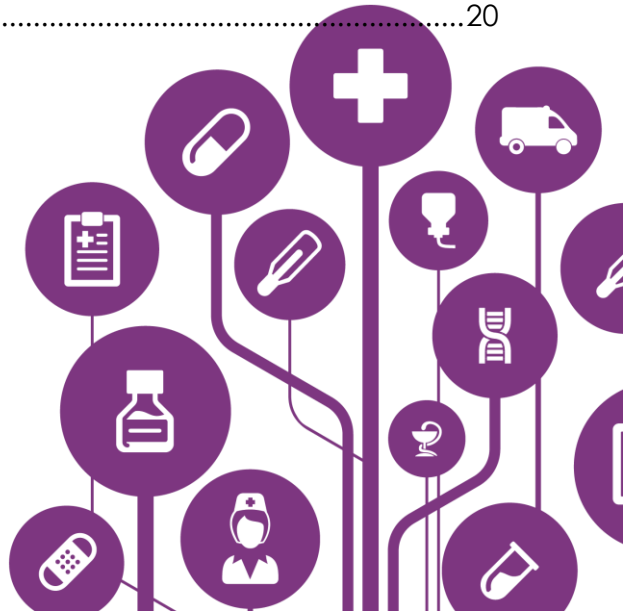
The Royal College of Emergency Medicine

CLINICAL AUDIT 2017/2018
Pain in Children
Clinical Audit Information



INTRODUCTION AND BACKGROUND

Pain in children is one of three Royal College of Emergency Medicine (RCEM) clinical audit topics for 2017/2018. It follows on from the successful earlier audits of the Emergency Department (ED) management of children in pain in 2003, 2004, 2005, 2007, 2008, 2009 and 2011/2012.

Participants are asked to collect data retrospectively from the ED notes of 50 consecutive children between the ages of 5 and 15 inclusive who present to their ED at any time in the period 1 January 2017 to 31 December 2017 who were in moderate or severe pain with a fracture to the clavicle, shoulder, humerus, elbow, forearm, wrist, ankle, tibia, fibula or femur.

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.

Full results of the audit will be published as part of RCEM's work on clinical quality. This audit is listed in the Quality Accounts for 2017/18, which require providers in England to report on their participation in identified national clinical audits.

Once data is submitted, RCEM will become custodian of that data and will be sharing data from the 2017/18 audits with the CQC, the healthcare regulator for England, and reserves the right to share with other organisations if approved by College Council. Named ED level data will be made public to enable and encourage quality assurance and quality improvement.

Aims and objectives

The audit will be conducted for the eighth time to continue the work of the seven previous data collections. It will identify the current performance in EDs against RCEM clinical standards, show the results in comparison with other departments, and also across time if there was previous participation.

The purpose of the audit is:

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

Inclusion criteria

- Children between the ages of 5 and 15 (inclusive)
- Presenting to the ED in moderate or severe pain
- Presenting to ED with a fracture to the clavicle, shoulder, humerus, elbow, forearm, wrist, ankle, tibia, fibula or femur
- Presenting with a single fracture but include related fractures (e.g. tibia & fibula, or radius & ulna)

Exclusion criteria

- Children aged 4 or under
- Children aged 16 or over
- Presenting to the ED with mild pain or no pain

Search Terms

The ICD 10 codes below can be used to help initially identify potential cases. This is not an exhaustive list; 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.

ECDS codes to support case identification

DATA GROUP	Related Audit Q.	DATA ITEM NAME	Data set and code									NOTES
			ICD10	SNOMED	DM&D	UDDA version 3	ECDS	CDS	CDS_sub1	CDS_area	CDS_Side	
EMERGENCY CARE ATTENDANCE ACTIVITY CHARACTERISTICS	Q2	EMERGENCY CARE ARRIVAL DATE	-	-	As per CDS 6.2 Type 010	-	-	010				Exclude all BEFORE 01/01/2017
EMERGENCY CARE ATTENDANCE ACTIVITY CHARACTERISTICS	Q2	EMERGENCY CARE ARRIVAL DATE	-	-	As per CDS 6.2 Type 010	-	-	010				Exclude all AFTER 31/01/2017
PATIENT IDENTITY - UNVERIFIED IDENTITY STRUCTURE	Q3	PERSON BIRTH DATE	-	-	As per CDS 6.2 Type 010	-	-	010				Exclude all BIRTH dates AFTER 31/12/2012

DATA GROUP	Related Audit Q.	DATA ITEM NAME	Data set and code									NOTES
			ICD10	SNOMED	DM&D	UDDA version 3	ECDS	CDS	CDS_sub1	CDS_area	CDS_Side	
PATIENT IDENTITY - UNVERIFIED IDENTITY STRUCTURE	Q3	PERSON BIRTH DATE	-	-	As per CDS 6.2 Type 010	-	-	010				Exclude all dates BEFORE 31/1/2001
DIAGNOSIS	-	Closed fracture Clavicle	S4200	33173003	-	020111	1211141000	05	3	10	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture humerus	S4220 S4230 S4240 S4280	43295006	-	020113	1211145000	05	3	12	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture shoulder	S4210 S4280	29749002	-	020112	1211143000	05	3	10	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture elbow joint	S5200	309464009	-	020114	1211149000	05	3	13	Y	Confirmed and suspected
DIAGNOSIS	-	closed fracture of radius	S5210 S5230 S5250	1111640008	-	-	1211151000	05	3	-	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture ulna	S5200 S5220	71555008	-	-	1211153000	05	3	-	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture	S5240 S5260 S5290	75857000	-	020115	1211155000	05	3	14	Y	Confirmed and suspected

DATA GROUP	Related Audit Q.	DATA ITEM NAME	Data set and code									NOTES
			ICD10	SNOMED	DM&D	UDDA version 3	ECDS	CDS	CDS_sub1	CDS_area	CDS_Side	
		radius AND ulna-										
DIAGNOSIS	-	Closed fracture carpel bones	S6210 S6220 S6230	9468002	-	020118	1211161000	05	3	18	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture femur	S72.30 S72.40 S72.80 S72.90	25415003	-	020123	1211175000	05	3	30	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture fibula (not ankle)	S8240	447395005	-	-	1211183000	05	3	-	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture tibia	S8210 S8220 S8230	447139008	-	-	1211181000	05	3	-	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture Tibia AND fibula	S8270 S8290	413877007	-	020126	1211185000	05	3	32	Y	Confirmed and suspected
DIAGNOSIS	-	Closed fracture ankle	S8250 S8260 S8280	42188001	-	020127	1211189000	05	3	33	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture Clavicle	S4201	111637008	-	020211	1212141000	05	2	10	Y	Confirmed and suspected

DATA GROUP	Related Audit Q.	DATA ITEM NAME	Data set and code									NOTES
			ICD10	SNOMED	DM&D	UDDA version 3	ECDS	CDS	CDS_sub1	CDS_area	CDS_Side	
DIAGNOSIS	-	Open fracture humerus	S4221 S4231 S4241 S4281	89294002	-	020213	1212145000	05	2	12	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture shoulder	S4211 S4281	47864008	-	020211	1212143000	05	2	10	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture elbow joint	S5201	302232001	-	020214	1212149000	05	2	13	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture of radius	S5211 S5231 S5251	42945005	-	-	1212151000	05	2	-	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture ulna	S5201 S5221	37449000	-	-	1212153000	05	2	-	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture radius AND ulna	S5241 S5261 S5291	81966000	-	020215	1212156000	05	2	14	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture carpel bones	S6211 S6221 S6231	29014003	-	020217	1212160000	05	2	18	Y	Confirmed and suspected

DATA GROUP	Related Audit Q.	DATA ITEM NAME	Data set and code									NOTES
			ICD10	SNOMED	DM&D	UDDA version 3	ECDS	CDS	CDS_sub1	CDS_area	CDS_Side	
DIAGNOSIS	-	Open fracture femur	S7231 S7241 S7281 S7291	28576007	-	020222	1212171000	05	2	30	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture fibula (not ankle)	S8241	447017008	-	-	1212183000	05	2	-	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture tibia	S8211 S8221 S8231	446979005	-	-	1212181000	05	2	-	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture Tibia AND fibula	S8271 S8291	414943006	-	020225	1212185000	05	2	32	Y	Confirmed and suspected
DIAGNOSIS	-	Open fracture ankle	S8251 S8261 S8281	48187004	-		1212189000	05	2	33	Y	Confirmed and suspected

Flow of data searches to identify audit cases

Using codes listed above, first identify all patients attending ED between dates, then by age at time of attendance, then through diagnostic criteria- exclude 'suspected' and then according to analgesia or x-ray. This will give you 4 separate groups of patients.

Date and time of attendance

Age (exclude < 5 years, > 16 years)

Diagnostic criteria (confirmed and suspected)

Additional codes of potential use

Related audit Q	DATA GROUP	DATA ITEM NAME	ICD10	DM&D	SNOMED	UDDA version 3	ECDS	CDS_Code mapping used for HRG Grouping	PbR_Category	NOTES
Q3	ARRIVAL MODE	Patient arranged own transport/ walk-in	-	-	2018110000	-	1048071000000103	-	-	
		Public transport / taxi	-	-	2018210000	-	1048061000000105	-	-	
		Emergency road ambulance	-	-	2018310000	-	1048031000000100	-	-	
		Emergency road ambulance with medical escort	-	-	2018350000	-	1048041000000109	-	-	
		Non-emergency road ambulance	-	-	2018370000	-	1048021000000102	-	-	
		Helicopter	-	-	2018510000	-	1048051000000107	-	-	
		Fixed wing / medical repatriation by air	-	-	2018550000	-	1048081000000101	-	-	

Related audit Q	DATA GROUP	DATA ITEM NAME	ICD10	DM&D	SNOMED	UDDA version 3	ECDS	CDS_Code mapping used for HRG Grouping	PbR_Category	NOTES
		Custodial services: prison / detention centre transport	-	-	2018810000	-	1047991000000102	-	-	
		Police transport	-	-	2018910000	-	1048001000000106	-	-	
Q7	PROCEDURE DATE	-	-	an10 CCYY-MM-DD	-	-	-	-	-	
	PROCEDURE TIME	-	-	an8 HH:MM:SS	-	-	-	-	-	
	PROCEDURE	Anaesthesia : local anaesthetic	-	-	386761002	-	1135110000	232	1-2	
	PROCEDURE	Anaesthesia : entonox	-	-	427035008	-	1135210000	234	1-2	
	PROCEDURE	Anaesthesia : regional block	-	-	27372005	-	1135410000	233	1-2	
	PROCEDURE	Administration of medication	-	-	386761002	-	1141110000	511	1-2	
	PROCEDURE	Intravenous drug : bolus	-	-	427035008	-	1141210000	291	3-4	
	PROCEDURE	Intravenous drug : infusion	-	-	432054008	-	1141250000	292	3-4	

Related audit Q	DATA GROUP	DATA ITEM NAME	ICD10	DM&D	SNOMED	UDDA version 3	ECDS	CDS_Code mapping used for HRG Grouping	PbR_Category	NOTES
Q11	Radiology	X-ray plain film	-	-	168537006	-	1171110000	01	2	

Sample size
RCEM recommends auditing a different number of cases depending on the number you expect to see within the data collection period. If this is an area of concern in your ED, you are able to submit data for more cases for an in depth look at your ED's performance.

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

Audited cases should be consecutive 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

Data collection period
From 1 January 2017 to 31 December 2017.
Note: You can start the audit at any point during the data collection period, as long as you submit the data by 31 January 2018.

Data submission period
National data can be submitted online at the link below between 1 August 2017 to 31 January 2018. You can find the link to log into the data entry site at www.rcem.ac.uk/audits

Data Sources
ED patient records (paper, electronic or both).

STANDARDS

STANDARD	GRADE
1. Pain is assessed within 15 minutes of arrival	F
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
b. 75% within 30 mins of arrival or triage whichever is the earliest.	D
c. 100% within 60 mins of arrival or triage whichever is the earliest.	F
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. 50% within 20 mins of arrival or triage whichever is the earliest.	A
b. 100% within 60 mins of arrival or triage whichever is the earliest.	D
4. 90% of patients with severe or moderate pain should have documented evidence of re-evaluation and action within 60 minutes of receiving the first dose of analgesic.	D
5. If analgesia is not prescribed and the patient has moderate or severe pain the reason should be documented in the notes	D

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 2	Moderate pain	Pain score 4 to 6

AUDIT QUESTIONS

Patient details

Q1	Reference (do not enter identifiable data)	
Q2	Date and time of arrival or triage, whichever is earlier *(Use 24 hour clock e.g. 11.23pm = 23:23)*	dd/mm/yyyy HH:MM
Q3	Age of patient	• 5-8 years • 9-12 years • 13-15 years

Pre-hospital

Q4	Was analgesia administered pre-hospital?	• Yes • No • Not recorded

Pain and analgesia

		Yes (select option where applicable)	*Time (leave blank if unknown)*	*Date (for use if different to date of admission)*	*No (select option where applicable)*
Q5	Was a pain score taken on arrival (within 15 mins?)	• 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 administered in the ED	• Yes	HH:MM	dd/mm/yyyy	• Not offered • Not accepted • No – but the reason was recorded • Not recorded

Q10	Was analgesia in accordance with local guidelines?	• Yes, fully • Yes, partially • No, it was not • No local guidelines exist

Treatment

Q11	Was an x-ray completed whilst patient was in the ED?	HH:MM	dd/mm/yyyy	• Yes • No • Done before arrival
Q12	Is there documented evidence that non-accidental injury was considered in the ED?			• Yes • No
Q13	Was discharge analgesia advice given?			• Yes • No • Not recorded
Q14	Time at which the patient left the ED:	HH:MM	dd/mm/yyyy	• Not recorded

Notes

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.

EVIDENCE BASE FOR STANDARDS

STANDARD	EVIDENCE
1. Pain is assessed within 15 minutes of arrival	RCEM Management of Pain in Children July 2017. Best Practice Guideline Recognition and alleviation of pain should be a priority when treating ill and injured children. This process should start at the triage, be monitored during their time in the ED and finish with ensuring adequate analgesia at, and if appropriate, beyond discharge. Level 5 evidence. NICE Fractures (non-complex): assessment and management (NG38) 2016 Assess pain regularly in people with fractures using a pain assessment scale suitable for the person's age, developmental stage and cognitive function.
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.	RCEM Management of Pain in Children July 2017. Best Practice Guideline The RCEM Quality in Emergency Care Committee (QEC) standard of analgesia for moderate & severe pain within 20 minutes of arrival in the ED should be applied to children in all Emergency Departments. RCEM 2011 Pain in children 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. 50% within 20 mins of arrival b. 75% within 30min of arrival c. 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. 50% within 20 mins of arrival or triage whichever is the earliest.	RCEM Management of Pain in Children July 2017. Best Practice Guideline The RCEM Quality in Emergency Care Committee (QEC) standard of analgesia for moderate & severe pain within 20 minutes of arrival in the ED should be applied to children in all Emergency Departments. RCEM 2011 Pain in children 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 30mins of arrival b. 100% within 60mins of arrival.
b. 100% within 60 mins of arrival or triage whichever is the earliest.	
4. 90% of patients with severe or moderate pain should have documented evidence of re-evaluation and action within 60 minutes of receiving the first dose of analgesic. (Please note standards are reviewed annually. This has been modified since 2011where this was 75% of patients with	RCEM Management of Pain in Children July 2017. Best Practice Guideline Patients with severe or moderate pain should have the effectiveness of analgesia re-evaluated within 60 minutes of the first dose of analgesia. Level 5 evidence. NICE Fractures (non-complex): assessment and management (NG38) 2016

moderate pain should have documented evidence of re-evaluation and action within 60 minutes of receiving the first dose of analgesic).	Assess pain regularly in people with fractures using a pain assessment scale suitable for the person's age, developmental stage and cognitive function. RCEM 2011 Pain in children standard 90% of patients with severe pain should have documented evidence of re-evaluation and action within 60 minutes of receiving the first dose of analgesic.
5. If analgesia is not prescribed and the patient has moderate or severe pain the reason should be documented in the notes.	RCEM 2011 Pain in children standard If analgesia is not prescribed and the patient has moderate or severe pain the reason should be documented in the notes.

REFERENCES

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