



The College of  
Emergency Medicine



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## **CEM Clinical Audits: Pain in Children**

All Trusts Report 2008

INT. GROUP: All trusts  
COMP. SET: All trusts  
YEAR(S): 2008, 2003  
DATABASE: cemc\_2008\_database with errorlog.xls

## Introduction

This report shows results from an audit of the treatment of children between the ages of 5 and 15 arriving at emergency departments (ED) in moderate or severe pain with long bone fractures against the clinical standards of the College of Emergency Medicine (CEM) Clinical Effectiveness Committee. Departments were asked to exclude patients who were only in mild pain. It compares your department with other departments that made audit returns.

Nationally, 5,543 cases from 117 emergency departments were included in the 2008 audit.

This report has been prepared by the Care Quality Commission in partnership with the College.

### History of the audits

This audit follows on from the successful earlier audits of ED treatment of children in pain in 2003, 2004, 2005 and 2007. There have been similar audits of the treatment of paracetamol overdose, fractured neck of femur, urinary retention and moderate/severe asthma in adults. These audits were developed in association with the CEM, initially by the Audit Commission's Acute Hospital Portfolio and then by the Healthcare Commission as part of its programme of service reviews. The Care Quality Commission is continuing this work as part of its work on clinical quality.

In September 2008, letters were sent to nominated contact Consultants and audit departments in each trust asking them to participate in the latest round of audits. Audit tools were made available on the Healthcare Commission and CEM websites.

Participants were asked to collect data from ED notes on 50 or more patients presenting in moderate or severe pain with long bone fractures. The audit tool summarised the data entered automatically. These summaries were then e-mailed to the College, who passed them to the Commission for the preparation of this report.

### Next Steps

Should you think that any of the figures or charts in this report misrepresent the results of your audit, please inform CEM by e-mailing [philip.mcmillan@collemergencymed.ac.uk](mailto:philip.mcmillan@collemergencymed.ac.uk) or telephoning 020 7067 1269.

Details of CEM audits for 2009 will be circulated shortly with a view to starting the audits in August 2009. The Care Quality Commission's support for the CEM audits will now be provided through its work on clinical quality with the view to publishing the results as comparative data. Some more information can be found at [http://www.collemergencymed.ac.uk/CEM/Clinical Effectiveness Committee/CEC Standards and Audit](http://www.collemergencymed.ac.uk/CEM/Clinical%20Effectiveness%20Committee/CEC%20Standards%20and%20Audit)

## Results for this department since 2003

The pain in children audit is now in its fifth round, and the table below shows your department's results for each round. It also includes national results for 2008 (in blue) so that departments can consider their performance against that of other departments. The table on the next page summarises the national results for each round of the audit.

Table 1. Comparison of 2008 Pain in Children audit against previous years

|   | National results 2008 |        |                | Results for this department |      |      |      |      |
|---|-----------------------|--------|----------------|-----------------------------|------|------|------|------|
|   | Lower quartile        | Median | Upper Quartile | 2008                        | 2007 | 2005 | 2004 | 2003 |
| <b>How promptly after arrival was analgesia provided? (%)</b>                               |                       |        |                |                             |      |      |      |      |
| Pre-hospital admin.   | 0                     | 6      | 10             |                             |      |      |      |      |
| Within 20 minutes   | 27                    | 42     | 58             |                             |      |      |      |      |
| Within 30 minutes   | 38                    | 58     | 70             |                             |      |      |      |      |
| Within 60 minutes   | 54                    | 74     | 86             |                             |      |      |      |      |
| <b>How promptly after arrival was analgesia provided for patients in severe pain? (%)</b>   |                       |        |                |                             |      |      |      |      |
| Pre-hospital admin.   | 0                     | 0      | 0              |                             |      |      |      |      |
| Within 20 minutes   | 34                    | 50     | 67             |                             |      |      |      |      |
| Within 30 minutes   | 60                    | 73     | 87             |                             |      |      |      |      |
| Within 60 minutes   | 86                    | 93     | 100            |                             |      |      |      |      |
| <b>How promptly after arrival was analgesia provided for patients in moderate pain? (%)</b> |                       |        |                |                             |      |      |      |      |
| Pre-hospital admin.   | 0                     | 0      | 11             |                             |      |      |      |      |
| Within 20 minutes   | 33                    | 49     | 60             |                             |      |      |      |      |
| Within 30 minutes   | 53                    | 63     | 77             |                             |      |      |      |      |
| Within 60 minutes   | 69                    | 84     | 94             |                             |      |      |      |      |
| <b>Was analgesia provided in accordance with need? (%)</b>                                  |                       |        |                |                             |      |      |      |      |
| Pain score recorded   | 26                    | 55     | 94             |                             |      |      |      |      |
| Accepting analgesia   | 59                    | 71     | 82             |                             |      |      |      |      |
| In line with guidelines   | 38                    | 58     | 72             |                             |      |      |      |      |
| Evidence of re-evaluation   | 10                    | 18     | 30             |                             |      |      |      |      |
| Not offered, no reason  | 0                     | 5      | 18             |                             |      |      |      |      |
| <b>Time to leave department (%)</b>   |                       |        |                |                             |      |      |      |      |
| Left department within 1hr  | 2                     | 6      | 12             |                             |      |      |      |      |
| Left department within 2hr  | 28                    | 38     | 49             |                             |      |      |      |      |
| Left department within 4hr  | 82                    | 95     | 98             |                             |      |      |      |      |
| <b>Supplementary figures</b>  |                       |        |                |                             |      |      |      |      |
| % Severe pain   | 13                    | 28     | 40             |                             |      |      |      |      |
| % Moderate pain   | 40                    | 59     | 76             |                             |      |      |      |      |
| No. cases audited   | 49                    | 50     | 50             |                             |      |      |      |      |
| No. departments   |                       | 117    |                | 117                         | 139  | 41   | 28   | 172  |

The charts from page 5 to the end of the report allow more detailed comparisons to be made.

## Summarised National Results since 2003

The table below summarises the national results for the current round of the audit alongside previous rounds to show how performance has generally improved. By using the lower quartile, the median and the upper quartile the table indicates the range in performance between less well, average and better performing departments.

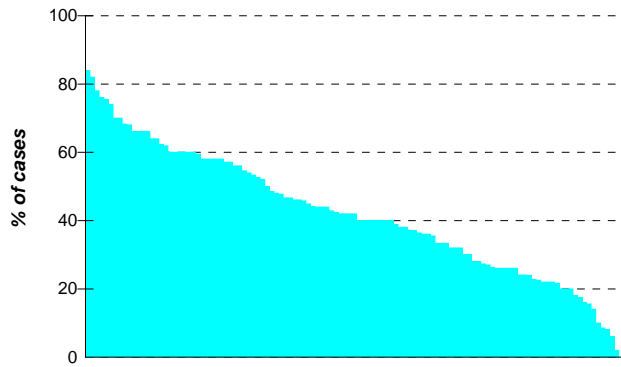
**Table2: National results since 2003**

|   | Results for 2008 |        |                | Results for 2007 |        |                | Results for 2005 |        |                | Results for 2004 |        |                | Results for 2003 |        |                |
|---|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|
|   | Lower quartile   | Median | Upper quartile | Lower quartile   | Median | Upper quartile | Lower quartile   | Median | Upper quartile | Lower quartile   | Median | Upper quartile | Lower quartile   | Median | Upper quartile |
| <b>How promptly after arrival was analgesia provided? (%)</b>                                   |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| Pre-hospital admin.   | 0                | 6      | 10             | 0                | 3      | 10             |                  |        |                |                  |        |                |                  |        |                |
| Within 20 minutes   | 27               | 42     | 58             | 27               | 42     | 58             | 27               | 35     | 51             | 13               | 23     | 37             | 17               | 29     | 47             |
| Within 30 minutes   | 38               | 58     | 70             | 40               | 60     | 73             | 37               | 55     | 73             | 22               | 36     | 51             | 25               | 42     | 60             |
| Within 60 minutes   | 54               | 74     | 86             | 57               | 76     | 90             | 57               | 73     | 86             | 40               | 53     | 71             | 36               | 56     | 78             |
| <b>How promptly after arrival was analgesia provided for patients in severe pain? (% pts)</b>   |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| Pre-hospital admin.   | 0                | 0      | 0              | 0                | 0      | 0              |                  |        |                |                  |        |                |                  |        |                |
| Within 20 minutes   | 34               | 50     | 67             | 43               | 58     | 75             | 23               | 27     | 27             | 32               | 40     | 51             | 40               | 52     | 71             |
| Within 30 minutes   | 60               | 73     | 87             | 64               | 76     | 86             | 29               | 40     | 69             | 48               | 61     | 76             | 70               | 75     | 87             |
| Within 60 minutes   | 86               | 93     | 100            | 82               | 95     | 100            | 55               | 67     | 85             | 79               | 83     | 87             | 81               | 91     | 99             |
| <b>How promptly after arrival was analgesia provided for patients in moderate pain? (% pts)</b> |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| Pre-hospital admin.   | 0                | 0      | 11             | 0                | 0      | 9              |                  |        |                |                  |        |                |                  |        |                |
| Within 20 minutes   | 33               | 49     | 60             | 36               | 56     | 66             |                  |        |                |                  |        |                |                  |        |                |
| Within 30 minutes   | 53               | 63     | 77             | 56               | 67     | 82             |                  |        |                |                  |        |                |                  |        |                |
| Within 60 minutes   | 69               | 84     | 94             | 73               | 85     | 94             |                  |        |                |                  |        |                |                  |        |                |
| <b>Was analgesia provided in accordance with need? (% of pts)</b>                               |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| pain score recorded   | 26               | 55     | 94             | 20               | 44     | 80             | 16               | 39     | 72             | 0                | 26     | 54             | 0                | 12     | 48             |
| accepted analgesia  | 59               | 71     | 82             | 57               | 77     | 86             | 60               | 73     | 89             | 39               | 54     | 79             | 43               | 61     | 83             |
| in accordance with guidelines   | 38               | 58     | 72             | 33               | 63     | 87             | 44               | 58     | 79             | 23               | 40     | 63             | 22               | 46     | 77             |
| evidence of re-evaluation   | 10               | 18     | 30             | 6                | 17     | 36             | 4                | 11     | 23             | 0                | 3      | 10             | 0                | 7      | 18             |
| not offered, no reason  | 0                | 5      | 18             | 0                | 0      | 6              |                  |        |                |                  |        |                |                  |        |                |
| <b>Time to leave Emergency Department (% of pts)</b>  |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| left within 1 hr  | 2                | 6      | 12             |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| left within 2 hrs   | 28               | 38     | 49             |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| left within 4 hrs   | 82               | 95     | 98             |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| <b>Supplementary figures</b>  |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| % in severe pain  | 13               | 28     | 40             | 17               | 26     | 41             | 21               | 38     | 50             | 27               | 32     | 59             | 15               | 27     | 40             |
| % in moderate pain  | 40               | 59     | 76             | 55               | 73     | 82             |                  |        |                |                  |        |                |                  |        |                |
| No. cases audited   | 49               | 50     | 50             | 30               | 32     | 40             | 30               | 30     | 31             | 30               | 36     | 50             | 30               | 35     | 45             |
| No. departments   |                  | 117    |                |                  | 139    |                |                  | 41     |                |                  | 27     |                |                  | 172    |                |

The charts from page 5 to the end of the report allow more detailed comparisons to be made.

## How promptly was analgesia provided?

**Chart 01: Analgesia within 20 minutes**



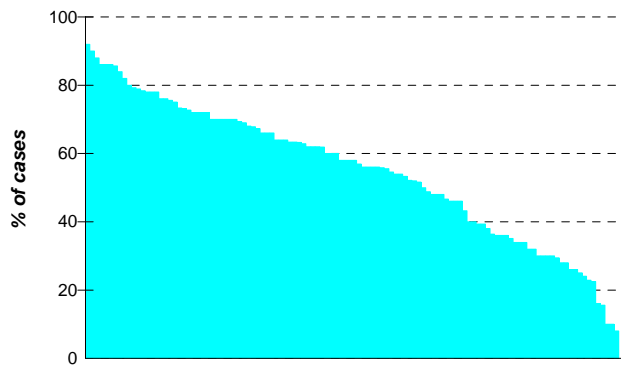
*Results for All trusts within All trusts*

Comments:

The charts on this page show percentages of audited cases in which it was documented in the notes that analgesia was first offered or provided within (respectively) 20, 30 and 60 minutes of the patient’s arrival in the ED. (The charts are cumulative: those receiving analgesia within 20 minutes are included in the figures for 30 and 60 minutes.)

Nationally, 42% of audited children received pain relief within 20 minutes of arrival, 55% within 30 minutes and 69% within 60 minutes of arrival in ED.

**Chart 02: Analgesia within 30 minutes**



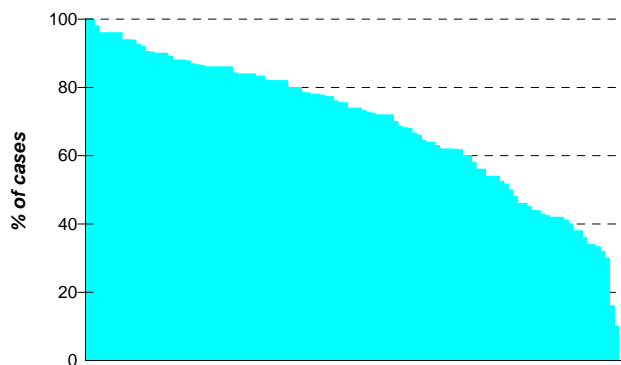
*Results for All trusts within All trusts*

The charts on this page show large variations between EDs.

Some EDs provided very prompt pain relief: in 4% at least 75% of children received analgesia within 20 minutes. And in 34% of EDs at least 50% of children received analgesia within 30 minutes. But in other departments analgesia was slower. In 21% of EDs under 50% of children received analgesia within 60 minutes.

**Using charts 1 to 3 EDs should consider whether they are providing analgesia promptly. If not they should review their procedures.** (EDs can use the Compare software to investigate their performance.)

**Chart 03: Analgesia within 60 minutes**



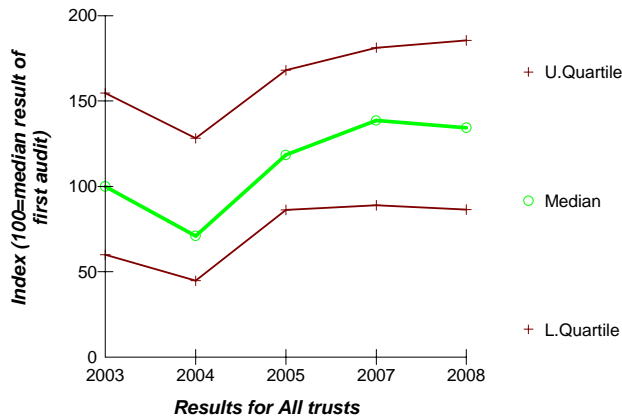
*Results for All trusts within All trusts*

|            | Severe pain | Moderate pain |
|------------|-------------|---------------|
| in 20 mins | 50%         |               |
| in 30 mins | 75%         | 75%           |
| in 60 mins | 98%         | 90%           |

Table 1 on page 3 shows your performance against these standards.

## Trends in promptness of analgesia

**Chart 01T: Analgesia within 20 minutes**  
- trend over successive audits

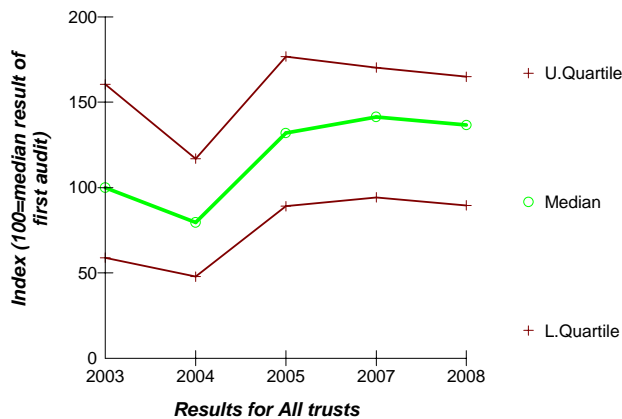


Comments:

These trend charts show changes over successive rounds of the audit in the promptness with which analgesia was provided in your department compared to other EDs. The comparative set may vary from year to year as not all emergency departments participated in each round of the audit.

All of the values shown on these trend charts are in relation to the national median score in the first audit (i.e. a current score greater than 100 represents improvement on the overall national result of the first audit).

**Chart 02T: Analgesia within 30 minutes**  
- trend over successive audits

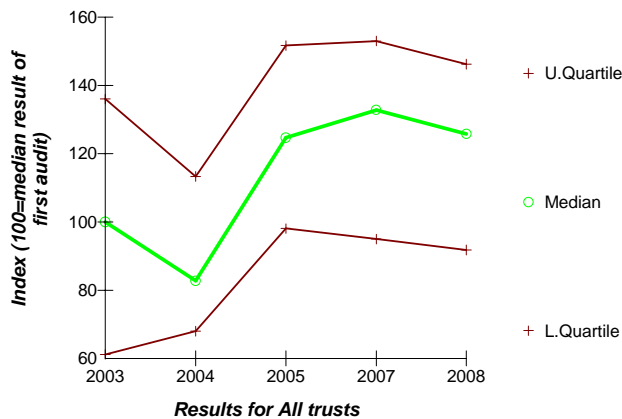


**Good performance is indicated if the thick line (your results) is now either above the line denoting the upper quartile performance of all participating Emergency Departments, or is converging towards it.**

Performance has improved since 2003. However the rate of improvement since 2005 has been slower and for some measures there was a slight fall in 2008.

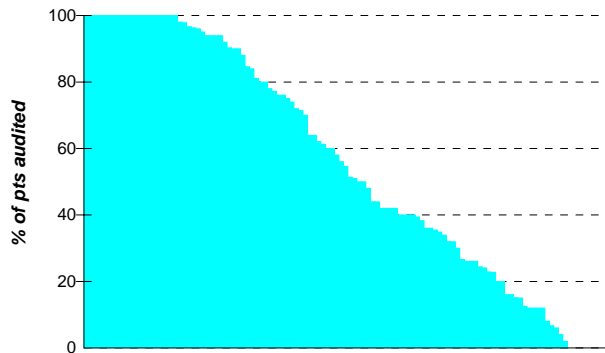
On comparing the trends for analgesia within 20, 30 and 60 minutes. Here, the rate of improvement for proportion of patients receiving analgesia in 60 mins is less than 20 or 30 mins.

**Chart 03T: Analgesia within 60 minutes**  
- trend over successive audits



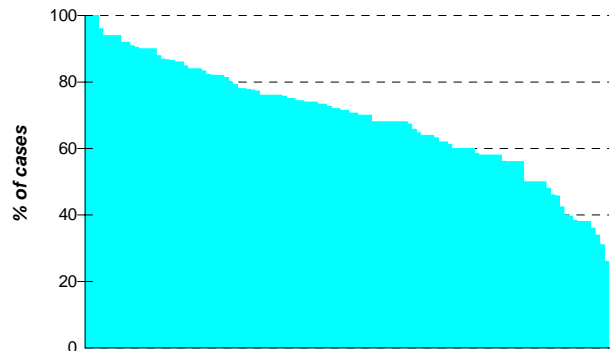
## Was analgesia provided in accordance with need?

**Chart 04: Pain score recorded**



*Results for All trusts within All trusts*

**Chart 05: Analgesia accepted**



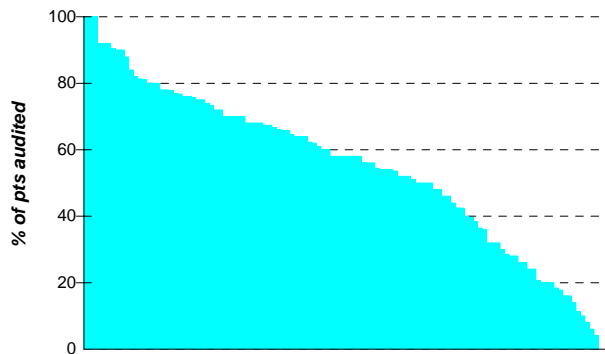
*Results for All trusts within All trusts*

Charts 04 and 05 shows whether a pain score was recorded or analgesia accepted. Across the audit a pain score was recorded for only 55% of children and 69% received analgesia.

For both measures performance between departments varied greatly. In 18% of EDs all children had a pain score recorded and in 3% all children received analgesia. However in 47% of EDs under 50% of children had a pain score recorded, and in 12% of EDs under 50% received analgesia.

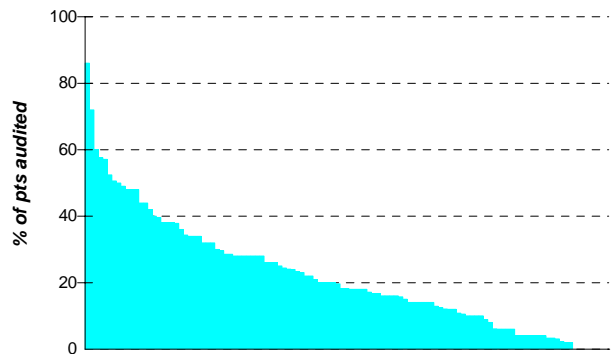
**Departments should review their practices where their performance is poor.**

**Chart 06: Analgesia within guidelines**



*Results for All trusts within All trusts*

**Chart 07: Analgesia re-evaluated**



*Results for All trusts within All trusts*

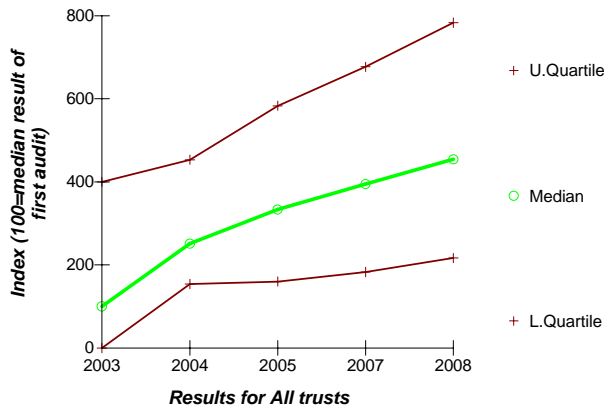
Across the 2008 audit, 54% of children received analgesia that was according to CEM guidelines (or local ones if present). Chart 6 shows substantial variation between EDs. In 12% for at least 80% analgesia was provided within guidelines (and for a few EDs it was 100%). But in 34% of EDs less than half of analgesia complied with guidelines.

CEM recommends that analgesia is re-evaluated within 30 minutes of administration for those in severe pain, or 60 minutes for those in moderate pain. Chart 7 shows that in most EDs performance was low: in 53% re-evaluation was evidenced for less than 20% of children. But in 7% of EDs analgesia was re-evaluated for at least 50% of children. Nationally, reevaluation was noted for 22% of cases, and despite poor overall performance there is an improvement over the 5-year period.

**Where performance is low in either chart 06 or 07, EDs should consider their practices, including whether sufficient information about analgesia was recorded.**

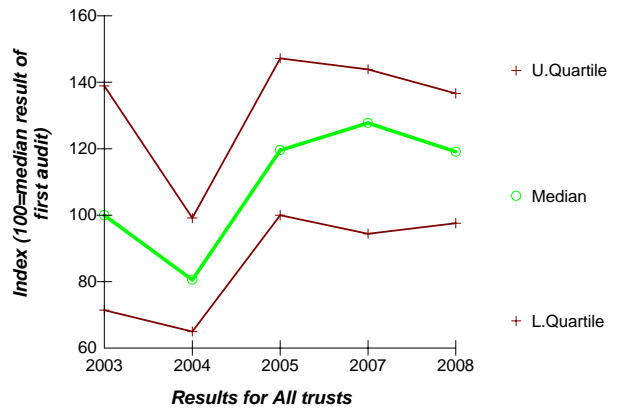
Trends in provision of analgesia

Chart 04T: Pain score recorded - trend over successive audits



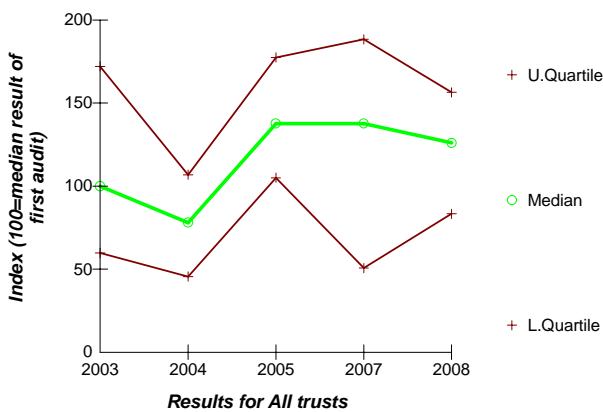
There has been a steady increase in the recording of pain scores for those EDs in the upper quartile and median range across successive audits. However poorer performing trusts have shown little improvement since 2004 audit.

Chart 05T: Analgesia accepted - trend over successive audits



Since 2005 patients accepting analgesia in better performing EDs, as shown by the upper quartile, has fallen. In 2008 the median which represents a typical ED, also fell. The reasons for this are unclear. (Note, cases where there was sufficient pre-hospital analgesia are counted as receiving analgesia.) EDs should investigate if their performance has fallen.

Chart 06T: Analgesia within guidelines - trend over successive audits



2008 saw a small decline in performance for better performing and typical EDs as shown by the upper quartile and median.

However the lower quartile representing poorer performing EDs rose, but still remained below the baseline level achieved in 2005.

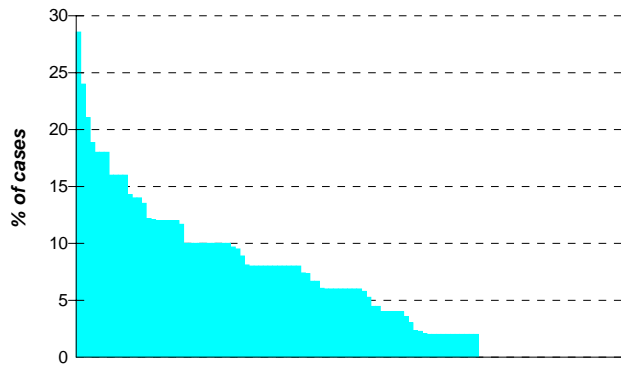
The trend charts on this page show how rapidly practice in your department has changed over successive audits compared to that of other EDs. The comparative set may vary from year to year as not all EDs participated in each round of the audit.

All of the values shown on these trend charts are in relation to the national median score in the first audit (i.e. a current score greater than 100 represents improvement on the overall national result of the first audit). Good performance is indicated if the thick line (your results) is now either above the line denoting the upper quartile performance of all participating EDs, or is converging towards it.



Contextual measures

**Chart 08: No analgesia in ED because provided before arrival at hospital**



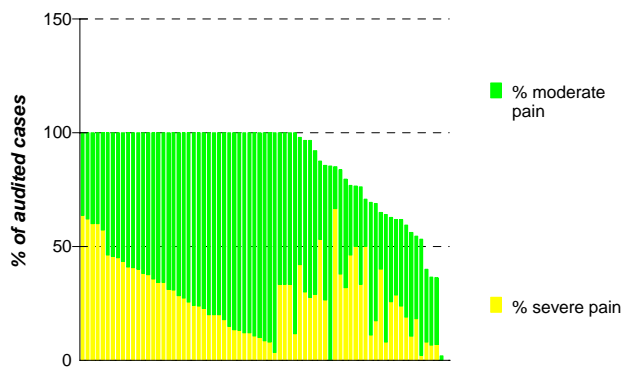
Results for All trusts within All trusts

This contextual indicator that may help to explain inter-departmental variation in speed of analgesia.

Nationally 6% of audited children were not given analgesia in the ED because they had received sufficient pain relief prior to arrival.

They are counted in the number of children receiving analgesia in the ED.

**Chart 09: Patients in severe or moderate pain**



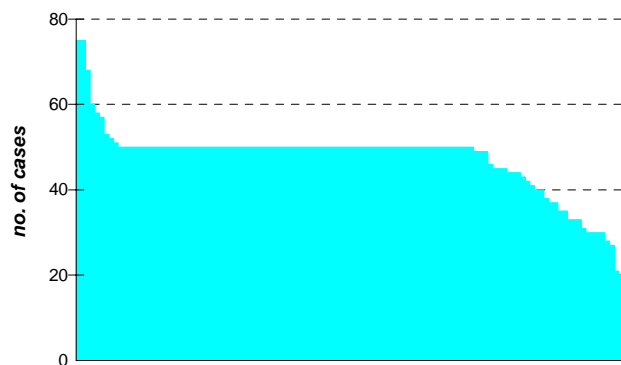
Results for All trusts

All of the patients included in this audit should have been in severe or moderate pain.

Nationally, 29% of those audited children for whom a pain score was recorded in the ED notes were judged to be in severe pain when first assessed in ED (the lower part of each bar) and 59% in moderate pain.

The chart shows that some departments included children in the audit that did not meet the pain criteria.

**Chart 10: Number of cases audited**



Results for All trusts within All trusts

For the 2008 audit the sample number was increased to 50 cases from 30.

Most EDs managed to achieve this. A small group though did not, with some auditing less than 30 cases.