

# Illinois EMS for Children

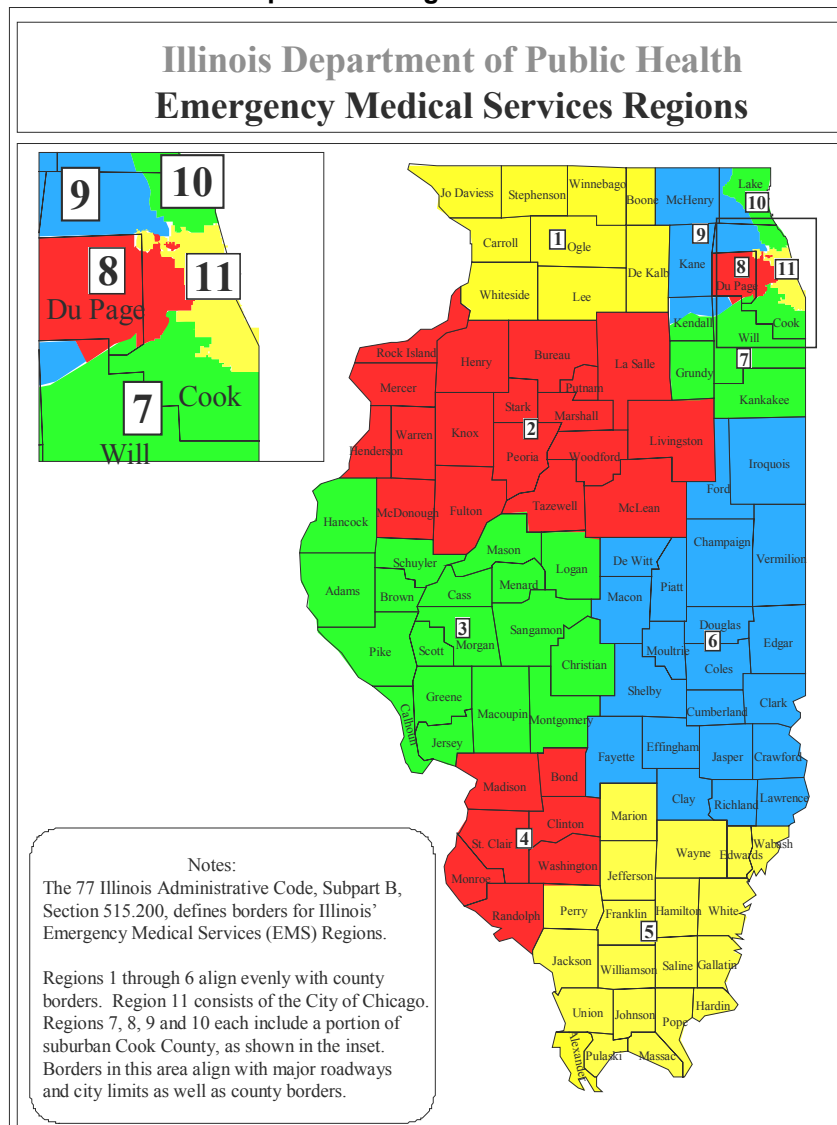
## *Pediatric Pain Management in the Emergency Department, 2005*

### Results of Survey and Chart Review

#### I. Executive Summary

In 2005, 121 emergency departments actively participated in the EMSC regional CQI program (of these, 98 are recognized as PCCC, EDAP or SEDP facilities). These emergency departments were surveyed regarding pediatric pain management using a Web-based application. Of the 121 facilities, 93 (77%) completed the survey. In addition, the respondents conducted 792 medical record reviews on pediatric patients age 0-15 years who presented to the ED with extremity fracture(s). After data submission, participants were provided with Web-based reports that allowed comparison of their results to their region, to similar sized facilities, and to the rest of the state. For this executive summary, responses from 2005 for these facilities were compared to their responses to paper-based surveys from 2002 and 2003. In addition, comparisons were made among facilities by grouping their responses according to their EMS Regions. The 11 regions are shown in the map below. Summary findings appear following the map.

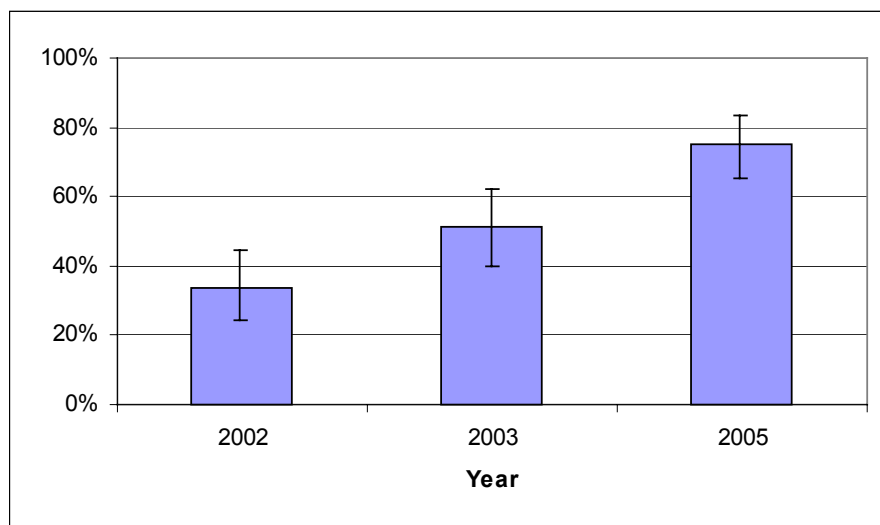
**Map of EMS Regions in Illinois**



## Pain Scale Use

- 95% of emergency departments use the Wong-Baker Faces pain scale, an increase from 87% in 2002.
- To assess pain in infants, 75% use the Faces, Legs, Activity, Cry, Consolability (FLACC) scale, which was a statistically significant increase from 34% in 2002 and 51% in 2003 (Figure 1).

**Figure 1. Use of FLACC Scale by Year of Survey**



Year of Response	Number of Facilities	FLACC Scale		95% C.I.	
		Number	Percent	Lower	Upper
2002	86	29	34%	24%	45%
2003	82	42	51%	40%	62%
2005	93	70	75%	65%	83%

## Resources

- 46% of emergency departments have an identified pain resource expert within their institution, with 60% of these hospitals having access to this person 24 hours/day. The availability of a pain resource expert within the facility differed significantly by EMS region. For downstate regions (combining regions 2, 3, 4, 5, and 6), 26% of emergency departments identified a pain resource expert within their institution. For the remaining regions in the state (combining regions 1, 7, 8, 9, 10, and 11), 63% identified a pain resource expert. NOTE: A pain resource expert is defined as a healthcare professional with advanced training in pain management whom is available for consultation.
- 27% have standing orders for pediatric pain management, which is a statistically significant increase from 9% in 2002.

## Practices

- 47% of emergency departments offer an analgesic to every pediatric patient who is in “moderate to severe pain”. The primary reason identified for not offering an analgesic to these patients during their ED stay was physician discretion/reluctance. In addition, the offering of an analgesic differed significantly when comparing findings by EMS region. For Chicago and its collar counties (combining regions 7, 8, 9, 10, and 11), 65% of emergency departments offered an analgesic to every pediatric patient in moderate to severe pain. Elsewhere in the state (combining regions 1, 2, 3, 4, 5, and 6), 32% of emergency departments offered an analgesic.

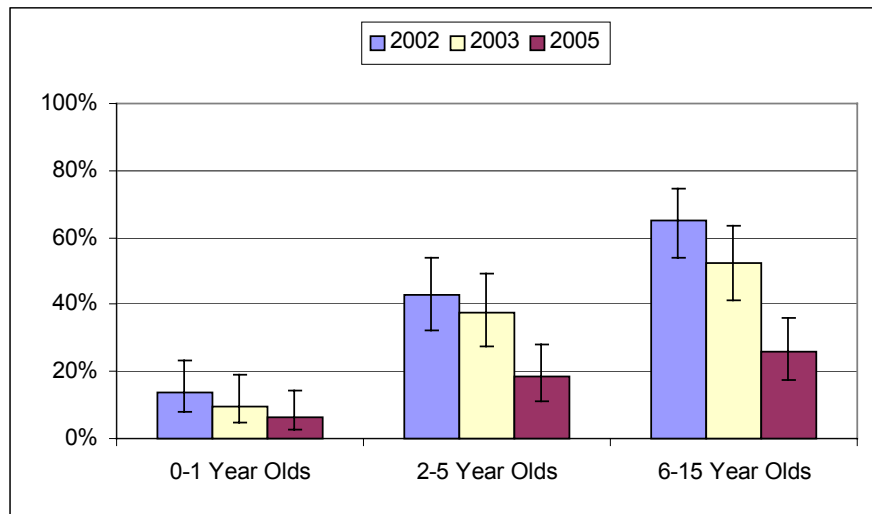
- 84% of emergency departments include a specific parameter on their ED chart for documenting pain in pediatric patients, a statistically significant increase from 46% in 2002.

### Analgesics Offered

- The primary analgesics offered to pediatric patients in the ED were identified as
  - Acetaminophen (offered in over 94% of EDs to all age groups from 0-15 years old)
  - Ibuprofen (offered in over 95% of EDs to patients aged 2-5 years old and 6-15 years old)
  - Codeine with Acetaminophen (offered in 84% of EDs to 2-5 year olds and in 88% of facilities to 6-15 year olds)
- The percentage of emergency departments offering Morphine as an IV bolus increased for all age groups between 2002 and 2005 as follows:
  - From 22% in 2002 to 31% in 2005 for 0-1 year olds
  - From 40% in 2002 to 65% in 2005 for 2-5 year olds
  - From 60% in 2002 to 81% in 2005 for 6-15 year olds
- Current literature indicates that Meperidine (Demerol) is not recommended for use in children due to the potential for seizures, and the offer of this medication decreased for all age groups between 2002 and 2005 (Figure 2).
  - For 0-1 year olds, the percentage decreased from 14% in 2002 to 6% in 2005
  - For the 2-5 year olds, the percentage decreased from 43% in 2002 to 18% in 2005
  - For the 6-15 year olds, there was a statistically significant decrease from 65% in 2002 to 26% in 2005.

On a related note, differences were found in the offering of Meperidine by region. For downstate facilities (combining regions 2, 3, 4, 5, and 6), 29% of participating EDs offered Meperidine for 2-5 year olds and 41% for 6-15 year olds. For the rest of the state (combining regions 1, 7, 8, 9, 10, and 11), 10% offered Meperidine for 2-5 year olds and 13% for 6-15 year olds.

**Figure 2. Meperidine IM or IV Offered by Patient Age and Year of Survey**

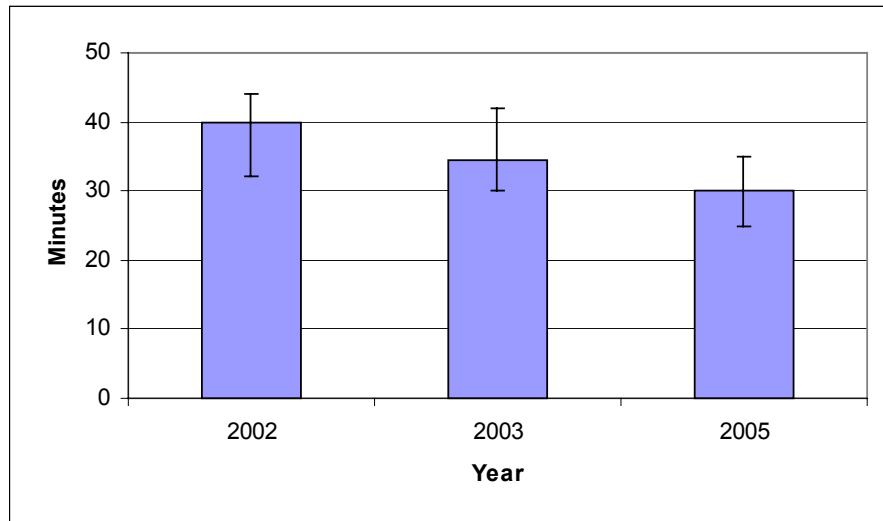


Age Group	2002 (86 Surveys)		2003 (82 Surveys)		2005 (93 Surveys)	
	Number	Percent	Number	Percent	Number	Percent
0-1 Year Olds	12	14%	8	10%	6	6%
2-5 Year Olds	37	43%	31	38%	17	18%
6-15 Year Olds	56	65%	43	52%	24	26%

## Medical Records Review

- 86% of records documented use of a pain scale in the initial assessment, an increase from 61% in 2002.
- 89% of records documented a reduction in pain based on the initial measurement used compared to 52% in 2002 (this may be related to improved documentation).
- The median time between assessment and treatment was 30 minutes, a decrease from median times of 40 minutes in 2002 and 34.5 minutes in 2003 (Figure 3).

**Figure 3. Median Times Between Assessment and Treatment by Year of Survey**



Year	Records	Median Time	95% CI	
			Lower	Upper
2002	285	40	32	44
2003	308	34.5	30	42
2005	412	30	25	35

(Figure 3; Note: for the 2005 study, times were restricted to cases reporting analgesic treatment and to values of 0 to 180 minutes from assessment to treatment. The median was determined to be a better measure than the mean because of how these values were distributed.)

## Use of Survey Materials

- The decrease in time between assessment and treatment between 2002 and 2005 coincided with the increase in use of standing orders noted earlier in this report (from 9% of facilities in 2002 to 27% in 2005). This is consistent with the data because the median time to treatment was far less when standing orders were used (5 minutes) compared to when they were not used (35 minutes). In follow-up to this finding, facilities that implemented standing orders between 2002 and 2005 were contacted regarding this change as it related to the EMSC program. These facilities reported that the 2002 and 2003 survey information was useful in supporting ongoing hospital committee work in this development, and that in one case the related discussion at an EMSC meeting served as a starting point to share protocols with other facilities and implement standing orders.