

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.

“Since 2008, the NHTSA Office of Emergency Medical Services and the Emergency Medical Services for Children (EMSC) Program have worked with EMS stakeholders to create and pilot test a model for developing and implementing EBGs for prehospital emergency care.”

Taken from NHTSA’s [“Progress on Evidence-Based Guidelines For Prehospital Emergency Care”](#)

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

“EBGs are an important element in improving the quality of prehospital care, as they promote a consistent approach by prehospital providers for a given clinical scenario, and thus facilitate creation of standard for measures to evaluate the quality of prehospital emergency care.”

Taken from NHTSA’s [“Progress on Evidence-Based Guidelines For Prehospital Emergency Care”](#)

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).

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EBG FAQs

What is an evidence-based guideline (EBG)?

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

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

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

What does GRADE stand for?

Grading of Recommendations Assessment, Development and Evaluation

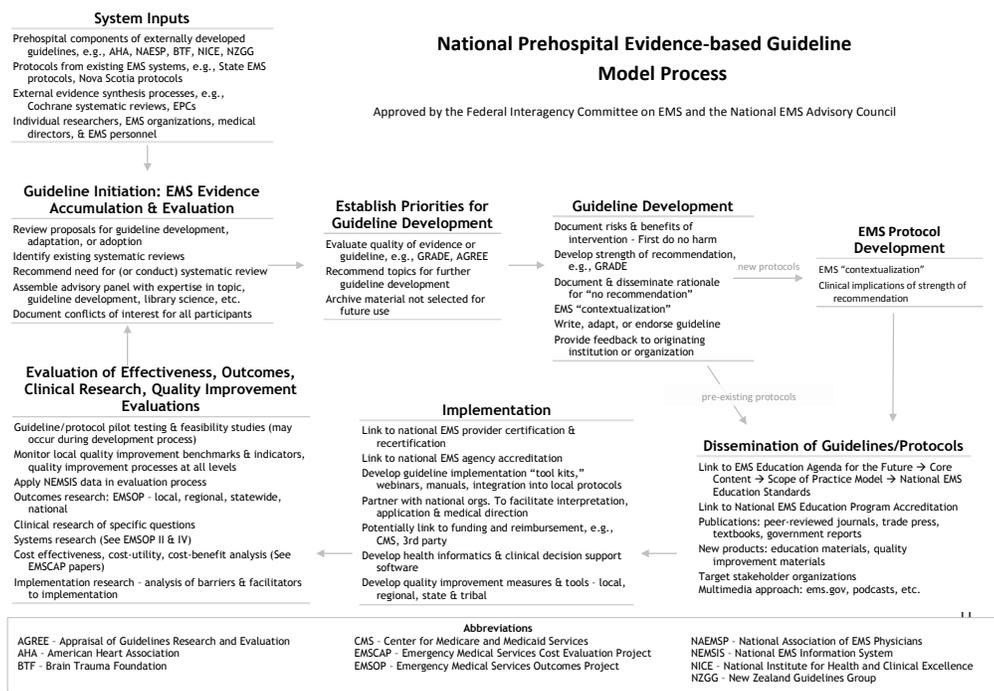
What is the evidence supporting the concept of EBGs and more standardized prehospital care?

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.}



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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.

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

[*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.

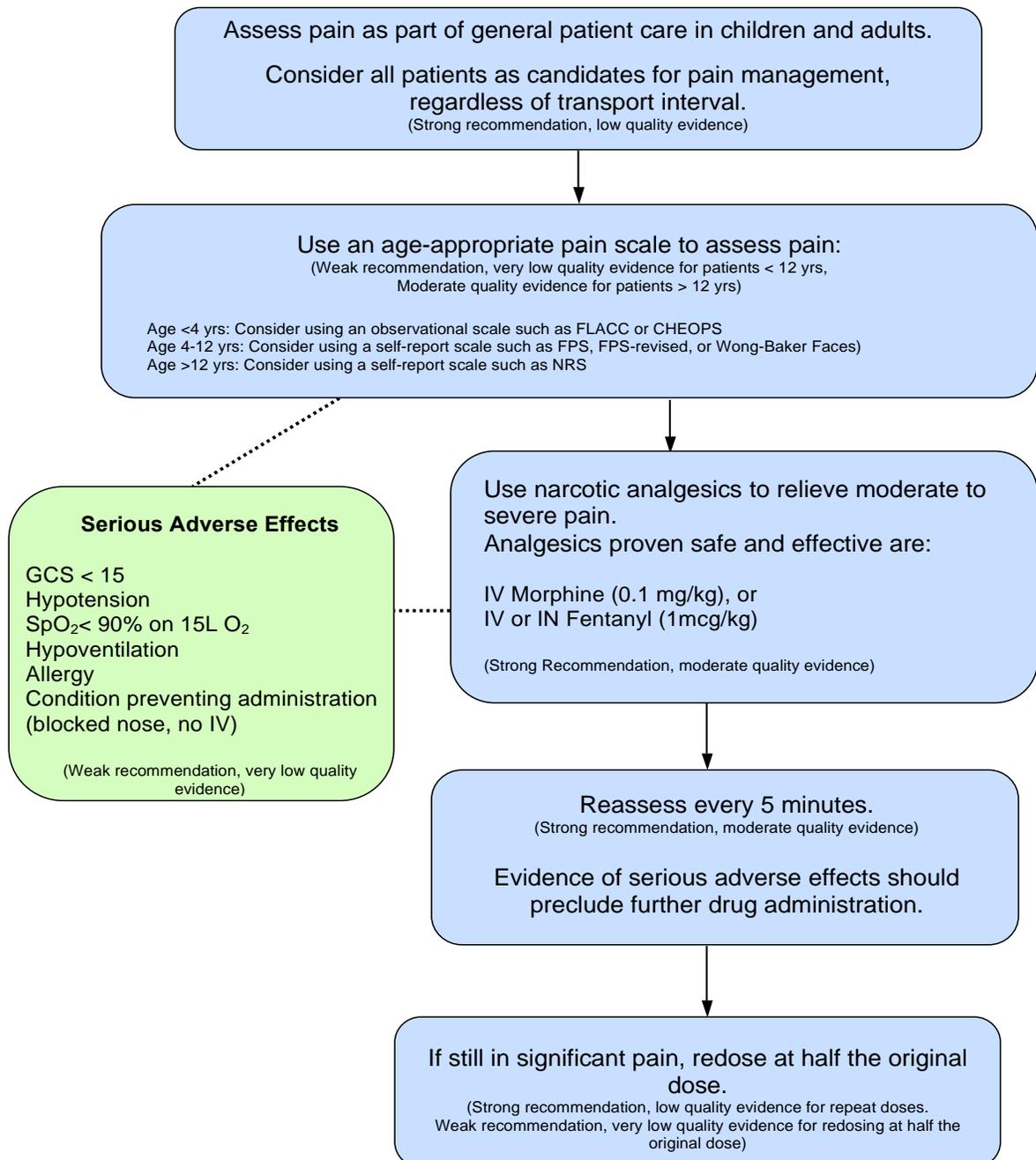
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Guideline

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).



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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

Categories	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractable	Difficult to console or comfort
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 point 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 unconsolated 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

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

Instructions:

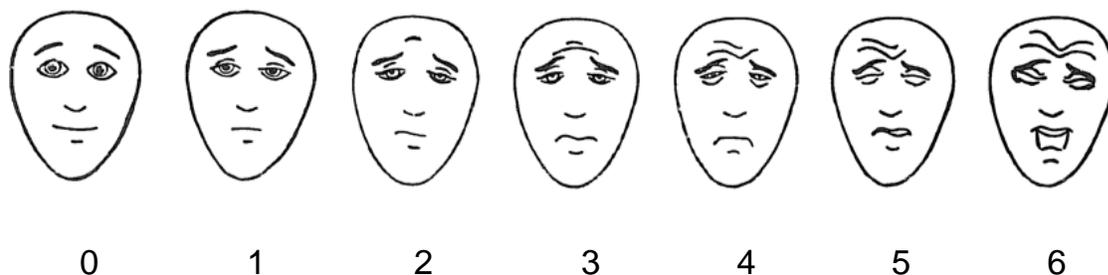
- The CHEOPS pain score equals the SUM of points for all 6 parameters
- Interpretation:
 - Minimum score: 4
 - Maximum score: 13

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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.

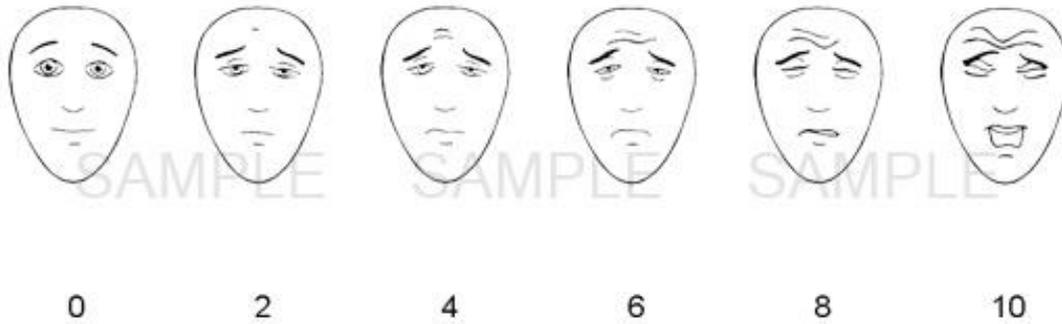
Note: Patients should view the figure without numbers.

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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

Wong-Baker FACES® Pain Rating Scale



www.wongbakerFACES.org

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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.

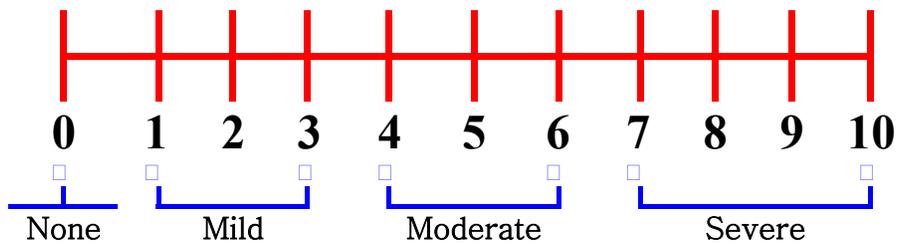
Ask the person to choose the face that best depicts the pain they are experiencing.

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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)

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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 its 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 NEMESIS 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](#).

NEMESIS 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**
 - E18_01 “Date/Time Medication Administered”
 - E18_03 “Medication Given”
 - **E18_04 “Medication Administered Route”
 - **E18_05 “Medication Dosage”
 - **E18_06 “Medication Dosage Units”
 - **E18_08 “Medication Complication”
 - **E18_10 “Medication Authorization”
- **Destination Information**
 - D04_14 “Destination Facility Number”
- **Location**
 - E08_15 “Incident Zip Code”
- **Medical Direction**
 - E17_01 “Protocols Used”
- **Procedure Information**
 - 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.

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NEMESIS Version 3

- **Transport Time:**
 - eTimes.06 “Unit Arrived on Scene Date/Time”
 - eTimes.11 “Patient Arrived at Destination Date/Time”
- **Age**
 - ePatient.15 “Age”
 - 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**
 - eProtocols.01 “Protocols Used”
- **Procedure Information**
 - 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.

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Evaluation Considerations

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

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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 on-line 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



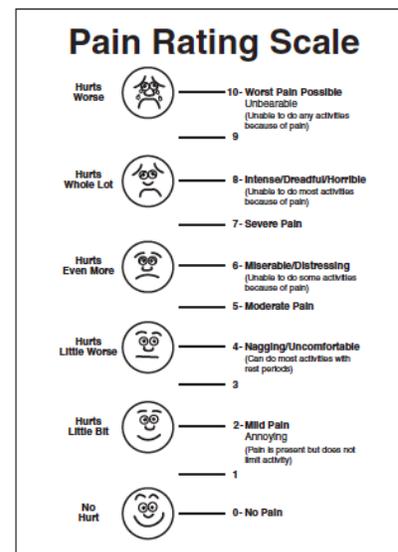
1) Initiate General Patient Care.

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 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.

PAIN MANAGEMENT (Continued)

- (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](#)

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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

Brown, KM, Hirshon, JM, Alcorta R, et al. The Implementation and Evaluation of an Evidence-based Statewide Prehospital Pain Management Protocol Developed using the National Prehospital Evidence-based Guideline Model Process for Emergency Medical Services. *Prehosp Emerg Care*. 2014;18 No. Supplement 1:45-51.

[Full Article](#)

Hennes H, Kim MK, Pirrallo RG. Prehospital Pain Management: A Comparison of Providers' Perceptions and Practices. *Prehosp Emerg Care*. 2005 Jan-Mar;9(1):32-9.

[Abstract](#)

Lang ES, Spaitte DW, Oliver ZJ, et al. A National Model for Developing, Implementing, and Evaluating Evidence-based Guidelines for Prehospital Care. *Acad Emerg Med*. 2012 Feb;19:201-209.

[Abstract](#) | [Full Article](#)

[↩ Return to References](#)

Recommended Articles

Prehospital Pain Management – Background Information

Alonso-Serra HM, Wesley K. Prehospital Pain Management. *Prehosp Emerg Care*. 2003 Oct-Dec;7(4):482-488.

[Full Article](#)

Evidence for the Need of Prehospital Pain Control

McManus JG Jr, Sallee DR Jr. Pain Management in the Prehospital Environment. *Emerg Med Clin North Am*. 2005 May;23(2):415-31.

[Abstract](#) | [Full Article](#)

Barriers to Offering Pain Control

Walsh B, Cone DC, Meyer EM, Larkin GL. Paramedic Attitudes Regarding Prehospital Analgesia. *Prehosp Emerg Care*. 2013 Jan-Mar;17(1):78-87.

[Abstract](#) | [Full Article](#)

Williams DM, Rindal KE, Cushman JT, Shah MN. Barriers to and Enablers for Prehospital Analgesia for Pediatric Patients. *Prehosp Emerg Care*. 2012 Oct-Dec;16(4):519-26.

[Abstract](#)

Safety of Narcotics in the Prehospital Environment

Kanowitz A, Dunn TM, Kanowitz EM, Dunn WW, Vanbuskirk K. Safety and Effectiveness of Fentanyl Administration for Prehospital Pain Management. *Prehosp Emerg Care*. 2006 Jan-Mar;10(1):1-7.

[Abstract](#) | [Full Article](#)

Evidence Behind the Intra-Nasal Route of Application

Karlsen AP, Pedersen DM, Trautner S, et al. Safety of Intranasal Fentanyl in the Out-of-Hospital Setting: A Prospective Observational Study. *Ann Emerg Med*. 2013 Nov 13. pii: S0196-0644(13)01544-8. doi: 10.1016/j.annemergmed.2013.10.025. [Epub ahead of print]

[Abstract](#)

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

[Presentation](#)

Borland ML, Jacobs I, Geelhoed G. Intranasal Fentanyl Reduces Acute Pain in Children in the Emergency Department: A Safety and Efficacy Study. *Emerg Med (Fremantle)*. 2002 Sept;14(3):275-280.

[Abstract](#)

Evidence for the Use of Pain Scales in Adults and Pediatrics

Jennings PA, Cameron P, Bernard S. Measuring Acute Pain in the Prehospital Setting. *Emerg Med J*. 2009 Aug;26(8):552-5.

[Abstract](#)

Babl FE, Crellin D, Cheng J, et al. The Use of the Faces, Legs, Activity, Cry and Consolability Scale to Assess Procedural Pain and Distress in Young Children. *Pediatric Emergency Care*. 2012 Dec;28(12):1281-96

[Abstract](#)

Williamson A, Hoggart B. Pain: A Review of Three Commonly Used Pain Rating Scales. *J of Clin Nurs*. 2005 Aug;14(7):798-804.

[Abstract](#) | [Full Article](#)

[↩ Return to References](#)

Supplemental Articles

Evidenced-Based Guidelines in EMS

Gausche-Hill M, Brown KM, Oliver ZJ, et al. An Evidence-based Guideline for Prehospital Analgesia in Trauma. *Prehosp Emerg Care*. 2014;18 No. Supplement 1:25-34.

[Abstract](#) | [Full Article](#)

Shah M, Macias C, Dayan P, et al. An Evidence-based Guideline for Pediatric Prehospital Seizure Management Using GRADE Methodology. *Prehosp Emerg Care*. 2014;18 No. Supplement 1:15-24.

[Abstract](#) | [Full Article](#)

Thomas SH, Brown KM, Oliver ZJ, et al. An Evidence-based Guideline for the Air Medical Transportation of Prehospital Trauma Patients. *Prehosp Emerg Care*. 2014;18 No. Supplement 1:35-44.

[Abstract](#) | [Full Article](#)

Wright, J. Evidence-Based Guidelines for Prehospital Practice: A Process Whose Time Has Come. *Prehosp Emerg Care*. 2014;18 No. Supplement 1:1-2.

[Full Article](#)

Evidence-Based Practice

Graham ID, Harrison MB, Brouwers M, Davies BL, Dunn S. Facilitating the Use of Evidence in Practice: Evaluating and Adapting Clinical Practice Guidelines for Local Use by Health Care Organizations. *J Obstet Gynecol Neonatal Nurs*. 2002 Sep-Oct;31(5):599-611.

[Abstract](#)

Grimshaw, JM, Eccles, MP. Is Evidence-Based Implementation of Evidence-Based Care Possible? *Med J Aust*. 2004;180(6):50.

[Abstract](#) | [Full Article](#)

Lang ES, Spaite DW, Oliver ZJ, et al. A National Model for Developing, Implementing, and Evaluating Evidence-based Guidelines for Prehospital Care. *Acad Emerg Med*. 2012 Feb;19:201-209.

[Abstract](#) | [Full Article](#)

Wright, J. Implementation of an Evidence-Based Guideline for Prehospital Pain Management. EMS Today, Washington, DC. 9 April 2013. Breakout Session.

[Presentation](#)

Evidence for the Need of Prehospital Pain Control

Fairbanks, RJ, Kolstee, KE, Martin, HA, et al. Prehospital Pain Management is not Adequate. *Prehosp Emerg Care*. 2007; 11(1):134.

[Abstract](#) (page 41)

French, SC, Chan, SB, Ramaker J. Education on Prehospital Pain Management: A Follow-up Study. *West J of Emerg Med*. 2013 Mar;14(2):96-102.

[Abstract](#) | [Full Article](#)

French SC, Salama NP, Baqai S, et al. Effects of an Educational Intervention on Prehospital Pain Management. *Prehosp Emerg Care*. 2006 Jan-Mar;10(1):71-6.

[Abstract](#)

Barriers to Offering Pain Control

Jones, GE, Machen I. Prehospital Pain Management: The Paramedics' Perspective. *Accid Emerg Nurs*. 2003 Jul;11(3):166-72.

[Abstract](#) | [Full Article](#)

Safety of Narcotics in the Prehospital Environment

Bendall JC, Simpson PM, Middleton PM. Effectiveness of Prehospital Morphine, Fentanyl, and Methoxyflurane in Pediatric Patients. *Prehosp Emerg Care*. 2011 Apr-Jun;15(2):158-65.

[Abstract](#) | [Full Article](#)

Evidence Behind the Intra-Nasal Route of Application

Borland ML, Jacobs I, Geelhoed G. Intranasal Fentanyl Reduces Acute Pain in Children in the Emergency Department: A Safety and Efficacy Study. *Emerg Med (Fremantle)*. 2002 Sep;14(3):275-80.

[Abstract](#)

Saunders M, Adelgais K, Nelson D. Use of Intranasal Fentanyl for the Relief of Pediatric Orthopedic Trauma Pain. *Acad Emerg Med*. 2010 Nov;17(11):1155-61.

[Abstract](#) | [Full Article](#)

Evidence for the Use of Pain Scales in Adults and Pediatrics

Bijur PE, Silver W, Gallagher EJ. Reliability of the Visual Analog Scale for Measurement of Acute Pain. *Acad Emerg Med*. 2001 Dec;8(12):1153-7.

[Abstract](#) | [Full Article](#)

Bulloch B, Tenenbein M. Validation of 2 Pain Scales for use in the Pediatric Emergency Department. *Pediatrics*. 2002 Sep;110(3):e33.

[Abstract](#) | [Full Article](#)

Fosnocht DE, Chapman CR, Swanson ER, Donaldson GW. Correlation of Change in Visual Analog Scale with Pain Relief in the ED. *Am J Emerg Med.* 2005 Jan;23(1):55-9.

[Abstract](#)

Garra G, Singer AJ, Taira BR, et al. Validation of the Wong-Baker FACES Pain Rating Scale in Pediatric Emergency Department Patients. *Acad Emerg Med.* 2010 Jan;17(1):50-4.

[Abstract](#) | [Full Text](#)

Holdgate A, Asha S, Craig J, Thompson J. Comparison of a Verbal Numeric Rating Scale with the Visual Analogue Scale for the Measurement of Acute Pain. *Emerg Med (Fremantle).* 2003 Oct-Dec;15(5-6):441-6.

[Abstract](#) | [Full Text](#)

Lord BA, Parsell B. Measurement of Pain in the Prehospital Setting Using a Visual Analogue Scale. *Prehosp Disaster Med.* 2003 Oct-Dec;18(4):353-8.

[Abstract](#)

McLean SA, Domeier RM, DeVore HK, et al. The Feasibility of Pain Assessment in the Prehospital Setting. *Prehosp Emerg Care.* 2004 Apr-Jun;8(2):155-61.

[Abstract](#)

Powell CV, Kelly AM, Williams A. Determining the Minimum Clinically Significant Difference in Visual Analog Pain Score for Children. *Ann Emerg Med.* 2001 Jan;37(1):28-31.

[Abstract](#)

Stinson JN, Kavanagh T, Yamada J, Gill N, Stevens B. Systematic Review of the Psychometric Properties, Interpretability and Feasibility of Self-Report Pain Intensity Measures for Use in Clinical Trials in Children and Adolescents. *Pain.* 2006 Nov;125(1-2):143-57. Epub 2006 Jun 13.

[Abstract](#)

Todd, KH. Pain Assessment Instruments for Use in the Emergency Department. *Emerg Med Clin North Am.* 2005 May;23(2):285-95.

[Abstract](#)

GRADE Process

Atkins D, Best D, Briss PA, et al. Grading Quality of Evidence and Strength of Recommendations. *BMJ.* 2004 Jun 19;328(7454):1290.

[Abstract](#) | [Full Article](#)

Shah M, Macias C, Dayan P, et al. [An Evidence-based Guideline for Pediatric Prehospital Seizure Management Using GRADE Methodology](#). *Prehosp Emerg Care*. 2014;18 No. Supplement 1:15-24.

[Abstract](#) | [Full Article](#)

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3. Talking Points / FAQs

Q: [How is this project funded?](#)

Q: [What is the heritage of this idea?](#)

Q: [What is an evidence-based guideline \(EBG\)?](#)

Q: [What is the evidence supporting the concept of EBGs and more standardized prehospital care?](#)

Q: [What states are participating in this project?](#)

Q: [Why is prehospital pain management important?](#)

Q: [What are the benefits of prehospital pain management?](#)

Q: [Do prehospital providers do a good job with prehospital pain management?](#)

Q: [What are the barriers to treating pain in the prehospital environment?](#)

Q: [How can the barriers to treating pain in the prehospital environment be overcome?](#)

Q: [How will I be able to give feedback about this project?](#)

Q: [What will be the cost to State EMS Offices and EMS Agencies?](#)

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.”

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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)

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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

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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 hypersensitized pain pathways in patients who have repeated pain stimuli

[↩ Return to FAQs](#)

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.

[↩ Return to FAQs](#)

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

↩ [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](#).

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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.

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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-

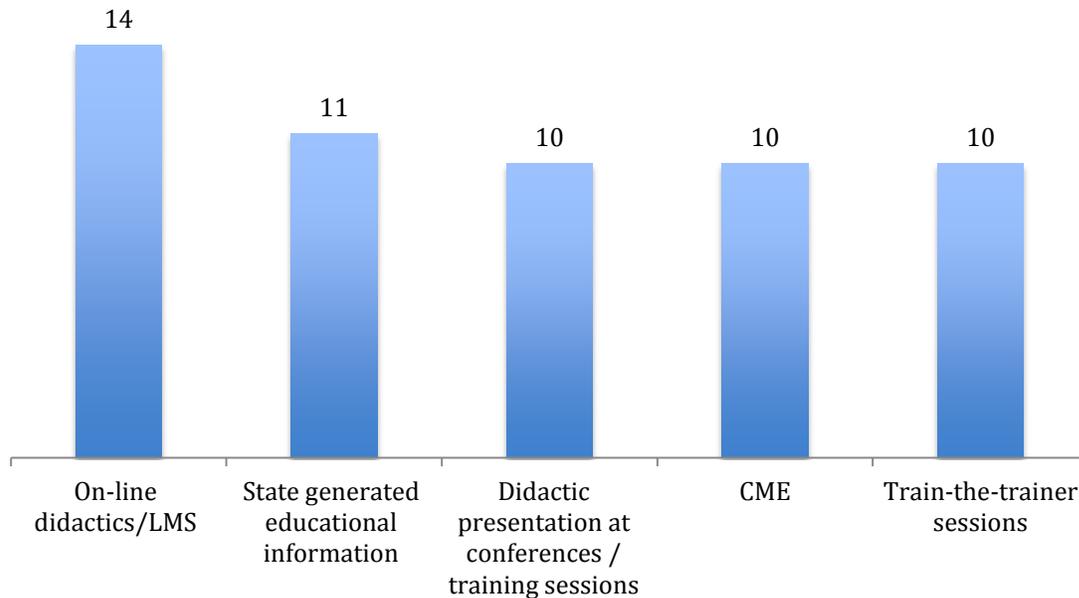
trainer). Also, special regional updates on an ad hoc basis statewide, when new programs or initiatives are rolled out.

- 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)

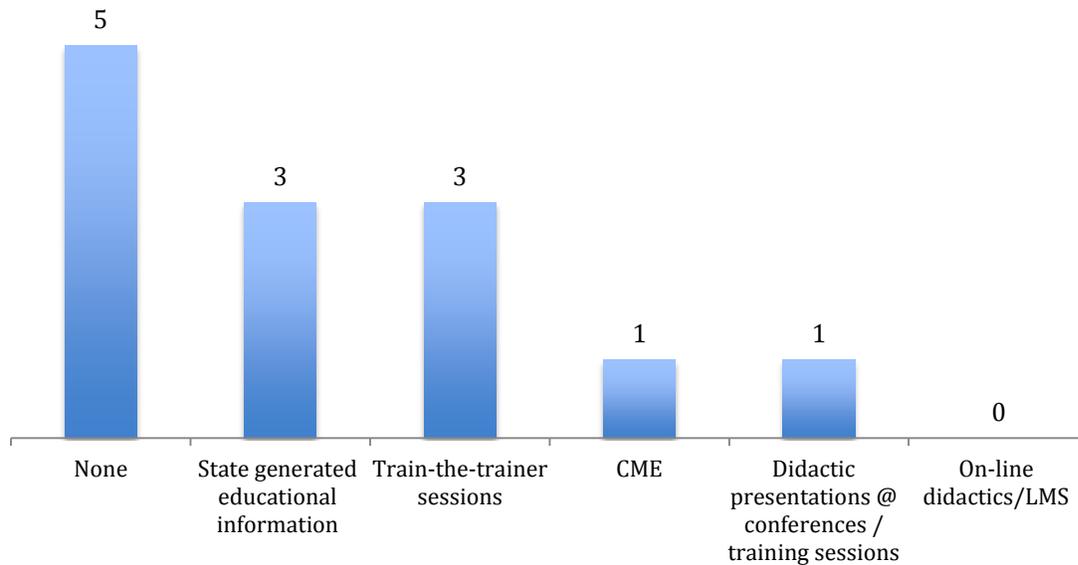


Additional Comments

- 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)



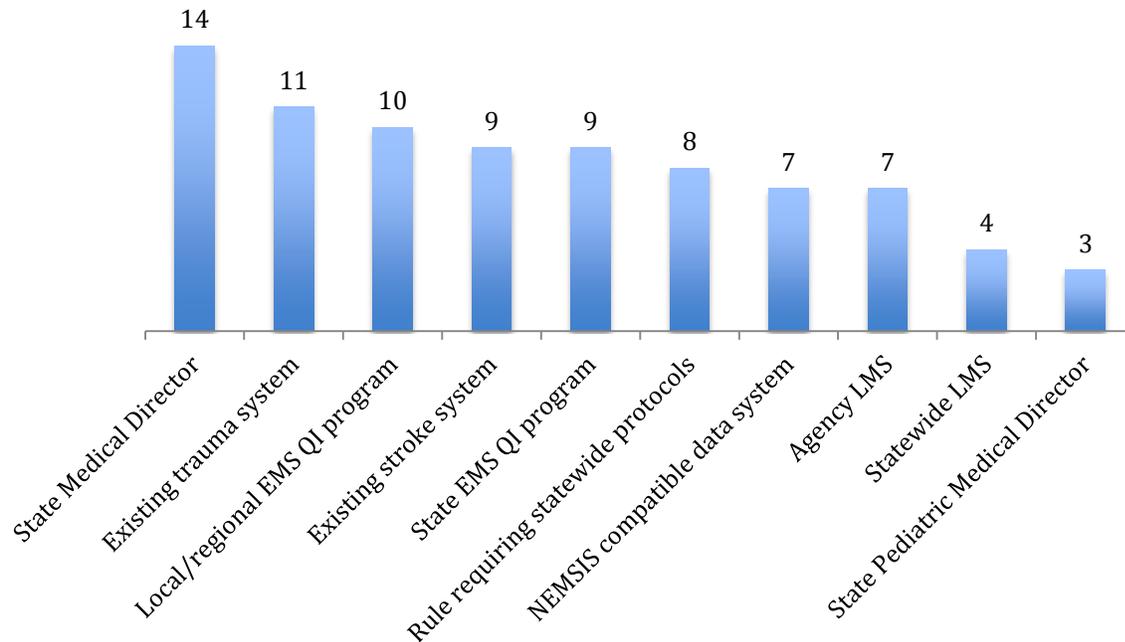
[Additional Comments](#)

- 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)



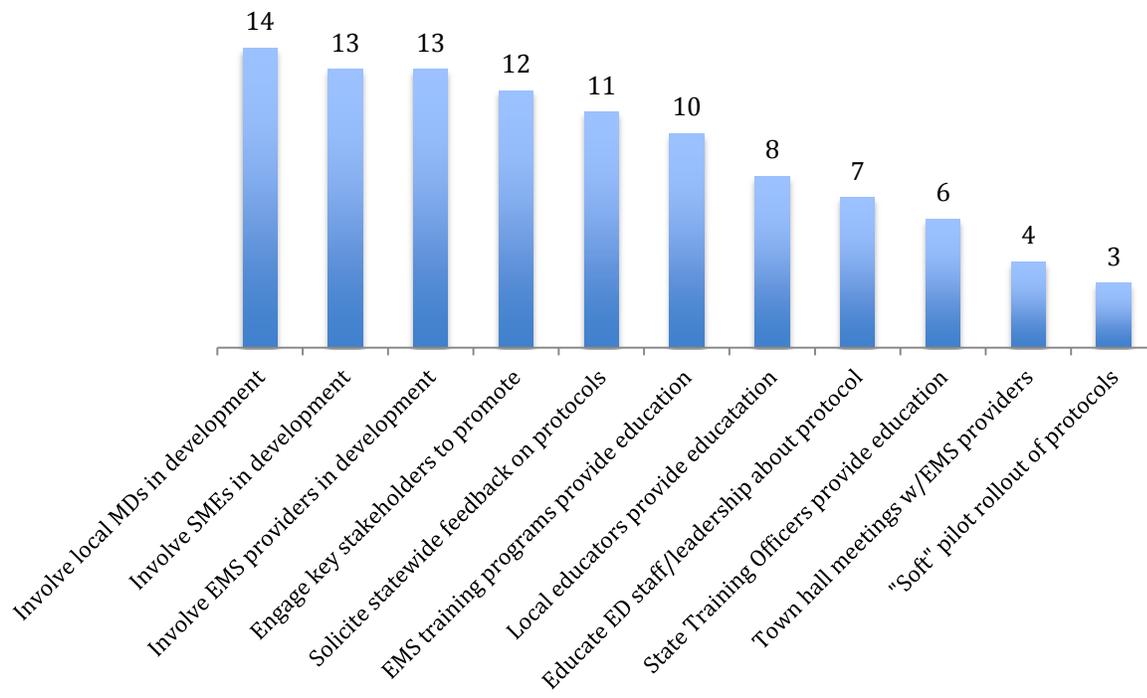
Additional helpful resource ideas:

- Resources need to match training, QA/QI and protocol changes or reinforcement
- Minor changes do not necessarily 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)



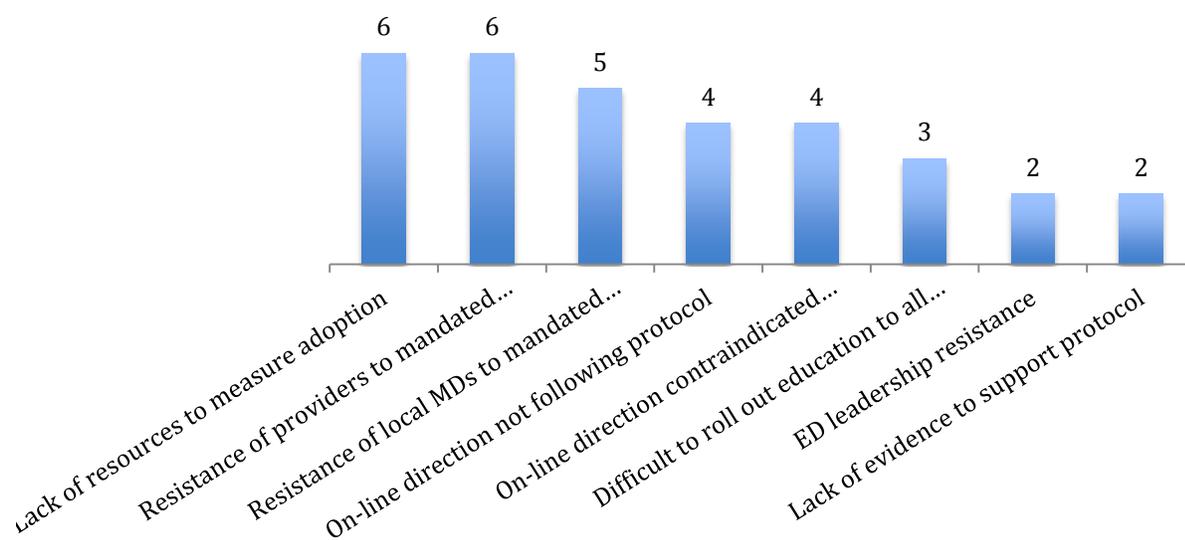
Additional helpful strategy ideas:

- 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

[↩ Return to Successful Practices](#)

[↩ Return to Toolkit Contents](#)

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.

[*↩ 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
 - OR
 - Low fidelity manikin with headset

Equipment

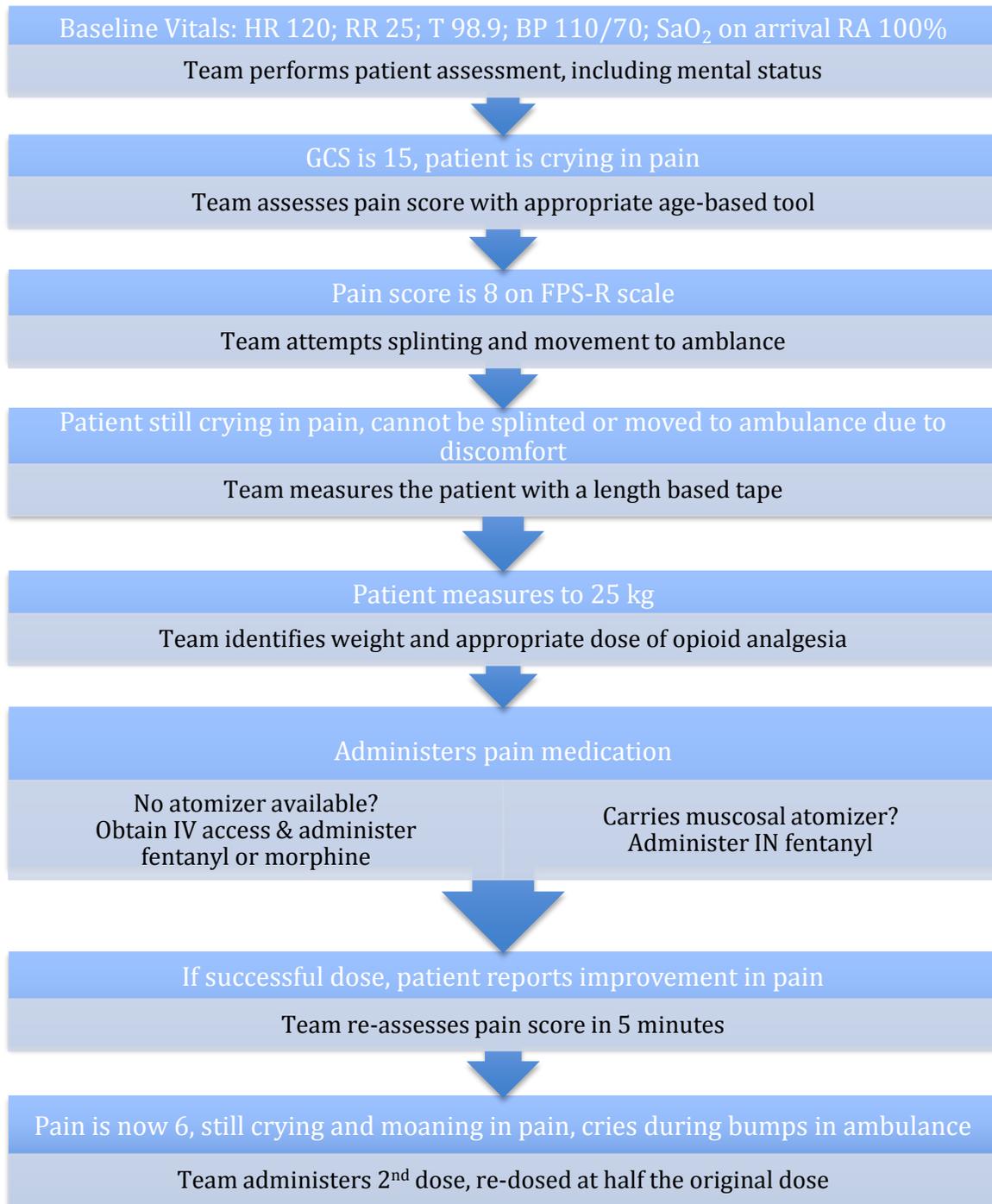
- Oxygen delivery
 - Nasal cannula
 - Simple face mask
 - Non-rebreather masks (various sizes)
- Airway management equipment
 - Laryngoscope
 - ETT
 - Suction
 - BVM
 - Oropharyngeal airway
 - Nasal trumpet
- Length-based tape
- IV/IN/IO modality
- Tape to secure patient to backboard
- Trauma shears
- 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

Scenario Logistics

Expected Scenario Flow



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 accidentally 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
- SaO₂ on arrival RA 100% Child is crying, kicking legs, flailing arms
 - 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

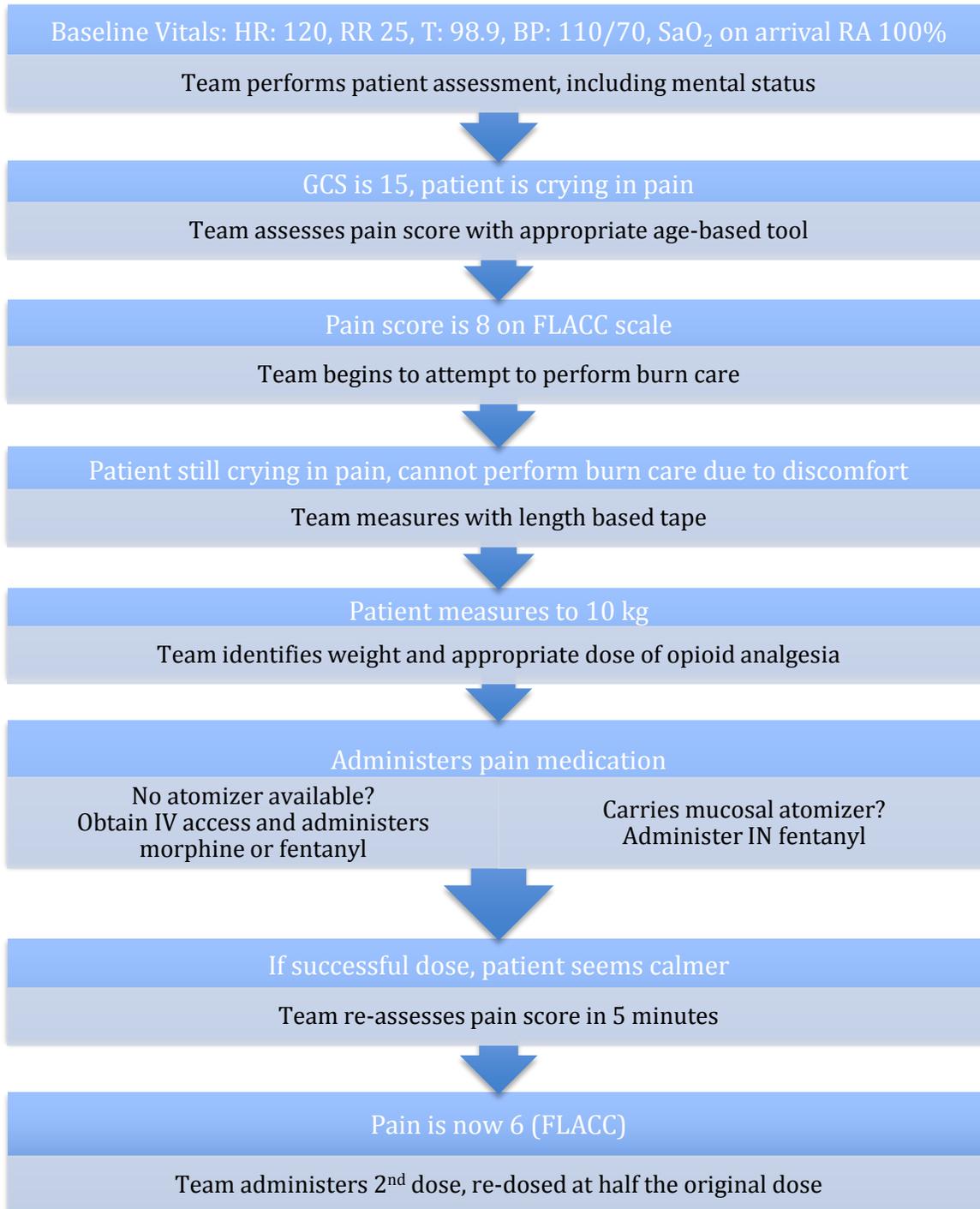
- Oxygen delivery
 - Nasal cannula
 - Simple face mask
 - Non-rebreather mask (various sizes)
- Airway management equipment
 - Laryngoscope
 - ETT
 - Suction
 - BVM
 - Oropharyngeal airway
 - Nasal trumpet
- Length-based tape
- IV/IN/IO modality
- Medications:
 - Morphine
 - Fentanyl
- Normal saline
- 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



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
 - 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
 - RR 18
 - T 98.9
 - BP 120/70
 - SaO₂ on arrival RA 100%
- 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

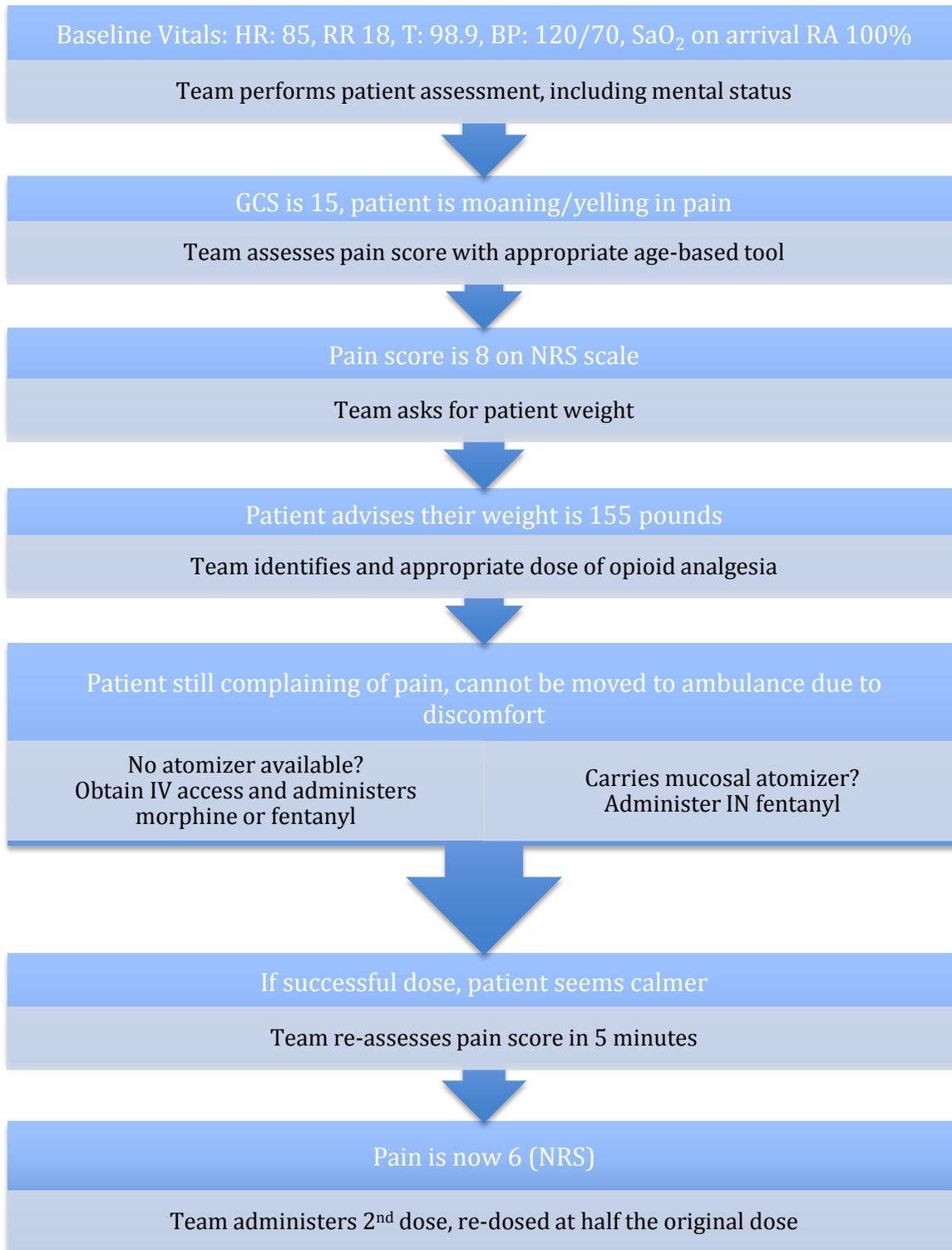
- | | |
|--|--|
| <ul style="list-style-type: none">• Oxygen delivery<ul style="list-style-type: none">○ Nasal cannula○ Simple face mask○ Non-rebreather mask (various sizes)• Airway management equipment<ul style="list-style-type: none">○ Laryngoscope○ ETT○ Suction○ BVM○ Oropharyngeal airway○ Nasal trumpet• IV/IN/IO modality• Backboard, straps, & C-collar | <ul style="list-style-type: none">• Trauma shears• Medications<ul style="list-style-type: none">○ Morphine○ Fentanyl○ Normal saline• Pain assessment scales<ul style="list-style-type: none">○ 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) |
|--|--|

Debriefing

- Prehospital Protocol for the Management of Acute Traumatic Pain

Scenario Logistics

Expected Scenario Flow



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 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

												Scale			
0	10	20	30	40	50	60	70	80	90	100					
Certain I cannot do it					Moderately certain I can do it					Completely certain I can do it					
<i>Example: Appropriately put a 3½ year old on a longboard.</i>					0	10	20	30	40	50	60	70	80	90	100

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:

Assess the Glasgow Coma Scale (GCS) score for the patient	0	10	20	30	40	50	60	70	80	90	100
Utilize the Guideline for the patient	0	10	20	30	40	50	60	70	80	90	100
Assess the pain score for the patient using FLACC or CHEOPS (pain scale choice will be state/agency dependent)	0	10	20	30	40	50	60	70	80	90	100
Obtain IV access in the patient	0	10	20	30	40	50	60	70	80	90	100
Find the correct pain medication dose for the patient	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for the patient through an IV (assuming that an IV is in place)	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)	0	10	20	30	40	50	60	70	80	90	100
Use chosen pain scale to reassess the patient's pain score after pain medication administration	0	10	20	30	40	50	60	70	80	90	100
Identify adverse events after pain medication administration	0	10	20	30	40	50	60	70	80	90	100

Scale															
0	10	20	30	40	50	60	70	80	90	100					
Certain I cannot do it					Moderately certain I can do it					Completely certain I can do it					
<i>Example: Appropriately put a 3½-year old on a longboard.</i>					0	10	20	30	40	50	60	70	80	90	100

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	0	10	20	30	40	50	60	70	80	90	100
Utilize the Guideline for the patient	0	10	20	30	40	50	60	70	80	90	100
Assess the pain score for the patient using FPS, FPS-R or Wong-Baker FACES® (choice will be agency dependent)	0	10	20	30	40	50	60	70	80	90	100
Obtain IV access in the patient	0	10	20	30	40	50	60	70	80	90	100
Find the correct pain medication dose for the patient	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for the patient through an IV (assuming that an IV is in place)	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)	0	10	20	30	40	50	60	70	80	90	100
Use chosen pain scale to reassess the patient's pain score after pain medication administration	0	10	20	30	40	50	60	70	80	90	100
Identify adverse events after pain medication administration	0	10	20	30	40	50	60	70	80	90	100

Scale															
0	10	20	30	40	50	60	70	80	90	100					
Certain I cannot do it					Moderately certain I can do it					Completely certain I can do it					
<i>Example: Appropriately put a 3½-year old on a longboard.</i>					0	10	20	30	40	50	60	70	80	90	100

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:

Assess the Glasgow Coma Scale (GCS) score for the patient	0	10	20	30	40	50	60	70	80	90	100
Utilize the Guideline for the patient	0	10	20	30	40	50	60	70	80	90	100
Assess the pain score for the patient using NRS	0	10	20	30	40	50	60	70	80	90	100
Obtain IV access in the patient	0	10	20	30	40	50	60	70	80	90	100
Find the correct pain medication dose for the patient	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for the patient through an IV (assuming that an IV is in place)	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)	0	10	20	30	40	50	60	70	80	90	100
Use NRS to reassess the patient's pain score after pain medication administration	0	10	20	30	40	50	60	70	80	90	100
Identify adverse events after pain medication administration	0	10	20	30	40	50	60	70	80	90	100

Scale															
0	10	20	30	40	50	60	70	80	90	100					
Certain I cannot do it					Moderately certain I can do it					Completely certain I can do it					
<i>Example: Appropriately put a 3½-year old on a longboard.</i>					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	0	10	20	30	40	50	60	70	80	90	100
Utilize the Guideline for the patient	0	10	20	30	40	50	60	70	80	90	100
Assess the pain score for the patient using NRS	0	10	20	30	40	50	60	70	80	90	100
Obtain IV access in the patient	0	10	20	30	40	50	60	70	80	90	100
Find the correct pain medication dose for the patient	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for the patient through an IV (assuming that an IV is in place)	0	10	20	30	40	50	60	70	80	90	100
Administer pain medication for an adult intranasally with a mucosal atomizer device (MAD)	0	10	20	30	40	50	60	70	80	90	100
Use chosen pain scale to reassess the patient's pain score after pain medication administration	0	10	20	30	40	50	60	70	80	90	100
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](#)

[↩ Return to Toolkit Contents](#)

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.

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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?
 - Yes → go to #2
 - No → go to #3
2. Has your agency adopted the Prehospital Protocol for the Management of Acute Traumatic Pain?
 - Adopted
 - Did not adopt

3. Are you planning on adopting the guideline?
 - Yes, if included in the statewide guidelines
 - Yes, if adopted at the regional/county level
 - Plan on partial adoption of the guideline
 - 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?
 - Yes → *go to #6*
 - No → *done*

6. What medications do you use with the mucosal atomizer?
 - Fentanyl
 - Narcan
 - Versed

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