The Royal College of Emergency Medicine

FRACTURED NECK OF FEMUR

CLINICAL AUDIT 2017/18

National Report

Published: 10 October 2018

Contents

Foreword

Dr Taj Hassan, RCEM President

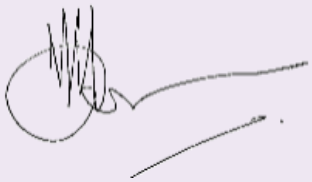
Patients attending the Emergency Department with a fractured neck of femur are amongst the most vulnerable in our society. We know that 10% will die after a month and 30% within a year. Such patients have complex medical, surgical, and rehabilitation needs, and a well-coordinated multidisciplinary team approach is essential for the best outcome, but it must start well in the ED setting. Early timely assessment and management combined with good access to surgical intervention have been key in helping to drive down morbidity and mortality. We know that every year almost 65,000 suffer this potentially devastating injury, and failures in the pathway are directly linked to patient harm.

This is an area RCEM has previously focused on. It is the 7th time the audit has been performed and yet the first that we have looked at organisational factors that will influence care delivered in ED.

Sadly the results suggest that the tremendous pressures of increasing demand and complexity, combined with a crowded ED, have had repercussions on clinical care delivery in this area. The key marker of flow – admission to hospital within 4hrs has slipped from a median of 86% to 41%. Even these figures hide the fact that patients may well have waited much longer to get into a hospital bed, thereby avoiding further secondary soft tissue harm.

There is much work going on at a national level to improve system flow, but we know there are things we can rightly control and that will help our patients. Organisationally we should have a hip fracture lead within each ED and work closely with nursing colleagues to champion excellence in the pathway. They will also then be able to ensure that staff training in nerve block is optimised, that equipment is always available, and that data is well recorded. Finding ways to prioritise vulnerable patient access to a hospital bed in a timely fashion for such treatable disease is utterly vital. Clinical Directors have a responsibility to both find and support such clinical champions.

As ever, I am grateful to those who contributed - to the QEC Committee for their ongoing work in this area and of course to the Quality team at RCEM who have worked so hard to produce another excellent document. Now we need to make sure we can find ways to reverse a trend that is adding to patient harm.



Dr Taj Hassan, RCEM President

Co-signed:

Dr Adrian Boyle, Chair of Quality in Emergency Care Committee

Dr Jeff Keep, Chair of Quality Assurance and Improvement Sub Committee

Executive Summary

Overview

A total of 12724 patients presenting to 186 Emergency Departments (EDs) were included in this audit. This was the seventh time this audit has been conducted. The performance summary chart on the next page is a summary of the national performance against standards.

The purpose of the audit is to monitor documented care against the standards published in July 2017. The audit is designed to drive clinical practice forward by helping clinicians examine the work they do day-to-day and benchmark against their peers, and to recognise excellence. There are many improvements required, as well as much good practice occurring and the Royal College of Emergency Medicine (RCEM) believes that this audit is an important component in sharing this and ensuring patient safety.

Key findings

Organisational data

This is the first time that organisational data were analysed. Only **51%** of EDs have a nominated lead for hip fracture management. This was a surprising find and one that should be addressed rapidly. **86%** of EDs have a written protocol but only half of these protocols include guidance on when to perform a CT or MRI scan. Only **35%** of EDs provide information leaflets for patients, carers or relatives.

93% of EDs have the necessary equipment and staff to perform a nerve block (e.g. facia iliaca block) and we hope that this audit will springboard local review to improve pain management pathways especially in #NOF.

Patient data

93% of patients with #NOF arrive by ambulance yet only **66%** have documented evidence of having received analgesia before arrival. Although this is improving more work needs to be done as there is wide variability of pre-hospital analgesia of **0-98%**.

it is important to note a large drop in performance of giving analgesia to patients, RCEM believes this may be related to capacity issues. However, EDs are recording pain scores better and this has consistently improved since 2003. Our results show that if a pain score is recorded patients will receive analgesia sooner, especially if the pain score is high.

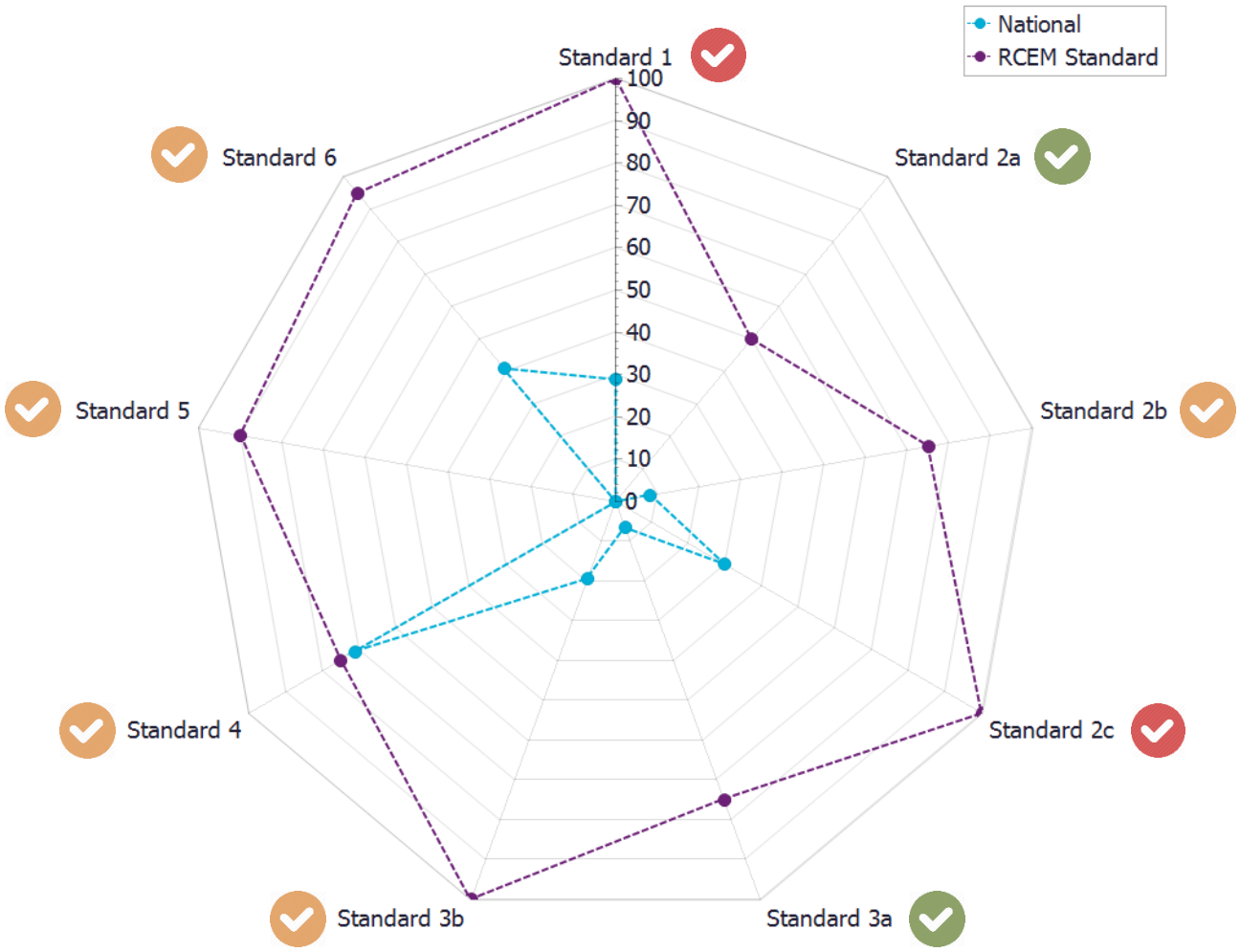
Re-evaluation of pain is important but not done well (only in **40%**) and not done in a timely manner. This is disappointing as the graphs in this report show. Although there is overall improvement in pain scores, some patients may still be in severe pain.

Key recommendations

1. Every ED should nominate a hip fracture lead to improve and champion standards of care in this area by working with the lead anaesthetist.
2. Written protocols and pathways for hip fracture management should be updated to include a section on how to investigate using CT and/or MRI when the x-ray is normal but the clinical findings are still suspicious of a #NOF. Protocols should be easily accessible for all staff.
3. Protocols and pathways should be urgently reviewed to ensure a focus on the rapid assessment and relief of pain, including utilising nurse-led prescribing.
4. Where possible, liaise with local ambulance Trusts to encourage pain relief prior to arrival at hospital.
5. Pain scoring should be mandatory for all patients with suspected or confirmed #NOF. EDs should undertake QIPs to find a locally accepted way of ensuring pain scores are done.
6. Re-evaluation of pain is vital to ensure that analgesia given has been effective.
7. Nerve blocks should be used where possible to limit the use of systemic analgesia. Patients must be monitored following blocks.

Performance Summary

This graph shows the median national performance against standards for this audit



Standards:

Fundamental Developmental Aspirational

↑ **Higher scores (e.g. 100%)** indicate higher compliance with the standards and better performance.

↓ **Lower scores (e.g. 0%)** indicate lower compliance with the standards and EDs may wish to investigate the reasons.

Summary of national findings

	RCEM Standard (%)	National Results				
		2017/18 (12724 cases)			2012/13	2009/10
		Lower quartile	Median	Upper quartile	Median	Median
STANDARD 1: Pain score is assessed within 15 minutes of arrival *The standard was previously 'pain score assessed at any time'	100	14%	29%	46%	72%*	62%*
STANDARD 2: Patients in severe pain (pain score 7 to 10) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)						
a. 50% within 20 mins of arrival or triage whichever is the earliest.	50	0%	0%	10%	15%	17%
b. 75% within 30 mins of arrival or triage whichever is the earliest.	75	0%	8%	21%	29%	33%
c. 100% within 60 mins of arrival or triage whichever is the earliest.	100	11%	30%	45%	56%	67%
STANDARD 3: Patients with moderate pain (pain score 4 to 6) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)						
a. 75% within 30 mins of arrival or triage whichever is the earliest.	75	0%	6%	14%	22%	22%
b. 100% within 60 mins of arrival or triage whichever is the earliest.	100	9%	20%	31%	43%	50%
STANDARD 4: 75% of patients should have an X-ray within 120 minutes of arrival or triage, whichever is the earliest.	75	56%	71%	80%	83%	84%
STANDARD 5: 90% of patients with severe or moderate pain should have documented evidence of re-evaluation and action within 30 minutes of receiving the first dose of analgesic.	90	0%	0%	0%	4%	2%
STANDARD 6: 95% of patients should be admitted within 4 hours of arrival.	95	20%	41%	65%	86%	90%

NOTE: these national figures present the **median** and **quartiles**, which may differ from other results quoted in the body of this report which are **mean** (average) values calculated over all audited cases due to the distribution of data.

Introduction

This report shows the results of an audit of adult patients who presented to EDs with fractured neck of femur.

Background

65,000 patients a year suffer a fractured neck of femur, the majority presenting via the ED. Our focus should be on pain relief including nerve blocks and making the correct diagnosis through the use of MRI and CT scans where necessary. The audit standards have therefore changed slightly and we have included some questions looking at organisational factors.

The purpose of the audit is to identify current performance in EDs against RCEM clinical standards and show the results in comparison with other departments. This audit is being conducted by RCEM for the seventh time. The audit will enable individual hospitals to compare their current performance with results from previous audits.

Aims

The audit was conducted for the seventh time to continue the work of the six previous data collections. It identifies current performance in EDs against RCEM clinical standards, shows the results in comparison with other departments, and also across time periods.

There is great scope for improvement in the care provided to patients with fractured neck of femur. Results from the 2012/13 audit showed that only 32% of patients were given analgesia within 60 minutes. Analgesia was provided slightly more quickly for patients judged to be in severe pain where 56% received analgesia within 60 minutes. Less than half of patients (44%) received an x-ray within 60 minutes. 86% of patients were admitted within 4 hours.

Trends in the recognition and management of patients with fractured neck of femur have been examined further, and improvement objectives set where needed.
The purpose of the audit was:

1. To benchmark current performance in EDs against the standards
2. To allow comparison nationally and between peers
3. To identify areas in need of improvement
4. To compare against previous performance

Methodology

Participation summary

Nationally, **12724** cases from **186** EDs were included in the audit.

Country	Number of relevant EDs	Number of cases
National total	186/233 (80%)	12724
England	160/179 (89%)	11213
Scotland	5/26 (19%)	301
Wales	13/13 (100%)	731
Northern Ireland	6/9 (67%)	365
Isle of Man /Channel Islands	2/3 (66%)	114

Pilot methodology

A pilot of the audit was carried out prospectively from 5 to 14 June 2017, with the help of 5 sites. The pilot period was used to test the standards, audit questions, quality of data collected and reporting template.

Pilot sites

We are grateful to contacts from the following trusts for helping with the development of the audit:

- Homerton University Hospital Hospitals NHS Foundation Trust
- Northampton General Hospital NHS Trust
- Sheffield Teaching Hospitals NHS Foundation Trust
- University Hospital of South Manchester NHS Foundation Trust
- Western Sussex Hospitals NHS Foundation Trust

Audit history

All EDs in the UK were invited to participate in July 2017. Data were collected using an online data collection tool. The audit is included in the NHS England Quality Accounts for 2017/2018.

Participants were asked to collect data from ED patient records on consecutive cases who presented to the ED between 1st January 2017 and 31st December 2017.

Sample size

RCEM recommended auditing a different number of cases depending on the number of the patients seen within the data collection period. If this was an area of concern, EDs were able to submit data for more cases for a more in-depth look at their performance.

Basing the audit sample size on the number of cases in this way increased the reliability of your ED's audit results.

RCEM recommended that audited cases were collected consecutively during the data collection period (1 January 2017 to 31 December 2017).

Expected number of cases	Recommended audit sample
< 50	All eligible cases
50-250	50 consecutive cases
>250	100 consecutive cases

Standards

The audit asked questions against standards published by RCEM in 2017:

STANDARD	Standard type
1. Pain score is assessed within 15 minutes of arrival	Fundamental
2. Patients in severe pain (pain score 7 to 10) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)	
a. 50% within 20 mins of arrival or triage whichever is the earliest.	Aspirational
b. 75% within 30 mins of arrival or triage whichever is the earliest.	Developmental
c. 100% within 60 mins of arrival or triage whichever is the earliest.	Fundamental
3. Patients with moderate pain (pain score 4 to 6) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)	
a. 75% within 30 mins of arrival or triage whichever is the earliest.	Aspirational
b. 100% within 60 mins of arrival or triage whichever is the earliest.	Developmental
4. 75% of patients should have an X-ray within 120 minutes of arrival or triage, whichever is the earliest.	Developmental
5. 90% of patients with severe or moderate pain should have documented evidence of re-evaluation and action within 30 minutes of receiving the first dose of analgesic.	Developmental
6. 95% of patients should be admitted within 4 hours of arrival.	Developmental

About this report

Notes about the results

The **median** value of each indicator is that where equal numbers of participating EDs had results above and below that value. The median figures in the summary table may differ from other results quoted in the body of this report which are **mean** (average) values calculated over all audited cases.

The **lower quartile** is the median of the lower half of the data values.

The **upper quartile** is the median of the upper half of the data values.

Understanding the different types of standards

Fundamental: need to be applied by all those who work and serve in the healthcare system. Behaviour at all levels and service provision need to be in accordance with at least these fundamental standards. No provider should provide any service that does not comply with these fundamental standards, in relation to which there should be zero tolerance of breaches.

Developmental: set requirements over and above the fundamental standards.

Aspirational: setting longer term goals.

For definitions on the standards, refer to appendix.

Quality Improvement Project

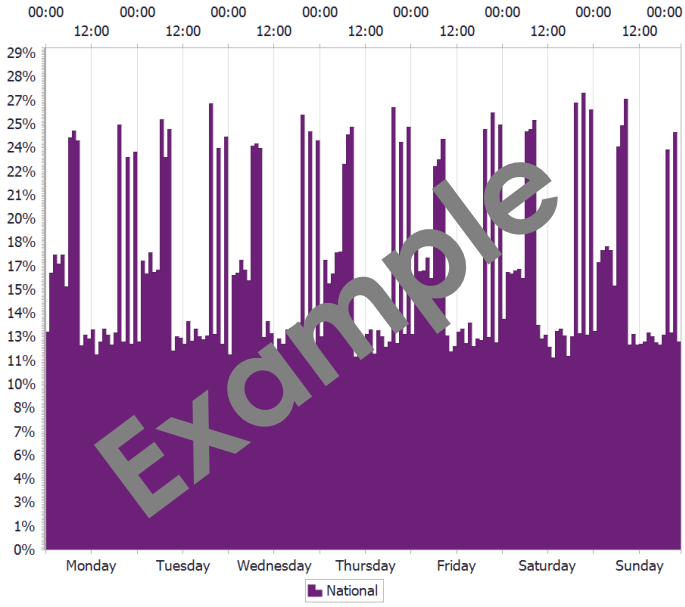
QIP

This symbol identifies an area that would be a good topic nationally for a QIP. Local QIP priorities may vary depending on performance.

Understanding the charts

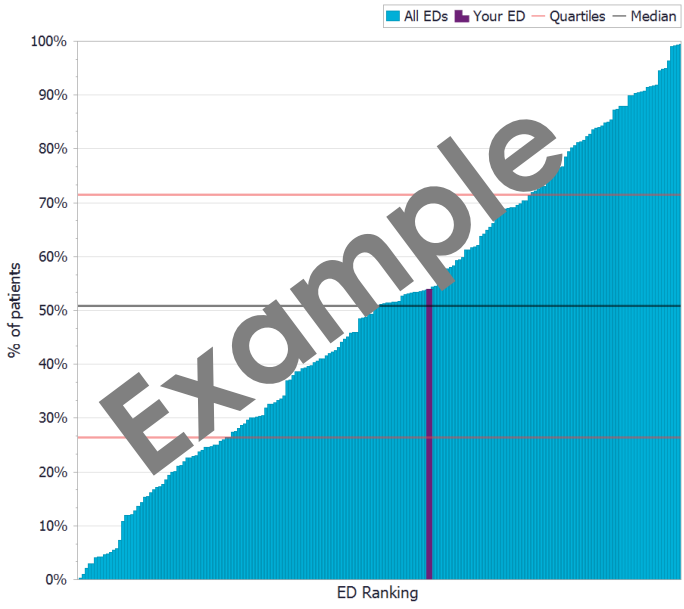
There are different types of charts within this report to present the data. The example graphs below show the type of charts you will encounter.

Time and date



This chart shows the day and time of patient arrivals. Higher bars show when a lot of patients are arriving in the ED, whereas lower bars show quieter arrival times.

Sorted Bar Chart

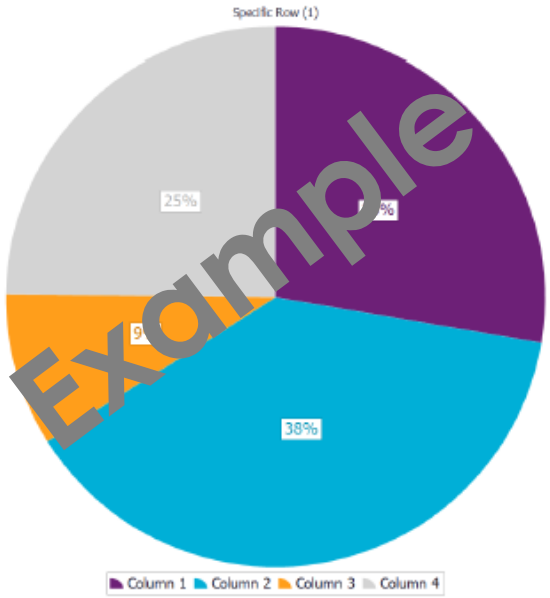


Sorted bar charts show the national performance, where each bar represents the performance of an individual ED. The horizontal lines represent the median and upper/lower quartiles.

Stacked Bar Chart

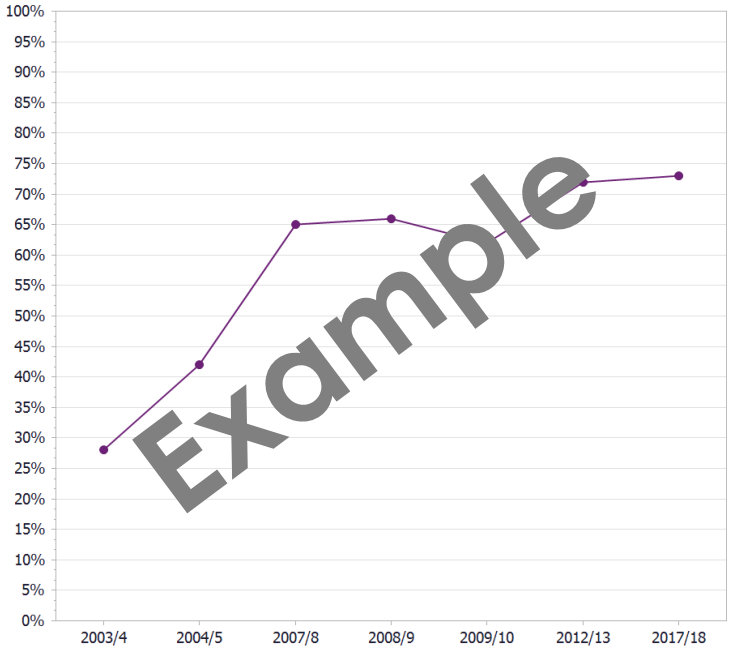
Stacked bar charts show the breakdown of a group nationally. These are used when it will be helpful to compare two groups side by side, for example comparing local data with the national data.

Pie Chart



Pie charts show the breakdown of a group nationally. They help you understand the composition of a sample and which subgroups are the largest.

Line chart

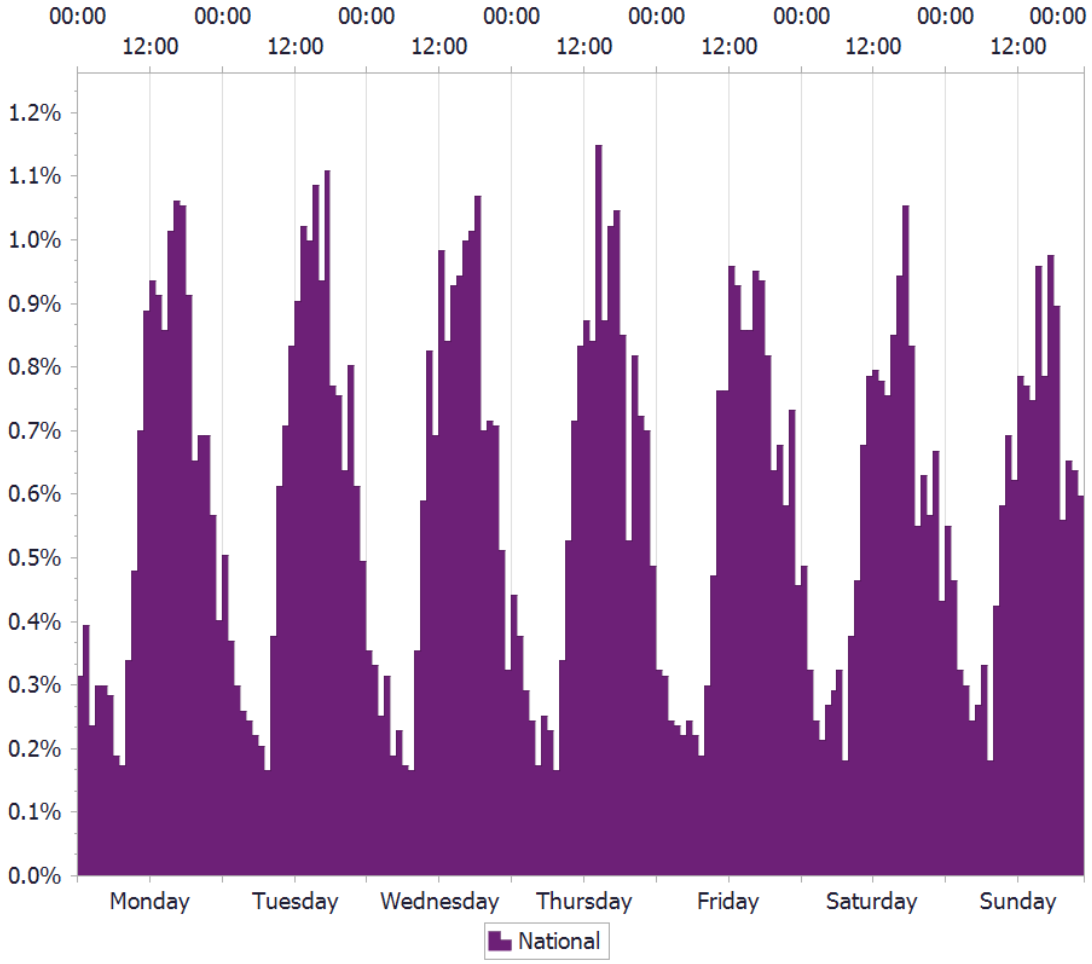


These charts show changes over time, so you can see whether performance is getting better, worse or staying the same.

Section 1: Casemix

National casemix and demographics of the patients

Q2: Date and time of arrival

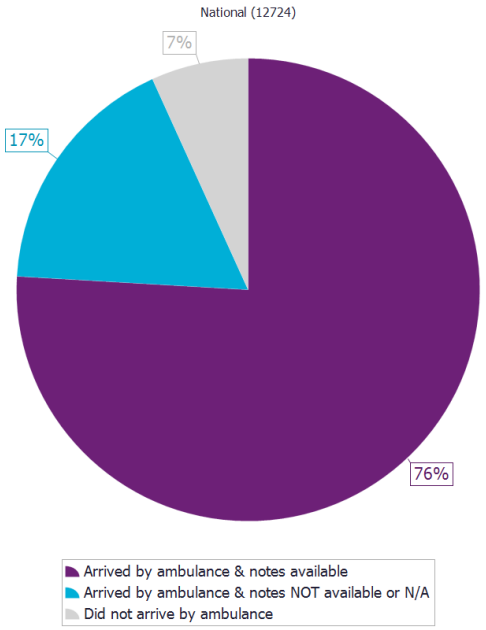


Sample: all patients (n=12724)

Section 2: Pre-hospital

This section gives details about the patient's arrival and pre-hospital care.

Q3a & 3b: Patient arrival method

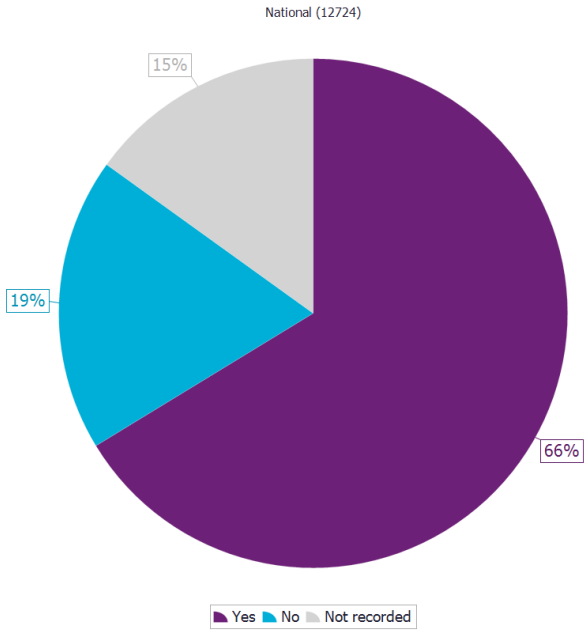


Sample: all patients (n=12724)

As seen in previous audits, the majority of patients included in the audit arrived by ambulance. The ambulance notes form an integral part of the record of the patient's treatment.

Nationally, copies of the ambulance notes were available to EDs for 76% of audited patients, a similar figure to the last audit (79% in 2012/13).

Q4: Was analgesia administered pre-hospital?



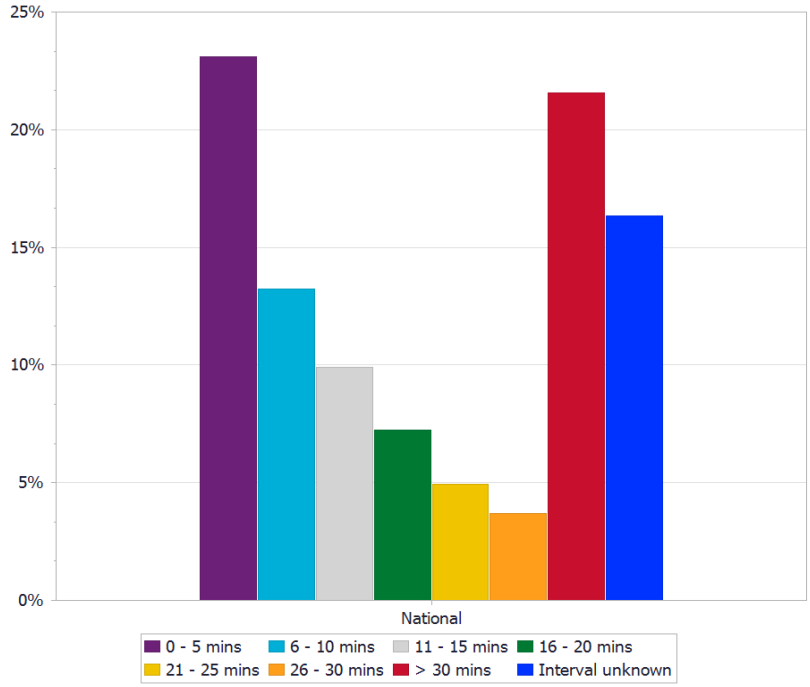
Sample: all patients (n=12724)

Nationally 66% of audited patients had received some pain relief prior to arrival in the ED. This is an improvement over the 53% in 2012/13, but considerable local variation remains. The proportion of patients in each ED receiving analgesia pre-hospital ranges from 0-98%.

Section 3: Audit results

Pain and analgesia – all patients

Q5: Was a pain score taken on arrival

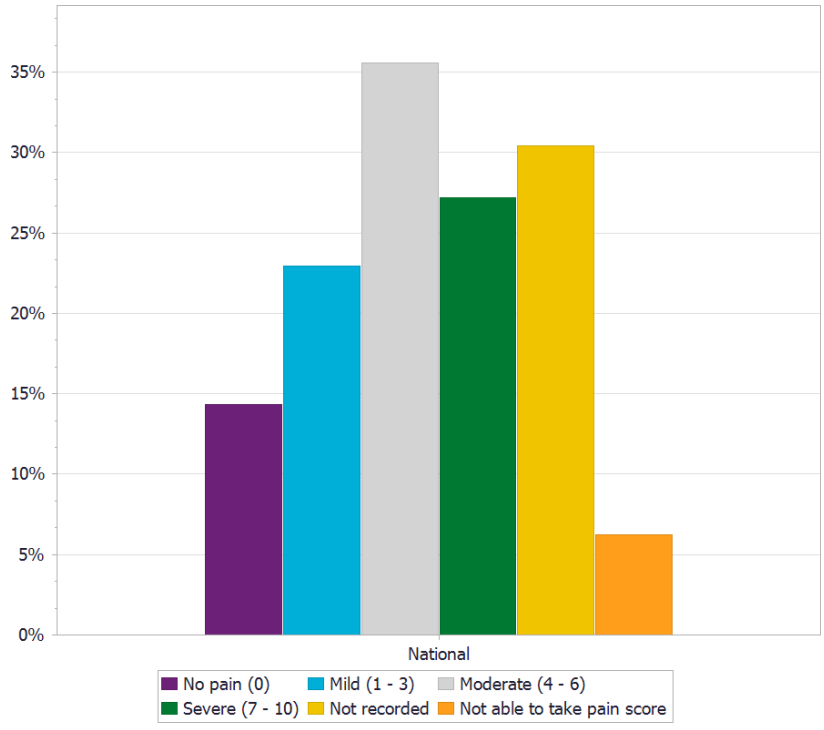


STANDARD 1: Pain score is assessed within 15 minutes of arrival

Sample: all patients (n=12724)

QIP This chart shows how soon after arrival a pain score is taken. This should be assessed on arrival (defined as within 15 minutes of arrival or triage).

Q5: What was the pain score on arrival?

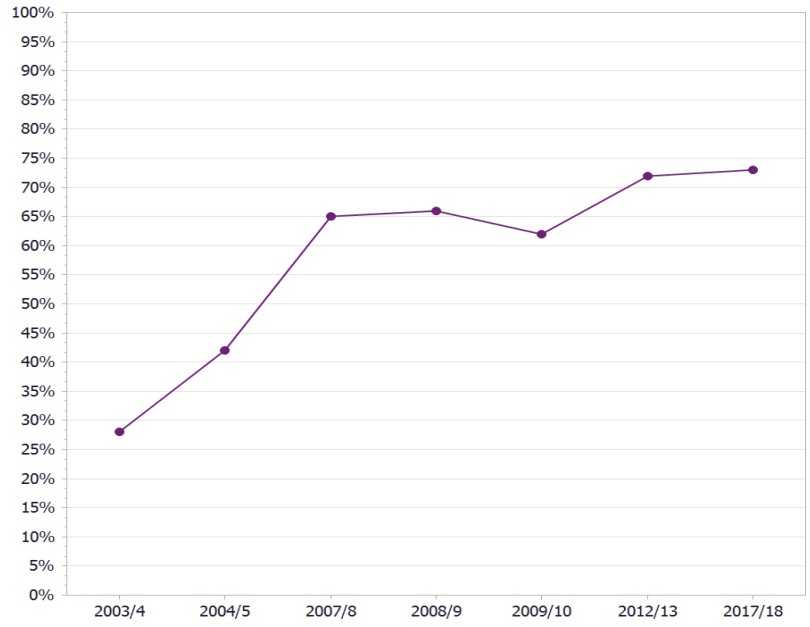


Sample: all patients (n=12724)

This looks at the pain score of patients at arrival.

Nationally, 27% of those audited were found to be in severe pain when first assessed in the ED. A further 36% were in moderate pain.

Recording of pain score comparison over time

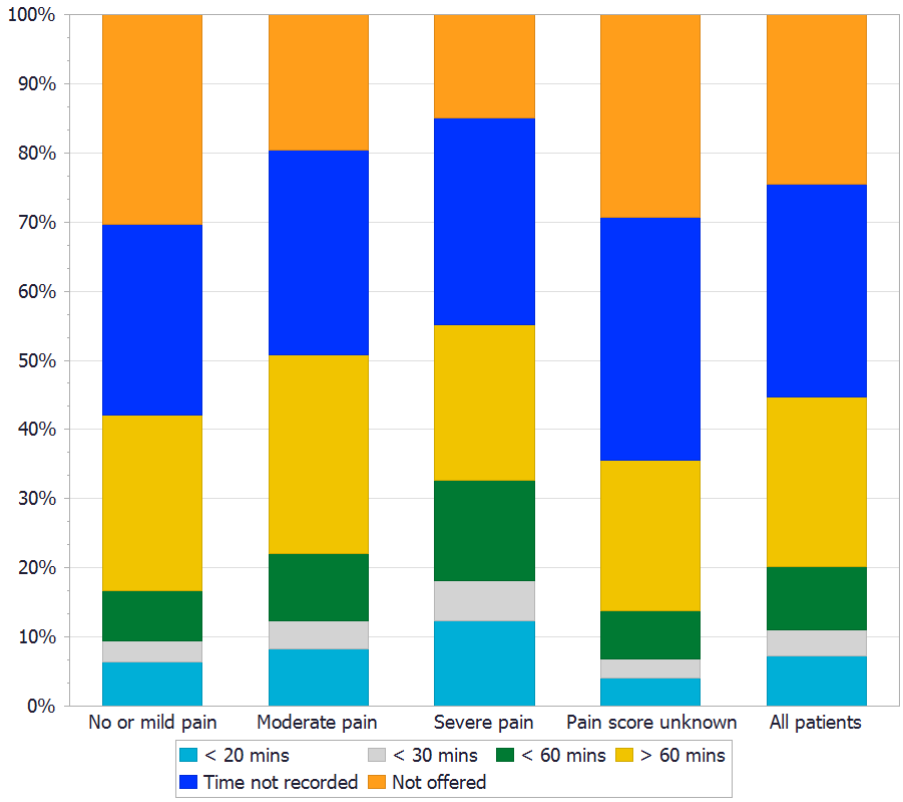


Sample: all patients (n=12724)

This chart shows the proportion of patients who had a pain score recorded in their notes at any time whilst in the ED for the current audit period, and in the previous 6 audits.

A pain score was recorded for nearly 3/4 of patients whilst in the ED. This chart illustrates the continuing improvement since the first audit in 2003/4. However, there is still a wide disparity with performance in EDs ranging from 1-100% of patients.

Q6: Was analgesia **offered** in the ED

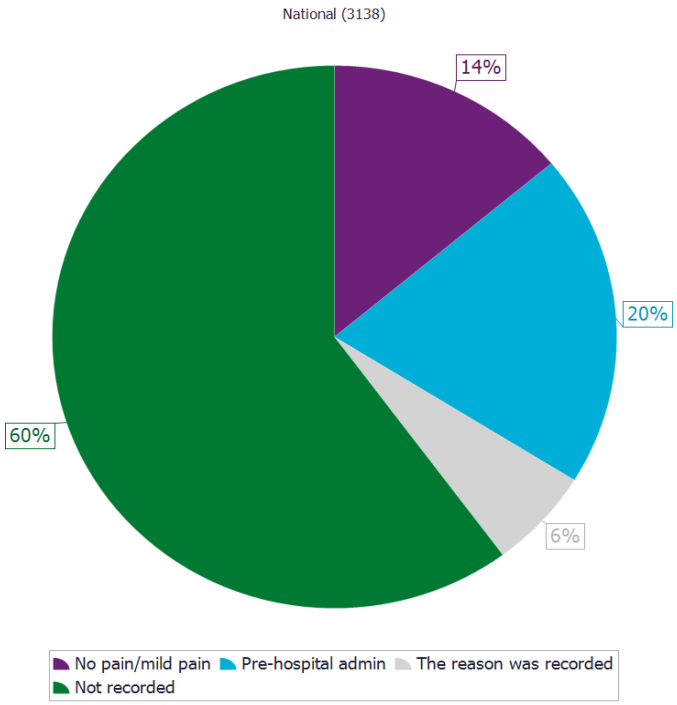


Sample: all patients (n=12724)

This chart shows the speed of offering analgesia in patients grouped by initial pain score. Note that this is the offer of analgesia, rather than administration.

Analgesia was offered slightly faster for those judged to be in severe pain or moderate pain, with half of these patients being offered pain relief within 60 minutes. Patients for whom a pain score was not recorded are less likely to be offered any analgesia than patients with no or mild pain.

Q6: Why was analgesia **not offered** in the ED?



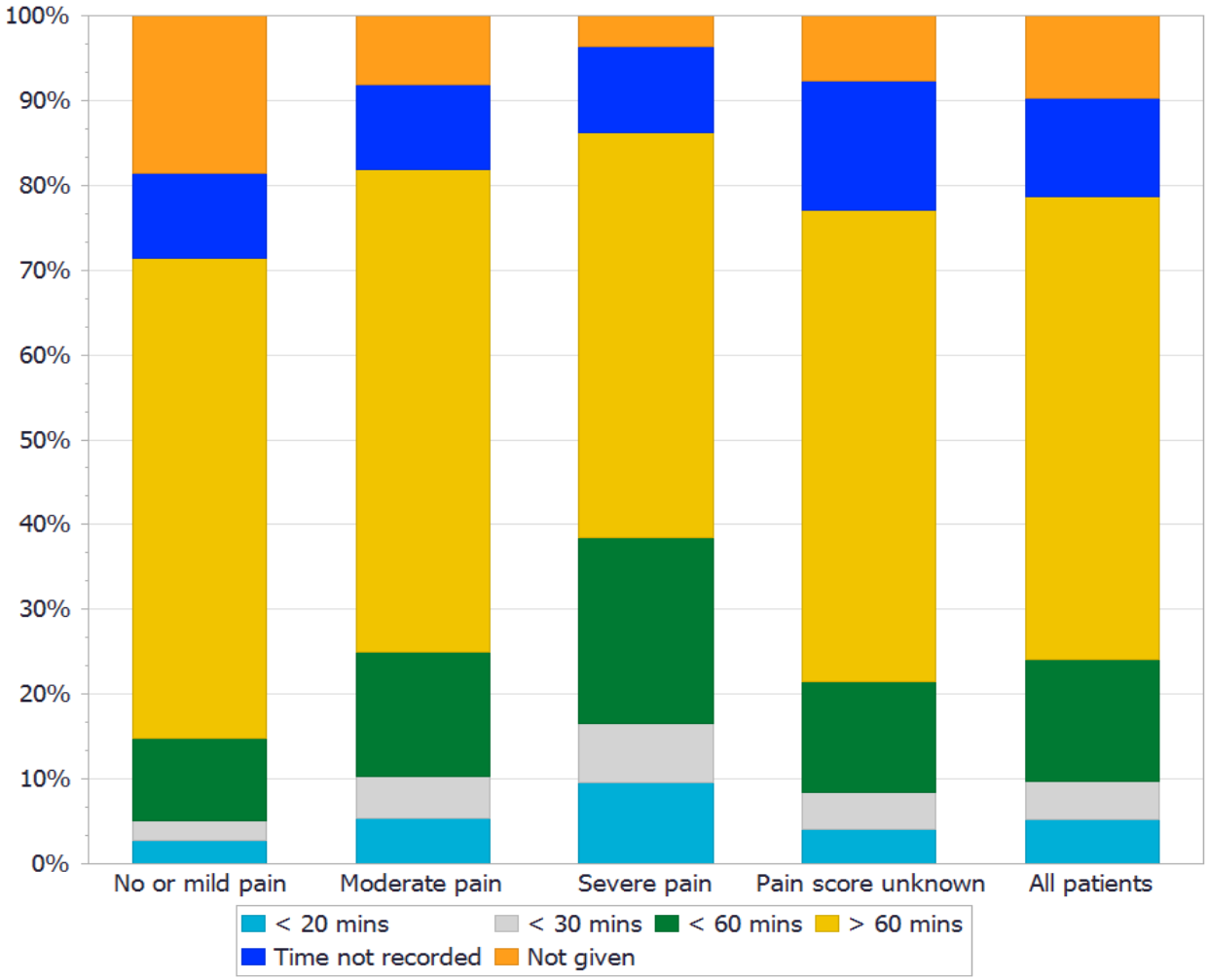
Sample: Q6=no (n=3138)

This looks at the reasons why analgesia was not offered to patients.

No reason for not offering analgesia was recorded in the majority of cases.

20% received analgesia pre-hospital and 14% were not offered analgesia because of a low pain score.

Q7: Was analgesia **administered** in the ED?



STANDARD 2: Patients in severe pain (pain score 7 to 10) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)

50% within 20 mins of arrival or triage whichever is the earliest.

75% within 30 mins of arrival or triage whichever is the earliest.

100% within 60 mins of arrival or triage whichever is the earliest.

STANDARD 3: Patients with moderate pain (pain score 4 to 6) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)

75% within 30 mins of arrival or triage whichever is the earliest.

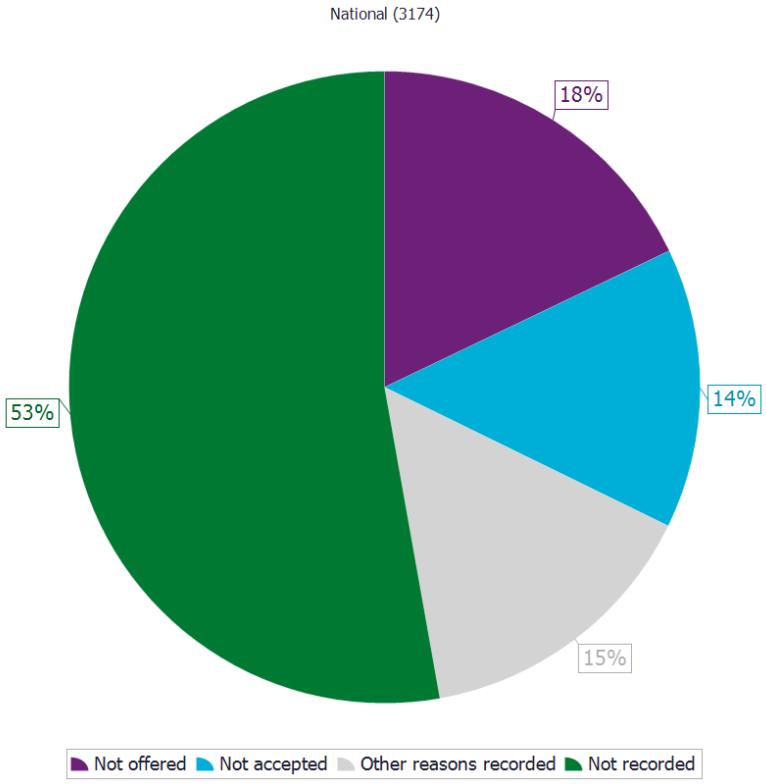
100% within 60 mins of arrival or triage whichever is the earliest.

Sample: all patients excluding Q7=no but the reason was recorded (n=10126)

QIP

This chart shows the speed of analgesia administration in patients grouped by initial pain score. Patients with more severe pain are more likely to receive analgesia, and to receive it faster. However, nationally EDs are failing to meet the standards outlined above. Recording a pain score appears to improve the timeliness of analgesia being administered.

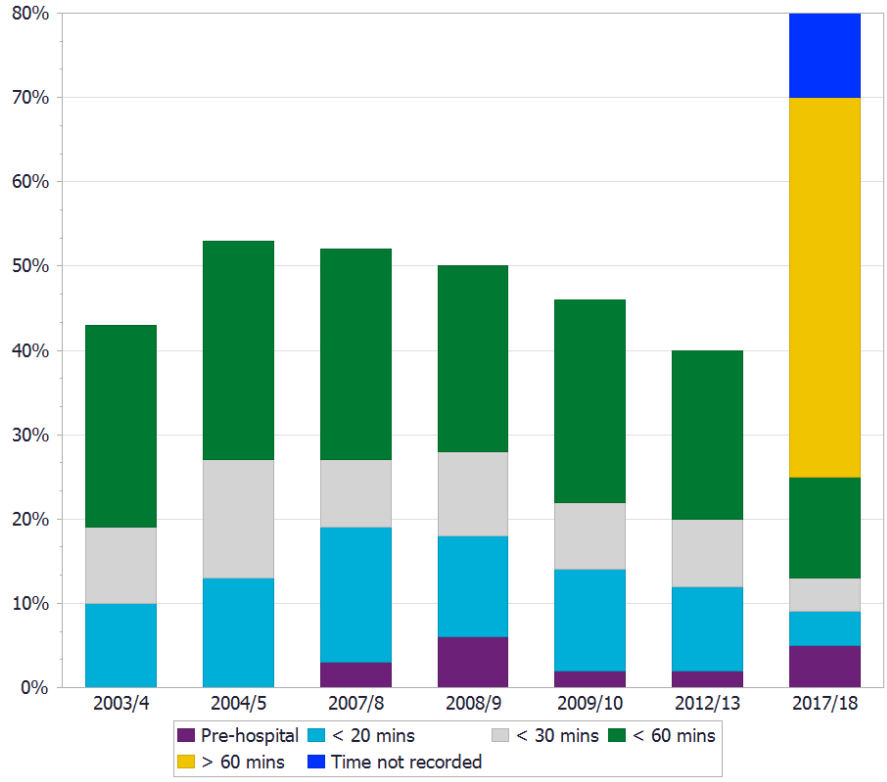
Why was analgesia **not administered** in the ED?



Sample: Q7=no (n=3174)

The reasons for not administering analgesia are not documented in 53% of patients, 14% of patients were offered pain relief but did not accept it, and 15% had another reason documented in the notes.

Administration of analgesia comparison over time – **all patients**

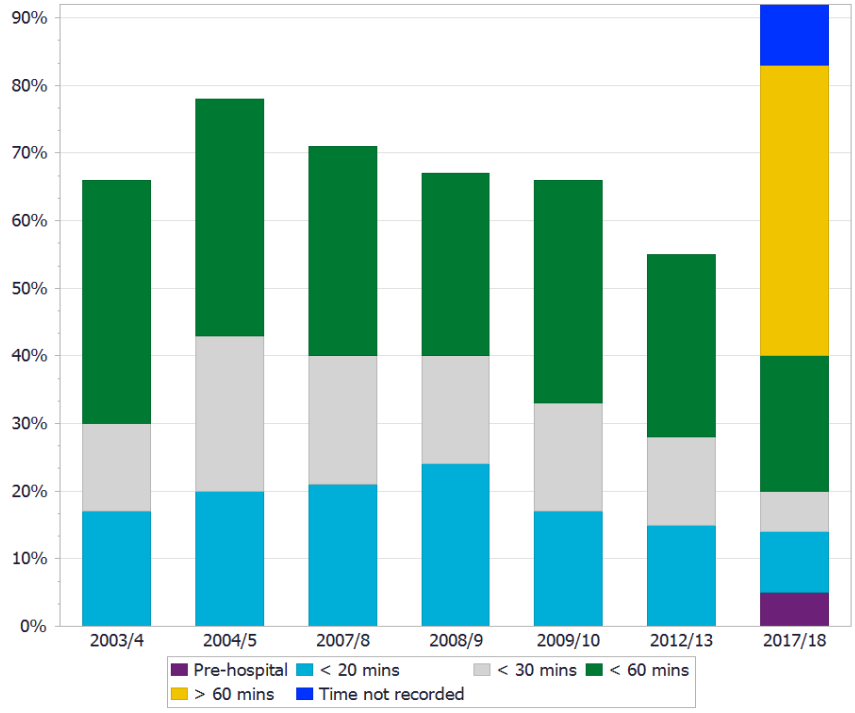


Sample: all patients (n=12724)

This chart shows the proportion of patients who received analgesia for the current audit period, and within 60 minutes for the previous 6 audits.

It is worrying to see the trend of timely analgesia administration falling over the years since 2008/9.

Administration of analgesia comparison over time – **severe pain**



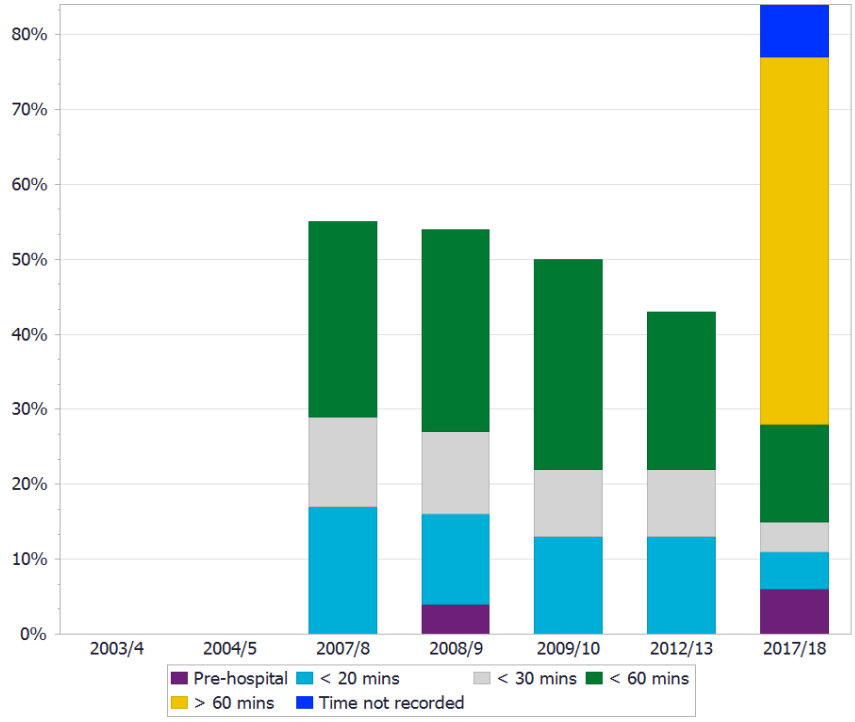
Sample: Q5=severe pain (n=2299)

This chart shows the proportion of patients reporting **severe pain** who received analgesia for the current audit period, and in the previous 6 audits.

Patients in severe pain on arrival at the ED are typically waiting longer to receive any analgesia than in previous audits.

EDs are urged to review their performance and processes in this area.

Administration of analgesia comparison over time – **moderate pain**



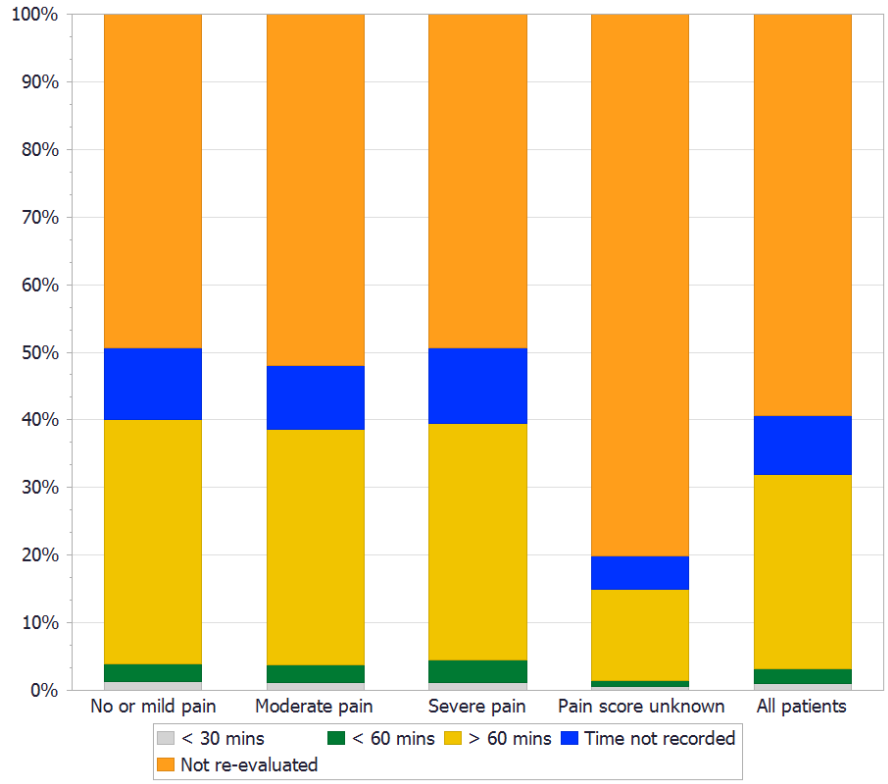
Sample: Q5=moderate pain (n=3011)

This chart shows the proportion of patients reporting **moderate pain** who received analgesia for the current audit period, and in the previous 6 audits.

As with the chart above, patients in moderate pain on arrival at the ED are typically waiting longer to receive any analgesia than in previous audits.

EDs are urged to review their performance and processes in this area.

Q8: Was pain score re-evaluated in the ED?



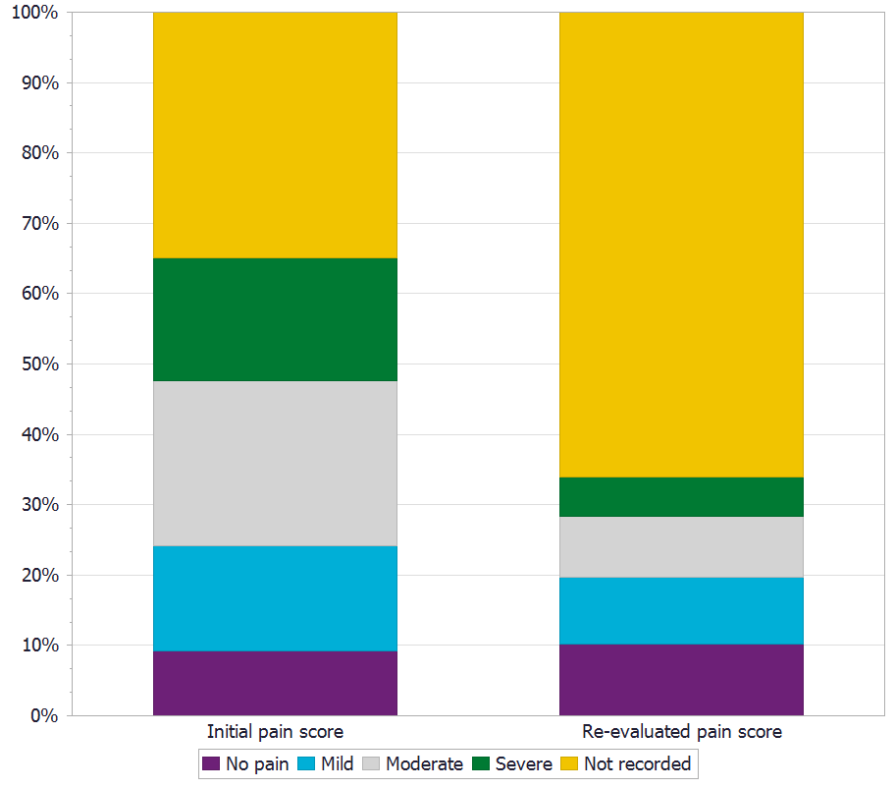
Sample: Q5=yes (n=12164)

This chart looks at whether analgesia was re-evaluated whilst the patient was in the ED. It is broken down by the patient's initial pain score.

QIP The re-evaluation of pain following analgesia remains challenging and requires further attention in most EDs.

The severity of a patient's initial pain score does not appear to affect whether or how quickly pain score is reassessed, unless the pain score was not initially recorded.

Change in pain score at re-evaluation



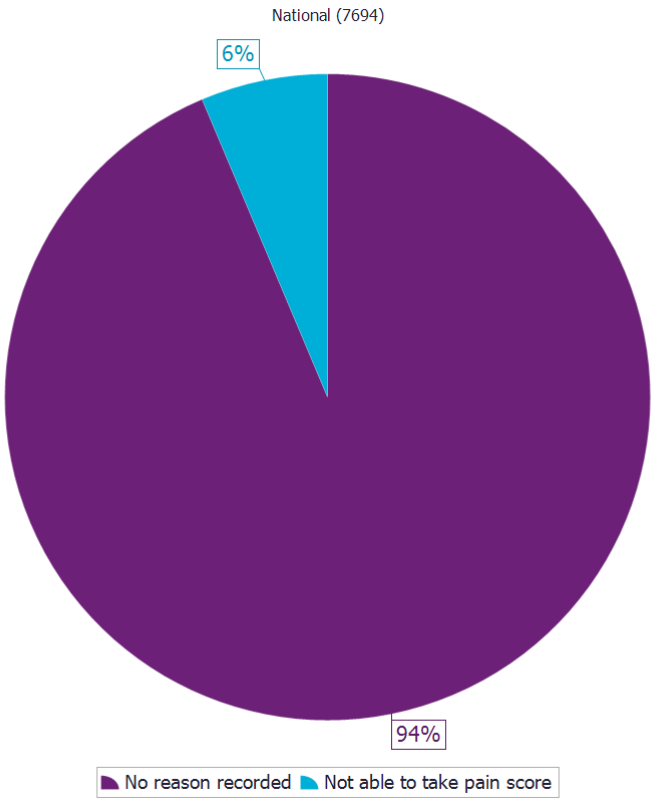
Sample: all patients (n=11656)

This chart looks at the change in pain score from initial assessment to reassessment.

The proportion of patients in severe or moderate pain at the time of reassessment appears to be lower than at arrival, however over 60% of patients do not have their reassessed pain score documented in the notes.

This demonstrates the importance of re-evaluating pain as the analgesia may not have been effective.

Why was pain score not re-evaluated?

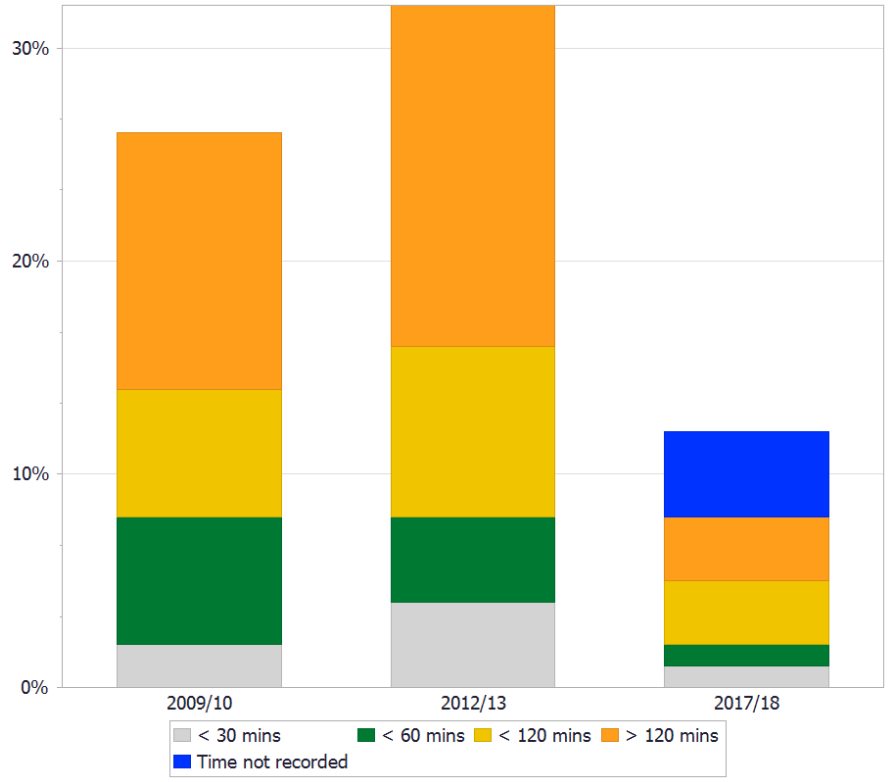


Sample: Q8=no AND Q5=yes (n=7694)

This chart looks at the reasons for not re-evaluating the pain score. The majority of notes however did not document why the pain score was not re-evaluated.

This is an area that should be considered by EDs locally.

Re-evaluation of pain score comparison over time – **all patients**

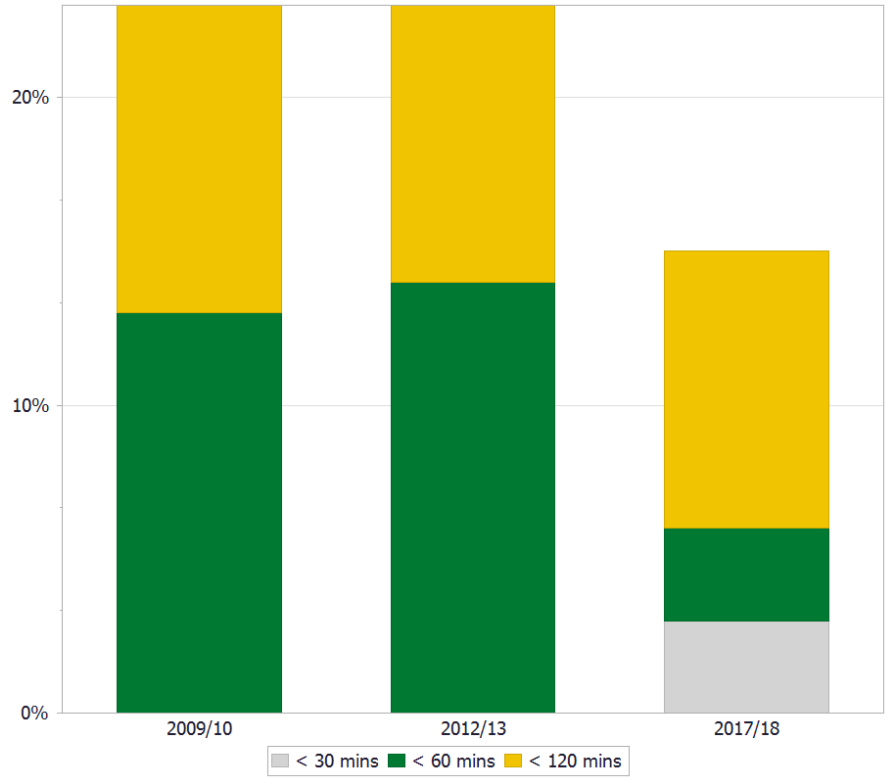


Sample: all patients (n=12724)

This chart shows the timeliness of pain score re-evaluation for the current audit period, and in the previous 2 audits.

This shows further decline in pain management in the ED.

Re-evaluation of pain score comparison over time – **severe pain**

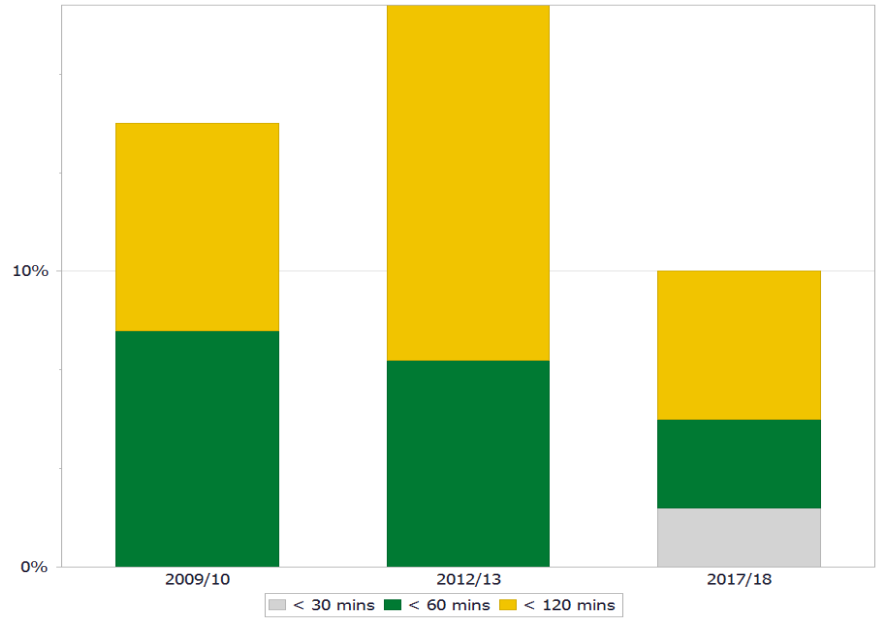


Sample: Q5=severe pain (n=2299)

This chart shows the timeliness of pain score re-evaluation for patients initially reporting **severe pain** for the current audit period, and in the previous 2 audits.

It is concerning to see a decline in pain score re-evaluation within 2 hours compared to previous audits.

Re-evaluation of pain score comparison over time – **moderate pain**

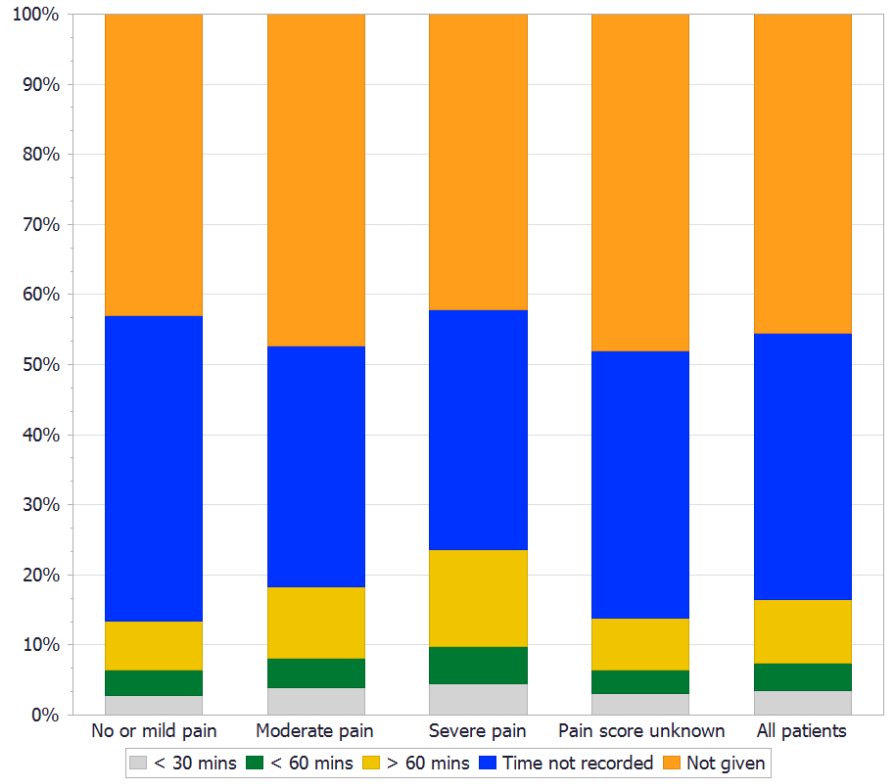


Sample: Q5=moderate pain (n=3011)

This chart shows the timeliness of pain score re-evaluation for patients initially reporting **moderate pain** for the current audit period, and in the previous 2 audits.

It is concerning to see a decline in pain score re-evaluation within 2 hours compared to previous audits.

Q9: Was a second dose of analgesia **administered** in the ED?

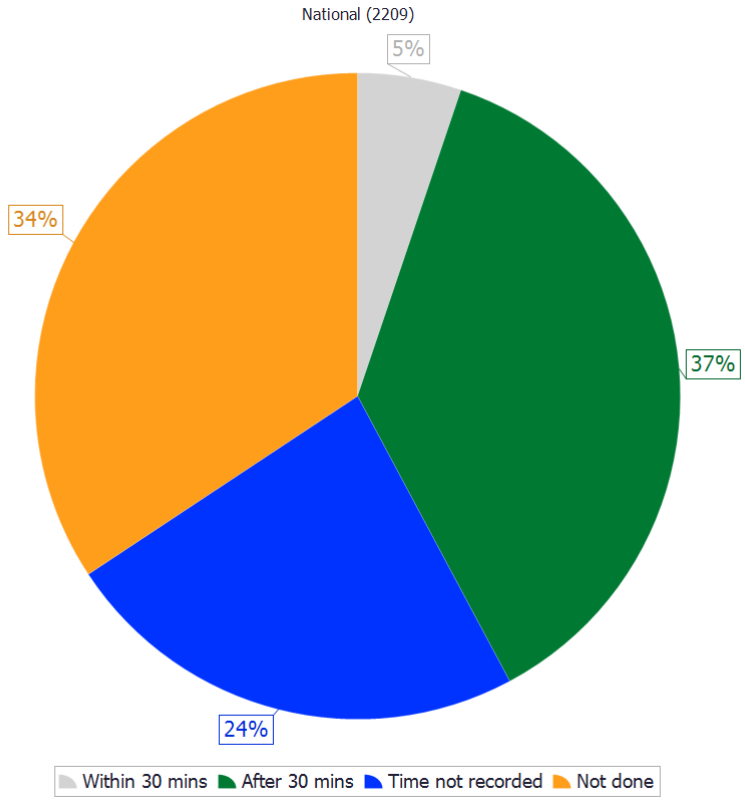


Sample: all patients (n=12724)

This chart shows the speed of analgesia administration following the initial dose, in patients grouped by their initial pain score.

The patient's initial pain score has little effect on the likelihood of receiving further analgesia, with 50-60% of all groups administered a second dose. Patients initially reporting severe pain appear to have a second dose administered faster; however, the time of administration is poorly documented for all patients.

Q8 & Q9: Was the pain score re-evaluated and actioned within 30 minutes of receiving the first dose of analgesia?

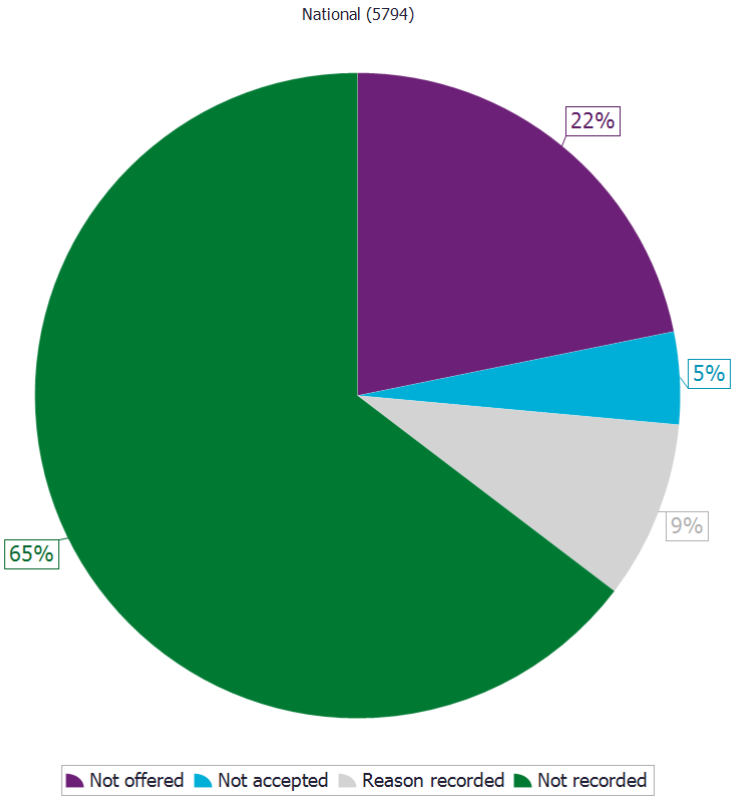


STANDARD 5: 90% of patients with severe or moderate pain should have documented evidence of re-evaluation and action within 30 minutes of receiving the first dose of analgesic.

Sample: Q5=moderate or severe AND Q7=yes, excluding Q8=not able to take pain score or Q9=no- but the reason was recorded (n=2209)

QIP It is vital to re-evaluate pain scores as analgesia may not be as effective as expected.

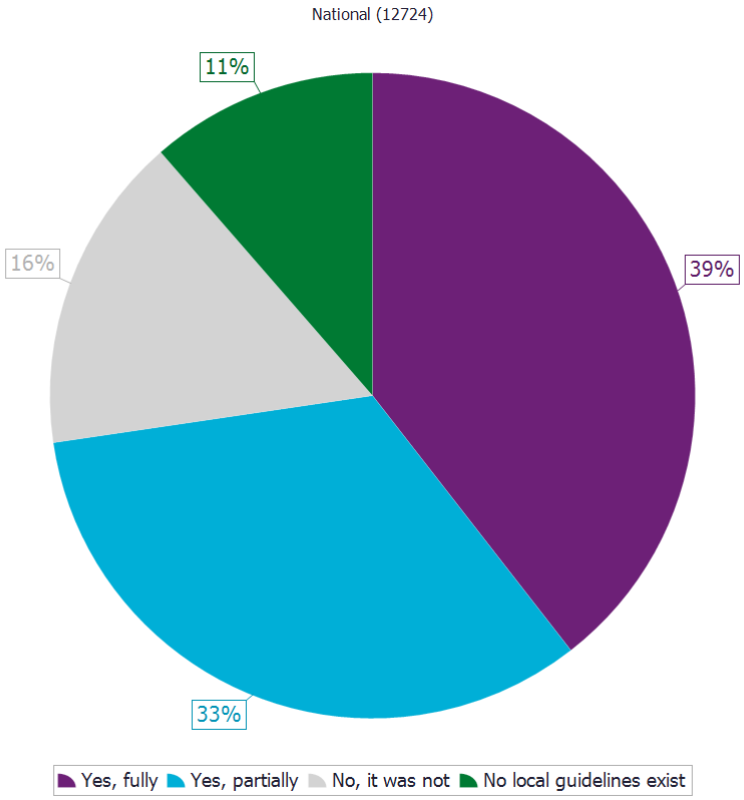
Why was a second dose of analgesia **not administered** in the ED?



Sample: Q9=no (n=5794)

Whilst 14% of patients either did not accept further analgesia or had a documented reason for this not being administered (for example no pain reported), the majority of patients had no documentation to say why a second dose of analgesia was not administered.

Q10. Was analgesia in accordance with local guidelines?



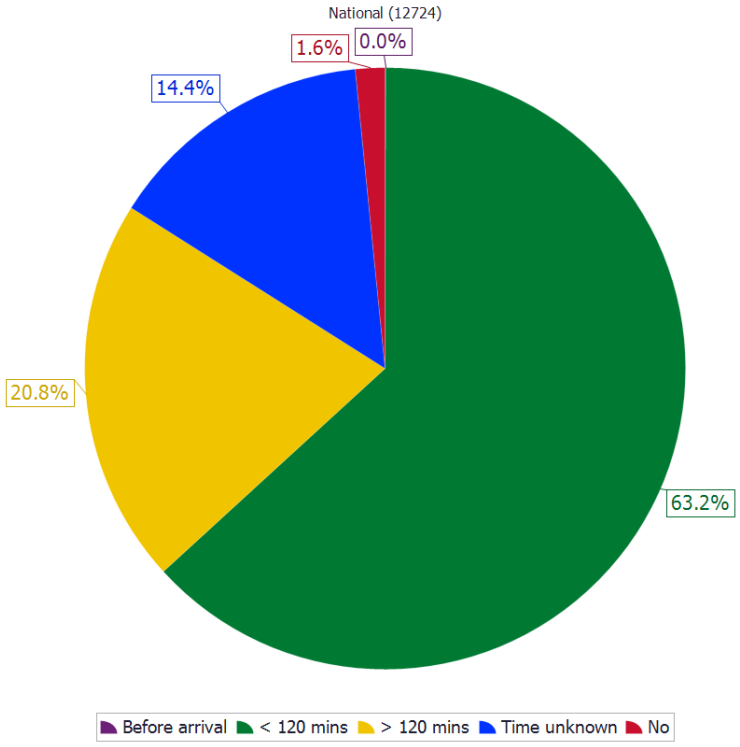
Sample: all patients (n=12724)

Only 39% of patients had analgesia in accordance with local guidance.

EDs are encouraged to look locally for the reasons guidance is not followed. The 11% reporting no local guidance should investigate whether implementing guidance would be of benefit.

Section 4: Treatment and outcomes

Q11: Was an X-ray completed whilst patient was in the ED?



STANDARD 4: 75% of patients should have an X-ray within 120 minutes of arrival or triage, whichever is the earliest.

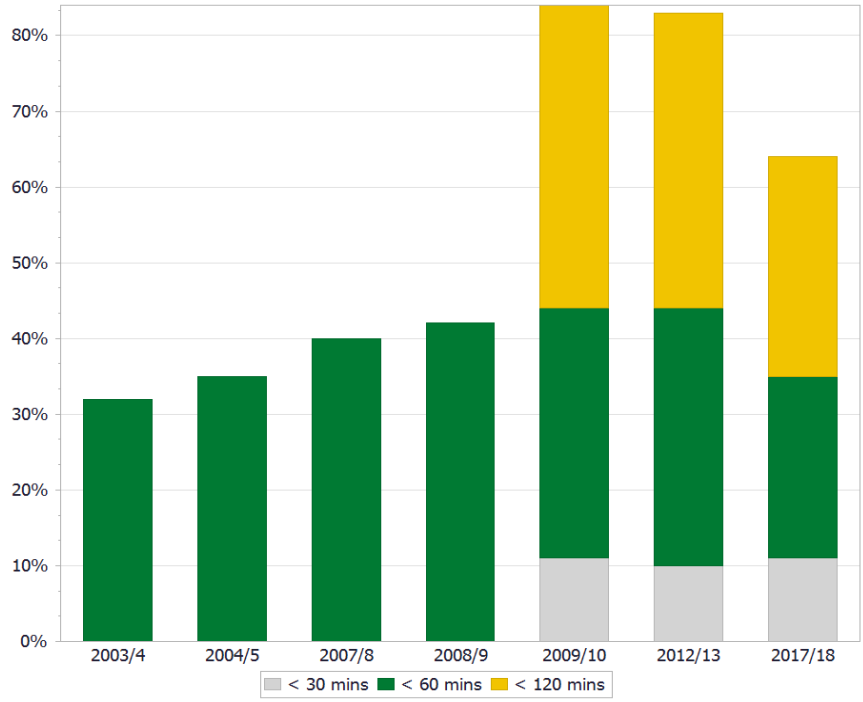
Sample: all patients (n=12724)

Nationally, 63% of audited #NOF patients were recorded as going to X-ray within 120 minutes of arrival in the ED. There was considerable variation between EDs.

1/5 audited patients were still waiting for an X-ray two hours after their arrival and nearly 2% did not have an x-ray at all.

No time was recorded for 14.5% of audited patients.

Time to x-ray comparison over time

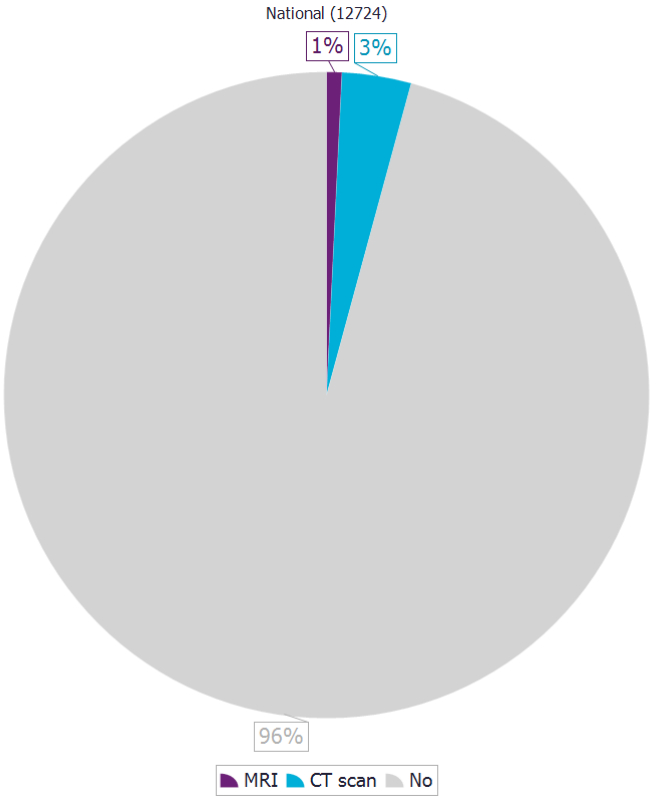


Sample: all patients (n=12724)

This chart shows the time to x-ray for the current audit period, and in the previous 6 audits.

The timeliness of x-ray has dropped since the last audit. EDs are encouraged to consider the reasons for this and to take action.

Q12: Was the fracture diagnosed by MRI or CT scan?



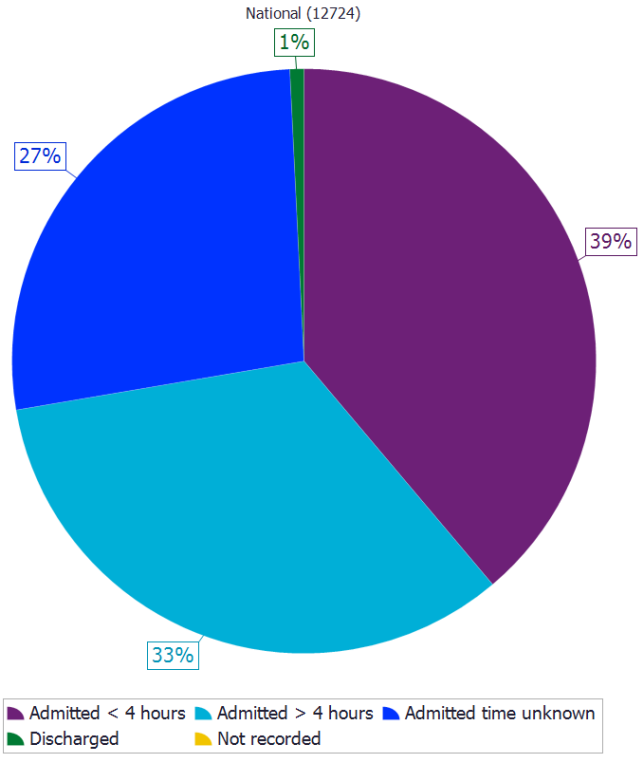
Sample: all patients (n=12724)

Only 4% of fractured neck of femurs were diagnosed by an MRI or CT scan, however this may be skewed by the audit sampling method. The importance of a timely x-ray is highlighted as this is the basis of how the majority of fractures are diagnosed.

Of the 115 EDs with a written protocol or pathway for hip fracture management, only 56 specified when an MRI or CT should be performed for a patient with a normal x-ray. EDs should ensure that protocols are up-to-date and draw on all expertise in the ED.

Section 5: Leaving the ED

Q13: Was the patient admitted or discharged within 4 hours?

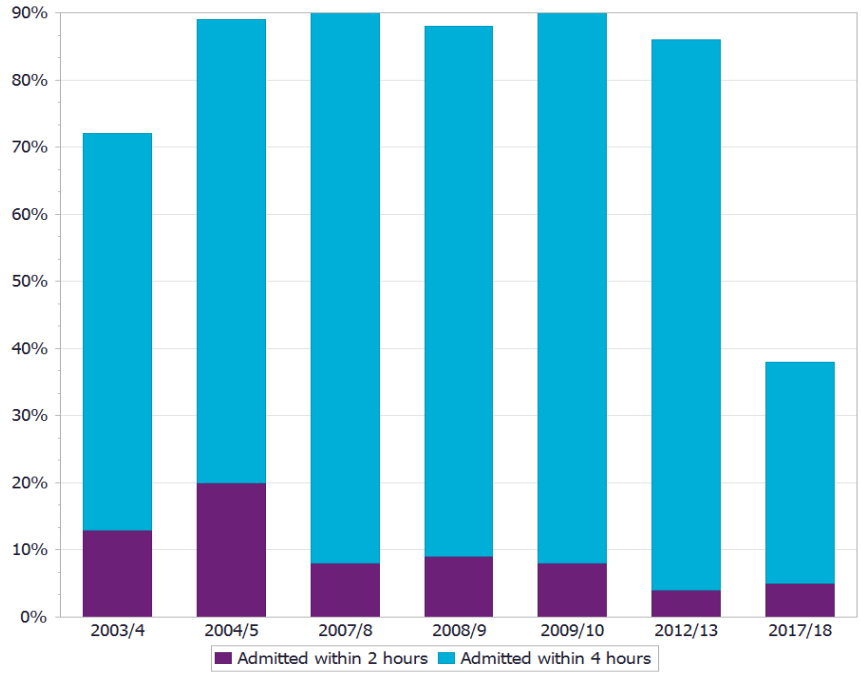


STANDARD 6: 95% of patients should be admitted within 4 hours of arrival.

Sample: all patients (n=12724)

Unsurprisingly almost all patients were admitted rather than discharged. The proportion of patients documented as being admitted within 4 hours is very low at less than 39%. Over a quarter of patients had no admission time documented.

Time to admission comparison over time



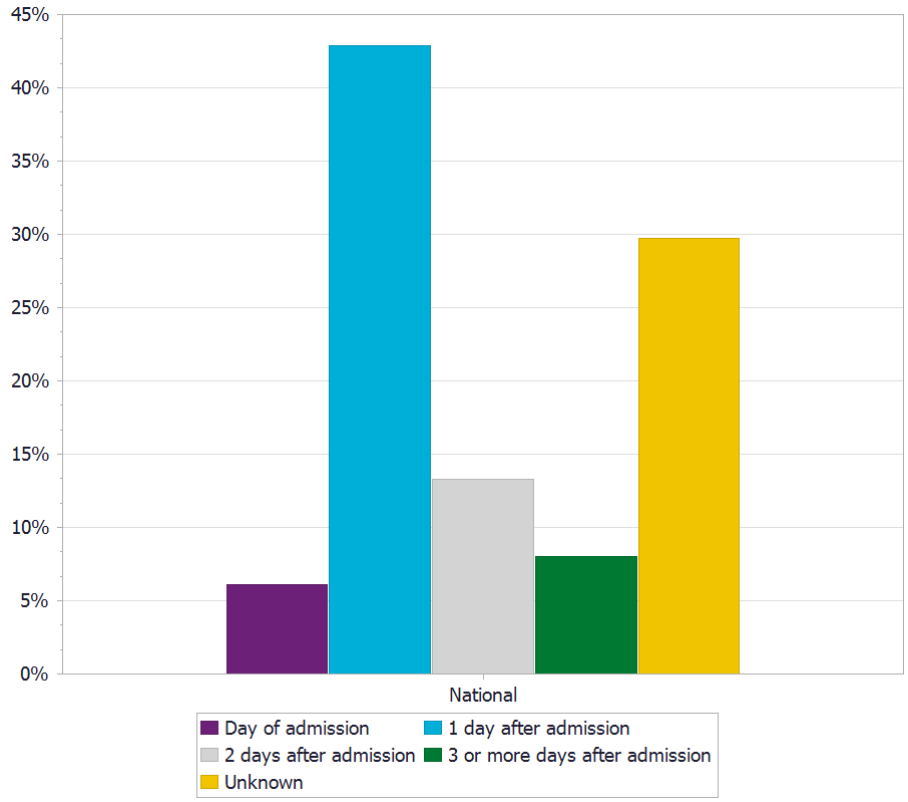
STANDARD 6: 95% of patients should be admitted within 4 hours of arrival

Sample: all patients (n=12724)

This chart shows the time to admission for the current audit period, and in the previous 6 audits.

The proportion of patients admitted within 4 hours has dropped significantly this year, likely as a result of crowding and flow pressures.

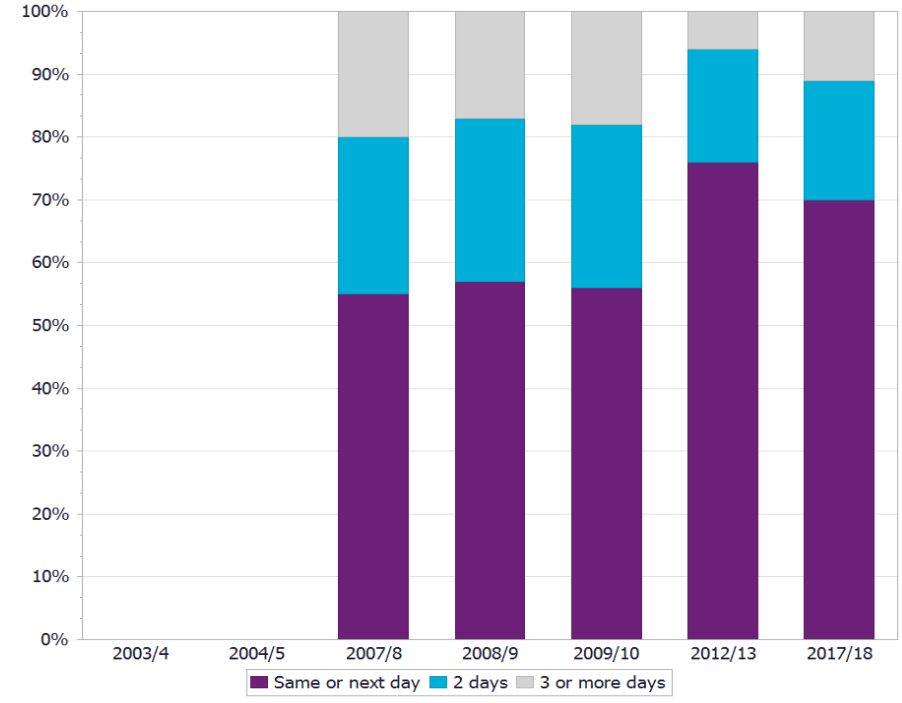
Q14: Time between ED attendance and first operation



Sample: all patients excluding Q14=not applicable (n=12350)

Approximately half of audited patients for whom the data was available received an operation on the day of admission or the following day. Two thirds of patients were operated upon within two days.

Time from admission to first operation comparison over time



Sample: all patients excluding Q14=not applicable or unknown (n=8683)

This chart shows the time from admission to operation for the current audit period, and in the previous 4 audits.

Performance has dropped slightly compared to the last time the audit was run.

Section 6: Organisational data

FNOF organisational data

Hip fracture lead

51% (68/133) EDs reported having a lead for hip fracture management

Written protocol

86% (115/133) EDs have a written protocol/ pathway for hip fracture management

... including CT/MRI?

Of those 115, 56 protocols included information on when to perform an MRI or CT if the x-ray looks normal

Written information

35% (46/133) EDs have written information about hip fracture available for patients and/or their relatives and carers

Nerve block

93% (124/133) EDs have the necessary equipment and trained staff to perform a nerve block in the ED

Analysis

Organisational data

This is the first time that organisational data were analysed. Only **51%** of EDs have a nominated lead for hip fracture management. This was a surprising find and one that should be addressed rapidly. **86%** of EDs have a written protocol but only half of these protocols include guidance on when to perform a CT or MRI scan. Only **35%** of EDs provide information leaflets for patients, carers or relatives.

93% of EDs have the necessary equipment and staff to perform a nerve block (e.g. facia iliaca block) and we hope that this audit will springboard local review to improve pain management pathways especially in #NOF.

Patient data

93% of patients with #NOF arrive by ambulance yet only **66%** have documented evidence of having received analgesia before arrival. Although this is improving more work needs to be done as there is wide variability of pre-hospital analgesia of **0-98%**.

it is important to note a large drop in performance of giving analgesia to patients, RCEM believes this may be related to capacity issues. However, EDs are recording pain scores better and this has consistently improved since 2003. Our results show that if a pain score is recorded patients will receive analgesia sooner, especially if the pain score is high.

Re-evaluation of pain is important but not done well (only in **40%**) and not done in a timely manner. This is disappointing as the graphs in this report show. Although there is overall improvement in pain scores, some patients may still be in severe pain.

Limitations

This audit excluded patients ages 17 years or under, and patients who have multiple injuries or have other conditions which need immediate resuscitation.

Summary of recommendations

1. Every ED should nominate a hip fracture lead to improve and champion standards of care in this area by working with the lead anaesthetist.
2. Written protocols and pathways for hip fracture management should be updated to include a section on how to investigate using CT and/or MRI when the x-ray is normal but the clinical findings are still suspicious of a #NOF. Protocols should be easily accessible for all staff.
3. Protocols and pathways should be urgently reviewed to ensure a focus on the rapid assessment and relief of pain, including utilising nurse-led prescribing.
4. Where possible, liaise with local ambulance Trusts to encourage pain relief prior to arrival at hospital.
5. Pain scoring should be mandatory for all patients with suspected or confirmed #NOF. EDs should undertake QIPs to find a locally accepted way of ensuring pain scores are done.
6. Re-evaluation of pain is vital to ensure that analgesia given has been effective.
7. Nerve blocks should be used where possible to limit the use of systemic analgesia. Patients must be monitored following blocks.

Using the results of this audit to improve patient care

The results of this audit should be shared with all staff, including doctors and nurses, who have responsibility for looking after patients with hip fracture or suspected hip fracture.

Discussing the results of this audit with colleagues is a good way of demonstrating the ED's commitment to improving care. Engaging staff in the action planning process will lead to more effective implementation of the plan.

EDs may wish to consider using a rapid cycle audit methodology and/or a Quality Improvement Project, which can be used to track performance against standards, as a tool to implement the action plan. For further resources, please visit the RCEM Quality Improvement webpage.

Further Information

Thank you for taking part in this audit. We hope that you find the results helpful.

If you have any queries about the report please e-mail audit@rcem.ac.uk or phone 020 7076 1269.

Details of the RCEM Clinical Audit Programme can be found under the Current Audits section of the RCEM website.

Feedback

We would like to know your views about this report and participating in this audit. Please let us know what you think by completing our feedback survey: www.surveymonkey.co.uk/r/RCEMaudit17

We will use your comments to help us improve our future audits and reports.

Useful Resources

- Site-specific report – available to download from the clinical audit website for registered users
- Site-specific PowerPoint presentation developed to help you disseminate your site-specific audit results easily and efficiently – available to download from the clinical audit website for registered users
- Local data file – a spreadsheet that allows you to conduct additional local analysis using your site-specific data for this audit. Available to download from the clinical audit website for registered users
- National data file - you can also access data from other EDs to customise your peer analysis
- RCEM Learning modules on fractured neck of fracture.

Report authors and contributors

This report is produced by the Quality Assurance and Improvement subgroup of the Quality in Emergency Care Committee for the Royal College of Emergency Medicine.

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Appendices

Appendix 1: Audit questions

Patient details

Q1	Reference (do not enter patient identifiable data)	
Q2	Date and time of arrival or triage – whichever is earlier	dd/mm/yyyy HH:MM

Pre-hospital

Q3	Did the patient arrive by ambulance?	• Yes • No
Q3a	If yes, is a copy of the ambulance service notes filed with the ED notes (or available electronically)?	• Yes • No • N/A
Q4	Was analgesia administered pre-hospital?	• Yes • No • Not recorded

Pain and analgesia

		Yes (select option where applicable)	*Time (leave blank if unknown)*	*Date (if different to date of admission)*	*No (select option where applicable)*
Q5	Was a pain score taken on arrival?	• No pain • Mild (1-3) • Moderate (4-6) • Severe (7-10)	HH:MM	dd/mm/yyyy	• Not recorded • Not able to take pain score
Q6	Was analgesia **offered** in the ED?	• Yes	HH:MM	dd/mm/yyyy	• No pain/mild pain • Pre-hospital admin • No – but the reason was recorded • Not recorded
Q7	Was analgesia **administered** in the ED?	• Yes	HH:MM	dd/mm/yyyy	• Not offered • Not accepted • No – but the reason was recorded • Not recorded
Q8	Was pain score re-evaluated in the ED?	• No pain • Mild (1-3) • Moderate (4-6) • Severe (7-10)	HH:MM	dd/mm/yyyy	• Not recorded • Not able to take pain score
Q9	Was a second dose of analgesia	• Yes	HH:MM	dd/mm/yyyy	• Not offered • Not accepted • No – but the reason was recorded

	administered in the ED?				• Not recorded
Q10	Was analgesia in accordance with local guidelines?			• Yes, fully • Yes, partially • No, it was not • No local guidelines exist	

Treatment

		Yes (select option where applicable)	*Time (leave blank if unknown)*	*Date (for use if different to date of admission)*	*No (select option where applicable)*
Q11	Was an X-ray completed whilst patient was in the ED?	• Yes	HH:MM	dd/mm/yyyy	• No • Done before arrival
Q12	Was the fracture diagnosed by MRI or CT scan?			• Yes – MRI • Yes – CT scan • No	
Q13	Was the patient:	• Admitted • Discharged	HH:MM	dd/mm/yyyy	• Not recorded
Q14	Date of (first) operation (if this information is readily available)			dd/mm/yyyy	• Not applicable • Unknown

Organisational data

Please only complete this final section **once** per ED.

Q1	Is there a lead for hip fracture management in the ED?	• Yes • No • Unknown
Q2	Is there a written protocol/ pathway for hip fracture management in the ED?	• Yes • No (please skip to Q4) • Unknown (please skip to Q4)
Q3	If so, does this include information on when to perform an MRI or CT scan if the X-ray appears normal?	• Yes • No • Unknown
Q4	Is written information about hip fracture available for patients and/or their relatives or carers?	• Yes • No • Unknown
Q5	Is there the necessary equipment/trained staff to perform a nerve block in the ED?	• Yes • No • Unknown

Notes

Appendix 2: Participating Emergency Departments

Aberdeen Royal Infirmary
Addenbrooke's Hospital
Aintree University Hospital
Airedale General Hospital
Alexandra Hospital
Antrim Area Hospital
Arrowe Park Hospital
Barnet Hospital
Barnsley Hospital
Basildon University Hospital
Basingstoke and North Hampshire Hospital
Bassetlaw Hospital
Bedford Hospital
Blackpool Victoria Hospital
Bradford Royal Infirmary
Bristol Royal Infirmary (Adults)
Bronglais General Hospital
Broomfield Hospital
Causeway Hospital
Chelsea & Westminster Hospital
Cheltenham General Hospital
Chesterfield Royal Hospital
City Hospital (Birmingham)
Colchester General Hospital
Conquest Hospital
Countess of Chester Hospital
Craigavon Area Hospital
Croydon University Hospital
Darent Valley Hospital
Darlington Memorial Hospital
Derriford Hospital
Diana, Princess Of Wales Hospital
Doncaster Royal Infirmary
Dorset County Hospital
Dr Gray's Hospital
Ealing Hospital
East Surrey Hospital
Eastbourne District General Hospital
Epsom General Hospital
Fairfield General Hospital
Forth Valley Royal Hospital
Frimley Park Hospital
Furness General Hospital
George Eliot Hospital
Glan Clwyd Hospital
Glangwili General Hospital
Gloucestershire Royal Hospital
Good Hope Hospital
Grantham & District Hospital
Hairmyres Hospital
Harrogate District Hospital
Heartlands Hospital
Hereford County Hospital
Hinchingbrooke Hospital
Homerton University Hospital
Horton Hospital
Huddersfield Royal Infirmary
Hull Royal Infirmary
Ipswich Hospital
James Paget Hospital
John Radcliffe Hospital
Kettering General Hospital
Kings College Hospital
King's Mill Hospital
Kingston Hospital
Leeds General Infirmary
Leicester Royal Infirmary
Leighton Hospital
Lincoln County Hospital
Lister Hospital
Luton and Dunstable University Hospital
Maidstone District General Hospital
Manchester Royal Infirmary
Manor Hospital
Medway Maritime Hospital
Mid Yorkshire Hospitals
Milton Keynes Hospital
Morriston Hospital
Musgrove Park Hospital
Nevill Hall Hospital
New Cross Hospital
Newham General Hospital
Noble's Hospital
Norfolk & Norwich University Hospital
North Devon District Hospital
North Manchester General Hospital
North Middlesex University Hospital
Northampton General Hospital
Northern General Hospital
Northumbria Specialist Emergency Care Hospital
Northwick Park Hospital
Peterborough City Hospital
Pilgrim Hospital
Pinderfields Hospital
Poole General Hospital
Prince Charles Hospital
Princess Alexandra Hospital
Princess of Wales Hospital
Princess Royal University Hospital
Queen Alexandra Hospital, PO
Queen Elizabeth Hospital (Birmingham)
Queen Elizabeth Hospital (Gateshead)
Queen Elizabeth Hospital (Woolwich)
Queen Elizabeth The Queen Mother Hospital
Queen's Hospital (Burton)
Queen's Hospital, Romford
Queen's Medical Centre, Nottingham
Rotherham District General Hospital
Royal Albert Edward Infirmary

Royal Berkshire Hospital
Royal Blackburn Hospital
Royal Bolton Hospital
Royal Bournemouth General Hospital
Royal Cornwall Hospital
Royal Derby Hospital
Royal Devon and Exeter Hospital (Wonford)
Royal Free Hospital
Royal Glamorgan Hospital
Royal Gwent Hospital
Royal Lancaster Infirmary
Royal London Hospital (The)
Royal Oldham Hospital
Royal Preston Hospital
Royal Surrey County Hospital
Royal Sussex County Hospital
Royal United Hospital
Royal Victoria Hospital - Belfast
Royal Victoria Infirmary
Russells Hall Hospital
Salford Royal Hospital
Salisbury District Hospital
Sandwell General Hospital
Scarborough General Hospital
Scunthorpe General Hospital
South Tyneside District General Hospital
South West Acute Hospital
Southampton General Hospital
Southend Hospital
Southmead Hospital
Southport & Formby District General Hospital
St George's
St Helier Hospital
St Mary's Hospital
St Marys Hospital (Newport, IOW)
St Peter's Hospital
St Richard's Hospital (Chichester)
St Thomas' Hospital
Stepping Hill Hospital
Stoke Mandeville Hospital
Sunderland Royal Hospital
Tameside General Hospital
The Cumberland Infirmary
The Great Western Hospital
The James Cook University Hospital
The Princess Elizabeth Hospital
The Queen Elizabeth Hospital (King's Lynn)
The Royal Liverpool University Hospital
Torbay Hospital
Tunbridge Wells Hospital
Ulster Hospital
University College Hospital
University Hospital Lewisham (Adults)
University Hospital Of North Durham
University Hospital Of North Tees
University Hospital of Wales
University Hospital, Coventry
Victoria Hospital
Warrington Hospital
Warwick Hospital
Watford General Hospital
West Cumberland Hospital
West Middlesex University Hospital
West Suffolk Hospital
Weston General Hospital
Wexham Park Hospital
Whipps Cross University Hospital
Whiston Hospital
Whittington Hospital
William Harvey Hospital
Withybush General Hospital
Worcestershire Royal Hospital
Wrexham Maelor Hospital
Wythenshawe Hospital
Yeovil District Hospital
York Hospital
Ysbyty Gwynedd

Appendix 3: Definitions

Grade definition

F - Fundamental: need to be applied by all those who work and serve in the healthcare system. Behaviour at all levels and service provision need to be in accordance with at least these fundamental standards. No provider should provide any service that does not comply with these fundamental standards, in relation to which there should be zero tolerance of breaches.

D - Developmental: set requirements over and above the fundamental standards.

A - Aspirational: setting longer term goals.

Standards definitions

Standard	Term	Definition
Standard 1	Severe pain	Pain score 7 to 10
Standard 1	Moderate pain	Pain score 4 to 6
Standard 4	Admission	Admission to a ward (CDU or Observation ward, Orthopaedic ward, General ward are all acceptable)

Question and answer definitions

Term	Definition
Not able to take pain score	If a pain score is not possible due to the patient's level of consciousness, dementia, delirium or similar, please select 'not able to take pain score'.
Pre-hospital analgesia	If the patient took their own analgesia pre-hospital, please tick yes.
X-ray	If the X-ray was completed outside the ED, but whilst the patient was still an ED patient, tick yes.
Admitted	Please record the time that the patient leaves the ED, whether this is to theatre, a ward, or transfer to another hospital.

Appendix 4: Evidence base for standards

These standards have been checked for alignment with NICE Quality Standard QS16 (last updated May 2017) and NICE Hip Fracture Management Clinical Guideline CG124 (last updated May 2017).

STANDARD	EVIDENCE
1. Pain score is assessed within 15 minutes of arrival	NICE CG124 1.3.1 Assess the patient's pain immediately upon presentation at hospital
2. Patients in severe pain (pain score 7 to 10) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)	
a. 50% within 20 mins of arrival or triage whichever is the earliest.	NICE CG124 1.3.2 Offer immediate analgesia to patients presenting at hospital with suspected hip fracture, including people with cognitive impairment. RCEM 2011 Pain standard Patients in severe pain (pain score 7 to 10) or moderate pain (pain score 4 to 6) receive appropriate analgesia, according to local guidelines or CEM pain guidelines, a. 75% within 30min of arrival b. 100% within 60min of arrival
b. 75% within 30 mins of arrival or triage whichever is the earliest.	
c. 100% within 60 mins of arrival or triage whichever is the earliest.	
3. Patients with moderate pain (pain score 4 to 6) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)	
a. 75% within 30 mins of arrival or triage whichever is the earliest.	NICE CG124 1.3.2 Offer immediate analgesia to patients presenting at hospital with suspected hip fracture, including people with cognitive impairment. RCEM 2011 Pain standard Patients in severe pain (pain score 7 to 10) or moderate pain (pain score 4 to 6) receive appropriate analgesia, according to local guidelines or CEM pain guidelines, a. 75% within 30min of arrival b. 100% within 60min of arrival
b. 100% within 60 mins of arrival or triage whichever is the earliest.	
4. 75% of patients should have an X-ray within 120 minutes of arrival or triage, whichever is the earliest.	
5. 90% of patients with severe or moderate pain should have documented evidence of re-evaluation and action within 30 minutes of receiving the first dose of analgesic.	NICE CG124 1.3.1Assess the patient's pain within 30 minutes of administering initial analgesia RCEM 2011 Pain standard Patients with severe pain or moderate pain – 90% should have documented evidence of re-evaluation and action within 120 minutes of the first dose of analgesic
6. 95% of patients should be admitted within 4 hours of arrival.	National 4-hour standard

Appendix 5: Data cleaning and calculations

Data cleaning

All submitted data were cleaned centrally to ensure high quality data. To help you understand the potential impact of data cleaning, the following gives details of the situations where data may have been cleaned and how this may affect your results.

The data entry error report was discussed, and the committee decided that records with missing times should not be excluded from the analysis. Where a time category must be allocated (e.g. to assess compliance with the standard), missing times should be allocated to the maximum time category if data indicates that it was performed whilst the patient was in the ED.

Data error	Cleaning undertaken
Data was entered to show something had been done whilst the patient was in the ED (e.g. x-ray), but no time was entered.	Patient record retained in the analysis. Where a time category must be allocated (e.g. to assess compliance with the standard), missing times were allocated by preference to a category such as 'time not recorded', or else to the maximum time category, if data indicates that it was performed whilst the patient was in the ED.
A date value (other than 'Arrival Date') was not supplied.	A value of 'Arrival Date' was assumed.
Data was entered to show something had been done whilst the patient was in the ED (e.g. x-ray), but no date was provided for the action and a time numerically less than the arrival time was entered.	'Arrival Date' +24 hours was assumed for the action date, as this situation usually occurs when the arrival and action times are either side of midnight.
Insufficient data was entered to determine a single consistent answer to a question (for example if a question was missed altogether).	Patient record retained in the overall analysis but excluded from the analysis for that question.

Standards: summary chart, summary table

STANDARD	GRADE	Analysis sample	Analysis plan – conditions for the standard to be met	Comparison with previous data
1. Pain score is assessed within 15 minutes of arrival	F	All patients	Met: Q5 <= 15 mins after Q2b Not met: all other cases	Completed by RCEM
2. Patients in severe pain (pain score 7 to 10) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)				
a. 50% within 20 mins of arrival or triage whichever is the earliest.	A	Q5 = severe **EXCLUDE**: Q7= no – but the reason was recorded	Met: Q7 = 'yes' **AND** Q7 <= 20 mins after Q2b **AND** Q10 = 'yes, fully' **OR** 'yes, partially' **OR** 'no local guidance Not met: all other cases	Completed by RCEM

b. 75% within 30 mins of arrival or triage whichever is the earliest.	D	Q5 = severe **EXCLUDE**: Q7= no – but the reason was recorded	Met: Q7 = 'yes' **AND** Q7 <= 30 mins after Q2b **AND** Q10 = 'yes, fully' **OR** 'yes, partially' **OR** 'no local guidance Not met: all other cases	Completed by RCEM
c. 98% within 60 mins of arrival or triage whichever is the earliest.	F	Q5 = severe **EXCLUDE**: Q7= no – but the reason was recorded	Met: Q7 = 'yes' AND Q10 <= 60 mins after Q2b AND Q10 = 'yes, fully' **OR** 'yes, partially' **OR** 'no local guidance' Not met: all other cases	Completed by RCEM
3. Patients with moderate pain (pain score 4 to 6) should receive appropriate analgesia in accordance with local guidelines (unless documented reason not to)				
a. 75% within 30 mins of arrival or triage whichever is the earliest.	A	Q5 = moderate **EXCLUDE**: Q7= no – but the reason was recorded	Met: Q7 = 'yes' **AND** Q7 <= 30 mins after Q2b **AND** Q10 = 'yes, fully' **OR** 'yes, partially' **OR** 'no local guidance Not met: all other cases	Completed by RCEM
b. 98% within 60 mins of arrival or triage whichever is the earliest.	D	Q5 = moderate **EXCLUDE**: Q7= no – but the reason was recorded	Met: Q7 = 'yes' **AND** Time <= 60 mins after Q2b Q10 = 'yes, fully' **OR** 'yes, partially' **OR** 'no local guidance Not met: all other cases	Completed by RCEM
4. 75% of patients should have an X-ray within 120 minutes of arrival or triage, whichever is the earliest.	D	All	Met: Q11 <= 120 mins after Q2b Not met: all other cases	Completed by RCEM
5. 90% of patients with severe or moderate pain should have documented evidence of re-evaluation and action within 30 minutes of receiving the first dose of analgesic.	D	Q5 = moderate **OR** Q5 = severe Exclude: Q9 - no but the reason was recorded	Met: Q8 <= 30 mins after Q7 **AND** Q9 <= 30 mins after Q7 Not met: all other cases	Completed by RCEM
6. 95% of patients should be admitted within 4 hours of arrival.	D	All	Met: Q13 = admitted <= 4 hours after Q2b Not met: all other cases	Completed by RCEM

Casemix

QUESTION/chart title	Analysis sample	Analysis plan	Comparison with previous data
Q2: Date and time of arrival	All	Combine Q2a and Q2b to present data in 1 hour bars as per chart	Not needed

Pre-hospital

QUESTION/chart title	Analysis sample	Analysis plan	Comparison with previous data
Q3a & 3b: Patient arrival method	All	Pie showing: Slice 1: Q3=yes AND Q3a=yes Slice 2: Q3=yes AND Q3a=no or N/A Slice 3: Q3=no	Not needed
Q4: Was analgesia administered pre-hospital?	All	Pie showing: Slice 1: Q4=yes Slice 2: Q4=no Slice 3: Q4=not recorded	Not needed

Audit results:
Pain and analgesia

QUESTION/chart title	Analysis sample	Analysis plan	Comparison with previous data
Q5: Was a pain score taken on arrival	All	Frequency chart of time from Q2 to Q5. Bar to include: 0-5mins, 6-10, 11-15,16-20, 21-25, 26-30, >30mins	Not needed
Q5: What was the pain score on arrival?	All	Bar chart showing: no pain, mild, moderate, severe, not recorded, not able to take pain score	Not needed
Recording of pain score comparison over time	All	Line chart showing current data compared to historical data	Figures provided by RCEM
Q6: Was analgesia **offered** in the ED	All	Stacked bar chart showing: STACKS: time from arrival to Q6 offer of analgesia: <20 mins, <30, <60, >60, not offered BARS: no or pain (combined), moderate, severe, not recorded, not able to take pain score	Not needed
Why was analgesia **not offered** in the ED?	Q6= No pain/mild pain, Pre-hospital admin, OR No – but the	Pie showing Slice 1: No pain/mild pain Slice 2: Pre-hospital admin Slice 3: other reason was recorded Slice 4: not recorded	Not needed

	reason was recorded Not recorded		
Q7: Was analgesia **administered** in the ED?	All	Stacked bar chart showing: STACKS: time from arrival to Q6 offer of analgesia: <20 mins, <30, <60, >60, not given BARS: no or mild (combined), moderate, severe, not recorded, not able to take pain score	Not needed
Why was analgesia **not administered** in the ED?	Q7=not offered, not accepted, no-but the reason was recorded OR not recorded	Pie showing Slice 1: not offered Slice 2: not accepted Slice 3: other reason was recorded Slice 4: not recorded	Not needed
Administration of analgesia comparison over time – **all patients**	All	Stacked bar chart showing: STACKS: time from arrival to Q7 administration of analgesia: pre-hospital, <20 mins, <30, >60 BARS: audit years	Figures provided by RCEM
Administration of analgesia comparison over time – **severe pain**	Q6=severe	Stacked bar chart showing: STACKS: time from arrival to Q7 administration of analgesia: pre-hospital, <20 mins, <30, >60 BARS: audit years	Figures provided by RCEM
Administration of analgesia comparison over time – **moderate pain**	Q6=moderate	Stacked bar chart showing: STACKS: time from arrival to Q7 administration of analgesia: pre-hospital, <20 mins, <30, >60 BARS: audit years	Figures provided by RCEM
Q8a: Was analgesia re-evaluated in the ED?	Q5=yes AND Q8=yes		

Appendix 6: Inclusion and exclusion criteria

Inclusion criteria

- Adult patients past their 18th birthday
- Patients presenting to the ED with a fractured neck of femur

Exclusion criteria

- Patients aged 17 or under
- Patients who have multiple injuries or have other conditions which need immediate resuscitation

Search terms

This is not an exhaustive list and other search terms can be used but all potential patients should then be reviewed to check they meet the definitions & selection criteria before inclusion in the audit.

The ICD 10 codes below can be used to help identify potential cases.

- Fracture of femur: S72
- Fracture of head and neck of femur: S72.0

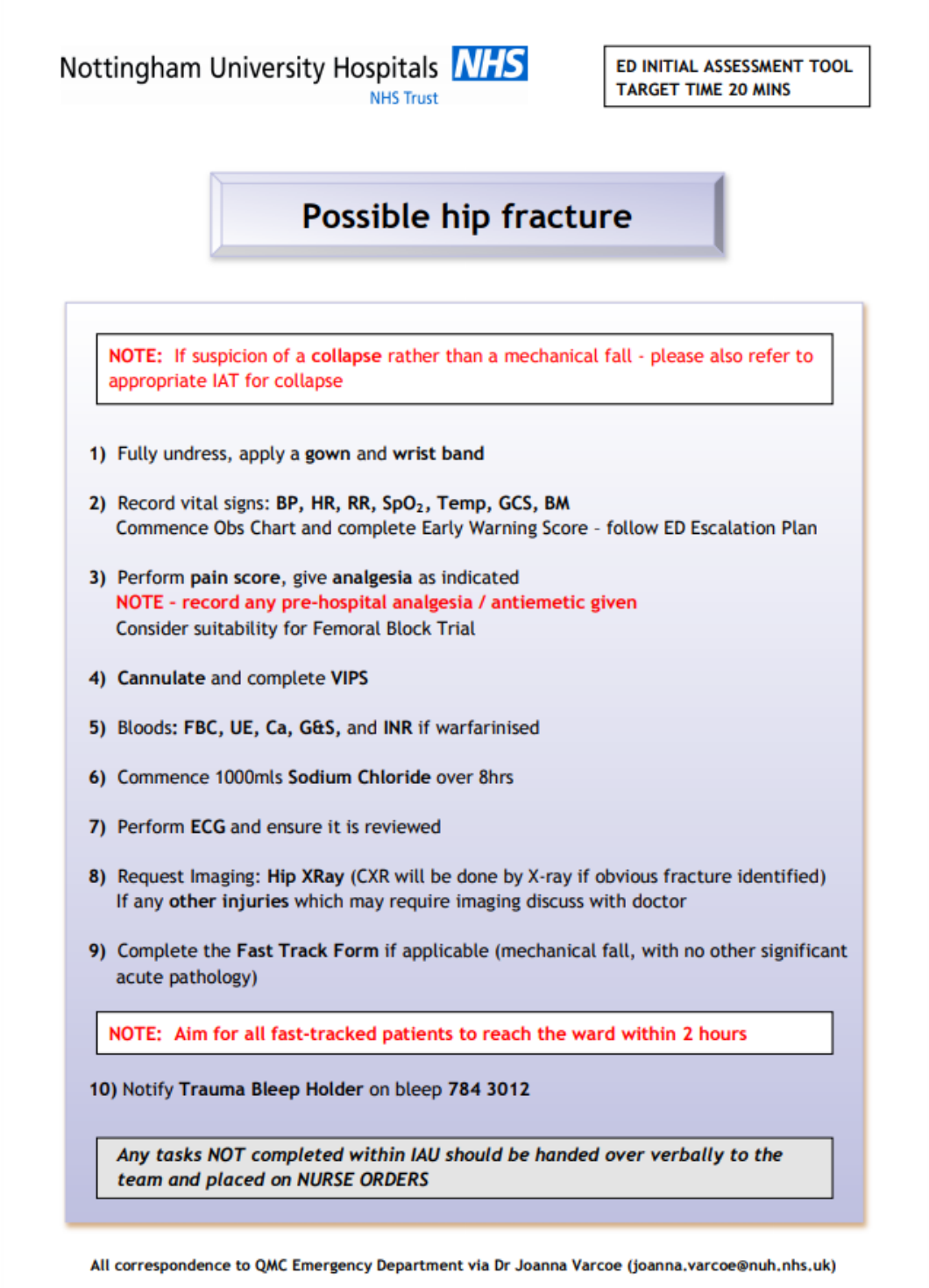
If your ED has started using the new Emergency Care Data Set (ECDS), the following codes can be used to identify potential cases:

Type of code	Code	ECDS description	SNOMED equivalent
Diagnosis	1211171000	Closed fracture: hip (NOF)	359817006 - closed fracture of hip (disorder)
Diagnosis	1212169000	Open fracture: hip (NOF)	361118003 - open fracture of hip (disorder)
Chief complaint	1161310000	Injury of hip / leg / knee / ankle / foot	127279002 - Injury of lower extremity (disorder)
Chief complaint	1161610000	Pain in hip / leg / knee / ankle / foot	10601006 - Pain in lower limb (finding)

Appendix 7: Examples of locally developed tools and safety alerts

RCEM would like to thank the following EDs for sharing copies of their locally developed tools.

Initial assessment tool for possible fractured neck of femur (QMC Nottingham, Jan 2013)



Nottingham University Hospitals NHS
NHS Trust

ED INITIAL ASSESSMENT TOOL
TARGET TIME 20 MINS

Possible hip fracture

NOTE: If suspicion of a **collapse** rather than a mechanical fall - please also refer to appropriate IAT for collapse

1) Fully undress, apply a **gown** and **wrist band**

2) Record vital signs: **BP, HR, RR, SpO_2, Temp, GCS, BM**
Commence Obs Chart and complete Early Warning Score - follow ED Escalation Plan

3) Perform **pain score**, give **analgesia** as indicated
NOTE - record any pre-hospital analgesia / antiemetic given
Consider suitability for Femoral Block Trial

4) **Cannulate** and complete **VIPS**

5) Bloods: **FBC, UE, Ca, G&S,** and **INR** if warfarinised

6) Commence 1000mls **Sodium Chloride** over 8hrs

7) Perform **ECG** and ensure it is reviewed

8) Request Imaging: **Hip XRay** (CXR will be done by X-ray if obvious fracture identified)
If any **other injuries** which may require imaging discuss with doctor

9) Complete the **Fast Track Form** if applicable (mechanical fall, with no other significant acute pathology)

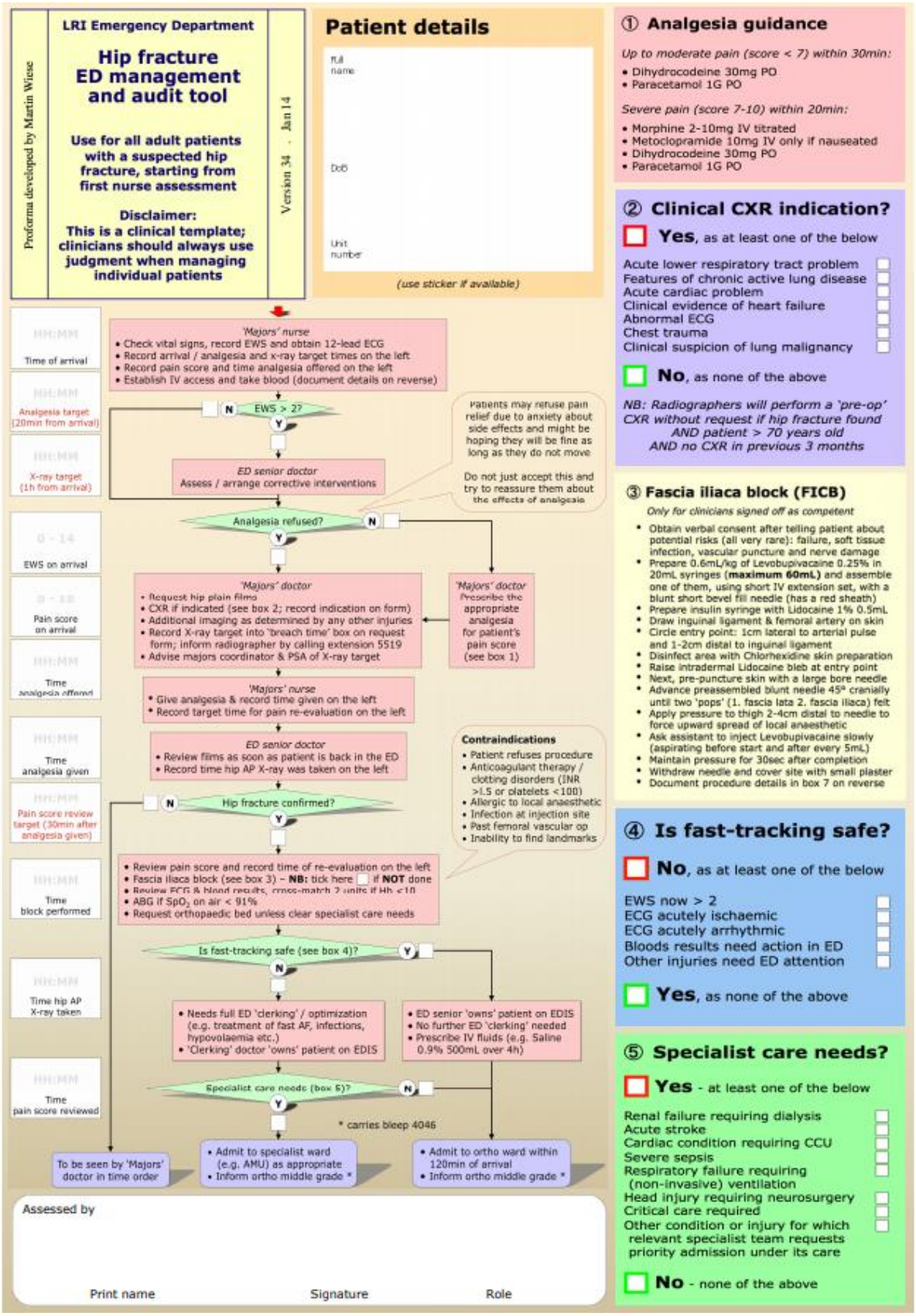
NOTE: Aim for all fast-tracked patients to reach the ward within 2 hours

10) Notify **Trauma Bleep Holder** on bleep **784 3012**

Any tasks NOT completed within IAU should be handed over verbally to the team and placed on NURSE ORDERS

All correspondence to QMC Emergency Department via Dr Joanna Varcoe (joanna.varcoe@nuh.nhs.uk)

Hip fracture ED management and audit tool (Leicester Royal Infirmary, 2014)



⑥ Required blood tests for patients with suspected hip fractures

Bloods to be taken during first assessment – please initial each test when done (failure to do so will delay surgery)		Initials
FBC (near-patient)	All patients	
Venous Blood Gas	All patients	
U&E (laboratory)	All patients	
INR	If on Warfarin, EtOH-dependent, known liver disease, signs of shock or clotting problem	
Group & Save	All patients	
Bloods to be taken after senior review - please initial each test when done (failure to do so will delay surgery)		**Initials**
Arterial blood gas	If SaO_2 < 91% on room air	
Cross-match blood	If Hb < 10, cross-match 2 units of packed red blood cells (transfuse if Hb < 7)	
Other	As appropriate – please state which tests have been done (e.g. dipstick urinalysis etc.)	

⑦ Fascia iliaca compartment block (FICB) procedural record

☐ Verbal consent obtained

☐ Skin prepared with Chlorhexidine 2% and sterile technique maintained

☐ 0.25% Levobupivacaine 0.6mL x _____ kg = _____ mL injected into FIC

☐ No immediate complications **OR**

☐ The following complications were observed

Print name Signature Role

Ultrasound guided nerve block for hip and femoral fractures (Barts Health, 2014)

Emergency Department

Ultrasound Guided Nerve Blocks for Hip & Femoral Fractures

Barts Health NHS NHS Trust

Contraindications
- Competent patient declines
- Allergy to local anaesthetic
- INR >1.5, Plts <100
- Infection at injection site
- Previous femoral vascular surgery
- Patient cannot report complications eg severe dementia, confusion
- High risk of compartment syndrome eg massive thigh swelling

If nerve block contraindicated give titrated iv morphine
Reassess pain score every 30 minutes until pain controlled

Local Anaesthetic Doses
- Levobupivacaine (Chirocaine)
  2mg/kg maximum. Use ideal body weight
  0.5% levobupivacaine, 1mL = 5mg
- For 50 – 70 kg patient:
  -**Fascia iliaca block** = 20 mL 0.5% levobupivacaine + 20 mL 0.9% saline (total 40 mL, diluted concentration 0.25%)
  -**Femoral nerve block** = 10 mL of 0.5% levobupivacaine

If nerve block fails, give alternative analgesia – do not repeat

Initial Assessment
Appropriate history, shortened, externally rotated leg, unable to straight leg raise, check neurovascular status
Assess pain score. Administer initial analgesia prior to x-ray
Fast track to x-ray - confirm fracture before inserting block. Place iv cannula, FBC, UE, Clotting, G+S, VBG

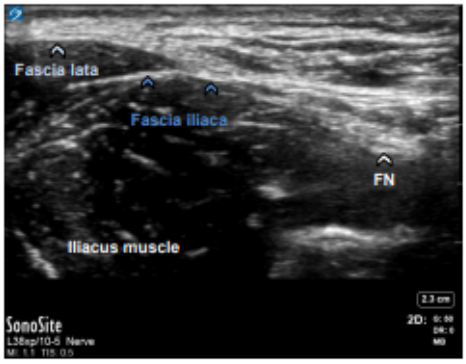
Preparation
- Document on EPR: informed consent, drugs used, block instillation time.

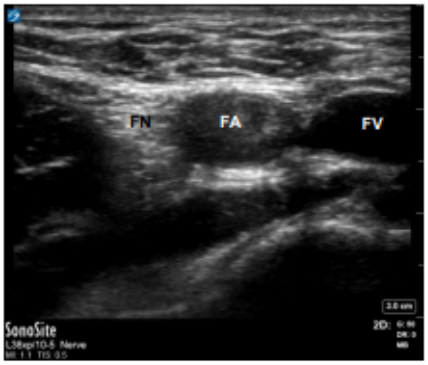
Equipment:
- USS machine, sterile USS probe cover, dressing pack, chlorhexidine skin prep, green needle, 20 mL syringe x 2, 7.5cm Sonoplex block needle, 0.5% levobupivacaine 20 mLs, 0.9% saline 20 mL,10 x 5cm Softpore dressing, assistant

Block Technique
- Use the linear or curvilinear probe on 'nerve' setting in a sterile manner with drapes & sterile USS probe cover
- Apply a sterile dressing over injection site and label block date and time
- If fascial planes difficult to identify, perform a femoral nerve block

USS guided fascia iliaca block
- Scan transversely in the inguinal crease
- Identify the femoral artery and slide the probe laterally to identify fascia iliaca, iliacus muscle, and fascia lata covering sartorius muscle
- Using an in-plane technique, instil 30 - 40 mL of 0.25% levobupivacaine under fascia iliaca (see dosing above)

USS guided femoral nerve block
- Scan transversely in the inguinal crease
- Locate the femoral artery. The femoral nerve is immediately lateral
- Using an in-plane technique, instil 10 mL of 0.5% levobupivacaine around the femoral nerve





Signs of local anaesthetic toxicity

CNS: paraesthesia, restlessness, confusion, seizures, coma
Resp: methaemoglobinaemia
CVS: transient hypertension, hypotension, tachycardia, arrhythmias
GI: nausea & vomiting

Management of local anaesthetic (LA) toxicity

Serum LA concentration peaks at 15-30 minutes post injection

- Stop LA infiltration, move the patient to resus
- Call for senior ED and Anaesthetic help
- Assess – ABCDE. Perform a 12 lead ECG
- Treat hypotension with fluid boluses
- Treat seizures with lorazepam 4mg iv or diazepam 10mg iv (decrease dose if hypotensive)
- If QRS interval is prolonged, treat with sodium bicarbonate 8.4% iv
- If torsades de pointes, treat with magnesium 2g iv over 30 mins

Consider intralipid emulsion 20% 1.5 mL / kg iv bolus followed by infusion 0.5 mL / kg / min for 30-60mins (max 500 mL initially)
- Stored in fridge in resus and in theatre 3 (ext 5832)

ED Clinical Team v1 December 2014 [review December 2016]

Emergency Department

Ultrasound Guided Nerve Blocks for Hip & Femoral Fractures

Barts Health NHS NHS Trust

Lead Author

ED Consultants, Barts Health

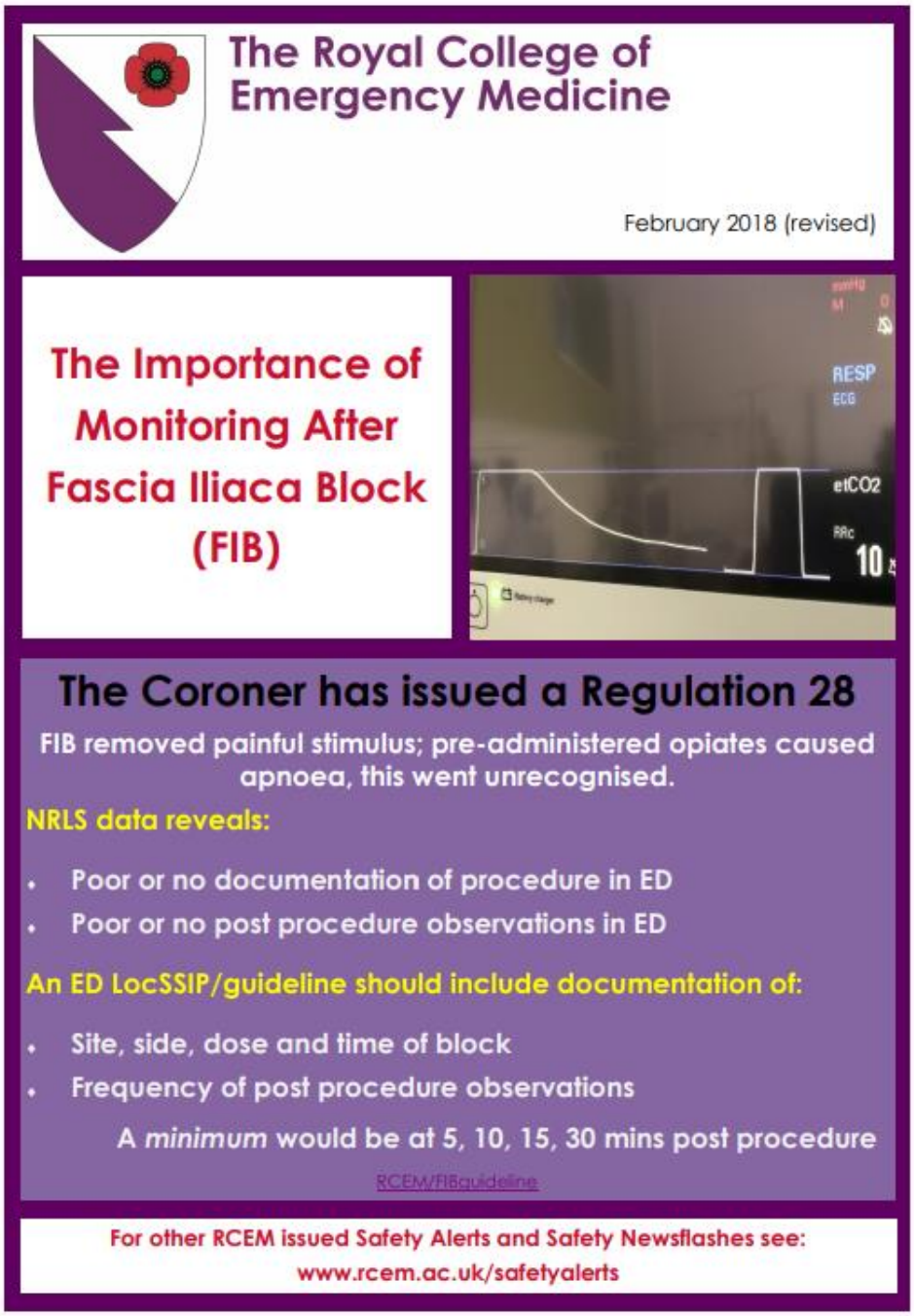
Co-Authors / Collaborators

Anaesthetic Consultants, Barts Health

Reference Documents

NICE Guideline CG124: The management of hip fractures, June 2011
New York School of Regional Anaesthesia: USS guided fascia iliaca block, 2013
Toxbase.org – The management of local anaesthetic toxicity, November 2008

RCEM safety newsflash on the importance of monitoring after FIB (RCEM, 2018)



Appendix 8: References

1. RCEM. CEM Clinical Audits 2012-13 Fractured Neck of Femur 2013
2. NICE. Quality Standard QS16 2017
3. NICE. Hip Fracture Management Clinical Guideline CG124 2017
4. RCEM. Pain standard 2011