to Skills Testing*
Scenario Checklist

**Cognitive Objectives**

- Recognize behavioral distress due to pain
- Identify appropriate age-based pain scale to use
- Recognize contraindications to treatment with opioid narcotics in prehospital setting

**Technical Objectives**

- Assessing level of GCS
- Assessing pain score with age appropriate scale
- IV access

**Behavioral Objectives**

- Teamwork including closed-loop communication
- Gathering of critical resources-calling for additional help for critically ill patient

**Expected Scenario Interventions**

- Recognize significant distress due to pain
- Review contraindications to treatment
- Accurately assess GCS and pain score in patient
- Appropriately measure with length based tape
- Attempt IV access,
  - If successful, administer IV dose of appropriate medication
  - If unsuccessful, recognize intranasal route an option
- Correctly calculate appropriate dose of medication based on weight and route
- Administer correct dose of medication
- Reassess pain score in 5 minutes
- Monitor for serious adverse events: rash, decreased respiratory effort

**Expected Endpoint**

- Improved pain score
- Appropriate interventions per protocol
- Uneventful transport to medical facility

Return to Skills Testing

Return to Educational Resources
Pain Assessment & Treatment Self-Efficacy Tool

Date: __________

State License/Certification #: ______________________

Provider Agency: _________________________________

Gender: M   F

Are you a parent?  Yes  No

Please indicate your provider level: _________

How many years have you been an EMS provider? __________

How many total runs do you see per 24-hour shift? ______ runs

How many pediatric runs do you see per 24-hour shift? ______ runs

How many runs per 24-hour shift require advanced airway management? _____ runs

Directions:

This is not a test and there is no right or wrong answer. Please indicate for each of the following statements how CONFIDENT you feel in your ability to do each of the listed activities.

For example, if you are certain that you can complete the task, circle 100. If you do not feel that you can complete the task, circle 0. Remember to rate what you expect you could do if you were asked to perform the tasks NOW. All of your responses are anonymous and for educational purposes only.

Glossary:

CHEOPS: Children's Hospital of Eastern Ontario Pain Scale

FLACC: Faces, Legs, Activity, Cry, Consolability Behavioral Scale

FPS: Faces Pain Scale

FPS-R: Faces Pain Scale Revised

NRS: Numeric Rating Scale
Pediatric Observational (FLACC/CHEOPS) Scenario

You arrive on scene at a street fair where a 3-year old child appears to have a deformed arm and is crying.

Circle the amount of confidence you have to:

<table>
<thead>
<tr>
<th>Task</th>
<th>Scale</th>
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<tbody>
<tr>
<td>Assess the Glasgow Coma Scale (GCS) score for the patient</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
</tr>
<tr>
<td>Utilize the Guideline for the patient</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
</tr>
<tr>
<td>Assess the pain score for the patient using FLACC or CHEOPS</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
</tr>
<tr>
<td>(pain scale choice will be state/agency dependent)</td>
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<tr>
<td>Obtain IV access in the patient</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
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<tr>
<td>Find the correct pain medication dose for the patient</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
</tr>
<tr>
<td>Administer pain medication for the patient through an IV (assuming that an IV is in place)</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
</tr>
<tr>
<td>Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
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<tr>
<td>Use chosen pain scale to reassess the patient’s pain score after pain medication administration</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
</tr>
<tr>
<td>Identify adverse events after pain medication administration</td>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
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Example: Appropriately put a 3½ year old on a longboard. 0 10 20 30 40 50 60 70 80 90 100
Scale

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**Example:** Appropriately put a 3½-year old on a longboard.

Pediatric Self-Report (FPS, FPS-R, Wong-Baker FACES®) Scenario

You arrive on scene at a playground where an 8-year old child appears to have a deformed forearm and is crying.

**Circle the amount of confidence you have to:**

- Assess the Glasgow Coma Scale (GCS) score for the patient
- Utilize the Guideline for the patient
- Assess the pain score for the patient using FPS, FPS-R or Wong-Baker FACES® (choice will be agency dependent)
- Obtain IV access in the patient
- Find the correct pain medication dose for the patient
- Administer pain medication for the patient through an IV (assuming that an IV is in place)
- Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)
- Use chosen pain scale to reassess the patient’s pain score after pain medication administration
- Identify adverse events after pain medication administration

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### Example: Appropriately put a 3½-year old on a longboard.

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## Pediatric Self-Report (NRS) Scenario

You arrive on scene at a skateboarding park where a 14-year old appears to have a deformed forearm and is crying out in pain.

### Circle the amount of confidence you have to:

<table>
<thead>
<tr>
<th>Assess the Glasgow Coma Scale (GCS) score for the patient</th>
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<tr>
<td>Utilize the Guideline for the patient</td>
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<tr>
<td>Assess the pain score for the patient using NRS</td>
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<tr>
<td>Obtain IV access in the patient</td>
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<td>Find the correct pain medication dose for the patient</td>
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<td>Administer pain medication for the patient through an IV (assuming that an IV is in place)</td>
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<td>Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)</td>
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<tr>
<td>Use NRS to reassess the patient’s pain score after pain medication administration</td>
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<td>Identify adverse events after pain medication administration</td>
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**Example:** Appropriately put a 3½-year old on a longboard.

0 10 20 30 40 50 60 70 80 90 100

**Adult Self-Report (NRS) Scenario**

*You arrive on scene in a local forest where a 23-year old fell had an ATV accident and is lying on the ground crying out in pain.*

**Circle the amount of confidence you have to:**

- Assess the Glasgow Coma Scale (GCS) score for the patient
- Utilize the Guideline for the patient
- Assess the pain score for the patient using NRS
- Obtain IV access in the patient
- Find the correct pain medication dose for the patient
- Administer pain medication for the patient through an IV (assuming that an IV is in place)
- Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)
- Use chosen pain scale to reassess the patient’s pain score after pain medication administration
- Identify adverse events after pain medication administration

0 10 20 30 40 50 60 70 80 90 100

*Return to Educational Resources*
Hospital Training

A number of studies suggest that an EMS provider's relationship and interactions with the receiving Emergency Department staff have significant impact on the EMS provider's actions. This training module is directed toward Emergency Medicine nurses and physicians in an effort to first, inform them of the project and second, discuss the safety, efficacy and value of prehospital pain management.

Ultimately, this training module attempts to build an alliance between the project's goals and hospital level providers in an effort to create advocacy for the project's goals at the hospital level. Finally, this training program offers hospital providers mechanisms of feedback regarding the program by identifying state-specific project allies. This training can be accessed from the Project webpage, located here.

Training Outline

1) Project introduction
2) Current state of pain control for pediatrics in EMS
3) Value of pain control in the pre-hospital environment
4) Barriers to pre-hospital pain control
5) Safety of EMS opioid use
6) Details of the Prehospital Protocol for the Management of Acute Traumatic Pain Guideline
7) Importance of support and interaction between the hospital and pre-hospital providers
8) Project information and state specific feedback mechanisms

Return to Educational Resources
Pain Scales

The Pain Scales section of this Toolkit included information on how to use most of the pain scales referenced in the *Prehospital Protocol for the Management of Acute Traumatic Pain Guideline*. Click on the links below to see each of the pain scale training sections.

If a state chooses not to dictate which pain scale agencies should use, it is recommended that individual agencies determine which pain scale their EMS providers should learn.

- FLACC
- CHEOPS
- FPS
- FPS-Revised
- Wong Baker FACES
- NRS

Additional research information regarding these pain scale selections can be found in the References section.

*Return to Educational Resources*

Additional Training Resources

- In 2013, a podcast on *Prehospital Pain Management in Children* was released. Developed by the University of Texas Southwestern through an EMS for Children Targeted Issue grant, this video focuses on the key elements of pain psychology, pain assessment, and pain management interventions for injured children experiencing pain.

- Toni Gross, MD, MPH, Clinical Associate Professor of Child Health at the University of Arizona College of Medicine-Phoenix, developed a “Tools for Assessing Pediatric Pain in the Prehospital Setting” PowerPoint. This resource can be accessed [here](#).

*Return to Educational Resources*
6. Evaluation Resources

The initial evaluation phase of the project will occur concurrently with the dissemination and implementation phases of the project in an effort to identify and mitigate difficulties and barriers as they occur. Individual evaluation plans have been created for each state participating in the project.

Evaluation Components

Agency Adoption Assessment Tool

Evaluation Components

State-specific evaluation components could include:

- Assessment of current prehospital care being provided in the specific protocol area to the specific population (How does it compare to proposed evidence-based guideline?)

  Evaluation Consideration

  Within this Toolkit, the data elements deemed critical for this assessment have been included within the Data Elements section. In addition, the Data Point section contains the Provider Impression, Cause of Injury, and Possible Injury data elements. These data elements are necessary in order to identify the specific patient population to include in the pre- and post-evaluation of care that will be conducted to assess the impact of the protocol implementation on prehospital care.

- Assessment of barriers to changing the current care being provided as well as assessment of the needs and resources that would help promote the protocol implementation

  Considerations

  Within this Toolkit, the data elements associated with the 5 Key Elements have also been included within the Data Elements section. Each of the 5 Key Elements represents a potential barrier to protocol implementation. By collecting the run data associated with each of the 5 Key Elements, States will be able to identify which Key Elements of the protocol have been successfully implemented and which are barriers to providing the care outlined in the protocol.

- Process evaluation of the implementation and dissemination:
- Identify barriers and modify approach

**Considerations**

Within the [Implementing a Statewide Guideline- How To](#) section of this Toolkit, data on previously encountered barriers to protocol implementation has been provided for the States participating in this project. It is the hope of the Project Team that this barrier data will inform the development of each State's Implementation Plan. Ideally each State Implementation Plan shall include strategies to avoid the previously identified barriers to protocol implementation.

- Identify facilitators to implementation and dissemination.

**Considerations**

Within the [Implementing a Statewide Guideline- How To](#) section of this Toolkit, data on identified successful strategies, resources, and incentives for protocol implementation has been provided for the States participating in this project. It is the hope of the project team that this successful strategies data will inform the development of each State's Implementation Plan. Ideally each State Implementation Plan shall include many of these strategies in order to promote the statewide adoption of the protocol.

- Impact evaluation (was there a change in the EMS providers’ knowledge of the protocol and/or an acquisition of clinical skills needed for care outlined in the protocol and/or a change in the ems providers’ self-efficacy to provide the care outlined in the protocol after completing the training)

**Considerations**

This evaluation component has been included within [Training Outline](#) section of this toolkit. Evaluation measures include a pre-and post-test, and case studies.

- Outcome evaluation:
  - Was there an improvement in the care that was provided (ePCR data will be used to determine compliance with the protocol)

**Considerations**

Within this Toolkit, the data elements deemed critical for this evaluation have been included within the [Data Elements](#) section.

- Post-assessment of barriers to provision of care:
  - If there was no improvement in care provided, why not?
- What worked well in the project?
- What were the facilitators to making the changes in the care provided?

### Considerations

Within this Toolkit, the data elements associated with the 5 [Key Elements](#) have also been included within the [Data Elements](#) section. Each of the 5 Key Elements represents a potential barrier to protocol implementation. By collecting the run data associated with each of the 5 Key Elements, States will be able to identify which Key Elements of the protocol have been successfully implemented and which are barriers to providing the care outlined in the protocol.

[Return to Evaluation Resources](#)
Agency Adoption Assessment Tool

This tool was developed to assist state EMS offices in determining which agencies have adopted the Guideline. It will help states determine if agencies are familiar with the Guideline, as well as whether or not the state EMS office will be able to capture change in pain management over time using the state prehospital database.

The first section is for the compiled information that is gathered from the second section.

Compilation Information

Total number of agencies in the state: _________

Number of Agencies who responding to the Assessment questions: _________

Of the participating agencies:

# pediatric exempt: _________
# who do not enter data into the statewide EMS database: _________
# who do enter data into the statewide EMS database: _________

Of the agencies entering data into the statewide EMS database:

# who use statewide protocols: _________
# who use regional/county protocols: _________
# who use local protocols: _________

Agency Questions

1. Are you familiar with the Prehospital Protocol for the Management of Acute Traumatic Pain?
   o Yes → go to #2
   o No → go to #3

2. Has your agency adopted the Prehospital Protocol for the Management of Acute Traumatic Pain?
   o Adopted
   o Did not adopt
3. Are you planning on adopting the guideline?
   o Yes, if included in the statewide guidelines
   o Yes, if adopted at the regional/county level
   o Plan on partial adoption of the guideline
   o No plans for adoption

4. Do you have any existing protocols that allow for the offline administration of pain medication to patients?
   □ Morphine IV
   □ Fentanyl IV
   □ Fentanyl IN
   □ Other (please indicate) __________________________________________

5. Does your agency use the mucosal atomization device?
   o Yes → go to #6
   o No → done

6. What medications do you use with the mucosal atomizer?
   □ Fenanyl
   □ Narcan
   □ Versed

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