

Draft

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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Appendix A: Literature search strategies

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Search strategies used for the complex fracture guideline are outlined below and were run in accordance with the methodology in the NICE guidelines manual 2012.¹ Final searches were run up between **25th March and 16th April 2015** (see individual questions for exact date). 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 to between 25/03 & 16/04/2015
Embase	1980 to between 25/03 & 16/04/2015
The Cochrane Library	Cochrane Reviews to 2015 either Issue 3 of 12 or 4 of 12 CENTRAL to 2015 either Issue 2 of 12 or 3 of 12 DARE, HTA and NHSEED to 2015 Issue 1 of 4

Searches for the **clinical reviews** were run in Medline (OVID), Embase (OVID) and the Cochrane Library (Wiley). Additional searches were run in Cinahl for two questions

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 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 questions and intervention search terms in section A.4

A.3 Study filter search terms

A.3.1 Systematic review (SR) search terms

Medline search terms

1.	meta-analysis/
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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 (RCT) 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 Health economics (HE) 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.3.5 Quality of life (QOL) 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 hq!* 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.3.6 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.3.7 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

S1.	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 Open fractures - immediate destination

1. Is it clinically and cost effective suspected open limb fractures to be directly transported to a Major Trauma Centre?

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
Open fractures.	Destination	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, open/
2.	((open or compound) adj3 (fracture* or frx)).ti,ab.
3.	or/1-2
4.	exp emergency service, hospital/
5.	(emergency department or "accident and emergency" or "a and e" or "a & e" or a&e).ti,ab.
6.	(trauma adj (centre* or center* or unit*)).ti,ab.
7.	((speciali* or tertiary or regional or district general or fracture*) adj2 (cent* or unit* or hospital* or facilit*)).ti,ab.
8.	or/4-7
9.	transportation/ or air ambulances/ or ambulances/
10.	"transportation of patients"/
11.	ambulance diversion/

12.	or/9-11
13.	3 and (8 or 12)

Embase search terms

1.	open fracture/
2.	((open or compound) adj3 (fracture* or frx)).ti,ab.
3.	or/1-2
4.	emergency ward/
5.	emergency health service/
6.	(emergency department or "accident and emergency" or "a and e" or "a & e" or a&e).ti,ab.
7.	(trauma adj (centre* or center* or unit*)).ti,ab.
8.	((speciali* or tertiary or regional or district general or fracture*) adj2 (cent* or unit* or hospital* or facilit*)).ti,ab.
9.	or/4-8
10.	"traffic and transport"/
11.	air medical transport/
12.	exp ambulance/
13.	exp patient transport/
14.	or/10-13
15.	3 and (9 or 14)

Cochrane search terms

#1.	MeSH descriptor: [fractures, open] this term only
#2.	((open or compound) near/3 (fracture* or frx)):ti,ab
#3.	#1 or #2
#4.	MeSH descriptor: [emergency service, hospital] explode all trees
#5.	(emergency department or "accident and emergency" or "a and e" or "a & e" or a&e):ti,ab
#6.	(trauma next (centre* or center* or unit*)):ti,ab
#7.	((speciali* or tertiary or regional or district general or fracture*) near/2 (cent* or unit* or hospital* or facilit*)):ti,ab
#8.	{or #4-#7}
#9.	MeSH descriptor: [transportation] this term only
#10.	MeSH descriptor: [ambulances] explode all trees
#11.	MeSH descriptor: [transportation of patients] this term only
#12.	MeSH descriptor: [ambulance diversion] this term only
#13.	{or #9-#12}
#14.	#3 and (#8 or #13)

A.4.2 Open fractures - limb salvage

2. Which are the best risk prediction tools to predict likelihood of successful limb salvage in people with mangled limbs who are given limb salvage treatment?

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
Mangled limbs	Limb salvage	n/a	The following filters were used in Medline	See Table 1 Date of last

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
			and Embase only: PROGNOSIS/PREDICTIO N RULE or known prediction rule terms All terms from this section included below with the search.	search: 16/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((mangling or mangle* or crush* or avulsion or comminute*) adj5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
2.	amputation, traumatic/
3.	fractures, comminuted/
4.	((mangling or mangle* or crush* or avulsion or comminute*) and (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	crush syndrome/
6.	((crush* or bywaters*) adj syndrome*).ti,ab.
7.	rhabdomyolys*.ti,ab.
8.	fractures, open/
9.	((open or compound) adj3 (fracture* or frx)).ti,ab.
10.	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/
11.	((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.
12.	((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.
13.	((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.
14.	((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.
15.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
16.	((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.
17.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
18.	hand injuries/ or *arm injuries/ or *ankle injuries/ or *foot injuries/ or *arm injuries/ or *leg injuries/
19.	*extremities/in or exp *lower extremity/in or exp *upper extremity/in
20.	((high energy or injur* or trauma* or wound*) adj6 (extremit* or limb or arm* or leg* or hand* or foot or feet or ankle)).ti,ab.
21.	exp fractures, bone/
22.	exp arteries/in [injuries]
23.	femur/ or fibula/ or tibia/ or humerus/ or radius/ or ulna/ or wrist/ or elbow/ or shoulder/ or forearm/ or ankle/ or knee/ or leg/
24.	21 and (22 or 23)
25.	or/1-20,24

26.	((salvag* or save* or saving or sparing or rescue* or preserv*) adj5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
27.	limb salvage/
28.	replantation/
29.	replant*.ti,ab.
30.	(revascularis* or revasculariz*).ti,ab.
31.	amputation/
32.	amputat*.ti,ab.
33.	or/26-32
34.	predict.ti.
35.	(validat* or rule*).ti,ab.
36.	(predict* and (outcome* or risk* or model*)).ti,ab.
37.	((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.
38.	decision*.ti,ab. and logistic models/
39.	(decision* and (model* or clinical*)).ti,ab.
40.	(prognostic and (history or variable* or criteria or scor* or characteristic* or finding* or factor* or model*)).ti,ab.
41.	(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.
42.	roc curve/
43.	or/34-42
44.	(psi or mess or lsi or nissa or hfs-97 or tess).ti,ab.
45.	((mangl* or salvag* or extremit* or skeletal*) adj5 (score* or scale* or index* or indice* or tool*)).ti,ab.
46.	or/44 or 45
47.	25 and 33 and (43 or 46)

Embase search terms

1.	((mangling or mangle* or crush* or avulsion or comminute*) adj5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
2.	traumatic amputation/
3.	comminuted fracture/
4.	((mangling or mangle* or crush* or avulsion or comminute*) and (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	crush syndrome/
6.	((crush* or bywaters*) adj syndrome*).ti,ab.
7.	rhabdomyolys*.ti,ab.
8.	avulsion injury/ or avulsion fracture/
9.	open fracture/
10.	((open or compound) adj3 (fracture* or break* or crack* or frx or fx)).ti,ab.
11.	fracture/
12.	((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.
13.	((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.
14.	((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.

15.	((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.
16.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
17.	((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.
18.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
19.	exp limb injury/
20.	((high energy or injur* or trauma* or wound*) adj6 (extremity* or limb or arm* or leg* or hand* or foot or feet or ankle)).ti,ab.
21.	exp fracture/
22.	exp artery injury/
23.	21 and 22
24.	or/1-20,23
25.	((salvag* or save* or saving or sparing or rescue* or preserv*) adj5 (extremity* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
26.	limb salvage/ or salvage therapy/
27.	limb replantation/
28.	replant*.ti,ab.
29.	(revascularis* or revasculariz*).ti,ab.
30.	exp amputation/
31.	amputat*.ti,ab.
32.	or/25-31
33.	predict.ti.
34.	(validat* or rule*).ti,ab.
35.	(predict* and (outcome* or risk* or model*)).ti,ab.
36.	((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.
37.	decision*.ti,ab. and statistical model/
38.	(decision* and (model* or clinical*)).ti,ab.
39.	(prognostic and (history or variable* or criteria or scor* or characteristic* or finding* or factor* or model*)).ti,ab.
40.	(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.
41.	receiver operating characteristic/
42.	or/33-41
43.	(psi or mess or lsi or nissas or hfs-97 or tess).ti,ab.
44.	((mangl* or salvag* or extremity* or skeletal*) adj5 (score* or scale* or index* or indice* or tool*)).ti,ab.
45.	43 or 44
46.	24 and 32 and (42 or 45)

Cochrane search terms

#1.	((mangling or mangle* or crush* or avulsion or comminute*) near/5 (extremity* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab
#2.	MeSH descriptor: [amputation, traumatic] this term only

#3.	MeSH descriptor: [fractures, comminuted] this term only
#4.	((mangling or mangle* or crush* or avulsion or comminute*) and (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#5.	MeSH descriptor: [crush syndrome] this term only
#6.	((crush* or bywaters*) next syndrome*):ti,ab
#7.	rhabdomyolys*:ti,ab
#8.	{or #1-#7}
#9.	MeSH descriptor: [fractures, open] this term only
#10.	((open or compound) near/3 (fracture* or frx)):ti,ab
#11.	MeSH descriptor: [fractures, bone] this term only
#12.	MeSH descriptor: [ankle fractures] this term only
#13.	MeSH descriptor: [humeral fractures] this term only
#14.	MeSH descriptor: [radius fractures] explode all trees
#15.	MeSH descriptor: [shoulder fractures] this term only
#16.	MeSH descriptor: [tibial fractures] this term only
#17.	MeSH descriptor: [ulna fractures] explode all trees
#18.	MeSH descriptor: [femoral fractures] this term only
#19.	((long bone* or longbone* or limb or limbs or 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
#20.	((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
#21.	((radius or radii or ulnae or ulna or elbow* or forearm* or wrist* 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
#22.	((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
#23.	((fibula or fibulae or calf*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#24.	((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
#25.	((femur* or femora* or thigh*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#26.	MeSH descriptor: [hand injuries] this term only
#27.	MeSH descriptor: [arm injuries] this term only
#28.	MeSH descriptor: [ankle injuries] this term only
#29.	MeSH descriptor: [foot injuries] this term only
#30.	MeSH descriptor: [leg injuries] this term only
#31.	MeSH descriptor: [extremities] this term only and with qualifier(s): [injuries - in]
#32.	MeSH descriptor: [lower extremity] explode all trees and with qualifier(s): [injuries - in]
#33.	MeSH descriptor: [upper extremity] explode all trees and with qualifier(s): [injuries - in]
#34.	((high energy or injur* or trauma* or wound*) near/6 (extremit* or limb or arm* or leg* or hand* or foot or feet or ankle)):ti,ab
#35.	{or #9-#34}
#36.	MeSH descriptor: [fractures, bone] explode all trees
#37.	MeSH descriptor: [arteries] explode all trees and with qualifier(s): [injuries - in]
#38.	MeSH descriptor: [femur] this term only
#39.	MeSH descriptor: [fibula] explode all trees

#40.	MeSH descriptor: [tibia] this term only
#41.	MeSH descriptor: [humerus] this term only
#42.	MeSH descriptor: [radius] this term only
#43.	MeSH descriptor: [ulna] this term only
#44.	MeSH descriptor: [wrist] this term only
#45.	MeSH descriptor: [elbow] this term only
#46.	MeSH descriptor: [shoulder] this term only
#47.	MeSH descriptor: [forearm] this term only
#48.	MeSH descriptor: [ankle] this term only
#49.	MeSH descriptor: [knee] this term only
#50.	MeSH descriptor: [leg] this term only
#51.	{or #37-#50}
#52.	#36 and #51
#53.	#8 or #35 or #52
#54.	(psi or mess or lsi or nissaa or hfs-97 or tess):ti,ab
#55.	((mangl* or salvag* or extremit* or skeletal*) near/5 (score* or scale* or index* or indice* or tool*)):ti,ab
#56.	#54 or #55
#57.	((risk or predict*) near/2 (score* or scale* or index* or indice* or tool* or stratif*)):ti,ab
#58.	((predict* or decision) near/2 rule*):ti,ab
#59.	(predict* and (outcome* or risk* or model*)):ti,ab
#60.	#57 or #58 or #59
#61.	#56 or #60

A.4.3 Open fractures - prophylactic antibiotics

3. What is the optimum time to administer prophylactic antibiotics for suspected open 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
Open fractures	Antibiotics	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, open/
2.	((open or compound) adj3 (fracture* or fx)).ti,ab.
3.	1 or 2
4.	anti-bacterial agents/
5.	exp alamethicin/ or exp amdinocillin/ or exp amdinocillin pivoxil/ or exp amikacin/ or exp amoxicillin/ or exp amoxicillin-potassium clavulanate combination/ or exp amphotericin b/ or exp ampicillin/ or exp anisomycin/ or exp antimycin a/ or exp aurodox/ or exp azithromycin/ or

	exp azlocillin/ or exp aztreonam/ or exp bacitracin/ or exp bacteriocins/ or exp bambarmycins/ or exp bongkreki acid/ or exp brefeldin a/ or exp butirosin sulfate/ or exp calcimycin/ or exp candidin/ or exp capreomycin/ or exp carbenicillin/ or exp carfecillin/ or exp cefaclor/ or exp cefadroxil/ or exp cefamandole/ or exp cefatrizine/ or exp cefazolin/ or exp cefixime/ or exp cefmenoxime/ or exp cefmetazole/ or exp cefonicid/ or exp cefoperazone/ or exp cefotaxime/ or exp cefotetan/ or exp cefotiam/ or exp ceftazidime/ or exp ceftriaxone/ or exp cefuroxime/ or exp cephaloridine/ or exp cephalosporins/ or exp cephalothin/ or exp cephamycins/ or exp cephalosporins/ or exp cephradine/ or exp chloramphenicol/ or exp chlortetracycline/ or exp ciprofloxacin/ or exp citrinin/ or exp clarithromycin/ or exp clavulanic acid/ or exp clavulanic acids/ or exp clindamycin/ or exp cloxacillin/ or exp colistin/ or exp cyclacillin/ or exp dactinomycin/ or exp daptomycin/ or exp demeclocycline/ or exp dibekacin/ or exp dicloxacillin/ or exp dihydrostreptomycin sulfate/ or exp diketopiperazines/ or exp distamycins/ or exp doxycycline/ or exp echinomycin/ or exp edeine/ or exp enoxacin/ or exp enviromycin/ or exp erythromycin/ or exp erythromycin estolate/ or exp erythromycin ethylsuccinate/ or exp filipin/ or exp floxacillin/ or exp fluoroquinolones/ or exp fosfomycin/ or exp framycetin/ or exp fusidic acid/ or exp gentamicins/ or exp gramicidin/ or exp hygromycin b/ or exp imipenem/ or exp josamycin/ or exp kanamycin/ or exp kidasamycin/ or exp lactams/ or exp lasalocid/ or exp leucomycins/ or exp levofloxacin/ or exp lincomycin/ or exp lincosamides/ or exp lucensomycin/ or exp lymecycline/ or exp mepartricin/ or exp methacycline/ or exp methicillin/ or exp mezlocillin/ or exp mikamycin/ or exp minocycline/ or exp miocamycin/ or exp moxalactam/ or exp mupirocin/ or exp mycobacillin/ or exp nafcillin/ or exp nalidixic acid/ or exp natamycin/ or exp nebramycin/ or exp neomycin/ or exp netilmicin/ or exp netropsin/ or exp nigericin/ or exp nisin/ or exp norfloxacin/ or exp novobiocin/ or exp nystatin/ or exp ofloxacin/ or exp oleandomycin/ or exp oligomycins/ or exp oxacillin/ or exp oxolinic acid/ or exp oxytetracycline/ or exp paromomycin/ or exp pefloxacin/ or exp penicillanic acid/ or exp penicillic acid/ or exp penicillin g/ or exp penicillin g benzathine/ or exp penicillin g procaine/ or exp penicillin v/ or exp pipemidic acid/ or exp piperacillin/ or exp pivampicillin/ or exp polymyxin b/ or exp polymyxins/ or exp pristinamycin/ or exp prodigiosin/ or exp ribostamycin/ or exp rifabutin/ or exp rifamycins/ or exp ristocetin/ or exp rolitetracycline/ or exp roxarsone/ or exp roxithromycin/ or exp rutamycin/ or exp sirolimus/ or exp sisomicin/ or exp spectinomycin/ or exp spiramycin/ or exp streptogramin a/ or exp streptogramin group a/ or exp streptogramin group b/ or exp streptogramins/ or exp streptomycin/ or exp streptovaricin/ or exp sulbactam/ or exp sulbenicillin/ or exp sulfamerazine/ or exp sulfamethoxypyridazine/ or exp talampicillin/ or exp teicoplanin/ or exp tetracycline/ or exp thiamphenicol/ or exp thienamycins/ or exp thioestrepton/ or exp ticarcillin/ or exp tobramycin/ or exp troleandomycin/ or exp tunicamycin/ or exp tylosin/ or exp tyrocidine/ or exp tyrothricin/ or exp valinomycin/ or exp vancomycin/ or exp vernamycin b/ or exp viomycin/ or exp virginiamycin/ or exp beta-lactams/
6.	exp antifungal agents/
7.	antibiotic prophylaxis/
8.	(antibiotic* or antimicrobial*).ti,ab.
9.	or/4-8
10.	3 and 9

Embase search terms

1.	open fracture/
2.	((open or compound) adj3 (fracture* or fx)).ti,ab.
3.	1 or 2
4.	antiinfective agent/
5.	exp antibiotic agent/
6.	antifungal agent/
7.	antibiotic prophylaxis/

8.	(antibiotic* or antimicrobial*).ti,ab.
9.	or/4-8
10.	3 and 9

Cochrane search terms

#1.	MeSH descriptor: [fractures, open] explode all trees
#2.	((open or compound) near/3 (fracture* or break* or crack* or frx or fx)).ti,ab
#3.	{or #1-#2}
#4.	MeSH descriptor: [anti-bacterial agents] explode all trees
#5.	MeSH descriptor: [antifungal agents] explode all trees
#6.	MeSH descriptor: [antibiotic prophylaxis] this term only
#7.	{or #4-#6}
#8.	#3 and #7

A.4.4 Open fractures - dressings

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

4. What is the most clinically and cost effective dressing type prior to surgical debridement and excision for use in open fractures, pre-hospital and in hospital?
5. What is the most clinically and cost effective temporary dressing/wound therapy in open fractures after wound excision/surgical debridement?

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
Open fractures	Dressings	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, open/
2.	((open or compound) adj3 (fracture* or break* or crack* or frx or fx)).ti,ab.
3.	1 or 2
4.	exp bandages/
5.	(dressing* or gauze*).ti,ab.
6.	"vacuum assisted closure".ti,ab.
7.	vac.ti,ab.
8.	(vacuum adj2 (therapy or closure)).ti,ab.
9.	("wet-to-dry" or "dry-to-dry" or "wet-to-wet").ti,ab.
10.	((antibiotic or impregnated) adj2 bead*).ti,ab.
11.	negative-pressure wound therapy/

12.	npwt.ti,ab.
13.	(negative adj2 pressure).ti,ab.
14.	or/4-13
15.	3 and 14

Embase search terms

1.	fractures, open/
2.	((open or compound) adj3 (fracture* or frx)).ti,ab.
3.	1 or 2
4.	exp bandage/
5.	(dressing* or gauze*).ti,ab.
6.	"vacuum assisted closure".ti,ab.
7.	vac.ti,ab.
8.	(vacuum adj2 (therapy or closure)).ti,ab.
9.	("wet-to-dry" or "dry-to-dry" or "wet-to-wet").ti,ab.
10.	((antibiotic or impregnated) adj2 bead*).ti,ab.
11.	negative-pressure wound therapy/
12.	npwt.ti,ab.
13.	(negative adj2 pressure).ti,ab.
14.	or/4-13
15.	3 and 14

Cochrane search terms

#1.	MeSH descriptor: [fractures, open] explode all trees
#2.	((open or compound) near/3 (fracture* or fx)).ti,ab
#3.	{or #1-#2}
#4.	MeSH descriptor: [bandages] explode all trees
#5.	(dressing* or gauze*).ti,ab
#6.	vacuum assisted closure:ti,ab
#7.	vac:ti,ab
#8.	(vacuum near/2 (therapy or closure)):ti,ab
#9.	("wet-to-dry" or "dry-to-dry" or "wet-to-wet"):ti,ab
#10.	((antibiotic or impregnated) near/2 bead*).ti,ab
#11.	negative-pressure wound therapy
#12.	npwt:ti,ab
#13.	(negative near/2 pressure):ti,ab
#14.	{or #4-#13}
#15.	#3 and #14

A.4.5 Open fractures – preservation of limbs (arterial shunts)

6. Are arterial shunts followed by later repair more clinically and cost effective compared to definitive repair of arterial injuries associated with open 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
Mangled limbs	Arterial shunts	n/a	n/a	See Table 1 Date of last search: 15/04/2015 English only Exclusion filter applied in Medline and Embase
	Limb salvage (title only)	n/a	n/a	
	Limb salvage	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	

Medline search terms

1.	((mangling or mangle* or crush* or avulsion or comminute*) adj5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
2.	amputation, traumatic/
3.	fractures, comminuted/
4.	((mangling or mangle* or crush* or avulsion or comminute*) and (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	crush syndrome/
6.	((crush* or bywaters*) adj syndrome*).ti,ab.
7.	rhabdomyolys*.ti,ab.
8.	fractures, open/
9.	((open or compound) adj3 (fracture* or frx)).ti,ab.
10.	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/
11.	((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.
12.	((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.
13.	((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.
14.	((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.
15.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
16.	((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.
17.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
18.	hand injuries/ or *arm injuries/ or *ankle injuries/ or *foot injuries/ or *arm injuries/ or *leg injuries/
19.	*extremities/in or exp *lower extremity/in or exp *upper extremity/in
20.	((high energy or injur* or trauma* or wound*) adj6 (extremit* or limb or arm* or leg* or hand* or foot or feet or ankle)).ti,ab.
21.	or/1-20
22.	exp fractures, bone/
23.	exp arteries/in [injuries]
24.	femur/ or fibula/ or tibia/ or humerus/ or radius/ or ulna/ or wrist/ or elbow/ or shoulder/ or

	forearm/ or ankle/ or knee/ or leg/
25.	22 and (23 or 24)
26.	21 or 25
27.	(shunt* or tvs*).ti,ab.
28.	arteriovenous shunt, surgical/
29.	27 or 28
30.	26 and 29
31.	((salvag* or save* or saving or sparing or rescue* or preserv*) adj5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti.
32.	((vascular or circulat*) adj3 (control* or restor* or repair*)).ti.
33.	(revascularis* or revasculariz*).ti.
34.	(skeletal adj2 (stabilis* or stabiliz*)).ti.
35.	or/31-34
36.	26 and 35
37.	((salvag* or save* or saving or sparing or rescue* or preserv*) adj5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
38.	((vascular or circulat*) adj3 (control* or restor* or repair*)).ti,ab.
39.	Limb Salvage/
40.	(Revascularis* or revasculariz*).ti,ab.
41.	(skeletal adj2 (stabilis* or stabiliz*)).ti,ab.
42.	or/37-41
43.	26 and 42
44.	<i>Study design filters (see table notes above)</i>
45.	43 and 44
46.	30 or 36 or 45

Embase search terms

1.	((mangling or mangle* or crush* or avulsion or comminute*) adj5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
2.	traumatic amputation/
3.	comminuted fracture/
4.	((mangling or mangle* or crush* or avulsion or comminuted) and (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	crush syndrome/
6.	((crush* or bywaters*) adj syndrome*).ti,ab.
7.	rhabdomyolys*.ti,ab.
8.	avulsion injury/ or avulsion fracture/
9.	open fracture/
10.	((open or compound) adj3 (fracture* or frx)).ti,ab.
11.	fracture/
12.	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/
13.	((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.
14.	((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.

15.	((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.
16.	((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.
17.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
18.	((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.
19.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
20.	exp *limb injury/
21.	((high energy or injur* or trauma* or wound*) adj6 (extremity* or limb or arm* or leg* or hand* or foot or feet or ankle)).ti,ab.
22.	or/1-21
23.	exp fracture/
24.	exp artery injury/
25.	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/
26.	23 and (24 or 25)
27.	22 or 26
28.	arteriovenous shunt/
29.	(shunt* or tvs*).ti,ab.
30.	28 or 29
31.	27 and 30
32.	((salvag* or save* or saving or sparing or rescue* or preserv*) adj5 (extremity* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti.
33.	((vascular or circulat*) adj3 (control* or restor* or repair*)).ti.
34.	(skeletal adj2 (stabilis* or stabiliz*)).ti.
35.	(revascularis* or revasculariz*).ti.
36.	or/32-35
37.	27 and 36
38.	((salvag* or save* or saving or sparing or rescue* or preserv*) adj5 (extremity* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab.
39.	((vascular or circulat*) adj3 (control* or restor* or repair*)).ti,ab.
40.	(skeletal adj2 (stabilis* or stabiliz*)).ti,ab.
41.	limb salvage/
42.	(revascularis* or revasculariz*).ti,ab.
43.	or/38-42
44.	<i>Study design filters (see table notes above)</i>
45.	43 and 44
46.	27 and 45
47.	31 or 37 or 46

Cochrane search terms

#1.	((mangling or mangle* or crush* or avulsion or comminute*) near/5 (extremity* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)).ti,ab
#2.	MeSH descriptor: [amputation, traumatic] this term only

#3.	MeSH descriptor: [fractures, comminuted] this term only
#4.	((mangling or mangle* or crush* or avulsion or comminute*) and (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#5.	MeSH descriptor: [crush syndrome] this term only
#6.	((crush* or bywaters*) next syndrome*):ti,ab
#7.	rhabdomyolys*:ti,ab
#8.	{or #1-#7}
#9.	MeSH descriptor: [fractures, open] this term only
#10.	((open or compound) near/3 (fracture* or frx)):ti,ab
#11.	MeSH descriptor: [fractures, bone] this term only
#12.	MeSH descriptor: [ankle fractures] this term only
#13.	MeSH descriptor: [humeral fractures] this term only
#14.	MeSH descriptor: [radius fractures] explode all trees
#15.	MeSH descriptor: [shoulder fractures] this term only
#16.	MeSH descriptor: [tibial fractures] this term only
#17.	MeSH descriptor: [ulna fractures] explode all trees
#18.	MeSH descriptor: [femoral fractures] this term only
#19.	((long bone* or longbone* or limb or limbs or 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
#20.	((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
#21.	((radius or radii or ulnae or ulna or elbow* or forearm* or wrist* 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
#22.	((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
#23.	((fibula or fibulae or calf*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#24.	((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
#25.	((femur* or femora* or thigh*) near/4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)):ti,ab
#26.	MeSH descriptor: [hand injuries] this term only
#27.	MeSH descriptor: [arm injuries] this term only
#28.	MeSH descriptor: [ankle injuries] this term only
#29.	MeSH descriptor: [foot injuries] this term only
#30.	MeSH descriptor: [leg injuries] this term only
#31.	MeSH descriptor: [extremities] this term only and with qualifier(s): [injuries - in]
#32.	MeSH descriptor: [lower extremity] explode all trees and with qualifier(s): [injuries - in]
#33.	MeSH descriptor: [upper extremity] explode all trees and with qualifier(s): [injuries - in]
#34.	((high energy or injur* or trauma* or wound*) near/6 (extremit* or limb or arm* or leg* or hand* or foot or feet or ankle)):ti,ab
#35.	{or #9-#34}
#36.	MeSH descriptor: [fractures, bone] explode all trees
#37.	MeSH descriptor: [arteries] explode all trees and with qualifier(s): [injuries - in]
#38.	MeSH descriptor: [femur] this term only
#39.	MeSH descriptor: [fibula] explode all trees

#40.	MeSH descriptor: [tibia] this term only
#41.	MeSH descriptor: [humerus] this term only
#42.	MeSH descriptor: [radius] this term only
#43.	MeSH descriptor: [ulna] this term only
#44.	MeSH descriptor: [wrist] this term only
#45.	MeSH descriptor: [elbow] this term only
#46.	MeSH descriptor: [shoulder] this term only
#47.	MeSH descriptor: [forearm] this term only
#48.	MeSH descriptor: [ankle] this term only
#49.	MeSH descriptor: [knee] this term only
#50.	MeSH descriptor: [leg] this term only
#51.	{or #37-#50}
#52.	#36 and #51
#53.	#8 or #35 or #52
#54.	(shunt* or tvs*):ti,ab
#55.	MeSH descriptor: [arteriovenous shunt, surgical] this term only
#56.	((salvag* or save* or saving or sparing or rescue* or preserv*) near/5 (extremit* or limb* or arm* or leg* or hand* or foot or feet or ankle* or injur* or trauma*)):ti,ab
#57.	((vascular or circulat*) near/3 (control* or restor* or repair*)):ti,ab
#58.	MeSH descriptor: [limb salvage] this term only
#59.	(revascularis* or revasculariz*):ti,ab
#60.	(skeletal near/2 (stabilis* or stabiliz*)):ti,ab
#61.	{or #54-#60}
#62.	#53 and #61

A.4.6 Open fractures - orthoplastic approach

7. Is the presence of both an orthopaedic surgeon and plastic surgeon at the initial surgical excision and stabilisation of an open fracture clinically and cost effective?

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
Open fracture	Multidisciplinary teams including a plastic surgeon	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, open/
2.	((open or compound) adj3 (fracture* or frx)).ti,ab.
3.	or/1-2
4.	exp fractures, bone/

5.	(fracture* or frx).ti,ab.
6.	or/4-5
7.	exp surgery, plastic/
8.	((reconstruct* or plastic or aesthetic or esthetic) adj2 (surgery or surgeon* or specialist* or consultant*)).ti,ab.
9.	or/7-8
10.	exp patient care team/
11.	exp interprofessional relations/
12.	exp cooperative behavior/
13.	((interdisciplinary or multi-disciplinary or interprofessional or multi-professional) adj2 (team* or service* or approach*)).ti,ab.
14.	((health or care) adj2 team*).ti,ab.
15.	or/10-14
16.	3 and (9 or 15)
17.	6 and 9 and 15
18.	16 or 17

Embase search terms

1.	open fracture/
2.	((open or compound) adj3 (fracture* or frx)).ti,ab.
3.	1 or 2
4.	exp fracture/
5.	(fracture* or frx).ti,ab.
6.	or/4-5
7.	plastic surgery/
8.	plastic surgeon/
9.	((reconstruct* or plastic or aesthetic or esthetic) adj2 (surgery or surgeon* or specialist* or consultant*)).ti,ab.
10.	or/7-9
11.	patient care/
12.	exp cooperation/
13.	interpersonal communication/
14.	((interdisciplinary or multi-disciplinary or interprofessional or multi-professional) adj2 (team* or service* or approach*)).ti,ab.
15.	((health or care) adj2 team*).ti,ab.
16.	or/11-15
17.	3 and (10 or 16)
18.	6 and 10 and 16
19.	17 or 18

Cochrane search terms

#1.	MeSH descriptor: [fractures, open] explode all trees
#2.	((open or compound) near/3 (fracture* or frx or fx)):ti,ab
#3.	#1 or #2
#4.	MeSH descriptor: [fractures, bone] explode all trees
#5.	(fracture* or frx or fx):ti,ab
#6.	#4 or #5

#7.	MeSH descriptor: [surgery, plastic] explode all trees
#8.	((reconstruct* or plastic or aesthetic or esthetic) near/2 (surgery or surgeon* or specialist* or consultant*)):ti,ab
#9.	{or #7-#8}
#10.	MeSH descriptor: [patient care team] explode all trees
#11.	MeSH descriptor: [interprofessional relations] explode all trees
#12.	MeSH descriptor: [cooperative behavior] explode all trees
#13.	((interdisciplinary or multi-disciplinary or interprofessional or multi-professional) near/2 (team* or service* or approach*)):ti,ab
#14.	((health or care) near/2 team*):ti,ab
#15.	{or #10-#14}
#16.	#3 and (#9 or #15)
#17.	#6 and #9 and #15
#18.	#16 or #17

A.4.7 Open fractures - debridement

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

8. What is the optimal timing of initial debridement of open 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
Open fractures	Debridement	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((open or compound) adj3 (fracture* or fx)).ti,ab.
2.	fractures, open/
3.	1 or 2
4.	exp time/
5.	("six-hour-rule" or time* or timing or frequen* or rate* or constant or delay* or primary or early or immediate* or staged or "fix and flap" or "golden hour" or "golden rule" or h or hour* or day* or min* or initial* or definitive or window or interval*).ti,ab.
6.	4 or 5
7.	3 and 6

Embase search terms

1.	((open or compound) adj3 (fracture* or break* or crack* or frx or fx)).ti,ab.
2.	open fracture/
3.	1 or 2
4.	exp time/

5.	("six-hour-rule" or time* or timing or frequen* or rate* or constant or delay* or primary or early or immediate* or staged or "fix and flap" or "golden hour" or "golden rule" or h or hour* or day* or min* or initial* or definitive or window or interval*).ti,ab.
6.	4 or 5
7.	3 and 6

Cochrane search terms

#1.	MeSH descriptor: [fractures, open] explode all trees
#2.	((open or compound) adj3 (fracture* or fx)) .ti,ab.
#3.	{or #1-#2}
#4.	MeSH descriptor: [time] explode all trees
#5.	("six-hour-rule" or time* or timing or frequen* or rate* or constant or delay* or primary or early or immediate* or staged or "fix and flap" or "golden hour" or "golden rule" or h or hour* or day* or min* or initial* or definitive or window or interval*):ti,ab
#6.	{or #4-#5}

A.4.8 Open fractures – staging of fixation and timing of cover

9. Is the use of initial definitive fixation and cover more clinically and cost effective in the management of open fractures compared with staged fixation and cover?
10. What is the most clinical and cost effective time to achieve definitive soft tissue cover in open 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
Open fractures	Fixation or Surgical cover	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, open/
2.	((open or compound) adj3 (fracture* or frx)).ti,ab.
3.	1 or 2
4.	exp fracture fixation/
5.	(osteosynthes?s adj2 fracture*).ti,ab.
6.	(ilizarov adj2 (method or technique or procedur*)).ti,ab.
7.	exp external fixators/
8.	exp internal fixators/
9.	exp orthopedic fixation devices/
10.	((kirchner or k) adj2 wire*).ti,ab.
11.	((internal or external) adj2 (fixat* or device*)).ti,ab.
12.	((fixat* or osteosynthes?s or stabili?ation or stabili?er) adj2 (skeletal or fracture* or bone* or nail* or plate* or screw* or wire* or anchor* or pin* or fram*)).ti,ab.

13.	(bone adj2 (nail* or plate* or screw* or wire* or anchor* or pin* or device* or fram*)).ti,ab.
14.	((definitive or staged) adj2 fixat*).ti,ab.
15.	(intramedullary adj2 (fracture* or fixation* or nail* or osteosynthes?s)).ti,ab.
16.	osteosynthes?s.ti,ab.
17.	or/4-16
18.	reconstructive surgical procedures/
19.	exp surgical flaps/
20.	flap*.ti,ab.
21.	((early or delay* or stag* or definitive or late) adj2 cover*).ti,ab.
22.	(tissue adj2 (reconstruction or reconstructive or cover*)).ti,ab.
23.	or/18-22
24.	3 and (17 or 23)
25.	(complex* adj3 (fracture* or trauma*)).ti,ab.
26.	exp fractures, bone/su [surgery]
27.	"wounds and injuries"/su [surgery]
28.	exp extremities/su [surgery]
29.	or/25-28
30.	23 and 29
31.	24 or 30

Embase search terms

1.	open fracture/
2.	((open or compound) adj3 (fracture* or frx)).ti,ab.
3.	1 or 2
4.	exp *fracture fixation/
5.	(osteosynthes?s adj2 fracture*).ti,ab.
6.	(ilizarov adj2 (method or technique or procedur*)).ti,ab.
7.	exp *external fixator/
8.	exp *internal fixator/
9.	exp *orthopedic fixation device/
10.	*osteosynthesis/
11.	exp *surgical wire/
12.	((kirchner or k) adj2 wire*).ti,ab.
13.	((internal or external) adj2 (fixat* or device*)).ti,ab.
14.	((fixat* or osteosynthes?s or stabili?ation or stabili?er) adj2 (skeletal or fracture* or bone* or nail* or plate* or screw* or wire* or anchor* or pin* or fram*)).ti,ab.
15.	(bone adj2 (nail* or plate* or screw* or wire* or anchor* or pin* or device* or fram*)).ti,ab.
16.	((definitive or staged) adj2 fixat*).ti,ab.
17.	(intramedullary adj2 (fracture* or fixation* or nail* or osteosynthes?s)).ti,ab.
18.	osteosynthes?s.ti,ab.
19.	or/4-18
20.	plastic surgery/
21.	exp surgical flaps/
22.	flap*.ti,ab.
23.	((early or delay* or stag* or definitive or late) adj2 cover*).ti,ab.
24.	(tissue adj2 (reconstruction or reconstructive or cover*)).ti,ab.

25.	or/20-24
26.	3 and (19 or 25)
27.	(complex* adj3 (fracture* or trauma*)):ti,ab.
28.	fracture/su [surgery]
29.	wound/su [surgery]
30.	injury/su [surgery]
31.	limb/su [surgery]
32.	exp arm/su [surgery]
33.	exp leg/su [surgery]
34.	or/27-33
35.	25 and 34
36.	26 or 35

Cochrane search terms

#1.	MeSH descriptor: [fractures, open] explode all trees
#2.	((open or compound) near/3 (fracture* or frx)):ti,ab
#3.	{or #1-#2}
#4.	MeSH descriptor: [fracture fixation] explode all trees
#5.	(osteosynthes?s near/2 fracture*):ti,ab
#6.	(ilizarov near/2 (method or technique or procedur*)):ti,ab
#7.	MeSH descriptor: [external fixators] explode all trees
#8.	MeSH descriptor: [internal fixators] explode all trees
#9.	MeSH descriptor: [orthopedic fixation devices] explode all trees
#10.	((kirchner or k) near/2 wire*):ti,ab
#11.	((internal or external) near/2 (fixat* or device*)):ti,ab
#12.	((fixat* or osteosynthes?s or stabili?ation or stabili?er) near/2 (skeletal or fracture* or bone* or nail* or plate* or screw* or wire* or anchor* or pin* or fram*)):ti,ab
#13.	(bone near/2 (nail* or plate* or screw* or wire* or anchor* or pin* or device* or fram*)):ti,ab
#14.	((definitive or staged) near/2 fixat*):ti,ab
#15.	(intramedullary near/2 (fracture* or fixation* or nail* or osteosynthes?s)):ti,ab
#16.	osteosynthes?s:ti,ab
#17.	{or #4-#16}
#18.	#3 and #17
#19.	MeSH descriptor: [reconstructive surgical procedures] this term only
#20.	MeSH descriptor: [surgical flaps] explode all trees
#21.	flap*:ti,ab
#22.	((early or delay* or stag* or definitive or late) near/2 cover*):ti,ab
#23.	(tissue near/2 (reconstruction or reconstructive or cover*)):ti,ab
#24.	{or #19-#23}
#25.	(complex* near/3 (fracture* or trauma*)):ti,ab
#26.	MeSH descriptor: [fractures, bone] explode all trees and with qualifier(s): [surgery - su]
#27.	MeSH descriptor: [wounds and injuries] this term only and with qualifier(s): [surgery - su]
#28.	MeSH descriptor: [extremities] explode all trees and with qualifier(s): [surgery - su]
#29.	{or #25-#28}
#30.	#3 and (#17 or #24)
#31.	#24 and #29

#32.	#30 or #31
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A.4.9 Pelvic fractures – immediate destintation

11. Is it clinically and cost effective for patients with suspected high energy pelvic/acetabular fractures to be transferred directly to a Major Trauma Centre (MTC)?

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
Pelvic fractures	Destination	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp pelvic bones/
2.	fractures, bone/
3.	1 and 2
4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	3 or 4
6.	exp emergency service, hospital/
7.	(emergency department or "accident and emergency" or "a and e" or "a & e" or a&e).ti,ab.
8.	(trauma adj (centre* or center* or unit*)).ti,ab.
9.	((speciali* or tertiary or regional or district general or fracture*) adj2 (cent* or unit* or hospital* or facilit*)).ti,ab.
10.	transportation/ or air ambulances/ or ambulances/
11.	"transportation of patients"/
12.	ambulance diversion/
13.	or/6-12
14.	5 and 13

Embase search terms

1.	exp pelvis fracture/
2.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	or/1-2
4.	emergency ward/
5.	emergency health service/
6.	(emergency department or "accident and emergency" or "a and e" or "a & e" or a&e).ti,ab.
7.	(trauma adj (centre* or center* or unit*)).ti,ab.
8.	((speciali* or tertiary or regional or district general or fracture*) adj2 (cent* or unit* or

	hospital* or facilit*).ti,ab.
9.	"traffic and transport"/
10.	air medical transport/
11.	exp ambulance/
12.	exp patient transport/
13.	or/4-12
14.	3 and 13

Cochrane search terms

#1.	MeSH descriptor: [pelvic bones] explode all trees
#2.	MeSH descriptor: [fractures, bone] this term only
#3.	#1 and #2
#4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) near/3 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#5.	#3 or #4
#6.	MeSH descriptor: [emergency service, hospital] explode all trees
#7.	(emergency department or "accident and emergency" or "a and e" or "a & e" or a&e):ti,ab
#8.	(trauma next (centre* or center* or unit*)):ti,ab
#9.	((speciali* or tertiary or regional or district general or fracture*) near/2 (cent* or unit* or hospital* or facilit*)):ti,ab
#10.	MeSH descriptor: [transportation] this term only
#11.	MeSH descriptor: [ambulances] explode all trees
#12.	MeSH descriptor: [transportation of patients] this term only
#13.	MeSH descriptor: [ambulance diversion] this term only
#14.	{or #6-#13}
#15.	#5 and #14

A.4.10 Pelvic fractures - transfer to specialist services

12. What is the most clinically and cost effective timing for transferring patients with pelvic fractures (including acetabular fractures) to tertiary/specialist services?

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
Pelvic fractures	Transfer or referral to specialist services	n/a	n/a	See Table 1 Date of last search: 14/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp pelvic bones/
2.	fractures, bone/

3.	1 and 2
4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	3 or 4
6.	patient transfer/
7.	exp transportation of patients/
8.	"referral and consultation"/
9.	(refer or refers or referral or referrals or referring).ti,ab.
10.	((mov* or transfer* or transport* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix*) adj5 (unit* or center* or centre* or service* or specialist* or expert* or tertiary)).ti,ab.
11.	((prompt or hour* or day* or week* or rapid or within or early or earlier or late* or time* or timing or delay*) adj5 (mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix* or therap*)).ti,ab.
12.	or/6-11
13.	5 and 12

Embase search terms

1.	exp *pelvis fracture/
2.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	or/1-2
4.	exp *patient transport/
5.	*patient referral/
6.	(refer or refers or referral or referrals or referring).ti,ab.
7.	((mov* or transfer* or transport* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix*) adj5 (unit* or center* or centre* or service* or specialist* or expert* or tertiary)).ti,ab.
8.	((prompt or hour* or day* or week* or rapid or within or early or earlier or late* or time* or timing or delay*) adj5 (mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix* or therap*)).ti,ab.
9.	or/4-9
10.	3 and 9

Cochrane search terms

#1.	[mh "pelvic bones"]
#2.	[mh ^"fractures, bone"]
#3.	#1 and #2
#4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) near/3 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#5.	#3 or #4
#6.	[mh "patient transfer"]
#7.	[mh "transportation of patients"]
#8.	[mh "referral and consultation"]
#9.	(refer or refers or referral or referrals or referring):ti,ab
#10.	((mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix*)

	near/5 (unit* or center* or centre* or service* or specialist* or expert*)):ti,ab
#11.	((prompt or hour* or rapid or within or early or earlier or late* or time* or timing or delay*) near/5 (mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix* or therap*)):ti,ab
#12.	{or #6-#11}
#13.	#5 and #12

A.4.11 Pelvic fractures – pelvic binders

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

13. What is the most clinically and cost effective duration for pelvic binder use?

14. Which are the best diagnostic risk tools to predict the presence of a pelvic fracture at the pre-hospital stage?

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
Pelvic fractures	Pelvic binders	n/a	n/a	See Table 1 Date of last search: 15/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp pelvic bones/
2.	fractures, bone/
3.	1 and 2
4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	3 or 4
6.	(binding* or binder* or pccd or inflatable garment* or niecs or sheet* or c clamp*).ti,ab.
7.	((circumferen* or external or compression) adj5 (device* or belt* or sling*)).ti,ab.
8.	(brim or pelvigrip or pelvicbinder or t pod or t pod).ti,ab.
9.	(mast or pasg or pneumatic anti-shock garment*).ti,ab.
10.	(sam adj3 sling*).ti,ab.
11.	or/6-10
12.	5 and 11

Embase search terms

1.	exp pelvis fracture/
2.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	or/1-2

4.	(binding* or binder* or pccd or inflatable garment* or niecs or sheet* or c clamp*).ti,ab.
5.	((circumferen* or external or compression) adj5 (device* or belt* or sling*)).ti,ab.
6.	(brim or pelvigrip or pelvicbinder or t pod or tpod).ti,ab.
7.	(mast or pasg or pneumatic anti-shock garment*).ti,ab.
8.	(sam adj3 sling*).ti,ab.
9.	or/4-8
10.	3 and 9

Cochrane search terms

#1.	[mh "pelvic bones"]
#2.	[mh ^"fractures, bone"]
#3.	#1 and #2
#4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) near/3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab
#5.	#3 or #4
#6.	(binding* or binder* or pccd or inflatable garment* or niecs or sheet* or c clamp*).ti,ab
#7.	((circumferen* or external or compression) near/5 (device* or belt* or sling*)).ti,ab
#8.	(brim or pelvigrip or pelvicbinder or t pod or tpod).ti,ab
#9.	(mast or pasg or pneumatic anti-shock garment*).ti,ab
#10.	(sam near/3 sling*).ti,ab
#11.	{or #6-#10}
#12.	#5 and #11

A.4.12 Pelvic fractures - log roll

15.What is the safest strategy and timing for log rolling patients with suspected or known pelvic 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
Pelvic fractures	Log roll	n/a	n/a	See Table 1 Date of last search: 14/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp pelvic bones/
2.	fractures, bone/
3.	1 and 2
4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.

5.	3 or 4
6.	"moving and lifting patients"/
7.	patient positioning/
8.	"transportation of patients"/
9.	immobilization/
10.	(log roll* or logroll*).ti,ab.
11.	or/6-10
12.	5 and 11

Embase search terms

1.	exp pelvis fracture/
2.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	or/1-2
4.	*patient positioning/
5.	*patient transport/
6.	*immobilization/
7.	(log roll* or logroll*).ti,ab.
8.	or/4-7
9.	3 and 8

Cochrane search terms

#1.	[mh "pelvic bones"]
#2.	[mh ^"fractures, bone"]
#3.	#1 and #2
#4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) near/3 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#5.	#3 or #4
#6.	MeSH descriptor: [moving and lifting patients] this term only
#7.	MeSH descriptor: [patient positioning] this term only
#8.	MeSH descriptor: [transportation of patients] this term only
#9.	MeSH descriptor: [immobilization] this term only
#10.	log next roll*:ti,ab
#11.	logroll*:ti,ab
#12.	{or #6-#11}
#13.	#5 and #12

A.4.13 Pelvic fractures - imaging

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

16.Does a cystourethrogram lead to better outcomes than CT in patients with confirmed or suspected pelvic fracture and suspected bladder and urethral injuries?

17.What is the diagnostic accuracy of cystourethrograms and CT for assessment of bladder injury

18.What is the most clinically and cost effective imaging modality for assessment of high energy suspected pelvic/acetabular fractures at the initial presentation?

19. What is the diagnostic accuracy of CT, CT+X-ray or X-ray for assessment of high energy pelvic/acetabular fractures for (1) existence of fractures and (2) classification of 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
Pelvic fractures with urinary tract injuries	Imaging techniques	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp pelvic bones/
2.	fractures, bone/
3.	1 and 2
4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx or injur* or trauma*)).ti,ab.
5.	3 or 4
6.	"wounds and injuries"/
7.	abdominal injuries/
8.	urinary tract/ or urethra/ or urinary bladder/
9.	(6 or 7) and 8
10.	urinary bladder/in [injuries]
11.	urethra/in [injuries]
12.	urinary tract/in [injuries]
13.	((urinary tract or bladder or urethra*) adj4 (injur* or wound* or trauma*)).ti,ab.
14.	or/9-13
15.	5 or 14
16.	radiography/ or radiography, abdominal/ or tomography, x-ray/ or tomography, x-ray computed/
17.	urography/
18.	(compute* adj2 tomograph*).ti,ab.
19.	((ct or cat) adj scan*).ti,ab.
20.	(urograph* or urethrogram* or cystourethrogram* or cysto-urethrogram* or pyelogra*).ti,ab.
21.	(x ray* or xray* or mdct* or ct or radiograph*).ti,ab.
22.	or/16-21
23.	15 and 22

Embase search terms

1.	exp pelvis fracture/
2.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx or injur* or trauma*)).ti,ab.

3.	1 or 2
4.	pelvis injury/
5.	urinary tract injury/ or bladder injury/ or bladder rupture/ or urethra injury/
6.	((urinary tract or bladder or urethra*) adj4 (injur* or wound* or trauma*)):ti,ab.
7.	or/4-6
8.	3 or 7
9.	exp *radiodiagnosis/
10.	(compute* adj2 tomograph*).ti,ab.
11.	((ct or cat) adj scan*).ti,ab.
12.	(urograph* or urethrogram* or cystourethrogram* or cysto-urethrogram* or pyelogra*).ti,ab.
13.	(x ray* or xray* or mdct* or ct or radiograph*).ti,ab.
14.	pelvis radiography/
15.	or/9-14
16.	8 and 15

Cochrane search terms

#1.	[mh "pelvic bones"]
#2.	[mh ^"fractures, bone"]
#3.	#1 and #2
#4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) near/3 (fracture* or break or breaks or broken or crack* or frx or injur* or trauma*)):ti,ab
#5.	#3 or #4
#6.	MeSH descriptor: [wounds and injuries] this term only
#7.	MeSH descriptor: [abdominal injuries] this term only
#8.	#6 or #7
#9.	MeSH descriptor: [urinary tract] this term only
#10.	MeSH descriptor: [urethra] this term only
#11.	MeSH descriptor: [urinary bladder] this term only
#12.	#9 or #10 or #11
#13.	#8 and #12
#14.	((urinary tract or bladder or urethra*) near/4 (injur* or wound* or trauma*)) .ti,ab
#15.	#5 or #13 or #14
#16.	[mh ^radiography]
#17.	[mh ^"radiography, abdominal"]
#18.	[mh ^"tomography, x-ray"]
#19.	[mh ^"tomography, x-ray computed"]
#20.	[mh ^urography]
#21.	(compute* near/2 tomograph*):ti,ab
#22.	((ct or cat) next scan*):ti,ab
#23.	(urograph* or urethrogram* or cystourethrogram* or cysto-urethrogram* or pyelogra*):ti,ab
#24.	(x ray* or xray* or mdct* or ct or radiograph*):ti,ab
#25.	{or #16-#24}
#26.	#15 and #25

A.4.14 Pelvic fractures - control of pelvic haemorrhage

20. What is the most clinically and cost effective invasive technique for control of bleeding in pelvic ring 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
Pelvic fractures	Methods for controlling pelvic haemorrhage	n/a	n/a	See Table 1 Date of last search: 14/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp pelvic bones/
2.	fractures, bone/
3.	1 and 2
4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
5.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (bleed* or haemorrhag* or hemorrhag* or blood* or exsanguinat*)).ti,ab.
6.	or/3-5
7.	external fixators/
8.	surgical instruments/
9.	clamp*.ti,ab.
10.	external* fix*.ti,ab.
11.	pack*.ti,ab.
12.	embolization, therapeutic/
13.	(embolization or embolisation).ti,ab.
14.	radiology, interventional/
15.	radiography, interventional/
16.	((therapeutic* or vascular or surgical) adj3 radiolog*).ti,ab.
17.	(interventional adj3 (radiolog* or radiogra* or therap* or treatment*)).ti,ab.
18.	or/7-17
19.	6 and 18

Embase search terms

1.	exp pelvis fracture/
2.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (fracture* or break or breaks or broken or crack* or frx)).ti,ab.
3.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) adj3 (bleed* or haemorrhag* or

	hemorrhag* or blood* or exsanguinat*)):ti,ab.
4.	or/1-3
5.	clamp*.ti,ab.
6.	external* fix*.ti,ab.
7.	pack*.ti,ab.
8.	(embolization or embolisation).ti,ab.
9.	((therapeutic* or vascular or surgical) adj3 radiolog*).ti,ab.
10.	(interventional adj3 (radiolog* or radiogra* or therap* or treatment*)):ti,ab.
11.	exp clamp/
12.	surgical equipment/
13.	exp external fixator/
14.	fracture external fixation/
15.	exp artificial embolism/
16.	exp interventional radiology/
17.	or/5-16
18.	4 and 17

Cochrane search terms

#1.	[mh "pelvic bones"]
#2.	[mh ^"fractures, bone"]
#3.	#1 and #2
#4.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) near/3 (fracture* or break or breaks or broken or crack* or frx)):ti,ab
#5.	((pelvi* or ilium or ischium or pubis or pubic or hip bone or sacrum or coccyx or innominate or coxal or duverney or iliac wing or acetabul* or cotyloid) near/3 (bleed* or haemorrhag* or hemorrhag* or blood* or exsanguinat*)):ti,ab
#6.	#3 or #4 or #5
#7.	[mh "surgical instruments"]
#8.	clamp*:ti,ab,kw
#9.	external* fix*:ti,ab,kw
#10.	pack*:ti,ab,kw
#11.	(embolization or embolisation):ti,ab,kw
#12.	((therapeutic* or vascular or surgical) near/3 radiolog*):ti,ab,kw
#13.	(interventional near/3 (radiolog* or radiogra* or therap* or treatment*)):ti,ab,kw
#14.	{or #7-#13}
#15.	#6 and #14

A.4.15 Pilon fractures – timing of transfer for specialist care

21. Is it clinically and cost effective to transfer people with a pilon fracture (equivalent in children: McFarlane fracture) to a specialist centre prior to first surgical procedure?

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
McFarlane or pilon fractures	Transfer or referral to specialist	n/a	n/a	See Table 1 Date of last

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
	services			search: 14/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	tibial fractures/ and (distal or hammer or macfarland or mcfarland).ti,ab.
2.	ankle fractures/ and (distal or hammer or macfarland or mcfarland).ti,ab.
3.	ankle/ and (distal or hammer or macfarland or mcfarland).ti,ab.
4.	fibula/ and (distal or hammer or macfarland or mcfarland).ti,ab.
5.	tibia/ and (distal or hammer or macfarland or mcfarland).ti,ab.
6.	(p?lon or plafond).ti,ab.
7.	((hammer or macfarland or mcfarland or distal tibia* or distal tibia* or talus or distal femur or distal fibula* or distal femoral or triplane or tillaux or growth plate or physis) adj3 (fracture* or break* or broken or crack* or frx or fx)).ti,ab.
8.	or/1-7
9.	patient transfer/
10.	transfer*.ti,ab.
11.	exp transportation of patients/
12.	"referral and consultation"/
13.	(refer or refers or referral or referrals or referring).ti,ab.
14.	((mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix*) adj8 (unit* or center* or centre* or service* or specialist* or expert*)).ti,ab.
15.	((prompt or hour* or rapid or within or early or earlier or late* or time* or timing or delay*) adj8 (mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix* or therap*)).ti,ab.
16.	definitive.ti,ab.
17.	((stage* or staging) adj3 (approach* or manag* or treat* or surg* or operat* or fix* or therap*)).ti,ab.
18.	or/9-17
19.	8 and 18

Embase search terms

1.	*tibia fracture/
2.	exp *ankle fracture/
3.	*distal tibia fracture/
4.	exp *tibia/
5.	*fibula/
6.	*fibula fracture/
7.	*ankle/
8.	(distal or hammer or macfarland or mcfarland).ti,ab.
9.	or/1-7
10.	8 and 9
11.	(p?lon or plafond).ti,ab.

12.	((hammer or macfarland or mcfarland or distal tibia* or distal tibula* or talus or distal femur or distal fibula* or distal femoral or triplane or tillaux or growth plate or physis) adj3 (fracture* or break* or broken or crack* or FRX or fx)).ti,ab.
13.	or/10-12
14.	exp *patient transport/
15.	*patient referral/
16.	transfer*.ti,ab.
17.	(refer or refers or referral or referrals or referring).ti,ab.
18.	((mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix*) adj8 (unit* or center* or centre* or service* or specialist* or expert*)).ti,ab.
19.	((prompt or hour* or rapid or within or early or earlier or late* or time* or timing or delay*) adj8 (mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix* or therap*)).ti,ab.
20.	definitive.ti,ab.
21.	((stage* or staging) adj3 (approach* or manag* or treat* or surg* or operat* or fix* or therap*)).ti,ab.
22.	or/14-21
23.	13 and 22

Cochrane search terms

#1.	[mh "tibial fractures"] and (distal or hammer or macfarland or mcfarland):ti,ab
#2.	[mh "ankle fractures"] and (distal or hammer or macfarland or mcfarland):ti,ab
#3.	[mh ankle] and (distal or hammer or macfarland or mcfarland):ti,ab
#4.	[mh fibula] and (distal or hammer or macfarland or mcfarland):ti,ab
#5.	[mh tibia] and (distal or hammer or macfarland or mcfarland):ti,ab
#6.	(p?lon or plafond):ti,ab
#7.	((hammer or macfarland or mcfarland or distal tibia* or distal tibula* or talus or distal femur or distal fibula* or distal femoral or triplane or tillaux or growth plate or physis) near/3 (fracture* or break* or broken or crack* or frx or fx)):ti,ab
#8.	{or #1-#7}
#9.	[mh "patient transfer"]
#10.	transfer*:ti,ab
#11.	[mh "transportation of patients"]
#12.	[mh "referral and consultation"]
#13.	(refer or refers or referral or referrals or referring):ti,ab
#14.	((mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix*) near/8 (unit* or center* or centre* or service* or specialist* or expert*)):ti,ab
#15.	((prompt or hour* or rapid or within or early or earlier or late* or time* or timing or delay*) near/8 (mov* or transfer* or sent or send* or refer* or manag* or treat* or surg* or operat* or fix* or therap*)):ti,ab
#16.	definitive:ti,ab
#17.	((stage* or staging) near/3 (approach* or manag* or treat* or surg* or operat* or fix* or therap*)):ti,ab
#18.	{or #9-#17}
#19.	#8 and #18

A.4.16 Pilon fractures – staging and fixation

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

22. Are fine wire external fixators more clinically and cost effective for managing pilon fractures than internal fixation with plates and screws?

23. What is the most clinically and cost effective strategy in the surgical management of pilon 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
McFarlane or pilon fractures	Fixation and stabilisation	n/a	n/a	See Table 1 Date of last search: 14/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	tibial fractures/ and (distal or hammer or macfarland or mcfarland).ti,ab.
2.	ankle fractures/ and (distal or hammer or macfarland or mcfarland).ti,ab.
3.	ankle/ and (distal or hammer or macfarland or mcfarland).ti,ab.
4.	fibula/ and (distal or hammer or macfarland or mcfarland).ti,ab.
5.	tibia/ and (distal or hammer or macfarland or mcfarland).ti,ab.
6.	(p?lon or plafond).ti,ab.
7.	((hammer or macfarland or mcfarland or distal tibia* or distal tibia* or talus or distal femur or distal fibula* or distal femoral or triplane or tillaux or growth plate or physis) adj3 (fracture* or break* or broken or crack* or frx)).ti,ab.
8.	or/1-7
9.	orthopedic fixation devices/ or bone nails/ or bone plates/ or bone screws/ or bone wires/ or casts, surgical/ or external fixators/ or internal fixators/
10.	ilizarov technique/
11.	((external or internal) adj3 (device* or frame* or scaffold*)).ti,ab.
12.	(screw* or plate* or plating or wire*).ti,ab.
13.	(ilizarov* or trulock or orthofix).ti,ab.
14.	((taylor or spatial) adj2 frame).ti,ab.
15.	fixat*.ti,ab.
16.	fracture fixation/
17.	(stabilis* or stabiliz* or definitiv* or cast*).ti,ab.
18.	or/9-17
19.	8 and 18

Embase search terms

1.	*tibia fracture/
2.	exp *ankle fracture/
3.	*distal tibia fracture/
4.	exp *tibia/
5.	*fibula/

6.	*fibula fracture/
7.	*ankle/
8.	or/1-7
9.	(distal or hammer or macfarland or mcfarland).ti,ab.
10.	8 and 9
11.	(p?lon or plafond).ti,ab.
12.	((hammer or macfarland or mcfarland or distal tibia* or distal tibula* or talus or distal femur or distal fibula* or distal femoral or triplane or tillaux or growth plate or physis) adj3 (fracture* or break* or broken or crack* or frx)).ti,ab.
13.	or/10-12
14.	*orthopedic fixation device/
15.	*bone nail/
16.	*bone plate/
17.	*bone wire/ or *kirschner wire/
18.	*bone screw/
19.	*plaster cast/
20.	*external fixator/ or *ilizarov external fixator/
21.	*internal fixator/
22.	*ilizarov technique/
23.	*fracture external fixation/
24.	*fracture fixation/
25.	((external or internal) adj3 (device* or frame* or scaffold*)).ti,ab.
26.	(screw* or plate* or plating or wire*).ti,ab.
27.	wire*.ti,ab.
28.	(ilizarov* or trulock or orthofix).ti,ab.
29.	((taylor or spatial) adj2 frame).ti,ab.
30.	(stabilis* or stabiliz* or definitiv* or cast*).ti,ab.
31.	fixat*.ti,ab.
32.	*fracture fixation/
33.	or/14-32
34.	13 and 33

Cochrane search terms

#1.	[mh "tibial fractures"] and (distal or hammer or macfarland or mcfarland):ti,ab
#2.	[mh "ankle fractures"] and (distal or hammer or macfarland or mcfarland):ti,ab
#3.	[mh ankle] and (distal or hammer or macfarland or mcfarland):ti,ab
#4.	[mh fibula] and (distal or hammer or macfarland or mcfarland):ti,ab
#5.	[mh tibia] and (distal or hammer or macfarland or mcfarland):ti,ab
#6.	(p?lon or plafond):ti,ab
#7.	((hammer or macfarland or mcfarland or distal tibia* or distal tibula* or talus or distal femur or distal fibula* or distal femoral or triplane or tillaux or growth plate or physis) near/3 (fracture* or break* or broken or crack* or frx)):ti,ab
#8.	{or #1-#7}
#9.	[mh "orthopedic fixation devices"]
#10.	[mh "bone nails"]
#11.	[mh "bone wires"]

#12.	[mh "bone screws"]
#13.	[mh "bone plates"]
#14.	[mh "casts, surgical"]
#15.	[mh "internal fixators"]
#16.	[mh "external fixators"]
#17.	[mh "fracture fixation"]
#18.	[mh "ilizarov technique"]
#19.	((external or internal) near/3 (device* or frame* or scaffold*)):ti,ab
#20.	(screw* or plate* or plating or wire*):ti,ab
#21.	(ilizarov* or trulock or orthofix):ti,ab
#22.	((taylor or spatial) near/2 frame):ti,ab
#23.	fixat*:ti,ab
#24.	(stabilis* or stabiliz* or definitiv* or cast*):ti,ab
#25.	{or #9-#24}
#26.	#8 and #25

A.4.17 Identifying vascular compromise

24. What is the most accurate method for diagnosing an arterial injury in a person requiring intervention in people with upper and lower limb 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
Fractures with vascular injury	Diagnostic technique	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	vascular system injuries/
2.	((vascular* or arter*) adj2 (trauma* or compromis* or injur* or wound* or lacerat* or bleed* or haemorrhag* or hemorrhage* or puncture* or contusion* or crush*)):ti,ab.
3.	or/1-2
4.	fracture*.ti,ab.
5.	exp fractures, bone/
6.	4 or 5
7.	3 and 6
8.	limit 7 to english language
9.	exp angiography/
10.	exp ultrasonography, doppler/
11.	exp radiography/
12.	ra.fs.

13.	x-ray.ti,ab.
14.	exp tomography, x-ray computed/
15.	((ct or cat) adj2 (imag* or scan* or diagnos*)).ti,ab.
16.	(compute* adj3 tomogra*).ti,ab.
17.	ankle brachial index/
18.	(abpi or abi or ((ankle or toe) adj2 brachial)).ti,ab.
19.	((ankle or brachial or posterior or anterior or tibial) adj4 pressure*).ti,ab.
20.	(angiogra* or doppler* or imag* or ultrasound* or ultrasonogra* or radiogra*).ti,ab.
21.	exp physical examination/
22.	((clinical or physical or clinician* or physician*) adj (exam* or assess*)).ti,ab.
23.	or/9-22
24.	8 and 23

Embase search terms

1.	exp *blood vessel injury/
2.	((vascular* or arter*) adj2 (trauma* or compromis* or injur* or wound* or lacerat* or bleed* or haemorrhag* or hemorrhage* or puncture* or contusion* or crush*)).ti,ab.
3.	or/1-2
4.	fracture*.ti,ab.
5.	exp *fracture/
6.	or/4-5
7.	3 and 6
8.	limit 7 to english language
9.	exp *angiography/
10.	*doppler echography/
11.	exp *radiography/
12.	exp *computer assisted tomography/
13.	x-ray.ti,ab.
14.	((ct or cat) adj2 (imag* or scan* or diagnos*)).ti,ab.
15.	(compute* adj3 tomogra*).ti,ab.
16.	*ankle brachial index/
17.	(abpi or abi or ((ankle or toe) adj2 brachial)).ti,ab.
18.	((ankle or brachial or posterior or anterior or tibial) adj4 pressure*).ti,ab.
19.	(angiogra* or doppler* or imag* or ultrasound* or ultrasonogra* or radiogra*).ti,ab.
20.	physical examination/
21.	((clinical or physical or clinician* or physician*) adj (exam* or assess*)).ti,ab.
22.	or/9-21
23.	8 and 22

Cochrane search terms

#1.	((vascular* or arter*) near/2 (trauma* or compromis* or injur* or wound* or lacerat* or bleed* or haemorrhag* or hemorrhage* or puncture* or contusion* or crush*)):ti,ab,kw
#2.	MeSH descriptor: [vascular system injuries] this term only
#3.	#1 or #2
#4.	fracture*:ti,ab,kw
#5.	MeSH descriptor: [fractures, bone] explode all trees

#6.	#4 or #5
#7.	#3 and #6
#8.	x-ray:ti,ab,kw
#9.	(compute* near/3 tomogra*):ti,ab,kw
#10.	(abpi or abi or ((ankle or toe) near/2 brachial)):ti,ab,kw
#11.	((ankle or brachial or posterior or anterior or tibial) near/4 pressure*):ti,ab,kw
#12.	(angiogra* or doppler* or imag* or ultrasound* or ultrasonogra* or radiogra*):ti,ab,kw
#13.	((clinical or physical or clinician* or physician*) near (exam* or assess*)):ti,ab,kw
#14.	{or #8-#13}
#15.	#7 and #14

A.4.18 Compartment syndrome

25. What is the most clinically and cost effective method of identifying compartment syndrome in patients with limb fractures?

26. What is the most accurate method of identifying compartment syndrome in patients with limb 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
Compartment syndrome	n/a	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	exp compartment syndromes/
2.	((intercompartment* or intracompartment* or compartment*) adj2 (syndrome* or pressure*)):ti,ab.
3.	or/1-2
4.	fracture*.ti,ab.
5.	exp fractures, bone/
6.	or/4-5
7.	3 and 6

Embase search terms

1.	*compartment syndrome/
2.	((intercompartment* or intracompartment* or compartment*) adj2 (syndrome* or pressure*)):ti,ab.
3.	or/1-2
4.	fracture*.ti,ab.
5.	exp fracture/
6.	or/4-5

7.	3 and 6
----	---------

Cochrane search terms

#1.	((intercompartment* or intracompartment* or compartment*) near/2 (syndrome* or pressure*)):ti,ab,kw
#2.	fracture*:ti,ab,kw
#3.	#1 and #2

A.4.19 Splinting for lone bone fractures

27. What is the most clinically and cost effective strategy for splinting of lower limb long bone fractures in the pre-hospital setting?

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 (open or closed)	Splints	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	fractures, open/
2.	((open or compound or complex) adj3 (fracture* or frx)).ti,ab.
3.	or/1-2
4.	((long bone* or longbone* or lower limb* or leg*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
5.	tibial fractures/
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.	femoral fractures/ or femoral neck fractures/
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.	((fibula or fibulae or calf*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
10.	or/3-9
11.	femur/ or fibula/ or tibia/ or leg/ or lower extremity/
12.	fractures, bone/
13.	11 and 12
14.	10 or 13
15.	splints/
16.	splint*.ti,ab.
17.	or/15-16
18.	14 and 17

Embase search terms

1.	*open fracture/
2.	((open or compound or complex) adj3 (fracture* or frx)).ti,ab.
3.	or/1-2
4.	((long bone* or longbone* or lower limb* or leg*) 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.	*tibia fracture/ or *tibia shaft fracture/ or *distal tibia fracture/ or *proximal tibia fracture/
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.	*fibula fracture/
9.	*femur fracture/ or exp *leg fracture/
10.	((femur* or femora* or thigh*) adj4 (fracture* or break or breaks or broken or crack* or frx or trauma or injur*)).ti,ab.
11.	or/3-10
12.	*femur/ or *fibula/ or *tibia/ or *leg/ or *lower leg/
13.	exp *fracture/
14.	12 and 13
15.	11 or 14
16.	exp *splint/
17.	splint*.ti,ab.
18.	or/16-17
19.	15 and 18

Cochrane search terms

#1.	MeSH descriptor: [fractures, open] this term only
#2.	((open or compound or complex) next/3 (fracture* or break* or crack* or frx or fx)).ti,ab
#3.	#1 or #2
#4.	((long bone* or longbone* or lower limb* or leg*) next/4 (fracture* or break or breaks or broken or crack* or frx or fx or trauma or injur*)).ti,ab
#5.	MeSH descriptor: [tibial fractures] this term only
#6.	((tibia or tibiae or tibias or shin* or shank*) next/4 (fracture* or break or breaks or broken or crack* or frx or fx or trauma or injur*)).ti,ab
#7.	MeSH descriptor: [femoral fractures] this term only
#8.	MeSH descriptor: [femoral neck fractures] this term only
#9.	((femur* or femora* or thigh*) next/4 (fracture* or break or breaks or broken or crack* or frx or fx or trauma or injur*)).ti,ab
#10.	((fibula or fibulae or calf*) next/4 (fracture* or break or breaks or broken or crack* or frx or fx or trauma or injur*)).ti,ab
#11.	{or #3-#10}
#12.	MeSH descriptor: [fibula] this term only
#13.	MeSH descriptor: [fractures, bone] this term only
#14.	#12 and #13
#15.	#11 or #14
#16.	MeSH descriptor: [splints] this term only
#17.	splint*.ti,ab

#18.	#16 or #17
#19.	#15 and #18

A.4.20 Hip dislocation

28. Does hip dislocation require immediate open reduction in the event of a failed closed reduction?

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
Hip dislocation	n/a	n/a	n/a	See Table 1 Date of last search: 14/05/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	((hip* or femur* or femoral* or trochant* or pertrochant* or intertrochant* or acetabul*) adj4 (dislocat* or displace*)):ti,ab.
2.	hip dislocation/
3.	or/1-2
4.	(reduce* or reduction* or relocat*):ti,ab.
5.	(congenital or dysplasia):ti,ab.
6.	4 not 5
7.	3 and 6

Embase search terms

1.	((hip* or femur* or femoral* or trochant* or pertrochant* or intertrochant* or acetabul*) adj4 (dislocat* or displace*)):ti,ab.
2.	*hip dislocation/
3.	or/1-2
4.	(reduce* or reduction* or relocat*):ti,ab.
5.	(congenital or dysplasia):ti,ab.
6.	4 not 5
7.	3 and 6

Cochrane search terms

#1.	((hip* or femur* or femoral* or trochant* or pertrochant* or intertrochant* or acetabul*) near/4 (dislocat* or displace*)):ti,ab
#2.	MeSH descriptor: [hip dislocation] explode all trees
#3.	#1 or #2
#4.	(reduce* or reduction* or relocat*):ti,ab
#5.	(congenital or dysplasia):ti,ab
#6.	#4 not #5
#7.	#3 and #6

A.4.21 Full body imaging

29. Is it clinically and cost effective to extend full-body CT to the feet in patients with polytrauma and suspected lower limb injury?

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
Major trauma	Full body imaging techniques	n/a	n/a	See Table 1 Date of last search: 25/03/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	(trauma* or polytrauma*).ti,ab.
2.	((serious* or severe* or major or life threaten*) adj3 (accident* or injur* or fall*)).ti,ab.
3.	multiple trauma/
4.	wounds, gunshot/ or wounds, stab/ or accidents, traffic/ or accidental falls/ or blast injuries/ or accidents, aviation/
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*)).ti,ab.
6.	(mvas or mva or rtas or rta).ti,ab.
7.	(stabbed or stabbing or stab or gunshot* or gun or gunfire or firearm* or bullet* or knife* or knives or dagger).ti,ab.
8.	or/1-7
9.	exp tomography, x-ray computed/
10.	(cat adj (scan* or imag*)).ti,ab.
11.	(compute* adj2 tomograph*).ti,ab.
12.	(mdct* or ct).ti,ab.
13.	or/9-12
14.	((full or whole or total or entire or complete or head to toe) adj2 (body or bodies or patient* or casual*)).ti,ab.
15.	pan.ti,ab.
16.	or/14-15
17.	13 and 16
18.	whole body imaging/
19.	fbct.ti,ab.
20.	((full or whole or total or pan or head to toe or entire or complete) adj6 (mdct* or ct or tomograph* or cat scan*)).ti,ab.
21.	or/18-20
22.	17 or 21
23.	8 and 22

Embase search terms

1.	(trauma* or polytrauma*).ti,ab.
2.	((serious* or severe* or major or life threaten*) adj3 (accident* or injur* or fall*)).ti,ab.
3.	multiple trauma/
4.	gunshot injury/ or stab wound/ or traffic accident/ or falling/ or blast injury/ or aircraft accident/
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*)).ti,ab.
6.	(mvas or mva or rtas or rta).ti,ab.
7.	(stabbed or stabbing or stab or gunshot* or gun or gunfire or firearm* or bullet* or knife* or knives or dagger).ti,ab.
8.	or/1-7
9.	exp computer assisted tomography/
10.	(cat adj (scan* or imag*)).ti,ab.
11.	(compute* adj2 tomograph*).ti,ab.
12.	(mdct* or ct).ti,ab.
13.	or/9-12
14.	((full or whole or total or entire or complete or head to toe) adj2 (body or bodies or patient* or casual*)).ti,ab.
15.	pan.ti,ab.
16.	or/14-15
17.	13 and 16
18.	whole body imaging/
19.	fbct.ti,ab.
20.	((full or whole or total or pan or head to toe or entire or complete) adj6 (mdct* or ct or tomograph* or cat scan*)).ti,ab.
21.	or/18-20
22.	17 or 21
23.	8 and 22

Cochrane search terms

#1.	MeSH descriptor: [multiple trauma] this term only
#2.	(trauma* or polytrauma*).ti,ab
#3.	((serious* or severe* or major) near/3 (accident* or injur* or fall*)).ti,ab
#4.	MeSH descriptor: [wounds, gunshot] this term only
#5.	MeSH descriptor: [wounds, stab] this term only
#6.	MeSH descriptor: [accidents, traffic] this term only
#7.	MeSH descriptor: [accidental falls] this term only
#8.	MeSH descriptor: [blast injuries] this term only
#9.	MeSH descriptor: [accidents, aviation] this term only
#10.	((motor* or motorbike* or vehicle* or road or traffic or car or cars or cycling or bicycle* or automobile* or bike*) near/3 (accident* or crash* or collision* or smash*)).ti,ab
#11.	(mvas or mva or rtas or rta).ti,ab
#12.	(stabbed or stabbing or stab or gunshot or gun or gunfire or firearm* or bullet or knife* or knives or dagger or shot).ti,ab
#13.	{or #1-#12}
#14.	MeSH descriptor: [tomography, x-ray computed] explode all trees

#15.	(cat near/2 (scan* or imag*)):ti,ab
#16.	(compute* near/2 tomograph*):ti,ab
#17.	(mdct* or ct):ti,ab
#18.	{or #14-#17}
#19.	((full or whole or total or entire or complete) near/2 (body or bodies or patient* or casual*)):ti,ab
#20.	pan:ti,ab
#21.	{or #19-#20}
#22.	#18 and #21
#23.	MeSH descriptor: [whole body imaging] this term only
#24.	fbct:ti,ab
#25.	((full or whole or total or pan or entire or complete) near (mdct* or ct or tomograph* or cat scan*)):ti,ab
#26.	{or #23-#25}
#27.	#22 or #26
#28.	#13 and #27

A.4.22 Documentation – open wound fracture photographs

30. For patients with open fractures, is documentation that includes wound photographs more clinically and cost effective than documentation without inclusion of wound photographs?

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
Open fractures	Documentation of wound photographs	n/a	n/a	See Table 1 Date of last search: 13/04/2015 English only Exclusion filter applied in Medline and Embase

Medline search terms

1.	(photo or photos or photograph* or polaroid*).ti,ab.
2.	photography/
3.	or/1-2
4.	fractures, open/
5.	((open or compound) adj3 (fracture* or frx)).ti,ab.
6.	or/4-5
7.	3 and 6

Embase search terms

1.	(photo or photos or photograph* or polaroid*).ti,ab.
2.	photography/
3.	medical photography/

4.	or/1-3
5.	open fracture/
6.	((open or compound) adj3 (fracture* or frx)).ti,ab.
7.	or/5-6
8.	4 and 7

Cochrane search terms

#1.	(photo or photos or photograph* or polaroid*):ti,ab
#2.	MeSH descriptor: [photography] this term only
#3.	{or #1-#2}
#4.	MeSH descriptor: [fractures, open] this term only
#5.	((open or compound) near/3 (fracture* or frx)).ti,ab
#6.	{or #4-#5}
#7.	#3 and #6

A.4.23 Documentation - neurovascular status

31. Does documentation recording assessment results of neurovascular status (including interpretations and conclusions) improve outcomes compared to limited recording of neurovascular status?

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 AND Neurovascular status	n/a	n/a	See Table 1 Date of last search: 14/04/2015 English only Exclusion filter applied in Medline, Embase and CINAHL

Medline search terms

1.	fracture*.ti,ab.
2.	exp fractures, bone/
3.	or/1-2
4.	neurologic examination/
5.	((neurologic* or vascular* or neurovascular* or neuro-vascular* or circulation motor sensory or pulse motor sensory or nv or cms or pms or dnv) adj3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*)).ti,ab.
6.	((neurologic* or vascular* or neurovascular* or neuro-vascular* or circulation motor sensory or pulse motor sensory or nv or cms or pms or dnv) adj3 (exam* or evaluat* or assess* or test or tests or testing or measure* or observation* or investigat* or check*)).ti,ab.
7.	(nerve* adj3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*)).ti,ab.
8.	((arterial or blood) adj2 flow).ti,ab.
9.	((pulse* or capillar*) adj2 refill*).ti,ab.
10.	crt.ti,ab.

11.	*capillary resistance/
12.	(pulse* adj4 (access* or presence or present or absence or quality or strength or strong or weak or choppy or uneven or rough or irregular*)).ti,ab.
13.	((pallor or temperature or colour or color or warmth or swollen or swelling* or paralys* or movement* or paraesthesia or sensation* or position* or circulat* or pulse* or capillar*) adj4 (limb* or arm* or leg* or foot* or hand* or exam* or evaluat* or assess* or test or tests or testing or measure* or status* or observation* or investigat* or check*)).ti,ab.
14.	or/4-13
15.	"forms and records control"/
16.	documentation/
17.	exp medical records systems, computerized/
18.	medical records/
19.	medical audit/
20.	nursing records/
21.	databases factual/
22.	health information systems/
23.	hospital information systems/
24.	nursing records/
25.	(record* keep* or recordkeep* or form or forms or document* or audit* or database* or information system* or note or notes or notation* or log or logs or logging or paperwork).ti,ab.
26.	or/15-25
27.	3 and 14 and 26

Embase search terms

1.	fracture*.ti,ab.
2.	exp fracture/
3.	or/1-2
4.	*neurologic examination/
5.	((neurologic* or vascular* or neurovascular* or neuro-vascular* or circulation motor sensory or pulse motor sensory or nv or cms or pms or dnv) adj3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*)).ti,ab.
6.	((neurologic* or vascular* or neurovascular* or neuro-vascular* or circulation motor sensory or pulse motor sensory or nv or cms or pms or dnv) adj3 (exam* or evaluat* or assess* or test or tests or testing or measure* or observation* or investigat* or check*)).ti,ab.
7.	(nerve* adj3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*)).ti,ab.
8.	((arterial or blood) adj2 flow).ti,ab.
9.	((pulse* or capillar*) adj2 refill*).ti,ab.
10.	crt.ti,ab.
11.	exp *vascular resistance/
12.	(pulse* adj4 (access* or presence or present or absence or quality or strength or strong or weak or choppy or uneven or rough or irregular*)).ti,ab.
13.	((pallor or temperature or colour or color or warmth or swollen or swelling* or paralys* or movement* or paraesthesia or sensation* or position* or circulat* or pulse* or capillar*) adj4 (limb* or arm* or leg* or foot* or hand* or exam* or evaluat* or assess* or test or tests or testing or measure* or status* or observation* or investigat* or check*)).ti,ab.
14.	or/4-13
15.	exp *documentation/
16.	*factual database/

17.	*medical information system/
18.	*hospital information system/
19.	*medical audit/
20.	(record* keep* or recordkeep* or form or forms or document* or audit* or database* or information system* or note or notes or notation* or log or logs or logging or paperwork).ti,ab.
21.	or/15-20
22.	3 and 14 and 21

Cochrane search terms

#1.	fracture*:ti,ab,
#2.	MeSH descriptor: [fractures, bone] explode all trees
#3.	#1 or #2
#4.	MeSH descriptor: [neurologic examination] this term only
#5.	((neurologic* or vascular* or neurovascular* or neuro next vascular* or circulation next motor next sensory or pulse next motor next sensory or nv or cms or pms or dnv) near/3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*)):ti,ab
#6.	((neurologic* or vascular* or neurovascular* or neuro next vascular* or circulation next motor next sensory or pulse next motor next sensory or nv or cms or pms or dnv) near/3 (exam* or evaluat* or assess* or test or tests or testing or measure* or observation* or investigat* or check*)):ti,ab
#7.	(nerve* near/3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*)):ti,ab
#8.	((arterial or blood) near/2 flow):ti,ab
#9.	((pulse* or capillar*) near/2 refill*):ti,ab
#10.	crt:ti,ab
#11.	MeSH descriptor: [capillary resistance] this term only
#12.	(pulse* near/4 (access* or presence or present or absence or quality or strength or strong or weak or choppy or uneven or rough or irregular*)):ti,ab
#13.	((pallor or temperature or colour or color or warmth or swollen or swelling* or paralys* or movement* or paraesthesia or sensation* or position* or circulat* or pulse* or capillar*) near/4 (limb* or arm* or leg* or foot* or hand* or exam* or evaluat* or assess* or test or tests or testing or measure* or status* or observation* or investigat* or check*)):ti,ab
#14.	{or #4-#13}
#15.	MeSH descriptor: [forms and records control] this term only
#16.	MeSH descriptor: [documentation] this term only
#17.	MeSH descriptor: [medical records systems, computerized] explode all trees
#18.	MeSH descriptor: [medical records] this term only
#19.	MeSH descriptor: [medical audit] this term only
#20.	MeSH descriptor: [nursing records] this term only
#21.	MeSH descriptor: [databases, factual] this term only
#22.	MeSH descriptor: [health information systems] this term only
#23.	MeSH descriptor: [hospital information systems] this term only
#24.	MeSH descriptor: [nursing records] this term only
#25.	(record* next keep* or recordkeep* or form or forms or document* or audit* or database* or information system* or note or notes or notation* or log or logs or logging or paperwork):ti,ab
#26.	{or #15-#25}
#27.	#3 and #14 and #26

CINAHL search terms

S1.	fracture*
S2.	(MH "fractures+")
S3.	(S1 or S2)
S4.	MH neurologic examination
S5.	((neurologic* or vascular* or neurovascular* or neuro-vascular* or circulation motor sensory or pulse motor sensory or nv or cms or pms or dnv) n3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*))
S6.	((neurologic* or vascular* or neurovascular* or neuro-vascular* or circulation motor sensory or pulse motor sensory or nv or cms or pms or dnv) n3 (exam* or evaluat* or assess* or test or tests or testing or measure* or observation* or investigat* or check*))
S7.	(nerve* n3 (status* or deficit* or damage* or function* or impair* or compromise* or complication* or injur* or problem*))
S8.	((arterial or blood) n2 flow)
S9.	(pulse* or capillar*) n2 refill*
S10.	crt
S11.	MH capillary resistance
S12.	pulse* n4 (access* or presence or present or absence or quality or strength or strong or weak or choppy or uneven or rough or irregular*)
S13.	((pallor or temperature or colour or color or warmth or swollen or swelling* or paralys* or movement* or paraesthesia or sensation* or position* or circulat* or pulse* or capillar*) n4 (limb* or arm* or leg* or foot* or hand* or exam* or evaluat* or assess* or test or tests or testing or measure* or status* or observation* or investigat* or check*))
S14.	S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13
S15.	(MH "medical records") or (MH "computerized patient record") or (MH "nursing records") or (MH "patient record systems")
S16.	(MH "documentation")
S17.	(MH "clinical information systems") or (MH "health information systems")
S18.	(record* keep* or recordkeep* or form or forms or document* or audit* or database* or information system* or note or notes or notation* or log or logs or logging or paperwork)
S19.	(S15 or S16 or S17 or S18)
S20.	(S3 and S14 and S19)

A.4.24 Information and support

32. What information and support do people with 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 were used in Medline, Embase and CINAHL only: QUAL	See Table 1 Date of last search 8/04/2015 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.5 Health economics search

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

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
				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 sach's 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 capitata* 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 capitata* 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 capitate* 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=humeral* or arm or arms or forelimb* or radius or ulna* or forearm* or radial* or femoral or
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	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
Fractures 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.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/>