

Draft

Non complex fractures

Search strategies appendix

Clinical guideline

Appendices

10 June 2015

Draft

*Commissioned by the National Institute for
Health and Care Excellence*

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Healthcare professionals are expected to take NICE clinical guidelines fully into account when exercising their clinical judgement. However, the guidance does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of each patient, in consultation with the patient and, where appropriate, their guardian or carer.

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Appendix A: Literature search strategies

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Search strategies used for the non-complex fractures guideline are outlined below and were run in accordance with the methodology in the NICE guidelines manual 2012.¹ All searches were run up to **either 8th or 9th April 2015** unless otherwise stated. Any studies added to the databases after this date (even if they were published prior to this date) were not included unless specifically stated in the text. We do not routinely search for electronic, ahead of print or 'online early' publications. Where possible searches were limited to retrieve material published in English.

Table 1: Database date parameters

Database	Dates searched
Medline	1946 up to either 8 th or 9 th April 2015
Embase	1980 up to either 8 th or 9 th April 2015
The Cochrane Library	Cochrane Reviews to 2015 Issue 4 of 12 CENTRAL to 2015 Issue 3 of 12 DARE, HTA and NHSEED to 2015 Issue 1 of 4
CINAHL	1960 up to either 8 th or 9 th April 2015

Searches for the **clinical reviews** were run in Medline (OVID), Embase (OVID) and the Cochrane Library (Wiley). Additional searches were run in CINAHL (EBSCO) for question A.4.3

Searches for **intervention and diagnostic studies** were usually constructed using a PICO format where population (P) terms were combined with Intervention (I) and sometimes Comparison (C) terms. An intervention can be a drug, a procedure or a diagnostic test. Outcomes (O) are rarely used in search strategies for interventions. Search filters were also added to the search where appropriate.

Searches for **prognostic studies** were usually constructed combining population terms with prognostic variable terms and sometimes outcomes. Search filters were added to the search where appropriate.

Searches for the **health economic reviews** were run in Medline (OVID), Embase (OVID), the NHS Economic Evaluations Database (NHS EED), the Health Technology Assessment (HTA) database and the Health Economic Evaluation Database (HEED). NHS EED and HTA databases were hosted by the Centre for Research and Dissemination (CRD). Searches in NHS EED and HEED were constructed using population terms only. The Health Economic Evaluation Database (HEED) ceased production in 2014 with access ceasing in January 2015. For the final dates of HEED searches, please see individual economic questions. For Medline and Embase an economic filter (instead of a study type filter) was added to the same clinical search strategy.

A.2 Population search strategies

There is no standard population search strategy for this guideline. Population search terms are included with the intervention terms in section 0

A.3 Study filter search terms

A.3.1 Systematic review (SR) search terms

Medline search terms

1.	meta-analysis/
2.	meta-analysis as topic/
3.	(meta analy* or metanaly* or metaanaly*).ti,ab.
4.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
5.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
6.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
7.	(search* adj4 literature).ab.
8.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
9.	cochrane.jw.
10.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
11.	or/1-10

Embase search terms

1.	systematic review/
2.	meta-analysis/
3.	(meta analy* or metanaly* or metaanaly*).ti,ab.
4.	((systematic or evidence) adj3 (review* or overview*)).ti,ab.
5.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
6.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
7.	(search* adj4 literature).ab.
8.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
9.	((pool* or combined) adj2 (data or trials or studies or results)).ab.
10.	cochrane.jw.
11.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
12.	or/1-11

A.3.2 Randomised controlled trials (RCTs) search terms

Medline search terms

1.	randomized controlled trial.pt.
2.	controlled clinical trial.pt.
3.	randomi#ed.ab.
4.	placebo.ab.
5.	randomly.ab.
6.	clinical trials as topic.sh.
7.	trial.ti.
8.	or/1-7

Embase search terms

1.	random*.ti,ab.
2.	factorial*.ti,ab.
3.	(crossover* or cross over*).ti,ab.
4.	((doubl* or singl*) adj blind*).ti,ab.
5.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
6.	crossover procedure/

7.	double blind procedure/
8.	single blind procedure/
9.	randomized controlled trial/
10.	or/1-9

A.3.3 Observational studies (OBS) search terms

Medline search terms

1.	epidemiologic studies/
2.	exp case control studies/
3.	exp cohort studies/
4.	cross-sectional studies/
5.	case control.ti,ab.
6.	(cohort adj (study or studies or analys*)).ti,ab.
7.	((follow up or observational or uncontrolled or non randomi#ed or nonrandomi#ed or epidemiologic*) adj (study or studies)).ti,ab.
8.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort*)).ti,ab.
9.	or/1-8

Embase search terms

1.	clinical study/
2.	exp case control study/
3.	family study/
4.	longitudinal study/
5.	retrospective study/
6.	prospective study/
7.	cross-sectional study/
8.	cohort analysis/
9.	follow-up/
10.	cohort*.ti,ab.
11.	9 and 10
12.	case control.ti,ab.
13.	(cohort adj (study or studies or analys*)).ti,ab.
14.	((follow up or observational or uncontrolled or non randomi#ed or nonrandomi#ed or epidemiologic*) adj (study or studies)).ti,ab.
15.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort*)).ti,ab.
16.	or/1-8,11-15

A.3.4 Diagnostic test accuracy studies (DIAG) search terms

Medline search terms

1.	exp "sensitivity and specificity"/
2.	(sensitivity or specificity).ti,ab.
3.	((pre test or pretest or post test) adj probability).ti,ab.
4.	(predictive value* or PPV or NPV).ti,ab.
5.	likelihood ratio*.ti,ab.

6.	likelihood function/
7.	(ROC curve* or AUC).ti,ab.
8.	(diagnos* adj2 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
9.	gold standard.ab.
10.	or/1-9

Embase search terms

1.	exp "sensitivity and specificity"/
2.	(sensitivity or specificity).ti,ab.
3.	((pre test or pretest or post test) adj probability).ti,ab.
4.	(predictive value* or PPV or NPV).ti,ab.
5.	likelihood ratio*.ti,ab.
6.	(ROC curve* or AUC).ti,ab.
7.	(diagnos* adj2 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
8.	diagnostic accuracy/
9.	diagnostic test accuracy study/
10.	gold standard.ab.
11.	or/1-10

A.3.5 Prediction rules/prognostic studies (PRED-RULE) search terms

Medline search terms

1.	predict.ti.
2.	(validat* or rule*).ti,ab.
3.	(predict* and (outcome* or risk* or model*)).ti,ab.
4.	((history or variable* or criteria or scor* or characteristic* or finding* or factor*) and (predict* or model* or decision* or identif* or prognos*)).ti,ab.
5.	decision*.ti,ab. and Logistic models/
6.	(decision* and (model* or clinical*)).ti,ab.
7.	(prognostic and (history or variable* or criteria or scor* or characteristic* or finding* or factor* or model*)).ti,ab.
8.	(stratification or discrimination or discriminate or c statistic or "area under the curve" or AUC or calibration or indices or algorithm or multivariable).ti,ab.
9.	ROC curve/
10.	or/1-9

Embase search terms

1.	predict.ti.
2.	(validat* or rule*).ti,ab.
3.	(predict* and (outcome* or risk* or model*)).ti,ab.
4.	((history or variable* or criteria or scor* or characteristic* or finding* or factor*) and (predict* or model* or decision* or identif* or prognos*)).ti,ab.
5.	decision*.ti,ab. and statistical model/
6.	(decision* and (model* or clinical*)).ti,ab.
7.	(prognostic and (history or variable* or criteria or scor* or characteristic* or finding* or factor* or model*)).ti,ab.

8.	(stratification or discrimination or discriminate or c statistic or "area under the curve" or auc or calibration or indices or algorithm or multivariable).ti,ab.
9.	receiver operating characteristic/
10.	or/1-9

Cochrane search terms

#1.	predict:ti
#2.	(validat* or rule*):ti,ab
#3.	(predict* and (outcome* or risk* or model*)):ti,ab
#4.	((history or variable* or criteria or scor* or characteristic* or finding* or factor*) and (predict* or model* or decision* or identif* or prognos*)):ti,ab
#5.	decision*:ti,ab
#6.	MeSH descriptor: [logistic models] explode all trees
#7.	(decision* and (model* or clinical*)):ti,ab
#8.	(prognostic and (history or variable* or criteria or scor* or characteristic* or finding* or factor* or model*)):ti,ab
#9.	(stratification or discrimination or discriminate or c statistic or "area under the curve" or AUC or calibration or indices or algorithm or multivariable):ti,ab
#10.	MeSH descriptor: [roc curve] explode all trees
#11.	{or #1-#10}

A.3.6 Qualitative studies (QUAL) search terms

Medline search terms

1.	qualitative research/ or narration/ or exp interviews as topic/ or exp questionnaires/ or health care surveys/
2.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
3.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
4.	or/1-3

Embase search terms

1.	health survey/ or exp questionnaire/ or exp interview/ or qualitative research/ or narrative/
2.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
3.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
4.	or/1-3

CINAHL search terms

1.	(MH "qualitative studies+")
2.	(MH "qualitative validity+")
3.	(MH "interviews+") or (MH "focus groups") or (MH "surveys") or (MH "questionnaires+")
4.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*)
5.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-

	stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*)
6.	S1 or S2 or S3 or S4 or S5

A.3.7 Health economics search terms

Medline search terms

1.	economics/
2.	value of life/
3.	exp "costs and cost analysis"/
4.	exp economics, hospital/
5.	exp economics, medical/
6.	economics, nursing/
7.	economics, pharmaceutical/
8.	exp "fees and charges"/
9.	exp budgets/
10.	budget*.ti,ab.
11.	cost*.ti.
12.	(economic* or pharmaco?economic*).ti.
13.	(price* or pricing*).ti,ab.
14.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
15.	(financ* or fee or fees).ti,ab.
16.	(value adj2 (money or monetary)).ti,ab.
17.	or/1-16

Embase search terms

1.	health economics/
2.	exp economic evaluation/
3.	exp health care cost/
4.	exp fee/
5.	budget/
6.	funding/
7.	budget*.ti,ab.
8.	cost*.ti.
9.	(economic* or pharmaco?economic*).ti.
10.	(price* or pricing*).ti,ab.
11.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
12.	(financ* or fee or fees).ti,ab.
13.	(value adj2 (money or monetary)).ti,ab.
14.	or/1-13

A.3.8 Quality of life search terms

Medline search terms

1.	quality-adjusted life years/
2.	sickness impact profile/

3.	(quality adj2 (wellbeing or well-being)).ti,ab.
4.	sickness impact profile.ti,ab.
5.	disability adjusted life.ti,ab.
6.	(qal* or qtime* or qwb* or daly*).ti,ab.
7.	(euroqol* or eq5d* or eq 5d*).ti,ab.
8.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
9.	(health utility* or utility score* or disutilit*).ti,ab.
10.	(hui or hui1 or hui2 or hui3).ti,ab.
11.	health* year* equivalent*.ti,ab.
12.	(hye or hyes).ti,ab.
13.	rosser.ti,ab.
14.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
15.	(sf36 or sf 36 or short form 36 or shortform 36 or shortform36).ti,ab.
16.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
17.	(sf12 or sf 12 or short form 12 or shortform 12 or shortform12).ti,ab.
18.	(sf8 or sf 8 or short form 8 or shortform 8 or shortform8).ti,ab.
19.	(sf6 or sf 6 or short form 6 or shortform 6 or shortform6).ti,ab.
20.	or/1-19

Embase search terms

1.	quality adjusted life year/
2.	"quality of life index"/
3.	short form 12/ or short form 20/ or short form 36/ or short form 8/
4.	sickness impact profile/
5.	(quality adj2 (wellbeing or well-being)).ti,ab.
6.	sickness impact profile.ti,ab.
7.	disability adjusted life.ti,ab.
8.	(qal* or qtime* or qwb* or daly*).ti,ab.
9.	(euroqol* or eq5d* or eq 5d*).ti,ab.
10.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
11.	(health utility* or utility score* or disutilit*).ti,ab.
12.	(hui or hui1 or hui2 or hui3).ti,ab.
13.	health* year* equivalent*.ti,ab.
14.	(hye or hyes).ti,ab.
15.	rosser.ti,ab.
16.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
17.	(sf36 or sf 36 or short form 36 or shortform 36 or shortform36).ti,ab.
18.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
19.	(sf12 or sf 12 or short form 12 or shortform 12 or shortform12).ti,ab.
20.	(sf8 or sf 8 or short form 8 or shortform 8 or shortform8).ti,ab.
21.	(sf6 or sf 6 or short form 6 or shortform 6 or shortform6).ti,ab.
22.	or/1-21

A.3.9 Health economic modelling (MOD) search terms

Medline search terms

1.	exp models, economic/
2.	*models, theoretical/
3.	*models, organizational/
4.	markov chains/
5.	monte carlo method/
6.	exp decision theory/
7.	(markov* or monte carlo).ti,ab.
8.	econom* model*.ti,ab.
9.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
10.	or/1-9

Embase search terms

1.	statistical model/
2.	exp economic aspect/
3.	1 and 2
4.	*theoretical model/
5.	*nonbiological model/
6.	stochastic model/
7.	decision theory/
8.	decision tree/
9.	monte carlo method/
10.	(markov* or monte carlo).ti,ab.
11.	econom* model*.ti,ab.
12.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
13.	or/3-12

A.3.10 Excluded study designs and publication types

The following study designs and publication types were removed from retrieved results using the NOT operator.

Medline search terms

1.	letter/
2.	editorial/
3.	news/
4.	exp historical article/
5.	anecdotes as topic/
6.	comment/
7.	case report/
8.	(letter or comment*).ti.
9.	or/1-8
10.	randomized controlled trial/ or random*.ti,ab.
11.	9 not 10
12.	animals/ not humans/
13.	exp animals, laboratory/
14.	exp animal experimentation/
15.	exp models, animal/

16.	exp rodentia/
17.	(rat or rats or mouse or mice).ti.
18.	or/11-17

Embase search terms

1.	letter.pt. or letter/
2.	note.pt.
3.	editorial.pt.
4.	case report/ or case study/
5.	(letter or comment*).ti.
6.	or/1-5
7.	randomized controlled trial/ or random*.ti,ab.
8.	6 not 7
9.	animal/ not human/
10.	nonhuman/
11.	exp animal experiment/
12.	exp experimental animal/
13.	animal model/
14.	exp rodent/
15.	(rat or rats or mouse or mice).ti.
16.	or/8-15

Cinahl search terms

51.	(MH "case studies") or pt anecdote or pt audiovisual or pt bibliography or pt biography or pt book or pt book review or pt brief item or pt cartoon or pt commentary or pt computer program or pt editorial or pt games or pt glossary or pt historical material or pt interview or pt letter or pt listservs or pt masters thesis or pt obituary or pt pamphlet or pt pamphlet chapter or pt pictorial or pt poetry or pt proceedings or pt "questions and answers" or pt response or pt software or pt teaching materials or pt website
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A.4 Searches for specific questions

A.4.1 Documentation

1. In patients with non-complex fractures does documentation recording safeguarding, comorbidities, falls risk and fracture classification alongside standard diagnosis documentation improve outcomes compared to with standard diagnosis documentation alone?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Fractures	Documentation of safeguarding, comorbidities, falls risk and fracture classification alongside standard diagnosis.	n/a	n/a	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp fractures, bone/
2.	fracture*.ti,ab.
3.	or/1-2
4.	documentation/
5.	medical records/ or medical record linkage/ or medical records, problem-oriented/ or medical records systems, computerized/ or electronic health records/
6.	"Forms and Records Control"/
7.	nursing records/
8.	(document* or record* or note*).ti.
9.	((document* or record* or note*) adj3 (medical or patient*)).ab.
10.	or/4-9
11.	exp domestic violence/
12.	((domestic or partner* or famil* or spous* or husband* or wife* or wive*) adj3 (violen* or abuse* or maltreat* or mistreat*)).ti,ab.
13.	((aged or elder* or child*) adj3 (violen* or abuse* or neglect* or maltreat* or mistreat*)).ti,ab.
14.	exp substance-related disorders/
15.	((substance or drug* or tobacco) adj2 (use* or misuse* or using or abuse* or disorder* or dependen* or addict*)).ti,ab.
16.	(alcoholism or alcoholic).ti,ab.
17.	(alcohol adj2 (use* or misuse* or using or abuse* or disorder* or dependen* or addict*)).ti,ab.
18.	exp smoking/
19.	(smoke* or smoking).ti,ab.
20.	(vulnerable adj2 (adult* or elder* or child* or infant* or bab* or toddler* or people or person*)).ti,ab.
21.	(safeguard* or non-accident*).ti,ab.
22.	comorbidity/
23.	(comorbid* or co-morbid*).ti,ab.
24.	(fracture adj2 (grade* or class* or score*)).ti,ab.
25.	gustilo.ti,ab.
26.	exp fracture, bone/cl
27.	(risk* adj2 fall*).ti,ab.
28.	or/11-27
29.	accidental falls/
30.	risk/ or risk assessment/ or risk factors/
31.	29 and 30
32.	28 or 31
33.	3 and 10 and 32

Embase search terms

1.	exp fracture/
2.	fracture*.ti,ab.
3.	or/1-2
4.	*documentation/ or *medical documentation/ or *medical record/ or *electronic medical record/
5.	(document* or record* or note*).ti.
6.	((document* or record* or note*) adj3 (medical or patient*)).ab.

7.	or/4-6
8.	*domestic violence/ or *battered woman/ or *child abuse/ or *elder abuse/ or *family violence/ or *partner violence/
9.	((domestic or partner* or famil* or spous* or husband* or wife* or wive*) adj3 (violen* or abuse* or maltreat* or mistreat*)).ti,ab.
10.	((aged or elder* or child*) adj3 (violen* or abuse* or neglect* or maltreat* or mistreat*)).ti,ab.
11.	*substance abuse/
12.	((substance or drug* or tobacco) adj2 (use* or misuse* or using or abuse* or disorder* or dependen* or addict*)).ti,ab.
13.	exp *alcohol abuse/
14.	(alcoholism or alcoholic).ti,ab.
15.	(alcohol adj2 (use* or misuse* or using or abuse* or disorder* or dependen* or addict*)).ti,ab.
16.	*tobacco dependence/
17.	exp *smoking/
18.	(smoke* or smoking).ti,ab.
19.	(safeguard* or non-accident*).ti,ab.
20.	(vulnerable adj2 (adult* or elder* or child* or infant* or bab* or toddler* or people or person*)).ti,ab.
21.	*comorbidity/
22.	(comorbid* or co-morbid*).ti,ab.
23.	(risk* adj2 fall*).ti,ab.
24.	(fracture adj2 (grade* or class* or score*)).ti,ab.
25.	exp *classification/
26.	gustilo.ti,ab.
27.	or/8-26
28.	falling/
29.	*risk/ or *risk assessment/ or *risk factor/
30.	28 and 29
31.	27 or 30
32.	3 and 7 and 31

Cochrane search terms

#1.	MeSH descriptor: [fractures, bone] explode all trees
#2.	fracture*:ti,ab
#3.	{or #1-#2}
#4.	MeSH descriptor: [documentation] this term only
#5.	MeSH descriptor: [medical records] this term only
#6.	MeSH descriptor: [medical record linkage] this term only
#7.	MeSH descriptor: [medical records, problem-oriented] this term only
#8.	MeSH descriptor: [medical records systems, computerized] this term only
#9.	MeSH descriptor: [electronic health records] this term only
#10.	MeSH descriptor: [forms and records control] this term only
#11.	MeSH descriptor: [nursing records] this term only
#12.	(document* or record* or note*):ti
#13.	((document* or record* or note*) near/3 (medical or patient*)):ab
#14.	{or #4-#13}

#15.	MeSH descriptor: [domestic violence] explode all trees
#16.	((domestic or partner* or famil* or spous* or husband* or wife* or wive*) near/3 (violen* or abuse* or maltreat* or mistreat*)):ti,ab
#17.	((aged or elder* or child*) near/3 (violen* or abuse* or neglect* or maltreat* or mistreat*)):ti,ab
#18.	MeSH descriptor: [substance-related disorders] explode all trees
#19.	((substance or drug* or tobacco) near/2 (use* or misuse* or using or abuse* or disorder* or dependen* or addict*)):ti,ab
#20.	(alcoholism or alcoholic):ti,ab
#21.	(alcohol near/2 (use* or misuse* or using or abuse* or disorder* or dependen* or addict*)) .ti,ab
#22.	MeSH descriptor: [smoking] explode all trees
#23.	(smoke* or smoking):ti,ab
#24.	(vulnerable near/2 (adult* or elder* or child* or infant* or bab* or toddler* or people or person*)) .ti,ab
#25.	(safeguard* or non-accident*):ti,ab
#26.	MeSH descriptor: [comorbidity] this term only
#27.	(comorbid* or co-morbid*):ti,ab
#28.	(fracture near/2 (grade* or class* or score*)):ti,ab
#29.	gustilo:ti,ab
#30.	risk* near/2 fall*:ti,ab
#31.	{or #15-#30}
#32.	MeSH descriptor: [accidental falls] this term only
#33.	MeSH descriptor: [risk] this term only
#34.	MeSH descriptor: [risk assessment] this term only
#35.	MeSH descriptor: [risk factors] this term only
#36.	{or #33-#35}
#37.	#32 and #36
#38.	#31 or #37
#39.	#3 and #14 and #38

A.4.2 Pain

Searches for the following two questions were run as one search:

2. What is the most effective initial acute pharmacological management to alleviate pain in patients with a suspected long bone fracture (tibia and fibula, humerus, radius and ulna, or unspecified) in acute care settings?
3. What is the most clinically and cost effective nerve block for the initial management to alleviate pain in children and young people with a suspected femoral fracture in acute care settings?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Long bone fractures	Pharmacological pain management OR Nerve blocks	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Error! Reference source not found. English only Exclusion filter

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
				applied in Medline and Embase

Medline search terms

1.	"wounds and injuries"/
2.	exp arm injuries/ or leg injuries/ or ankle injuries/ or foot injuries/ or exp knee injuries/
3.	fractures, bone/ or ankle fractures/ or humeral fractures/ or exp radius fractures/ or shoulder fractures/ or tibial fractures/ or exp ulna fractures/
4.	((long bone* or longbone* or limb or limbs or arm or arms or forearm* or leg or legs) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
5.	((humerus or humeral or humeri or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
6.	((radius or radii or ulnae or ulna or elbow* or forearm* or wrist* or colles or colles' or raikar*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
7.	((tibia or tibiae or tibias or shin* or shank*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
8.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
9.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
10.	or/1-9
11.	femoral fractures/
12.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
13.	or/11 or12
14.	exp fractures, bone/
15.	femur/ or fibula/ or tibia/ or humerus/ or radius/ or ulna/ or wrist/ or elbow/ or shoulder/ or forearm/ or upper extremity/ or ankle/ or knee/ or leg/ or lower extremity/ or extremities/
16.	14 and 15
17.	10 or 13 or 16
18.	exp analgesics, opioid/
19.	exp opiate alkaloids/
20.	(opiod* or opiate*).ti,ab.
21.	nitrous oxide/
22.	(nitrous oxide or nitronox or entonox or equanox or "gas and air" or laughing gas).ti,ab.
23.	benzazepines/ or exp benzodiazepines/
24.	(benzodiazepine* or benzazepine*).ti,ab.
25.	(diazepam or dialar or diazemuls or rimapam or lorazepam or ativan or midazolam or hypnovel or temazepam).ti,ab.
26.	(morphine or oramorph or sevredol or minijet or cyclimorph or filnarine or morphgesic or continus or zomorph or mxl or morphia or duramorph).ti,ab.
27.	ketamine/
28.	(ketamine or ketalar or calipsol or ketanest or ketaset or calypso or kalipsol).ti,ab.
29.	lidocaine/

30.	(lidocaine or xylocaine or lignocaine or dalcaine or octocaine or xylesthesin or xylocaine or xylocitin or xyloneural or minijet).ti,ab.
31.	exp nerve block/
32.	(analg* or (pain* adj3 relie*) or ((nerve* or neural*) adj3 block*)).ti,ab.
33.	exp codeine/ or morphine/
34.	tramadol/
35.	heroin/
36.	(diamorphine or heroin or diamorf or diacetylmorphine or diagesil or tramadol or codeine).ti,ab.
37.	acetaminophen/
38.	(paracetamol or panadol or perfalgan or acetaminophen or tylenol or acamol or co-codamol or codipar or kapake or solpadol or tylex).ti,ab.
39.	fentanyl/
40.	(fentanyl or durogesic or sublimaze or instanyl or pecfent or actiq or abstral or effentora or fentora or matrifem or haldid or onsolis or lazanda).ti,ab.
41.	exp anti-inflammatory agents, non-steroidal/
42.	nsaid*.ti,ab.
43.	((non?steroidal or non-steroidal) adj2 (anti?inflammatory or anti-inflammatory or antinflammatory)).ti,ab.
44.	(aceclofenac or acemetacin or celecoxib or dexibuprofen or dexketoprofen or diclofenac or etodolac or etoricoxib or fenbufen or fenoprofen or flurbiprofen or ibuprofen or indometacin or ketoprofen or mefenamic acid or meloxicam or nabumetone or naproxen or piroxicam or sulindac or tenoxicam or tiaprofenic acid or tolfenamic acid or clotam rapid).ti,ab.
45.	(preservex or emflex or celebex or seractil or keral or voltarol or dyloject or diclomax or motifene or arthrotec or eltopan or lodine or arcoxia or fenopron or froben or brufen or fenbid or orudis or oruvail or axorid or ponstan or mobic or relifex or naprosyn or synflex or vimovo or napratec or brexidol or feldene or sulindac or mobiflex or surgam).ti,ab.
46.	or/18-45
47.	17 and 46

Embase search terms

1.	*bone injury/
2.	exp *limb injury/
3.	*fracture/
4.	exp *arm fracture/ or *leg fracture/ or *ankle fracture/ or *distal tibia fracture/ or *fibula fracture/ or *knee fracture/ or *patella fracture/ or *proximal tibia fracture/ or *tibia fracture/ or *tibia shaft fracture/ or *joint fracture/
5.	((long bone* or longbone* or limb or limbs or arm or arms or forearm* or leg or legs) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
6.	((humerus or humeral or humeri or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
7.	((radius or radii or ulnae or ulna or elbow* or forearm* or colles or colles' or raikar*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
8.	((tibia or tibiae or tibias or shin* or shank*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
9.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
10.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.

11.	or/1-10
12.	exp *femur fracture/
13.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
14.	12or 13
15.	exp *fracture/
16.	*femur/ or *fibula/ or *tibia/ or *humerus/ or *radius/ or *ulna/ or *limb/ or *arm/ or *forearm/ or *elbow/ or *wrist/ or *leg/ or *lower leg/ or *knee/ or *ankle/
17.	15 and 16
18.	11 or 14 or 17
19.	exp *narcotic analgesic agent/
20.	*opiate/
21.	(opioid* or opiate*).ti,ab.
22.	*nitrous oxide/
23.	nitrous oxide plus oxygen/
24.	(nitrous oxide or nitronox or entonox or equanox or "gas and air" or laughing gas).ti,ab.
25.	exp *benzodiazepine derivative/ or *benzazepine derivative/
26.	*diazepam/ or *lorazepam/ or *midazolam/ or *temazepam/
27.	(diazepam or dialar or diazemuls or rimapam or lorazepam or ativan or midazolam or hypnovel or temazepam).ti,ab.
28.	(morphine or oramorph or sevredol or minijet or cyclimorph or filnarine or morphgesic or continus or zomorph or mxl or morphia or duramorph).ti,ab.
29.	*ketamine/
30.	(ketamine or ketalar or calipsol or ketanest or ketaset or calypso or kalipsol).ti,ab.
31.	*lidocaine/
32.	(lidocaine or xylocaine or lignocaine or dalcaine or octocaine or xylesthesin or xylocaine or xylocitin or xyloneural or minijet).ti,ab.
33.	exp *nerve block/
34.	(analg* or (pain* adj3 relie*) or ((nerve* or neural*) adj3 block*)).ti,ab.
35.	exp *codeine/ or *morphine/ or *tramadol/ or *diamorphine/
36.	(diamorphine or heroin or diamorf or diacetylmorphine or diagesil or codeine or tramadol).ti,ab.
37.	*paracetamol/
38.	(paracetamol or panadol or perfalgan or acetaminophen or tylenol or acamol or co-codamol or codipar or kapake or solpadol or tylex).ti,ab.
39.	*fentanyl/
40.	(fentanyl or durogesic or sublimaze or instanyl or pecfent or actiq or abstral or effentora or fentora or matrifen or haldid or onsolis or lazanda).ti,ab.
41.	exp *nonsteroid antiinflammatory agent/
42.	nsaid*.ti,ab.
43.	((non?steroidal or non-steroidal) adj2 (anti?inflammatory or anti-inflammatory or antinflammatory)).ti,ab.
44.	*aceclofenac/ or *acemetacin/ or *celecoxib/ or *dexibuprofen/ or *dexketoprofen/ or *diclofenac/ or *etodolac/ or *etoricoxib/ or *fenbufen/ or *fenoprofen/ or *flurbiprofen/ or *ibuprofen/ or *indometacin/ or *ketoprofen/ or *mefenamic acid/ or *meloxicam/ or *nabumetone/ or *naproxen/ or *piroxicam/ or *sulindac/ or *tenoxicam/ or *tiaprofenic acid/ or *tolfenamic acid/
45.	(aceclofenac or acemetacin or celecoxib or dexibuprofen or dexketoprofen or diclofenac or

	etodolac or etoricoxib or fenbufen or fenoprofen or flurbiprofen or ibuprofen or indometacin or ketoprofen or mefenamic acid or meloxicam or nabumetone or naproxen or piroxicam or sulindac or tenoxicam or tiaprofenic acid or tolfenamic acid or clotam rapid).ti,ab.
46.	(preservex or emflex or celebrex or seractil or keral or voltarol or dyloject or diclomax or motifene or arthrotec or eltopan or lodine or arcoxia or fenopron or froben or brufen or fenbid or orudis or oruvail or axorid or ponstan or mobic or relifex or naprosyn or synflex or vimovo or napratec or brexidol or feldene or sulindac or mobiflex or surgam).ti,ab.
47.	or/19-46
48.	18 and 47

Cochrane search terms

#1.	MeSH descriptor: [wounds and injuries] this term only
#2.	MeSH descriptor: [arm injuries] explode all trees
#3.	MeSH descriptor: [leg injuries] this term only
#4.	MeSH descriptor: [ankle injuries] this term only
#5.	MeSH descriptor: [foot injuries] this term only
#6.	MeSH descriptor: [knee injuries] explode all trees
#7.	MeSH descriptor: [fractures, bone] this term only
#8.	MeSH descriptor: [tibial fractures] this term only
#9.	MeSH descriptor: [ankle fractures] this term only
#10.	MeSH descriptor: [humeral fractures] this term only
#11.	MeSH descriptor: [radius fractures] explode all trees
#12.	MeSH descriptor: [shoulder fractures] this term only
#13.	MeSH descriptor: [ulna fractures] explode all trees
#14.	((long bone* or longbone* or limb or limbs arm or arms or forearm* or leg or legs) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#15.	((humerus or humeral or humeri or shoulder*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#16.	((radius or radii or ulnae or ulna or elbow* or forearm* or colles or colles' or raikar*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#17.	((tibia or tibiae or tibias or shin* or shank*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#18.	((fibula or fibulae or calf*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#19.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#20.	{or #1-#19}
#21.	MeSH descriptor: [femoral fractures] this term only
#22.	((femur* or femora* or thigh*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)) .ti,ab.
#23.	#21 or #22
#24.	#20 or #23
#25.	MeSH descriptor: [analgesics, opioid] explode all trees
#26.	MeSH descriptor: [opiate alkaloids] explode all trees
#27.	(opiod* or opiate*) .ti,ab.
#28.	MeSH descriptor: [nitrous oxide] explode all trees
#29.	(nitrous oxide or nitronox or entonox or equanox or "gas and air" or laughing gas):ti,ab
#30.	MeSH descriptor: [benzazepines] this term only

#31.	MeSH descriptor: [benzodiazepines] explode all trees
#32.	(benzodiazepine* or benzazepine*):ti,ab
#33.	(diazepam or dialar or diazemuls or rimapam or lorazepam or ativan or midazolam or hypnovel or temazepam):ti,ab
#34.	MeSH descriptor: [ketamine] this term only
#35.	(ketamine or ketalar or calipsol or ketanest or ketaset or calypso or kalipsol):ti,ab
#36.	MeSH descriptor: [lidocaine] this term only
#37.	(lidocaine or xylocaine or lignocaine or dalcaine or octocaine or xylesthesin or xylocaine or xylocitin or xyloneural or minijet):ti,ab
#38.	MeSH descriptor: [nerve block] explode all trees
#39.	(analg* or (pain* adj3 relie*) or ((nerve* or neural*) adj3 block*)):ti,ab
#40.	MeSH descriptor: [codeine] explode all trees
#41.	MeSH descriptor: [morphine] explode all trees
#42.	MeSH descriptor: [tramadol] explode all trees
#43.	MeSH descriptor: [heroin] explode all trees
#44.	(morphine or oramorph or sevredol or minijet or cyclimorph or filnarine or morphgesic or continus or zomorph or mxl or morphia or duramorph):ti,ab
#45.	(diamorphine or heroin or diamorf or diacetylmorphine or diagesil or codeine or tramadol):ti,ab
#46.	MeSH descriptor: [acetaminophen] explode all trees
#47.	(paracetamol or panadol or perfalgan or acetaminophen or tylenol or acamol or co-codamol or codipar or kapake or solpadol or tylex):ti,ab
#48.	MeSH descriptor: [fentanyl] explode all trees
#49.	(fentanyl or durogesic or sublimaze or instanyl or pecfent or actiq or abstral or effentora or fentora or matrifen or haldid or onsolis or lazanda):ti,ab
#50.	MeSH descriptor: [anti-inflammatory agents, non-steroidal] explode all trees
#51.	((non?steroidal or non-steroidal) near/2 (anti?inflammatory or anti-inflammatory or antinflammatory)):ti,ab
#52.	nsaid*:ti,ab
#53.	(aceclofenac or acemetacin or celecoxib or dexibuprofen or dexketoprofen or diclofenac or etodolac or etoricoxib or fenbufen or fenoprofen or flurbiprofen or ibuprofen or indometacin or ketoprofen or mefenamic acid or meloxicam or nabumetone or naproxen or piroxicam or sulindac or tenoxicam or tiaprofenic acid or tolfenamic acid or clotam rapid):ti,ab
#54.	(preservex or emflex or celebrex or seractil or keral or voltarol or dyloject or diclomax or motifene or arthrotec or eltopan or lodine or arcoxia or fenopron or froben or brufen or fenbid or orudis or oruvail or axorid or ponstan or mobic or relifex or naprosyn or synflex or vimovo or napratec or brexidol or feldene or sulindac or mobiflex or surgam):ti,ab
#55.	{or #25-#54}
#56.	#24 and #55

A.4.3 Information and support

4. What information and support do people with non-complex fractures and their families and carers require?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Fractures	Information	n/a	The following filters	See Error!

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
			were used in Medline, Embase and CINAHL only: QUAL	Reference source not found. English only Exclusion filter applied in Medline, Embase and CINAHL

Medline search terms

1.	exp fractures, bone/
2.	fracture*.ti,ab.
3.	or/1-2
4.	patients/ or inpatients/ or outpatients/
5.	caregivers/ or exp family/ or exp parents/ or exp legal-guardians/
6.	(patient* or carer* or famil*).ti,ab.
7.	or/4-6
8.	popular-works-publication-type/ or exp information-services/ or publications/ or books/ or pamphlets/ or counseling/ or directive-counseling/
9.	7 and 8
10.	(patient* adj3 (education or educate or educating or literature or leaflet* or booklet* or pamphlet* or information)).ti,ab.
11.	patient education as topic/
12.	consumer health information/
13.	(information* adj3 (patient* or need* or requirement* or support* or seek* or access* or disseminat* or barrier*)).ti,ab.
14.	(discharge* adj3 (information* or advice)).ti,ab.
15.	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother* or caregiver* or next of kin) adj2 (information* or educat* or learn* or train* or program* or advi?e* or instruct* or teach* or knowledge or understanding or misunderstanding or communicat* or involvement or support*)).ti,ab.
16.	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother* or caregiver* or next of kin) adj2 (pamphlet* or leaflet* or booklet* or manual* or brochure* or publication* or handout* or website* or web site* or web page* or webpage* or video* or dvd*)).ti,ab.
17.	((information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach* or knowledge or understanding or misunderstanding or communicat* or involvement or support*) adj2 (pamphlet* or leaflet* or booklet* or manual* or brochure* or publication* or handout* or website* or web site* or web page* or webpage* or video* or dvd*)).ti,ab.
18.	((information* or educat*) adj2 (model* or program* or need* or requirement* or support* or seek* or access* or disseminat*)).ti,ab.
19.	exp consumer-satisfaction/ or personal-satisfaction/ or exp patient-acceptance-of-health-care/
20.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform*)).ti,ab.
21.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (knowledge or awareness or misconception* or understanding or misunderstanding)).ti,ab.
22.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (experience or experiences or opinion* or concern* or belief* or feeling* or idea* or satisfaction or anxiet* or

	fear* or acceptance or denial or stigma* or label* or behaviour* or behavior*).ti,ab.
23.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (need* or requirement* or support* or communication* or involvement)).ti,ab.
24.	or/9-23
25.	3 and 24

Embase search terms

1.	exp fracture/
2.	fracture*.ti,ab.
3.	or/1-2
4.	patient/ or hospital patient/ or outpatient/
5.	caregiver/ or exp family/ or exp parent/
6.	(patient* or carer* or famil*).ti,ab.
7.	or/4-6
8.	information service/ or information center/ or publication/ or book/ or counseling/ or directive counseling/
9.	7 and 8
10.	patient attitude/ or patient preference/ or patient satisfaction/ or consumer attitude/
11.	patient information/ or consumer health information/
12.	patient education/
13.	(patient* adj3 (education or educate or educating or information or literature or leaflet* or booklet* or pamphlet*).ti,ab.
14.	(information* adj3 (need* or requirement* or support* or seek* or access* or disseminat* or barrier*).ti,ab.
15.	(discharge* adj3 (information* or advice)).ti,ab.
16.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform*).ti,ab.
17.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (knowledge or awareness or misconception* or understanding or misunderstanding)).ti,ab.
18.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (experience or experiences or opinion* or concern* or belief* or feeling* or idea* or satisfaction or anxiet* or fear* or acceptance or denial or stigma* or label* or behaviour* or behavior*).ti,ab.
19.	((patient* or user* or carer* or famil* or parent* or father* or mother*) adj3 (need* or requirement* or support* or communication* or involvement)).ti,ab.
20.	or/9-19
21.	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother* or caregiver* or next of kin) adj2 (information* or educat* or learn* or train* or program* or advi?e* or instruct* or teach* or knowledge or understanding or misunderstanding or communicat* or involvement or support*).ti,ab.
22.	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother* or caregiver* or next of kin) adj2 (pamphlet* or leaflet* or booklet* or manual* or brochure* or publication* or handout* or website* or web site* or web page* or webpage* or video* or dvd*).ti,ab.
23.	((information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach* or knowledge or understanding or misunderstanding or communicat* or involvement or support*) adj2 (pamphlet* or leaflet* or booklet* or manual* or brochure* or publication* or handout* or website* or web site* or web page* or webpage* or video* or dvd*).ti,ab.
24.	((information* or educat*) adj2 (model* or program* or need* or requirement* or support* or seek* or access* or disseminat*).ti,ab.

25.	or/9-24
26.	3 or 25

Cinahl search terms

S1.	(MH "fractures+")
S2.	ti fracture* or ab fracture*
S3.	S1 or S2
S4.	(MM "patient education") or (MM "patient discharge education")
S5.	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother* or caregiver* or next of kin*) n2 (information* or educat* or learn* or train* or program* or advi?e* or instruct* or teach* or knowledge or understanding or misunderstanding or communicat* or involvement or support*))
S6.	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother* or caregiver* or next of kin) n2 (pamphlet* or leaflet* or booklet* or manual* or brochure* or publication* or handout* or website* or web site* or web page* or webpage* or video* or dvd*))
S7.	((information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach* or knowledge or understanding or misunderstanding or communicat* or involvement or support*) n2 (pamphlet* or leaflet* or booklet* or manual* or brochure* or publication* or handout* or website* or web site* or web page* or webpage* or video* or dvd*))
S8.	((information* or educat*) n2 (model* or program* or need* or requirement* or support* or seek* or access* or disseminat*))
S9.	S4 or S5 or S6 or S7 or S8
S10.	MH patients or MH inpatients or MH outpatients or MH caregivers or MH family+ or MH parents+ or MH guardianship, legal
S11.	MH information services+ or MH books+ or MH pamphlets or MH counseling
S12.	S10 and S11
S13.	((patient* or user* or carer* or famil* or parent* or father* or mother*) n3 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform or knowledge or awareness or misconception* or understanding or misunderstanding or experience or experiences or opinion* or concern* or belief* or feeling* or idea* or satisfaction or anxiet* or fear* or acceptance or denial or stigma* or label* or behaviour* or behavior* or need* or requirement* or support* or communication* or involvement))
S14.	MH consumer satisfaction+ or MH consumer attitudes or MH personal satisfaction
S15.	(MH "patient attitudes") or (MH "family attitudes+")
S16.	(information* n3 (need* or requirement* or support* or seek* or access* or disseminat* or barrier*))
S17.	(discharge* n3 (information* or advice))
S18.	S13 or S14 or S15 or S16 or S17
S19.	S9 or S12 or S18
S20.	S3 and S20

A.4.4 Hot reporting

5. Is the use of definitive hot reporting of X-Rays by radiographers and/or radiologists clinically and cost-effective for use in patients with suspected fractures?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
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Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Fractures OR Major trauma OR Emergency department settings	Radiographer/radiologist report	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp fractures, bone/
2.	fracture*.ti,ab.
3.	(trauma* or polytrauma*).ti,ab.
4.	((serious* or severe* or major or life threaten*) adj3 (accident* or injur* or fall*)).ti,ab.
5.	multiple trauma/
6.	wounds, gunshot/ or wounds, stab/ or accidents, traffic/ or accidental falls/ or blast injuries/ or accidents, aviation/
7.	((motor* or motorbike* or vehicle* or road or traffic or car or cars or cycling or bicycle* or automobile* or bike* or head on or pile up) adj3 (accident* or crash* or collision* or smash*)).ti,ab.
8.	(MVAs or MVA or RTAs or RTA).ti,ab.
9.	(stabbed or stabbing or stab or gunshot* or gun or gunfire or firearm* or bullet* or knife* or knives or dagger).ti,ab.
10.	exp emergency service, hospital/
11.	emergency medical services/
12.	((emergency or emergencies) adj2 (department* or dept* or unit* or room* or ward* or service* or team* or hospital* or medic* or centre* or center*)).ti,ab.
13.	"accident and emergency".ti,ab.
14.	A&E.ti,ab.
15.	ED.ti,ab.
16.	or/1-15
17.	((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed) adj2 report*).ti,ab.
18.	((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed) adj5 reporting).ti,ab.
19.	((radiograph* or radiolog* or imag* or tomograph* or ct or xray or x ray) and ((preliminary or provisional* or definitive*) adj3 report*)).ti,ab.
20.	(red adj2 dot*).ti,ab.
21.	or/17-20
22.	16 and 21

Embase search terms

1.	fracture/
2.	fracture*.ti,ab.
3.	(trauma* or polytrauma*).ti,ab.
4.	((serious* or severe* or major or life threaten*) adj3 (accident* or injur* or fall*)).ti,ab.

5.	multiple trauma/
6.	gunshot injury/ or stab wound/ or traffic accident/ or falling/ or blast injury/ or aircraft accident/
7.	((motor* or motorbike* or vehicle* or road or traffic or car or cars or cycling or bicycle* or automobile* or bike* or head on or pile up) adj3 (accident* or crash* or collision* or smash*)).ti,ab.
8.	(MVAs or MVA or RTAs or RTA).ti,ab.
9.	(stabbed or stabbing or stab or gunshot* or gun or gunfire or firearm* or bullet* or knife* or knives or dagger).ti,ab.
10.	emergency health service/
11.	emergency ward/
12.	((emergency or emergencies) adj2 (department* or dept* or unit* or room* or ward* or service* or team* or hospital* or medic* or centre* or center*)).ti,ab.
13.	"accident and emergency".ti,ab.
14.	ED.ti,ab.
15.	A&E.ti,ab.
16.	or/1-15
17.	((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed) adj2 report*).ti,ab.
18.	((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed) adj5 reporting).ti,ab.
19.	((radiograph* or radiolog* or imag* or tomograph* or ct or xray or x ray) and ((preliminary or provisional* or definitive*) adj3 report*)).ti,ab.
20.	(red adj2 dot*).ti,ab.
21.	or/17-20
22.	16 and 21

Cochrane search terms

#1.	fracture*:ti,ab
#2.	MeSH descriptor: [fractures, bone] explode all trees
#3.	(trauma* or polytrauma*):ti,ab
#4.	((serious* or severe* or major or life threaten*) near/3 (accident* or injur* or fall*)):ti,ab
#5.	MeSH descriptor: [multiple trauma] this term only
#6.	((motor* or motorbike* or vehicle* or road or traffic or car or cars or cycling or bicycle* or automobile* or bike* or head on or pile up) near/3 (accident* or crash* or collision* or smash*)):ti,ab
#7.	(MVAs or MVA or RTAs or RTA):ti,ab
#8.	(stabbed or stabbing or stab or gunshot* or gun or gunfire or firearm* or bullet* or knife* or knives or dagger):ti,ab
#9.	MeSH descriptor: [emergency service, hospital] explode all trees
#10.	MeSH descriptor: [emergency medical services] this term only
#11.	((emergency or emergencies) near/2 (department* or dept* or unit* or room* or ward* or service* or team* or hospital* or medic* or centre* or center*)) .ti,ab.
#12.	"accident and emergency":ti,ab
#13.	A&E:ti,ab
#14.	ED:ti,ab
#15.	{or #1-#14}
#16.	((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed)

	near/2 report*):ti,ab
#17.	((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed) near/5 reporting):ti,ab
#18.	((radiograph* or radiolog* or imag* or tomograph* or ct or xray or x ray) and ((preliminary or provisional* or definitive*) near/3 report*)):ti,ab
#19.	(red near/2 dot*):ti,ab
#20.	{or #16-#19}
#21.	#15 and #20

A.4.5 Multidisciplinary teams

6. Who are the most clinically and cost-effective referral pathway decision-makers for patients with NCF?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Long bone fractures.	Multi-disciplinary team OR Grade/seniority of clinician	n/a	n/a	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, bone/ or ankle fractures/ or humeral fractures/ or exp radius fractures/ or shoulder fractures/ or tibial fractures/ or exp ulna fractures/ or femoral fractures/
2.	((long bone* or longbone* or limb or limbs or arm or arms or forearm* or leg or legs) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
3.	((humerus or humeral or humeri or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
4.	((radius or radii or ulnae or ulna or elbow* or forearm* or wrist* or colles or colles' or raikar*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
5.	((tibia or tibiae or tibias or shin* or shank*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
6.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
7.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
8.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
9.	or/1-8
10.	exp fractures, bone/
11.	femur/ or fibula/ or tibia/ or humerus/ or radius/ or ulna/ or wrist/ or elbow/ or shoulder/ or forearm/ or upper extremity/ or ankle/ or knee/ or leg/ or lower extremity/ or extremities/
12.	10 and 11
13.	9 or 12

14.	consultants/
15.	(consultant* or registrar* or specialist*).ti,ab.
16.	orthopedics/
17.	(surgeon* or orthopod*).ti,ab.
18.	(house officer* or sho or junior doctor*).ti,ab.
19.	nurse*.ti,ab.
20.	exp nurses/ or exp nursing staff/
21.	(physical therapist* or physiotherapist*).ti,ab.
22.	physical therapists/
23.	locum*.ti,ab.
24.	radiologist*.ti,ab.
25.	(plaster technician* or orthop?edic technician*).ti,ab.
26.	extended practitioner*.ti,ab.
27.	or/14-26
28.	(senior* or experience* or supervis* or grade* or competen* or skill* or team*).ti,ab.
29.	(referral* or pathway* or decision*).ti,ab.
30.	decision making/
31.	"referral and consultation"/
32.	clinical competence/
33.	or/28-32
34.	27 and 33
35.	patient care team/ or nursing, team/
36.	interprofessional relations/
37.	(multidisciplin* or interdisciplin* or mdt or interprofessional* or multiprofessional* or interdisciplin* or multi-disciplin* or inter-professional or multi-professional).ti,ab.
38.	((patient or medical or health*) adj2 team*).ti,ab.
39.	or/34-38
40.	13 and 39

Embase search terms

1.	*fracture/
2.	exp *arm fracture/ or *leg fracture/ or *ankle fracture/ or *distal tibia fracture/ or *fibula fracture/ or *knee fracture/ or *patella fracture/ or *proximal tibia fracture/ or *tibia fracture/ or *tibia shaft fracture/ or *joint fracture/ or exp *femur fracture/
3.	((long bone* or longbone* or limb or limbs or arm or arms or forearm* or leg or legs) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
4.	((humerus or humeral or humeri or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
5.	((radius or radii or ulnae or ulna or elbow* or forearm* or colles or colles' or raikar*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
6.	((tibia or tibiae or tibias or shin* or shank*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
7.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
8.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
9.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.

10.	or/1-9
11.	exp *fracture/
12.	*femur/ or *fibula/ or *tibia/ or *humerus/ or *radius/ or *ulna/ or *limb/ or *arm/ or *forearm/ or *elbow/ or *wrist/ or *leg/ or *lower leg/ or *knee/ or *ankle/
13.	11 and 12
14.	10 or 13
15.	*consultation/
16.	(consultant* or registrar* or specialist*).ti,ab.
17.	*orthopedic surgeon/
18.	(surgeon* or orthopod*).ti,ab.
19.	(house officer* or sho or junior doctor*).ti,ab.
20.	nurse*.ti,ab.
21.	*nurse/
22.	(physical therapist* or physiotherapist*).ti,ab.
23.	*physiotherapist/
24.	locum*.ti,ab.
25.	radiologist*.ti,ab.
26.	(plaster technician* or orthop?edic technician*).ti,ab.
27.	extended practitioner*.ti,ab.
28.	or/15-27
29.	(senior* or experience* or supervis* or grade* or competen* or skill* or team*).ti,ab.
30.	(referral* or pathway* or decision*).ti,ab.
31.	*decision making/ or *medical decision making/ or *patient decision making/
32.	*patient referral/
33.	*clinical competence/
34.	or/29-33
35.	28 and 34
36.	*patient care/
37.	*teamwork/
38.	(multidisciplin* or interdisciplin* or mdt or interprofessional* or multiprofessional* or inter-disciplin* or multi-disciplin* or inter-professional or multi-professional).ti,ab.
39.	((patient or medical or health*) adj2 team*).ti,ab.
40.	or/35-39
41.	14 and 40

Cochrane search terms

#1.	MeSH descriptor: [fractures, bone] this term only
#2.	MeSH descriptor: [tibial fractures] this term only
#3.	MeSH descriptor: [ankle fractures] this term only
#4.	MeSH descriptor: [humeral fractures] this term only
#5.	MeSH descriptor: [radius fractures] explode all trees
#6.	MeSH descriptor: [shoulder fractures] this term only
#7.	MeSH descriptor: [ulna fractures] explode all trees
#8.	MeSH descriptor: [femoral fractures] this term only
#9.	((long bone* or longbone* or limb or limbs arm or arms or forearm* or leg or legs) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab

#10.	((humerus or humeral or humeri or shoulder*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#11.	((radius or radii or ulnae or ulna or elbow* or forearm* or colles or colles' or raikar*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#12.	((tibia or tibiae or tibias or shin* or shank*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#13.	((fibula or fibulae or calf*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#14.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#15.	((femur* or femora* or thigh*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)) .ti,ab.
#16.	{or #1-#15}
#17.	MeSH descriptor: [fractures, bone] explode all trees
#18.	MeSH descriptor: [femur] this term only
#19.	MeSH descriptor: [fibula] this term only
#20.	MeSH descriptor: [tibia] this term only
#21.	MeSH descriptor: [humerus] this term only
#22.	MeSH descriptor: [radius] this term only
#23.	MeSH descriptor: [ulna] this term only
#24.	MeSH descriptor: [wrist] this term only
#25.	MeSH descriptor: [elbow] this term only
#26.	MeSH descriptor: [shoulder] this term only
#27.	MeSH descriptor: [forearm] this term only
#28.	MeSH descriptor: [upper extremity] this term only
#29.	MeSH descriptor: [ankle] this term only
#30.	MeSH descriptor: [knee] this term only
#31.	MeSH descriptor: [leg] this term only
#32.	MeSH descriptor: [lower extremity] this term only
#33.	MeSH descriptor: [extremities] this term only
#34.	{or #18-#33}
#35.	#17 and #34
#36.	#16 or #35
#37.	MeSH descriptor: [consultants] this term only
#38.	(consultant* or registrar* or specialist*):ti,ab
#39.	MeSH descriptor: [orthopedics] this term only
#40.	(surgeon* or orthopod*):ti,ab
#41.	(house officer* or sho or junior doctor*):ti,ab
#42.	nurse*:ti,ab
#43.	MeSH descriptor: [nurses] this term only
#44.	MeSH descriptor: [nursing staff] this term only
#45.	(physical therapist* or physiotherapist*):ti,ab
#46.	MeSH descriptor: [physical therapists] this term only
#47.	locum*:ti,ab
#48.	radiologist*:ti,ab
#49.	(plaster next technician* or orthopedic next technician* or orthopaedic next technician*):ti,ab

#50.	extended next practitioner*:ti,ab
#51.	{or #37-#50}
#52.	(senior* or experience* or supervis* or grade* or competen* or skill* or team*):ti,ab
#53.	(referral* or pathway* or decision*):ti,ab
#54.	MeSH descriptor: [decision making] this term only
#55.	MeSH descriptor: [referral and consultation] this term only
#56.	MeSH descriptor: [clinical competence] this term only
#57.	{or #52-#56}
#58.	#51 and #57
#59.	MeSH descriptor: [patient care team] this term only
#60.	MeSH descriptor: [nursing, team] this term only
#61.	MeSH descriptor: [interprofessional relations] this term only
#62.	(multidisciplin* or interdisciplin* or mdt or interprofessional* or multiprofessional* or inter-disciplin* or multi-disciplin* or inter-professional or multi-professional):ti,ab
#63.	((patient or medical or health*) near/2 team*):ti,ab
#64.	{or #58-#63}
#65.	#36 and #64

A.4.6 Clinics

7. What is the clinical and cost effectiveness of virtual fracture clinics compared to face to face fracture clinics for patients with NCF?
8. What is the clinical and cost effectiveness of different referral destinations for patients with NCF?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Long bone fractures.	Virtual or specialist clinics	n/a	n/a	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, bone/ or ankle fractures/ or humeral fractures/ or exp radius fractures/ or shoulder fractures/ or tibial fractures/ or exp ulna fractures/ or femoral fractures/
2.	((long bone* or longbone* or limb or limbs or arm or arms or forearm* or leg or legs) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
3.	((humerus or humeral or humeri or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
4.	((radius or radii or ulnae or ulna or elbow* or forearm* or wrist* or colles or colles' or raikar*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
5.	((tibia or tibiae or tibias or shin* or shank*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab.
6.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or

	trauma or injur*).ti,ab.
7.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
8.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
9.	or/1-8
10.	exp fractures, bone/
11.	femur/ or fibula/ or tibia/ or humerus/ or radius/ or ulna/ or wrist/ or elbow/ or shoulder/ or forearm/ or upper extremity/ or ankle/ or knee/ or leg/ or lower extremity/ or extremities/
12.	10 and 11
13.	9 or 12
14.	outpatient clinics, hospital/
15.	telemedicine/
16.	exp decision making, computer-assisted/
17.	((virtual or tele* or face to face or in person or remote) adj2 (clinic* or outpatient* or appointment* or follow* up or meeting* or consultation* or referral*).ti,ab.
18.	((specialist* or fracture* or general or orthop*) adj2 (clinic* or outpatient* or appointment* or follow* up or meeting* or consultation* or referral*).ti,ab.
19.	or/14-18
20.	13 and 19

Embase search terms

1.	*fracture/
2.	exp *arm fracture/ or *leg fracture/ or *ankle fracture/ or *distal tibia fracture/ or *fibula fracture/ or *knee fracture/ or *patella fracture/ or *proximal tibia fracture/ or *tibia fracture/ or *tibia shaft fracture/ or *joint fracture/ or exp *femur fracture/
3.	((long bone* or longbone* or limb or limbs or arm or arms or forearm* or leg or legs) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
4.	((humerus or humeral or humeri or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
5.	((radius or radii or ulnae or ulna or elbow* or forearm* or colles or colles' or raikar*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
6.	((tibia or tibiae or tibias or shin* or shank*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
7.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
8.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
9.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*).ti,ab.
10.	or/1-9
11.	exp *fracture/
12.	*femur/ or *fibula/ or *tibia/ or *humerus/ or *radius/ or *ulna/ or *limb/ or *arm/ or *forearm/ or *elbow/ or *wrist/ or *leg/ or *lower leg/ or *knee/ or *ankle/
13.	11 and 12
14.	10 or 13
15.	*outpatient department/

16.	*telemedicine/
17.	*decision support system/
18.	((virtual or tele* or face to face or in person or remote) adj2 (clinic* or outpatient* or appointment* or follow* up or meeting* or consultation* or referral*)).ti,ab.
19.	((specialist* or fracture* or general or orthop*) adj2 (clinic* or outpatient* or appointment* or follow* up or meeting* or consultation* or referral*)).ti,ab.
20.	or/15-19
21.	14 and 20

Cochrane search terms

#1.	MeSH descriptor: [fractures, bone] this term only
#2.	MeSH descriptor: [tibial fractures] this term only
#3.	MeSH descriptor: [ankle fractures] this term only
#4.	MeSH descriptor: [humeral fractures] this term only
#5.	MeSH descriptor: [radius fractures] explode all trees
#6.	MeSH descriptor: [shoulder fractures] this term only
#7.	MeSH descriptor: [ulna fractures] explode all trees
#8.	MeSH descriptor: [femoral fractures] this term only
#9.	((long bone* or longbone* or limb or limbs arm or arms or forearm* or leg or legs) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#10.	((humerus or humeral or humeri or shoulder*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#11.	((radius or radii or ulnae or ulna or elbow* or forearm* or colles or colles' or raikar*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#12.	((tibia or tibiae or tibias or shin* or shank*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#13.	((fibula or fibulae or calf*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#14.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#15.	((femur* or femora* or thigh*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)) .ti,ab.
#16.	{or #1-#15}
#17.	MeSH descriptor: [fractures, bone] explode all trees
#18.	MeSH descriptor: [femur] this term only
#19.	MeSH descriptor: [fibula] this term only
#20.	MeSH descriptor: [tibia] this term only
#21.	MeSH descriptor: [humerus] this term only
#22.	MeSH descriptor: [radius] this term only
#23.	MeSH descriptor: [ulna] this term only
#24.	MeSH descriptor: [wrist] this term only
#25.	MeSH descriptor: [elbow] this term only
#26.	MeSH descriptor: [shoulder] this term only
#27.	MeSH descriptor: [forearm] this term only
#28.	MeSH descriptor: [upper extremity] this term only
#29.	MeSH descriptor: [ankle] this term only
#30.	MeSH descriptor: [knee] this term only

#31.	MeSH descriptor: [leg] this term only
#32.	MeSH descriptor: [lower extremity] this term only
#33.	MeSH descriptor: [extremities] this term only
#34.	{or #18-#33}
#35.	#17 and #34
#36.	#16 or #35
#37.	MeSH descriptor: [outpatient clinics, hospital] explode all trees
#38.	MeSH descriptor: [telemedicine] explode all trees
#39.	MeSH descriptor: [decision making, computer-assisted] explode all trees
#40.	((virtual or tele* or face to face or in person or remote) near/2 (clinic* or outpatient* or appointment* or follow* up or meeting* or consultation* or referral*)):ti,ab
#41.	((specialist* or fracture* or general or orthop*) near/2 (clinic* or outpatient* or appointment* or follow* up or meeting* or consultation* or referral*)):ti,ab
#42.	{or #37-#41}
#43.	#36 and #42

A.4.7 Humerus fractures - treatment

9. What is the most cost effective definitive treatment for displaced low energy fractures of the proximal humerus?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Proximal humerus fractures	n/a	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((humerus* or humeral* or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	hill-sachs.ti,ab.
3.	humeral fractures/
4.	or/1-3

Embase search terms

1.	((humerus* or humeral* or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	hill-sachs.ti,ab.
3.	*humerus fracture/
4.	or/1-3

Cochrane search terms

#1.	((humerus* or humeral* or shoulder*) near/4 (fracture* or break or breaks or broken or
-----	--

	crack* or frx)):ti,ab
#2.	hill-sachs:ti,ab
#3.	[MH "humeral fractures"]
#4.	{or #1-#3}

A.4.8 Distal radius fractures – reduction and timing of surgery

Searches for the following four questions were run as one search:

10. Is the reduction through manipulation of a dorsally displaced distal radius fracture without neurovascular compromise influenced by the use of an image intensifier?
11. Is the reduction through manipulation of a dorsally displaced distal radius fracture without neurovascular compromise influenced by timing?
12. What type of anaesthetic is the most clinically and cost effective for closed reduction of dorsally displaced distal radius fractures in people without neurovascular compromise in the emergency department?
13. What is the maximum safe delay in surgical management of fractures of the distal radius before outcome is compromised?
14. What is the most clinically and cost effective definitive treatment for dorsally displaced low-energy fractures of the distal radius?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Distal radius fractures	n/a	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	colles' fracture/
2.	radius fractures/ and distal*.ti,ab.
3.	((colles or smith* or barton* or wrist*) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
4.	(distal* adj4 (radial or radius) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	or/1-4
6.	exp fractures, bone/
7.	radius/ and distal*.ti,ab.
8.	6 and 7
9.	5 or 8

Embase search terms

1.	colles fracture/
2.	radius fracture/ and distal*.ti,ab.

3.	((colles or smith* or barton* or wrist*) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
4.	(distal* adj4 (radial or radius) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	or/1-4
6.	fracture/
7.	radius/ and distal*.ti,ab.
8.	6 and 7
9.	5 or 8

Cochrane search terms

#1.	MeSH descriptor: [radius fractures] this term only
#2.	distal:ti,ab
#3.	#1 and #2
#4.	MeSH descriptor: [colles' fracture] this term only
#5.	((colles or smith* or barton* or wrist*) near/3 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#6.	(distal* near/4 (radial or radius) near/4 (fracture* or break or breaks or broken or crack* or frx)) .ti,ab.
#7.	{or #3-#6}
#8.	MeSH descriptor: [fractures, bone] this term only
#9.	MeSH descriptor: [radius] this term only
#10.	distal:ti,ab
#11.	#8 and #9 and #10
#12.	#7 or #11

A.4.9 Adverse events associated with anaesthesia in emergency department

15.What are the rates of serious adverse events for selected anaesthetic techniques used in the emergency department?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Emergency department setting	Anaesthesia	n/a	n/a	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp emergency service, hospital/
2.	((emergency or casualty) adj2 department).ti,ab.
3.	((accident or room) adj2 emergency).ti,ab.
4.	trauma unit*.ti,ab.

5.	("A&E" or ED).ti,ab.
6.	((without or no or lack*) adj6 an?esthetist*).ti,ab.
7.	((consultant* or physician* or registrar* or surgeon*) adj6 (gave or give* or administer* or oversee* or oversaw or deliver* or supervis*) adj6 (an?esthe* or block or blocks or sedat*).ti,ab.
8.	or/1-7
9.	anesthesia, intravenous/
10.	((intravenous* or IV) and (regional adj3 an?esthes*)).ti,ab.
11.	(bier* block* or IVRA).ti,ab.
12.	(h?ematoma adj2 block*).ti,ab.
13.	exp nerve block/
14.	((regional or peripheral* or nerve) adj2 block*).ti,ab.
15.	((axillary or infraclavicular or interscalene or femoral or lumbar plexus or popliteal or sciatic or ankle or supraclavicular or brachial plexus or paravertebral or transversus abdominis plane or TAP) adj3 block*).ti,ab.
16.	((conscious* or procedural*) adj2 sedat*).ti,ab.
17.	or/9-16
18.	8 and 17

Embase search terms

1.	emergency health service/
2.	((emergency or casualty) adj2 department).ti,ab.
3.	((accident or room) adj2 emergency).ti,ab.
4.	trauma unit*.ti,ab.
5.	("A&E" or ED).ti,ab.
6.	((without or no or lack*) adj6 an?esthetist*).ti,ab.
7.	((consultant* or physician* or registrar* or surgeon*) adj6 (gave or give* or administer* or oversee* or oversaw or deliver* or supervis*) adj6 (an?esthe* or block or blocks or sedat*).ti,ab.
8.	or/1-7
9.	intravenous regional anesthesia/
10.	((intravenous* or IV) and (regional adj3 an?esthes*)).ti,ab.
11.	(bier* block* or IVRA).ti,ab.
12.	(h?ematoma adj2 block*).ti,ab.
13.	exp nerve block/
14.	((regional or peripheral* or nerve) adj2 block*).ti,ab.
15.	((axillary or infraclavicular or interscalene or femoral or lumbar plexus or popliteal or sciatic or ankle or supraclavicular or brachial plexus or paravertebral or transversus abdominis plane or TAP) adj3 block*).ti,ab.
16.	conscious sedation/
17.	((conscious* or procedural*) adj2 sedat*).ti,ab.
18.	or/9-17
19.	8 and 18

Cochrane search terms

#1.	MeSH descriptor: [emergency service, hospital] explode all trees
#2.	((emergency or casualty) near/2 department):ti,ab
#3.	((accident or room) near/2 emergency):ti,ab

#4.	(trauma next unit*):ti,ab
#5.	("A&E" or ED):ti,ab
#6.	((without or no or lack*) near/6 (anesthetist* or anaesthetist*)):ti,ab
#7.	((consultant* or physician* or registrar* or surgeon*) near/6 (gave or give* or administer* or oversee* or oversaw or deliver* or supervis*) near/6 (anesthe* or anaesthe* or block or blocks or sedat*)):ti,ab
#8.	{or #1-#7}
#9.	MeSH descriptor: [anesthesia, intravenous] this term only
#10.	((intravenous* or IV) and (regional near/3 (anaesthes* or anesthes*))):ti,ab
#11.	((bier* and block*) or IVRA):ti,ab
#12.	((hematoma or haematoma) near/2 block*):ti,ab
#13.	MeSH descriptor: [nerve block] explode all trees
#14.	((regional or peripheral* or nerve) near/2 block*):ti,ab
#15.	((axillary or infraclavicular or interscalene or femoral or lumbar plexus or popliteal or sciatic or ankle or supraclavicular or "brachial plexus" or paravertebral or "transversus abdominis plane" or TAP) near/3 block*):ti,ab
#16.	((conscious* or procedural*) near/2 sedat*):ti,ab
#17.	{or #9-#16}
#18.	#8 and #17

A.4.10 Torus fractures - treatment

16. What is the most clinically and cost-effective management strategy for children with torus fractures of the forearm?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Torus fractures	n/a	n/a	n/a	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((torus or buckl*) adj2 (fracture* or break* or broken or frx* or forearm* or radius or longbone* or long bone*)):ti,ab.
2.	((incomplete or bowing) adj4 (fracture* or break* or broken or frx*) adj4 (forearm* or radius or longbone* or long bone*)):ti,ab.
3.	radius/ or exp forearm injuries/ or "bone and bones"/ or fractures, bone/
4.	(torus or buckl*):ti,ab.
5.	3 and 4
6.	1 or 2 or 5

Embase search terms

1.	((torus or buckl*) adj2 (fracture* or break* or broken or frx* or forearm* or radius or
----	---

	longbone* or long bone*).ti,ab.
2.	((incomplete or bowing) adj4 (fracture* or break* or broken or frx*) adj4 (forearm* or radius or longbone* or long bone*).ti,ab.
3.	radius fracture/ or radius/
4.	fracture/ or bone injury/
5.	bone/
6.	or/3-5
7.	(torus or buckl*).ti,ab.
8.	6 and 7
9.	1 or 2 or 8

Cochrane search terms

#1.	((torus or buckl*) near/2 (fracture* or break* or broken or frx* or forearm* or radius or longbone*)):ti,ab
#2.	(torus or buckl*) near/2 long next bone*:ti,ab
#3.	((incomplete or bowing) near/4 (fracture* or break* or broken or frx*) near/4 (forearm* or radius or longbone*)):ti,ab
#4.	(incomplete or bowing) near/4 long next bone*:ti,ab
#5.	{or #1-#4}
#6.	MeSH descriptor: [radius] this term only
#7.	MeSH descriptor: [forearm injuries] explode all trees
#8.	MeSH descriptor: [bone and bones] this term only
#9.	MeSH descriptor: [fractures, bone] this term only
#10.	{or #6-#9}
#11.	(torus or buckl*):ti,ab
#12.	#10 and #11
#13.	#5 or #12

A.4.11 Scaphoid fractures - imaging

Searches for the following two questions were run as one search:

17. What is the most clinically and cost-effective imaging strategy for patients with clinically suspected scaphoid fracture but indeterminate X-ray findings?

18. What is the diagnostic accuracy of imaging strategies for a suspected scaphoid fracture in patients with indeterminate initial X-ray findings?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Scaphoid fractures	Imaging techniques	n/a	The following filters were used in Medline and Embase only: DIAG, OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((scaphoid* or navicular) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	scaphoid bone/
3.	exp fractures, bone/
4.	2 and 3
5.	1 or 4
6.	radiography/ or exp tomography, emission-computed/ or exp tomography, x-ray/ or magnetic resonance imaging/ or exp fluoroscopy/
7.	(x ray* or xray* or fluoroscop* or fluroscop* or MDCT* or magnetic resonance imag* or MRI* or MR imag* or NMR or CT or radiograph* or tomograph*).ti,ab.
8.	(cat adj (scan* or imag*)).ti,ab.
9.	(compute* adj2 tomograph*).ti,ab.
10.	or/6-9
11.	5 and 10

Embase search terms

1.	((scaphoid* or navicular) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	scaphoid fracture/
3.	or/1-2
4.	exp radiodiagnosis/
5.	(x ray* or xray* or fluoroscop* or fluroscop* or MDCT* or magnetic resonance imag* or MRI* or MR imag* or NMR or CT or radiograph* or tomograph*).ti,ab.
6.	(cat adj (scan* or imag*)).ti,ab.
7.	(compute* adj2 tomograph*).ti,ab.
8.	or/4-7
9.	3 and 8

Cochrane search terms

#1.	((scaphoid* or navicular) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#2.	MeSH descriptor: [scaphoid bone] this term only
#3.	MeSH descriptor: [fractures, bone] explode all trees
#4.	#2 and #3
#5.	#1 or #4
#6.	MeSH descriptor: [radiography] explode all trees
#7.	(x ray* or xray* or fluoroscop* or fluroscop* or MDCT* or magnetic resonance imag* or MRI* or MR imag* or NMR or CT or radiograph* or tomograph*):ti,ab
#8.	(cat near/2 (scan* or imag*)):ti,ab
#9.	compute* near/2 tomograph*:ti,ab
#10.	{or #6-#9}
#11.	#5 and #10

A.4.12 Paediatric femoral fractures - treatment

19.What is the most clinically and cost- effective treatment for paediatric femoral shaft fractures?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Femoral shaft fracture AND Children	Conservative or surgical treatments	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	femoral fractures/
2.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	or/1-2
4.	fractures, bone/
5.	femur/
6.	4 and 5
7.	3 or 6
8.	exp child/
9.	child*.ti,ab.
10.	exp pediatrics/
11.	exp infant/
12.	infan*.ti,ab.
13.	(baby or babies).ti,ab.
14.	"adolescent"/ or adolescen*.ti,ab.
15.	(pediatric* or paediatric*).ti,ab.
16.	(neonat* or newborn*).ti,ab.
17.	teen*.ti,ab.
18.	((skelet* or bone*) adj3 immatur*).ti,ab.
19.	or/8-18
20.	7 and 19
21.	(harness* or traction* or cast* or splint* or nail* or fix* or tape* or plaster* or elastic* or brace* or wire* or bolt* or plate*).ti,ab.
22.	traction/
23.	orthopedic fixation devices/ or bone nails/ or bone plates/ or bone screws/ or bone wires/ or casts, surgical/ or external fixators/ or internal fixators/ or splints/
24.	(pavlik* or bryant* or gallow*).ti,ab.
25.	(spica* or intramedullar*).ti,ab.
26.	(operat* or non-operat* or nonoperat* or surg* or nonsurg* or non-surg* or conservativ*).ti,ab.
27.	(manipulat* or reduction).ti,ab.
28.	or/21-27
29.	20 and 28

Embase search terms

1.	femur fracture/ or femur shaft fracture/
2.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	or/1-2
4.	fracture/
5.	femur/ or femur shaft/
6.	4 and 5
7.	3 or 6
8.	exp child/
9.	exp pediatrics/
10.	child*.ti,ab.
11.	infan*.ti,ab.
12.	(baby or babies).ti,ab.
13.	exp adolescent/ or adolescen*.ti,ab.
14.	(pediatric* or paediatric*).ti,ab.
15.	(neonat* or newborn*).ti,ab.
16.	((skelet* or bone*) adj3 immatur*).ti,ab.
17.	teen*.ti,ab.
18.	juvenile/
19.	or/8-18
20.	7 and 19
21.	(harness* or traction* or cast* or splint* or nail* or fix* or tape* or plaster* or elastic* or brace* or wire* or bolt* or plate*).ti,ab.
22.	traction therapy/
23.	exp fracture fixation/
24.	(pavlik* or bryant* or gallow*).ti,ab.
25.	(spica* or intramedullar*).ti,ab.
26.	(operat* or non-operat* or nonoperat* or surg* or nonsurg* or non-surg* or conservativ*).ti,ab.
27.	conservative treatment/
28.	(manipulat* or reduction).ti,ab.
29.	open reduction/
30.	fracture reduction/
31.	or/21-30
32.	20 and 31

Cochrane search terms

#1.	MeSH descriptor: [femoral fractures] this term only
#2.	((femur* or femora* or thigh*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#3.	#1 or #2
#4.	MeSH descriptor: [fractures, bone] this term only
#5.	MeSH descriptor: [femur] this term only
#6.	#4 and #5
#7.	#3 or #6
#8.	MeSH descriptor: [child] explode all trees

#9.	child*:ti,ab
#10.	MeSH descriptor: [pediatrics] explode all trees
#11.	MeSH descriptor: [infant] explode all trees
#12.	infan*:ti,ab
#13.	(baby or babies):ti,ab
#14.	MeSH descriptor: [adolescent] explode all trees
#15.	adolescen*:ti,ab
#16.	(pediatric* or paediatric*):ti,ab
#17.	(neonat* or newborn*):ti,ab
#18.	teen*:ti,ab
#19.	((skelet* or bone*) near/3 immatur*):ti,ab
#20.	{or #8-#19}
#21.	#7 and #20
#22.	(harness* or traction* or cast* or splint* or nail* or fix* or tape* or plaster* or elastic* or brace* or wire* or bolt* or plate* or screw*):ti,ab
#23.	MeSH descriptor: [traction] this term only
#24.	MeSH descriptor: [orthopedic fixation devices] this term only
#25.	MeSH descriptor: [bone nails] this term only
#26.	MeSH descriptor: [bone plates] this term only
#27.	MeSH descriptor: [bone screws] this term only
#28.	MeSH descriptor: [bone wires] this term only
#29.	MeSH descriptor: [casts, surgical] this term only
#30.	MeSH descriptor: [external fixators] this term only
#31.	MeSH descriptor: [internal fixators] this term only
#32.	MeSH descriptor: [splints] this term only
#33.	(pavlik* or bryant* or gallow*):ti,ab
#34.	(spica* or intramedullar*):ti,ab
#35.	(operat* or non-operat* or nonoperat* or surg* or nonsurg* or non-surg* or conservativ*):ti,ab
#36.	(manipulat* or reduction):ti,ab
#37.	{or #22-#36}
#38.	#21 and #37

A.4.13 Distal femoral fractures - mobilisation

20. What is the most clinically and cost-effective weight-bearing strategy in patients with operatively treated fractures of the distal femur?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Femoral fractures	Weight bearing	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
				Embase

Medline search terms

1.	femoral fractures/
2.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	exp Fractures, Bone/
4.	femur/
5.	3 and 4
6.	or/1-2,5
7.	exp weight-bearing/
8.	("load bearing" or loadbearing or weight-bearing or weightbearing or load-bearing or "weight bearing").ti,ab.
9.	("load carrying" or loadcarrying or load-carrying or weight-carrying or weightcarrying or "weight carrying").ti,ab.
10.	((immediate or delay* or prolong*) adj3 (weight or load*)).ti,ab.
11.	((restricted or unrestricted or forward) adj3 (weight or load*)).ti,ab.
12.	((full or partial or touch or non or non- or protect* or tolerat*) adj3 (weight or load*)).ti,ab.
13.	early ambulation/
14.	((early or immediate or delay*) adj3 (mobili* or walk* or ambulat*)).ti,ab.
15.	or/7-14
16.	6 and 15

Embase search terms

1.	exp femur fracture/
2.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	fracture/ and femur/
4.	or/1-3
5.	*weight bearing/
6.	("load bearing" or loadbearing or weight-bearing or weightbearing or load-bearing or "weight bearing").ti,ab.
7.	("load carrying" or loadcarrying or load-carrying or weight-carrying or weightcarrying or "weight carrying").ti,ab.
8.	((immediate or delay* or prolong*) adj3 (weight or load*)).ti,ab.
9.	((restricted or unrestricted or forward) adj3 (weight or load*)).ti,ab.
10.	((full or partial or touch or non or non- or protect* or tolerat*) adj3 (weight or load*)).ti,ab.
11.	*mobilization/
12.	((early or immediate or delay*) adj3 (mobili* or walk* or ambulat*)).ti,ab.
13.	or/5-12
14.	4 and 13

Cochrane search terms

#1.	[mh ^"femoral fractures"]
#2.	((femur* or femora* or thigh*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab

#3.	[mh femur]
#4.	MeSH descriptor: [fractures, bone] explode all trees
#5.	#3 and #4
#6.	#1 or #2 or #5
#7.	[mh weight-bearing]
#8.	("load bearing" or loadbearing or weight-bearing or weightbearing or load-bearing or "weight bearing"):ti,ab
#9.	("load carrying" or loadcarrying or load-carrying or weight-carrying or weightcarrying or "weight carrying"):ti,ab
#10.	((immediate or delay* or prolong*) near/3 (weight or load*)):ti,ab
#11.	((restricted or unrestricted or forward) near/3 (weight or load*)):ti,ab
#12.	((full or partial or touch or non or non- or protect* or tolerat*) near/3 (weight or load*)):ti,ab
#13.	[mh ^"early ambulation"]
#14.	((early or immediate or delay*) near/3 (mobili* or walk* or ambulat*)):ti,ab
#15.	{or #7-#14}
#16.	#6 and #15

A.4.14 Knee fractures - clinical prediction rules

21.Are validated clinical prediction rules accurate at predicting suspected knee fractures?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Knee fractures	n/a	n/a	The following filters were used in Medline and Embase only: PRED- RULE	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((knee* or patella or femoral condyle* or patellofemoral groove or tibial plateau) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(proximal* adj4 (tibia* or tibula* or fibia* or fibula*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	(distal* adj4 (femur or femoral) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
4.	or/1-3
5.	knee injuries/
6.	knee/ or patella/
7.	5 or 6
8.	exp fractures, bone/
9.	7 and 8
10.	4 or 9

Embase search terms

1.	((knee* or patella or femoral condyle* or patellofemoral groove or tibial plateau) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(proximal* adj4 (tibia* or tibula* or fibia* or fibula*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	(distal* adj4 (femur or femoral) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
4.	or/1-3
5.	knee injuries/
6.	knee/ or patella/
7.	5 or 6
8.	exp fractures, bone/
9.	7 and 8
10.	4 or 9

Cochrane search terms

#1.	((knee* or patella or femoral condyle* or patellofemoral groove or tibial plateau) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#2.	(proximal* near/4 (tibia* or tibula* or fibia* or fibula*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#3.	(distal* near/4 (femur or femoral) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#4.	{or #1-#3}
#5.	MeSH descriptor: [knee injuries] this term only
#6.	MeSH descriptor: [knee] this term only
#7.	MeSH descriptor: [patella] this term only
#8.	#5 or #6 or #7
#9.	MeSH descriptor: [fractures, bone] explode all trees
#10.	#8 and #9
#11.	#4 or #10

A.4.15 Ankle fractures - clinical prediction rules

22. Are validated clinical prediction rules clinically and cost effective at predicting suspected ankle fractures?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Ankle fractures	n/a	n/a	The following filters were used in Medline and Embase only: PRED-RULE	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	ankle fractures/
4.	or/1-3
5.	ankle injuries/ or ankle/ or fibula/ or tibia/
6.	exp fractures, bone/
7.	5 and 6
8.	ankle injuries/
9.	(ankle adj4 (sprain* or strain* or injur*)).ti,ab.
10.	or/4,7-9

Embase search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	exp ankle fracture/
4.	or/1-3
5.	ankle injury/
6.	(ankle adj4 (sprain* or strain* or injur*)).ti,ab.
7.	or/4-6

Cochrane search terms

#1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#2.	(distal* near/4 (fibula* or tibia*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#3.	MeSH descriptor: [ankle fractures] this term only
#4.	{or #1-#3}
#5.	MeSH descriptor: [ankle injuries] this term only
#6.	MeSH descriptor: [ankle] this term only
#7.	MeSH descriptor: [fibula] this term only
#8.	MeSH descriptor: [tibia] this term only
#9.	{or #5-#8}
#10.	MeSH descriptor: [fractures, bone] explode all trees
#11.	#9 and #10
#12.	MeSH descriptor: [ankle injuries] explode all trees
#13.	(ankle near/4 (sprain* or strain* or injur*)):ti,ab
#14.	#4 or #11 or #12 or #13

A.4.16 Ankle fractures - imaging

23. Is the use of CT scanning in addition to initial plain film X-ray clinically- and cost- effective for planning surgical treatment of unstable/displaced ankle fractures?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Ankle fractures	Imaging techniques	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	ankle fractures/
4.	or/1-3
5.	ankle injuries/ or ankle/ or fibula/ or tibia/
6.	exp fractures, bone/
7.	5 and 6
8.	4 or 7
9.	radiography/ or exp tomography, emission-computed/ or exp tomography, x-ray/ or magnetic resonance imaging/ or exp fluoroscopy/
10.	(x ray* or xray* or fluoroscop* or fluroscop* or MDCT* or magnetic resonance imag* or MRI* or MR imag* or NMR or CT or radiograph* or tomograph*).ti,ab.
11.	(cat adj (scan* or imag*)).ti,ab.
12.	(compute* adj2 tomograph*).ti,ab.
13.	or/9-12
14.	8 and 13

Embase search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	exp ankle fracture/
4.	or/1-3
5.	exp radiodiagnosis/
6.	(x ray* or xray* or fluoroscop* or fluroscop* or MDCT* or magnetic resonance imag* or MRI* or MR imag* or NMR or CT or radiograph* or tomograph*).ti,ab.

7.	(compute* adj2 tomograph*).ti,ab.
8.	(cat adj (scan* or imag*).ti,ab.
9.	or/5-8
10.	4 and 9

Cochrane search terms

#1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#2.	(distal* near/4 (fibula* or tibia*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#3.	MeSH descriptor: [ankle fractures] this term only
#4.	{or #1-#3}
#5.	MeSH descriptor: [ankle injuries] this term only
#6.	MeSH descriptor: [ankle] this term only
#7.	MeSH descriptor: [fibula] this term only
#8.	MeSH descriptor: [tibia] this term only
#9.	{or #5-#8}
#10.	MeSH descriptor: [fractures, bone] explode all trees
#11.	#9 and #10
#12.	#4 or #11
#13.	MeSH descriptor: [radiography] explode all trees
#14.	(cat near/2 (scan* or imag*)):ti,ab
#15.	(compute* near/2 tomograph*):ti,ab
#16.	(x ray* or xray* or fluoroscop* or fluroscop* or MDCT* or magnetic resonance imag* or MRI* or MR imag* or NMR or CT or radiograph* or tomograph*):ti,ab
#17.	{or #13-#16}
#18.	#12 and #17

A.4.17 Ankle fractures - mobilisation

24. What is the most clinically- and cost -effective mobilisation strategy in patients with stable ankle fractures?

25. What is the most clinically- and cost- effective mobilisation strategy in post-operative patients following internal fixation of ankle fracture?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Ankle fractures	Weight bearing	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	ankle fractures/
4.	or/1-3
5.	ankle injuries/ or ankle/ or fibula/ or tibia/
6.	exp fractures, bone/
7.	5 and 6
8.	4 or 7
9.	exp weight-bearing/
10.	("load bearing" or loadbearing or weight-bearing or weightbearing or load-bearing or "weight bearing").ti,ab.
11.	("load carrying" or loadcarrying or load-carrying or weight-carrying or weightcarrying or "weight carrying").ti,ab.
12.	((immediate or delay* or prolong*) adj3 (weight or load*)).ti,ab.
13.	((restricted or unrestricted or forward) adj3 (weight or load*)).ti,ab.
14.	((full or partial or touch or non or non- or protect* or tolerat*) adj3 (weight or load*)).ti,ab.
15.	early ambulation/
16.	((early or immediate or delay*) adj3 (mobili* or walk* or ambulat*)).ti,ab.
17.	or/9 and 16
18.	8 and 17

Embase search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	exp ankle fracture/
4.	or/1-3
5.	*weight bearing/
6.	("load bearing" or loadbearing or weight-bearing or weightbearing or load-bearing or "weight bearing").ti,ab.
7.	("load carrying" or loadcarrying or load-carrying or weight-carrying or weightcarrying or "weight carrying").ti,ab.
8.	((immediate or delay* or prolong*) adj3 (weight or load*)).ti,ab.
9.	((restricted or unrestricted or forward) adj3 (weight or load*)).ti,ab.
10.	((full or partial or touch or non or non- or protect* or tolerat*) adj3 (weight or load*)).ti,ab.
11.	*mobilization/
12.	((early or immediate or delay*) adj3 (mobili* or walk* or ambulat*)).ti,ab.
13.	or/5-12
14.	4 and 13

Cochrane search terms

#1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
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#2.	(distal* near/4 (fibula* or tibia*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#3.	MeSH descriptor: [ankle fractures] this term only
#4.	{or #1-#3}
#5.	MeSH descriptor: [ankle injuries] this term only
#6.	MeSH descriptor: [ankle] this term only
#7.	MeSH descriptor: [fibula] this term only
#8.	MeSH descriptor: [tibia] this term only
#9.	{or #5-#8}
#10.	MeSH descriptor: [fractures, bone] explode all trees
#11.	#9 and #10
#12.	#4 or #11
#13.	[mh weight-bearing]
#14.	("load bearing" or loadbearing or weight-bearing or weightbearing or load-bearing or "weight bearing"):ti,ab
#15.	("load carrying" or loadcarrying or load-carrying or weight-carrying or weightcarrying or "weight carrying"):ti,ab
#16.	((immediate or delay* or prolong*) near/3 (weight or load*)):ti,ab
#17.	((restricted or unrestricted or forward) near/3 (weight or load*)):ti,ab
#18.	((full or partial or touch or non or non- or protect* or tolerat*) near/3 (weight or load*)):ti,ab
#19.	[mh ^"early ambulation"]
#20.	((early or immediate or delay*) near/3 (mobili* or walk* or ambulat*)):ti,ab
#21.	{or #13-#20}
#22.	#12 and #21

A.4.18 Ankle fractures - timing of surgery

26. What is the most clinically- and cost -effective timing of surgical treatment of an ankle fracture?

Search constructed by combining the columns in the following table using the AND Boolean operator. Exclusion filter applied using NOT Boolean operator.

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
Ankle fractures	Timing of surgery	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Error! Reference source not found. English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	ankle fractures/

4.	or/1-3
5.	ankle injuries/ or ankle/ or fibula/ or tibia/
6.	fractures, bone/
7.	5 and 6
8.	4 or 7
9.	time factors/
10.	(early or earlie* or late or later or time* or timing* or schedul* or hour* or rapid* or fast* or slow* or delay* or immediate*).ti,ab.
11.	or/9-10
12.	exp surgical procedures, operative/
13.	(surger* or surgical or operation* or operativ* or fixation* or reduc*).ti,ab.
14.	exp orthopedic procedures/
15.	or/12-14
16.	11 and 15
17.	4 and 16

Embase search terms

1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
2.	(distal* adj4 (fibula* or tibia*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	exp ankle fracture/
4.	or/1-3
5.	time/
6.	(early or earlie* or late or later or time* or timing* or schedul* or hour* or rapid* or fast* or slow* or delay* or immediate*).ti,ab.
7.	therapy delay/ or time to treatment/ or early intervention/
8.	or/5-7
9.	*surgery/ or *surgical technique/
10.	(surger* or surgical or operation* or operativ* or fixation* or reduc*).ti,ab.
11.	exp orthopedic procedures/
12.	or/9-11
13.	8 and 12
14.	4 and 13

Cochrane search terms

#1.	((ankle* or tibiofibula* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren* or syndesmo*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#2.	(distal* near/4 (fibula* or tibia*) near/4 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#3.	MeSH descriptor: [ankle fractures] this term only
#4.	{or #1-#3}
#5.	MeSH descriptor: [ankle injuries] this term only
#6.	MeSH descriptor: [ankle] this term only
#7.	MeSH descriptor: [fibula] this term only
#8.	MeSH descriptor: [tibia] this term only

#9.	{or #5-#8}
#10.	MeSH descriptor: [fractures, bone] explode all trees
#11.	#9 and #10
#12.	#4 or #11
#13.	MeSH descriptor: [time factors] this term only
#14.	(early or earlie* or late or later or time* or timing* or schedul* or hour* or rapid* or fast* or slow* or delay* or immediate*):ti,ab
#15.	{or #13-#14}
#16.	MeSH descriptor: [surgical procedures, operative] explode all trees
#17.	(surger* or surgical or operation* or operativ* or fixation* or reduc*):ti,ab
#18.	MeSH descriptor: [orthopedic procedures] explode all trees
#19.	{or #16-#18}
#20.	#15 and #19
#21.	#12 and #20

A.5 Health economics searches

A.5.1 Health economic reviews

Economic searches were conducted in Medline, Embase, HEED and CRD for NHS EED and HTA.

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
Fractures	n/a	n/a	The following filters were used in Medline and Embase only: HE, MOD	Medline and Embase 2011–16/04/2015 CRD EED and HTA Inception–16/04/2015 HEED Inception-13/01/2014 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	humeral fractures/
2.	((humerus or arm or arms or forelimb*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	hill sachs lesion.ti,ab.
4.	exp radius fractures/ or exp ulna fractures/
5.	((radius or ulna* or forearm* or radial* or elbow* or intercondylar or condylar or capitellum or nightstick or night stick or monteggia or hume or olecranon or galeazzi or colles* or dinner fork or silver fork or bayonet or parry or smith* or barton*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
6.	femoral fractures/
7.	((femoral or femur* or thigh* or leg or legs or stieda*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
8.	exp pelvic bones/in

9.	((pelvic or pelvis or hip or innominate or duverney or coccyx or coxal or coxae or sacrum or ilium or ischium or pubis or acetabul* or cotyloid) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
10.	(hip adj2 (socket* or cavit*) adj3 (fracture* or break* or crack* or frx or fx)).ti,ab.
11.	tibial fractures/ or fibula/in
12.	((lower leg* or crus or gaiter* or tibia* or fibula* or bumper or segond or gosselin or toddler* or bosworth or shins or shin or shinbone* or pilon or distal tibia* or hammer or plafond) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
13.	(childhood adj2 accident* adj2 spiral adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
14.	talus/in
15.	((talus or ankle* or talocrural* or subtalar* or tibiofibular* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
16.	(le fort adj2 (fracture* or break or breaks or broken or crack* or frx) adj2 ankle*).ti,ab.
17.	exp carpal bones/in
18.	((carpal* or wrist* or radiocarpal* or scaphoid* or lunate* or triquetral* or pisiform* or trapezium* or trapezoid* or capitate* or hamate* or ossa carpi or chauffeur* or quervain*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
19.	hand bones/in or metacarpal bones/in
20.	((metacarpal* or metacarpus or hand or hands or scaphoid* or rolando or bennett* or boxer*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
21.	(phalanx adj4 (hand* or foot or feet) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
22.	((phalangeal or phalange* or finger* or toe* or interphalange*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
23.	tarsal bones/in or calcaneus/in
24.	((tarsal* or calcaneus* or navicular* or lover* or don juan or calcaneal* or heel* or cuneiform* or intercuneiform* or cuboid* or foot or feet or lisfranc or tarsometatarsal* or midfoot or chopart*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
25.	metatarsal bones/in
26.	((metatarsal* or jone* or metatarsus* or metatarsophalangeal* or march) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
27.	patella/in
28.	((patella* or knee*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
29.	exp scapula/in or clavicle/in or shoulder fractures/
30.	((clavicular or clavicle* or collarbone* or scapular or scapula* or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
31.	rib fractures/ or exp sternum/in
32.	((ribs or breastbone* or rib or sternal or sternum* or gladiolus or manubrium) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
33.	((hyoid or lingual or cornua) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
34.	or/1-33
35.	fractures, closed/ or fractures, comminuted/ or fractures, open/ or fractures, cartilage/ or intra-articular fractures/
36.	((greenstick or green stick or complex or open or closed or compound or simple) adj2 (fracture* or frx)).ti,ab.
37.	or/35-36

38.	exp facial bones/in
39.	((face or nose or nasal or maxillary or maxillofacial or mandibular or jaw or blowout or orbit) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
40.	(eye* adj3 (socket* or cavit*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
41.	(le fort adj3 skull).ti,ab.
42.	spinal fractures/
43.	((spine or spinal or vertebra* or neck or cervical or jefferson* or sagittal or hangman* or flexion or teardrop or clay shoveler* or burst or compression or holdsworth) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
44.	exp skull fractures/
45.	((skull* or basilar or basal or temporal or occipital or sphenoid* or ethmoid or head) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
46.	exp hip fractures/
47.	((hip or subtrochanteric or nof) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
48.	((femoral or femur) adj3 (head or neck) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
49.	or/38-48
50.	37 not 49
51.	34 or 50

Embase search terms

1.	exp arm fracture/
2.	((humerus or arm or arms or forelimb*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	hill sachs lesion.ti,ab.
4.	((radius or ulna* or forearm* or radial* or elbow* or intercondylar or condylar or capitellum or nightstick or night stick or monteggia or hume or olecranon or galeazzi or colles* or dinner fork or silver fork or bayonet or parry or smith* or barton*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	leg fracture/ or femur fracture/ or femur shaft fracture/
6.	((femoral or femur* or thigh* or leg or legs or stieda*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
7.	exp pelvis fracture/
8.	((pelvic or pelvis or hip or innominate or duverney or coccyx or coxal or coxae or sacrum or ilium or ischium or pubis or acetabul* or cotyloid) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
9.	(hip adj2 (socket* or cavit*) adj3 (fracture* or break* or crack* or frx or fx)).ti,ab.
10.	tibia fracture/ or distal tibia fracture/ or fibula fracture/ or proximal tibia fracture/ or tibia shaft fracture/
11.	((lower leg* or crus or gaiter* or tibia* or fibula* or bumper or segond or gosselin or toddler* or bosworth or shins or shin or shinbone* or pilon or distal tibia* or hammer or plafond) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
12.	(childhood adj2 accident* adj2 spiral adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
13.	exp ankle fracture/
14.	((talus or ankle* or talocrural* or subtalar* or tibiofibular* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.

15.	(le fort adj2 (fracture* or break or breaks or broken or crack* or frx) adj2 ankle*).ti,ab.
16.	((carpal* or wrist* or radiocarpal* or scaphoid* or lunate* or triquetral* or pisiform* or trapezium* or trapezoid* or capitate* or hamate* or ossa carpi or chauffeur* or quervain*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
17.	hand fracture/ or finger fracture/
18.	((metacarpal* or metacarpus or hand or hands or scaphoid* or rolando or bennett* or boxer*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
19.	(phalanx adj4 (hand* or foot or feet) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
20.	((phalangeal or phalange* or finger* or toe* or interphalange*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
21.	calcaneus fracture/ or foot fracture/
22.	((tarsal* or calcaneus* or navicular* or lover* or don juan or calcaneal* or heel* or cuneiform* or intercuneiform* or cuboid* or foot or feet or lisfranc or tarsometatarsal* or midfoot or chopart*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
23.	((metatarsal* or jone* or metatarsus* or metatarsophalangeal* or march) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
24.	knee fracture/ or patella fracture/
25.	((patella* or knee*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
26.	((clavicular or clavicle* or collarbone* or scapular or scapula* or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
27.	exp rib fracture/
28.	((ribs or breastbone* or rib or sternal or sternum* or gladiolus or manubrium) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
29.	((hyoid or lingual or cornua) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
30.	or/1-29
31.	avulsion fracture/ or comminuted fracture/ or fracture dislocation/ or intraarticular fracture/ or joint fracture/ or limb fracture/ or open fracture/
32.	((greenstick or green stick or complex or open or closed or compound or simple) adj2 (fracture* or frx)).ti,ab.
33.	or/31-32
34.	exp face fracture/
35.	((face or nose or nasal or maxillary or maxillofacial or mandibular or jaw or blowout or orbit) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
36.	(eye* adj3 (socket* or cavit*) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
37.	(le fort adj3 skull).ti,ab.
38.	exp spine fracture/
39.	((spine or spinal or vertebra* or neck or cervical or jefferson* or sagittal or hangman* or flexion or teardrop or clay shoveler* or burst or compression or holdsworth) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
40.	exp skull fracture/
41.	((skull* or basilar or basal or temporal or occipital or sphenoid* or ethmoid or head) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
42.	exp hip fracture/
43.	((hip or subtrochanteric or nof) adj4 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
44.	((femoral or femur) adj3 (head or neck) adj4 (fracture* or break or breaks or broken or crack*

	or frx)).ti,ab.
45.	or/34-44
46.	33 not 45
47.	30 or 46

CRD search terms

#1.	MeSH descriptor humeral fractures
#2.	(((humerus or arm or arms or forelimb*) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#3.	(hill sachs lesion)
#4.	MeSH descriptor radius fractures explode all trees
#5.	MeSH descriptor ulna fractures explode all trees
#6.	(((radius or ulna* or forearm* or radial* or elbow* or intercondylar or condylar or capitellum or nightstick or night stick or monteggia or hume or olecranon or galeazzi or colles* or dinner fork or silver fork or bayonet or parry or smith* or barton*) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#7.	MeSH descriptor femoral fractures
#8.	(((femoral or femur* or thigh* or leg or legs or stieda*) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#9.	MeSH descriptor pelvic bones explode all trees with qualifier in
#10.	(((pelvic or pelvis or hip or innominate or duverney or coccyx or coxal or coxae or sacrum or ilium or ischium or pubis or acetabul* or cotyloid) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#11.	((hip adj2 (socket* or cavit*) adj3 (fracture* or break* or crack* or frx or fx)))
#12.	MeSH descriptor tibial fractures
#13.	MeSH descriptor fibula with qualifier in
#14.	(((lower leg* or crus or gaiter* or tibia* or fibula* or bumper or segond or gosselin or toddler* or bosworth or shins or shin or shinbone* or pilon or distal tibia* or hammer or plafond) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#15.	((childhood adj2 accident* adj2 spiral adj4 (fracture* or break or breaks or broken or crack* or frx)))
#16.	MeSH descriptor talus with qualifier in
#17.	(((talus or ankle* or talocrural* or subtalar* or tibiofibular* or malleolus or malleoli or pott* or trimalleolar* or bimalleolar* or maisonneuve* or dupuytren*) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#18.	((le fort adj2 (fracture* or break or breaks or broken or crack* or frx) adj2 ankle*))
#19.	MeSH descriptor carpal bones explode all trees with qualifier in
#20.	(((carpal* or wrist* or radiocarpal* or scaphoid* or lunate* or triquetral* or pisiform* or trapezium* or trapezoid* or capitata* or hamate* or ossa carpi or chauffeur* or quervain*) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#21.	MeSH descriptor hand bones with qualifier in
#22.	MeSH descriptor metacarpal bones with qualifier in
#23.	(((metacarpal* or metacarpus or hand or hands or scaphoid* or rolando or bennett* or boxer*) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#24.	((phalanx adj4 (hand* or foot or feet) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#25.	(((phalangeal or phalange* or finger* or toe* or interphalange*) adj4 (fracture* or break or breaks or broken or crack* or frx)))
#26.	MeSH descriptor tarsal bones with qualifier in

#27.	MeSH descriptor calcaneus with qualifier in
#28.	((tarsal* or calcaneus* or navicular* or lover* or don juan or calcaneal* or heel* or cuneiform* or intercuneiform* or cuboid* or foot or feet or lisfranc or tarsometatarsal* or midfoot or chopart*) adj4 (fracture* or break or breaks or broken or crack* or frx))
#29.	MeSH descriptor metatarsal bones with qualifier in
#30.	((metatarsal* or jone* or metatarsus* or metatarsophalangeal* or march) adj4 (fracture* or break or breaks or broken or crack* or frx))
#31.	MeSH descriptor patella with qualifier in
#32.	((patella* or knee*) adj4 (fracture* or break or breaks or broken or crack* or frx))
#33.	MeSH descriptor scapula explode all trees with qualifier in
#34.	MeSH descriptor clavicle with qualifier in
#35.	MeSH descriptor shoulder fractures
#36.	((clavicular or clavicle* or collarbone* or scapular or scapula* or shoulder*) adj4 (fracture* or break or breaks or broken or crack* or frx))
#37.	MeSH descriptor rib fractures
#38.	((ribs or breastbone* or rib or sternal or sternum* or gladiolus or manubrium) adj4 (fracture* or break or breaks or broken or crack* or frx))
#39.	((hyoid or lingual or cornua) adj4 (fracture* or break or breaks or broken or crack* or frx))
#40.	MeSH descriptor fractures, closed
#41.	MeSH descriptor fractures, comminuted
#42.	MeSH descriptor fractures, open
#43.	MeSH descriptor fractures, cartilage
#44.	MeSH descriptor intra-articular fractures
#45.	((greenstick or green stick or complex or open or closed or compound or simple) adj2 (fracture* or frx))
#46.	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45

HEED search terms

1.	TI=humer* or arm or arms or forelimb* or radius or ulna* or forearm* or radial* or femoral or femur* or leg or legs or pelvic or pelvis or hip or fibular or tibia* or fibula* or talus or ankle or carpal* or wrist* or finger* or toe* or foot or feet or patella* or knee* or clavicular or clavicle* or collarbone* or scapular or scapula* or shoulder* or ribs or rib or pilon or acetabul* or plafond
2.	AB=humer* or arm or arms or forelimb* or radius or ulna* or forearm* or radial* or femoral or femur* or leg or legs or pelvic or pelvis or hip or fibular or tibia* or fibula* or talus or ankle or carpal* or wrist* or finger* or toe* or foot or feet or patella* or knee* or clavicular or clavicle* or collarbone* or scapular or scapula* or shoulder* or ribs or rib or pilon or acetabul* or plafond
3.	TI=fracture* or break or breaks or broken or crack* or frx
4.	AB=fracture* or break or breaks or broken or crack* or frx
5.	CS=1 or 2
6.	CS=3 or 4
7.	CS=5 and 6

A.5.2 Health economic reviews – supplementary search

Economic searches were conducted in Medline, Embase and CRD for NHS EED and HTA.

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
Fractures	n/a	n/a	The following filters were used in Medline and Embase only: HE, MOD	Medline and Embase 2014–17/04/2015 CRD EED and HTA Inception–17/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fracture*.ti,ab.
2.	exp fractures, bone/
3.	1 or 2

Embase search terms

1.	fracture*.ti,ab.
2.	exp fracture/
3.	1 or 2

CRD search terms

#1.	((fracture*))
#2.	MeSH descriptor fractures, bone explode all trees
#3.	#1 or #2

A.5.3 Quality of life reviews

Economic searches were conducted in Medline and Embase.

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
See A.5.1. for search terms	n/a	n/a	The following filters were used in Medline and Embase only: QOL	Medline 1946 - 14/01/2014 Embase 1974–14/01/2014 English only Exclusion filter applied in Medline and Embase

A.5.4 Hot reporting

Economic searches were conducted in Medline, Embase, HEED and CRD for NHS EED and HTA.

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
Major trauma or fractures or emergency	Radiographer/radiologist report	n/a	The following filters were used in Medline and Embase only:	Medline and Embase 2011–17/04/2015

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
department settings			HE	CRD NHS EED and HTA Inception–17/04/2015 English only Exclusion filter applied in Medline and Embase

Medline and Embase search terms

See A.4.4 for population and intervention terms

CRD search terms

#1.	((fracture*))
#2.	((trauma* or polytrauma*))
#3.	((serious* or severe* or major or life threaten*) adj3 (accident* or injur* or fall*))
#4.	MeSH descriptor multiple trauma
#5.	((motor* or motorbike* or vehicle* or road or traffic or car or cars or cycling or bicycle* or automobile* or bike* or head on or pile up) adj3 (accident* or crash* or collision* or smash*))
#6.	((MVAs or MVA or RTAs or RTA))
#7.	((stabbed or stabbing or stab or gunshot* or gun or gunfire or firearm* or bullet* or knife* or knives or dagger))
#8.	MeSH descriptor emergency service, hospital explode all trees
#9.	((accident or department* or room*) adj2 emergency))
#10.	((department* adj2 casualty))
#11.	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10
#12.	(((((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed) adj2 report*))
#13.	(((((radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed) adj5 reporting)))
#14.	(((((radiograph* or radiolog* or imag* or tomograph* or CT or xray or x ray) and ((preliminary or provisional* or definitive*) adj3 report*)))))
#15.	((red adj2 dot*))
#16.	#12 or #13 or #14 or #15
#17.	#11 and #16

HEED search terms

1.	TI=(fracture* or trauma* or polytrauma* or accident or emergency or fall* or injur*)
2.	AB=(fracture* or trauma* or polytrauma* or accident or emergency or fall* or injur*)
3.	CS=1 or 2
4.	TI= (radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed)
5.	AB= (radiographer* or radiologist* or led or immediate* or hot or cold or delayed or speed)
6.	CS=4 or 5
7.	TI= report*
8.	AB= report*
9.	CS=7 or 8

10.	CS=3 and 6 and 9
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A.5.5 Pain

Economic searches were conducted in Medline, Embase and Cochrane Library for NHS EED and HTA.

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
Long bone fractures	Pharmacological pain management		The following filters were used in Medline and Embase only: HE	Medline 1946 – 10/04/2015 Embase 1974 – 10/04/2015 Cochrane NHS EED and HTA Inception – 2015 Issue 1 of 4 English only Exclusion filter applied in Medline and Embase

Medline, Embase and Cochrane search terms

See A.4.2 for population and intervention terms

A.6 References

- 1 National Institute for Health and Clinical Excellence. The guidelines manual. London: National Institute for Health and Clinical Excellence; 2012. Available from: <http://publications.nice.org.uk/the-guidelines-manual-pmg6/>