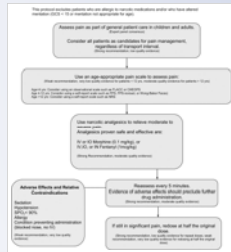


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## Background

- 20% of prehospital calls are for painful conditions
- Lack of pain control has negative physiological implications, including increased heart rate, respirations, blood pressure, anxiety and discomfort
- Failure to treat pain in the prehospital setting can delay treatment by up to 90 minutes
- Inability or difficulty assessing pain in children has been identified as a barrier to pain treatment in pediatrics
- An Evidence-Based Guideline (EBG) for Management of Acute Traumatic Pain recommends the use of observational-behavioral scales for children 1-4 years old, and pictorial self-report scales for children 5-11 years old



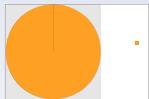
## Objectives

- Determine EMS providers'
- 1) Level of training and experience with pain scales
  - 2) Reported practices assessing pain and using pain scales
  - 3) Self-efficacy for assessing and treating pain in children
  - 4) Likelihood of using the various pain scales introduced during education
    - Determine preferences for each type of scale
  - 5) Preference for pain scale product
    - Paper versus electronic

## Methods

- A convenience sample of EMS providers received an education module on assessing pain in children
  - August 2013 – July 2014
  - Multiple agencies (ground and HEMS) in single large metropolitan area
  - Education module delivered in person or via video lecture
  - Continuing education credits were provided
- Survey instrument was administered at the time of education
  - 24 items
    - Demographics
    - Likert scale items
  - Anonymous
  - Piloted on 60 EMS providers in another state
- Results reported as descriptive statistics
- Comparisons made using chi-square to compare proportions and Kruskal-Wallis to compare median Likert value

## Results

- 553 EMS providers received education
  - 496 EMTs/paramedics
  - 57 RN/other/unreported
- 454 EMS provider surveys returned (**82% response rate**)
  - 345 ground EMT/paramedics (76%)
  - 53 HEMS paramedics (12%)
  - 57 RN/other/unreported (12%)
- Analysis performed only for EMT/paramedic providers (n=397)
  - 83% male
  - 89% 30 years or older
  - 75% parents
  - 77% paramedic, 23% EMT-B
  - Years of experience: 

## Results

Survey Item	All EMT/paramedic	Ground	HEMS	p
Have been formally trained on use of pain scale for adults	83.5%	84.3%	77.4%	NS
Have been formally trained on use of pain scale for children	59.3%	56.2%	62.3%	NS
Have offline protocols for assessing and treating pain in adults	80.6%	79.1%	88.7%	NS
Have offline protocols for assessing and treating pain in children	60.6%	56.2%	73.6%	0.010
Feel "very" to "extremely" comfortable measuring pain in adults	88.1%	87.8%	88.7%	NS
Feel "very" to "extremely" comfortable measuring pain in children	41%	36%	47.1%	NS
Are more than "somewhat likely" to measure pain:				
• in every pediatric patient	33.9%	25.8%	50.9%	<0.001
• in pediatric patients with severe mechanism of injury	83.3%	81.2%	90.6%	NS
Are "moderately" to "extremely" familiar with the:				
• Numeric Rating Scale	77.1%	75.9%	83%	NS
• Wong Baker FACES scale	45.8%	43.8%	58.4%	0.010
• Faces Pain Scale-Revised	45.6%	42.7%	64.2%	<0.001
• FLACC scale	24.4%	21.4%	43.4%	0.004
• CHEOPS scale	3.5%	3.2%	5.7%	NS
"Most of the time" to "always" use in adults:				
• Numeric rating scale	91.2%	90.2%	96.2%	NS
"Most of the time" to "always" use in children:				
• Numeric rating scale	48.6%	47.5%	54.8%	NS
• Wong Baker FACES scale	15.1%	10.5%	45.3%	<0.001
• Faces Pain Scale-Revised	14.1%	10.8%	35.8%	<0.001
• FLACC scale	20.2%	18.2%	32.0%	0.024
• CHEOPS scale	0.8%	0.9%	0.0%	NS
If not using pain scale, "most of the time" to "always" use my own observation	80.1%	81.2%	71.7%	NS
Feel "mostly" to "completely" certain able to assess pain for 8yo child crying with forearm deformity	75.3%	74.2%	81.1%	NS
Feel "mostly" to "completely" certain able to assess pain for 36mo toddler crying with arm deformity	56.6%	55.1%	66.1%	NS
More than "somewhat likely" to use in children:				
• Numeric rating scale	60.2%	57.9%	75.5%	NS
• Wong Baker FACES scale	41.1%	35.7%	75.5%	<0.001
• Faces Pain Scale-Revised	27.7%	25.0%	45.2%	0.004
• FLACC scale	31.4%	27.4%	58.4%	<0.001
• CHEOPS scale	3.5%	3.5%	3.8%	NS
At least "somewhat likely" to carry and use a printed pain scale	55.1%	51.5%	79.2%	<0.001
At least "somewhat likely" to use an electronic pain scale	35%	31.9%	54.7%	0.024

- This sample of EMS providers reported
  - Modest levels of comfort assessing pain in children, despite moderate prevalence of training
  - Low familiarity with pediatric pain scales, especially observational-behavioral scales
  - Infrequent use of pediatric-specific pain scales, *more frequently using their own observation*
  - Moderate self-efficacy for the ability to assess pain in children
  - Low likelihood of using existing pediatric pain scales, even after receiving education on the scales

## Conclusions

- Unfamiliarity and discomfort with pediatric-specific pain scales may be an important barrier to adoption of the EBG for pain management.
- In addition, EMS providers may be unlikely to use currently recommended pain scales
- Validation of pediatric pain scales in the prehospital setting should account for reported resistance to using printed/electronic scales
- Use of own observation could be an enabler to adopting pediatric pain scale