National Clinical Guideline Centre

Draft

Appendix F

Pressure ulcer prevention and management

Literature searches

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Draft for Consultation

Commissioned by the National Institute for Health and Care Excellence

Royal College of Physicians

The Royal College of Surgeons of England

RCGP Royal College of General Practitioners

Royal College of Nursing

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Contents

Appendix F: Literature search strategies ... 8
F.1 Population search terms ... 9
F.2 Study filter search terms ... 10
F.2.1 Systematic review (SR) search terms ... 10
F.2.2 Randomised controlled trial (RCT) search terms ... 11
F.2.3 Observational studies search terms ... 11
F.2.4 Health economics search terms ... 12
F.2.5 Quality of life search terms ... 13
F.2.6 Excluded study designs and publication types ... 14
F.3 Searches for specific questions (prevention) ... 15
F.3.1 Risk assessment tools (clinical and cost effectiveness) ... 15
F.3.2 Risk assessment tools (predictive ability) ... 16
F.3.3 Skin assessment ... 18
F.3.4 Repositioning ... 20
F.3.5 Skin massage and rubbing ... 21
F.3.6 Nutritional interventions ... 22
F.3.7 Hydration strategies ... 23
F.3.8 Pressure-redistributing devices ... 24
F.3.9 Topical barrier preparations ... 28
F.4 Searches for specific questions (management) ... 30
F.4.1 Ulcer measurement ... 30
F.4.2 Ulcer categorisation ... 31
F.4.3 Negative pressure wound therapy ... 32
F.4.4 Electrotherapy ... 33
F.4.5 Hyperbaric oxygen therapy ... 35
F.4.6 Debridement ... 36
F.4.7 Maggot debridement ... 38
F.4.8 Topical agents ... 38
F.4.9 Systemic agents ... 41
F.4.10 Dressings ... 43
F.4.11 Management of pressure ulcers of the heel ... 45
F.4.12 Patient information / healthcare professionals training and education ... 45
F.5 Health economics searches ... 49
F.5.1 Economic evaluations ... 49
F.5.2 Topical barrier preparations (economics) ... 49
F.6 References ... 52

Appendix F: Literature search strategies

Contents

Introduction	Search methodology
Section F.1	**Standard population search terms** This population was used for all search questions unless otherwise stated
Section F.2	**Study filter terms**
F.2.1	Systematic reviews (SR)
F.2.2	Randomised controlled trials (RCT)
F.2.3	Observational studies
F.2.4	Health economics studies
F.2.5	Quality of life studies
F.2.6	Excluded study designs and publication types
Section F.3	**Searches for specific questions**
F.3.1	Risk assessment tools (clinical and cost effectiveness)
F.3.2	Risk assessment tools (predictive ability)
F.3.3	Skin assessment
F.3.4	Repositioning
F.3.5	Skin massage and rubbing
F.3.6	Nutritional interventions
F.3.7	Hydration strategies
F.3.8	Pressure-redistributing devices
F.3.9	Topical barrier preparations
F.3.10	Measurement techniques/tools
F.3.11	Ulcer categorisation
F.3.12	Negative pressure wound therapy
F.3.13	Electrotherapy
F.3.14	Hyperbaric oxygen therapy
F.3.15	Debridement
F.3.16	Maggot debridement
F.3.17	Topical agents
F.3.18	Systemic agents
F.3.19	Dressings
F.3.20	Management of pressure ulcers of the heel
F.3.21	Patient information / healthcare professionals training and education
Section F.4	**Health economics searches**
F.4.1	Economic evaluations
F.4.2	Topical barrier preparations (economics)
Section F.5	**References**

Search strategies used for the pressure ulcer guideline are outlined below and were run in accordance with the methodology in the NICE Guidelines Manual 2012.[5] All searches were run up to 28th August 2013 unless otherwise stated. Any studies added to the databases after this date were not included unless specifically stated in the text. Where possible searches were limited to retrieve material published in English.

Table 1: Database date parameters

Database	Dates searched
Medline	1946 – 28th August 2013
Embase	1980 – 28th August 2013 (week 34)
CINAHL	1981 – 28th August 2013
The Cochrane Library	Cochrane Reviews to 2013 Issue 8 of 12 (final search date: 28th August 2013) CENTRAL to 2013 Issue 8 of 12 DARE, HTA and NHSEED to 2013 Issue 3 of 4

Clinical searches

Searches for the **clinical reviews** were run in Medline (OVID), Embase (OVID), CINAHL (EBSCO) and the Cochrane Library (Wiley). Usually, searches were constructed in the following way:

- A PICO format was used for **intervention** searches 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.
- A PEO format was used for **prognosis** searches where population (P) terms were combined with exposure (E) terms and sometimes outcomes (O). Search filters were added to the search where appropriate.

Health economics searches

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). Searches in NHS EED, HTA and HEED were constructed only using population terms. For Medline and Embase an economic filter (instead of a study type filter) was added to the same clinical search strategy.

The question on topical barrier preparations used a different set of population terms hence it was searched separately for economic evidence. The full search is presented in the relevant section below.

Searches for **quality of life** data were run in Medline (OVID) and Embase (OVID) by adding the filter in section A.2.6 to the population terms.

F.1 Population search terms

Medline search terms

1	pressure ulcer/
2	decubit*.ti,ab.
3	(pressure adj (sore* or ulcer* or damage)).ti,ab.
4	(bedsore* or bed-sore*).ti,ab.
5	or/1-4

Embase search terms

1	decubitus/
2	decubit*.ti,ab.
3	(pressure adj (sore* or ulcer* or damage)).ti,ab.
4	(bedsore* or bed-sore*).ti,ab.
5	or/1-4

Cochrane search terms

#1	MeSH descriptor Pressure Ulcer explode all trees
#2	decubit*:ti,ab,kw
#3	(pressure near/2 (sore* or ulcer* or damage)):ti,ab,kw
#4	(bedsore* or bed-sore*):ti,ab,kw
#5	(#1 OR #2 OR #3 OR #4)

CINAHL search terms

S1	(MH "Pressure Ulcer")
S2	decubit*
S3	pressure n1 sore* OR pressure n1 ulcer* OR pressure n1 damage*
S4	bedsore* OR bed-sore*
S5	S1 or S2 or S3 or S4

F.2 Study filter search terms

F.2.1 Systematic review (SR) search terms

Medline search terms

1.	meta-analysis/
2.	meta-analysis as topic/
3.	(meta analy* or metanaly* or metaanaly*).ti,ab.
4.	((systematic* or evidence*) adj2 (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.	or/1-9

Embase search terms

1.	systematic review/
2.	meta-analysis/
3.	(meta analy* or metanaly* or metaanaly*).ti,ab.
4.	((systematic or evidence) adj2 (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.	or/1-10

F.2.2 Randomised controlled trial (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

F.2.3 Observational studies 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

F.2.4 Health economics search terms

Medline search terms

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

Embase search terms

1.	health economics/
2.	exp economic evaluation/
3.	exp health care cost/
4.	exp fee/
5.	budget/
6.	funding/
7.	budget*.ti,ab.
8.	cost*.ti.
9.	(economic* or pharmaco?economic*).ti.
10.	(price* or pricing*).ti,ab.

11.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
12.	(financ* or fee or fees).ti,ab.
13.	(value adj2 (money or monetary)).ti,ab.
14.	or/1-13

F.2.5 Quality of life search terms

Medline search terms

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

Embase search terms

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

17.	(sf36 or sf 36 or short form 36 or shortform 36 or shortform36).ti,ab.
18.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
19.	(sf12 or sf 12 or short form 12 or shortform 12 or shortform12).ti,ab.
20.	(sf8 or sf 8 or short form 8 or shortform 8 or shortform8).ti,ab.
21.	(sf6 or sf 6 or short form 6 or shortform 6 or shortform6).ti,ab.
22.	or/1-21

F.2.6 Excluded study designs and publication types

The following study designs and publication types were removed from retrieved results using the NOT operator. All Medline records were excluded from each CINAHL search.

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

F.3 Searches for specific questions (prevention)

F.3.1 Risk assessment tools (clinical and cost effectiveness)

Searches for the following question were date limited in order to update a Cochrane review by Moore and Cowman.[4]

1. What is the clinical and cost effectiveness of risk assessment tools in the prevention of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Risk assessment tools	None	SR, RCT (Medline, Embase only). Standard exclusions (Medline, Embase and CINAHL)	2010 - see Table 1

Medline search terms

1.	judgment/
2.	observation/
3.	nursing assessment/
4.	risk assessment/
5.	risk factor/
6.	(assess* score? or clinical judg?ment or instrument* or nursing assess* or observation? or risk assess* or risk factor* or risk score* or risk-benefit assess* or scale* or screening or structured assess* or tool* or unstructured assess*).tw.
7.	or/1-6

Embase search terms

1.	exp risk factor/
2.	exp risk assessment/
3.	exp instrument/
4.	exp decision making/
5.	exp clinical observation/
6.	exp nursing assessment/
7.	exp risk assessment/
8.	(risk assessment* or assessment* risk or risk-benefit assessment* or structured assessment* or assessment* structured or unstructured assessment* or instrument* or tool* or scale* or

	screening or risk factor* or factor risk* or risk score* or score* risk or assessment* score* or clinical judg?ment or nursing assessment or observation*).ti,ab.
9.	or/1-8

Cochrane search terms

#1.	MeSH descriptor: [Observation] explode all trees
#2.	MeSH descriptor: [Judgment] explode all trees
#3.	MeSH descriptor: [Nursing Assessment] explode all trees
#4.	MeSH descriptor: [Risk Factors] explode all trees
#5.	MeSH descriptor: [Risk Assessment] explode all trees
#6.	(risk assess* or risk-benefit assess* or structured assessment or unstructured assess* or instrument* or tool* or scale* or screening* or risk factor or risk score or assessment score or nurs* assess* or clinical judg?ment or observation*):ti,ab,kw
#7.	#1 or #2 or #3 or #4 or #5 or #6

CINAHL search terms

S1.	MH "judgment"
S2.	MH "decision making, clinical"
S3.	MH “risk factors”
S4.	MH “risk assessment”
S5.	MH “nursing assessment”
S6.	risk assessment* or assessment* risk or nurs* assessment* or assessment* nurs* or risk-benefit assessment* or structured assessment* or assessment* structured or unstructured assessment* or instrument* or tool* or scale* or screening or risk factor* or factor* risk or risk score* or score* risk or assessment score* or clinical judg?ment or observation or observations
S7.	S1 or S2 or S3 or S4 or S5 or S6

F.3.2 Risk assessment tools (predictive ability)

Searches for the following question were date limited in order to update a systematic review.[6]

2. What is the predictive ability of risk assessment tools for pressure ulcer prevention?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Risk assessment tools	None	Prognostic (all databases - reproduced below)	2003 - see Table 1

Medline search terms

1.	judgment/
2.	observation/
3.	nursing assessment/
4.	risk assessment/
5.	risk factor/
6.	(assess* score? or clinical judg?ment or instrument* or nursing assess* or observation? or risk assess* or risk factor* or risk score* or risk-benefit assess* or scale* or screening or structured assess* or tool* or unstructured assess*).tw.
7.	or/1-6

8.	braden*.tw.
9.	waterlow.tw.
10.	norton.tw.
11.	or/8-10
12.	"sensitivity and specificity"/
13.	sensitiv*.mp.
14.	predictive value*.mp.
15.	accuracy*.tw.
16.	specificit*.mp.
17.	or/12-16
18.	7 and (11 or 17)

Embase search terms

1.	exp risk factor/
2.	exp risk assessment/
3.	exp instrument/
4.	exp decision making/
5.	exp clinical observation/
6.	exp nursing assessment/
7.	exp risk assessment/
8.	(risk assessment* or assessment* risk or risk-benefit assessment* or structured assessment* or assessment* structured or unstructured assessment* or instrument* or tool* or scale* or screening or risk factor* or factor risk* or risk score* or score* risk or assessment* score* or clinical judg?ment or nursing assessment or observation*).ti,ab.
9.	or/1-8
10.	exp braden scale/
11.	braden*.ti,ab.
12.	waterlow*.ti,ab.
13.	norton*.ti,ab.
14.	or/10-13
15.	exp "sensitivity and specificity"/
16.	exp predictive validity/
17.	exp predictive value/
18.	sensitiv*.ti,ab.
19.	specificit*.ti,ab.
20.	accuracy*.ti,ab.
21.	predictive value*.ti,ab.
22.	predictive validity.ti,ab.
23.	or/15-22
24.	9 and (14 or 23)

Cochrane search terms

#1.	MeSH descriptor: [Observation] explode all trees
#2.	MeSH descriptor: [Judgment] explode all trees
#3.	MeSH descriptor: [Nursing Assessment] explode all trees
#4.	MeSH descriptor: [Risk Factors] explode all trees
#5.	MeSH descriptor: [Risk Assessment] explode all trees

#6.	(risk assess* or risk-benefit assess* or structured assessment or unstructured assess* or instrument* or tool* or scale* or screening* or risk factor or risk score or assessment score or nurs* assess* or clinical judg?ment or observation*):ti,ab,kw
#7.	#1 or #2 or #3 or #4 or #5 or #6
#8.	(braden* or waterlow or norton):ti,ab,kw
#9.	MeSH descriptor: [Sensitivity and Specificity] explode all trees
#10.	(sensitiv* or predictive value* or predictive validity or accuracy or specificit*):ti,ab,kw
#11.	#9 or #10
#12.	#7 and (#8 or #11)

CINAHL search terms

S1.	MH "judgment"
S2.	MH "decision making, clinical"
S3.	MH “risk factors”
S4.	MH “risk assessment”
S5.	MH “nursing assessment”
S6.	risk assessment* or assessment* risk or nurs* assessment* or assessment* nurs* or risk-benefit assessment* or structured assessment* or assessment* structured or unstructured assessment* or instrument* or tool* or scale* or screening or risk factor* or factor* risk or risk score* or score* risk or assessment score* or clinical judg?ment or observation or observations
S7.	S1 or S2 or S3 or S4 or S5 or S6
S8.	(MH "Braden Scale for Predicting Pressure Sore Risk")
S9.	braden* or waterlow or norton
S10.	S8 or S9
S11.	(MH "Sensitivity and Specificity")
S12.	(MH "Predictive Validity")
S13.	(MH "Predictive Value of Tests")
S14.	sensitiv* or predictive value* or predictive validity or accuracy or specificit*
S15.	S11 or S12 or S13 or S14
S16.	S7 and (S10 or S15)

F.3.3 Skin assessment

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

3. What is the clinical and cost effectiveness of skin assessment methods in the prevention of pressure ulcers?
4. What is the predictive ability of skin assessment tools for pressure ulcer development?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Methods of skin assessment	None	None	See Table 1

Medline search terms

1.	(finger method or transparent disk* or diascopy or ultrasonograph* or ultrasound or durometer or durometry or elastometer or haptic finger or digital imag* or digital colo?r imag* or spectrometer or multispectral imag* or multiwavelength imag* or clinical assessment or transcutaneous oximetry or tympanic thermometer* or doppler blood flowmetry or laser

	doppler imag* or minimum data set or mds or rai or skin assess* or skin inspect* or skin exam* or skin eval* or skin observ* or skin risk assess* or skin status or skin condition or clinical judgment or skin temperature or or thermograph* scan*).tw.
2.	skin temperature/
3.	judgment/
4.	blood gas monitoring, transcutaneous/
5.	ultrasonics/
6.	ultrasonography/
7.	or/1-6

Embase search terms

1.	(finger method or transparent disk* or diascopy or ultrasonograph* or ultrasound or durometer or durometry or elastometer or haptic finger or digital imag* or digital colo?r imag* or spectrometer or multispectral imag* or multiwavelength imag* or clinical assessment or transcutaneous oximetry or tympanic thermometer* or doppler blood flowmetry or laser doppler imag* or minimum data set or mds or rai or skin assess* or skin inspect* or skin exam* or skin eval* or skin observ* or skin risk assess* or skin status or skin condition or clinical judgment or skin temperature or thermograph* scan*).tw.
2.	exp echography/
3.	exp doppler echography/
4.	exp color ultrasound flowmetry/
5.	exp ultrasound/
6.	exp mass spectrometer/
7.	exp clinical assessment/
8.	exp transcutaneous oxygen monitoring/
9.	exp tympanic thermometer/
10.	exp doppler flowmetry/
11.	exp blood flowmetry/
12.	exp laser doppler flowmetry/
13.	exp clinical observation/
14.	exp skin temperature/
15.	or/1-14

Cochrane search terms

#1.	(finger method or transparent disk* or diascopy or ultrasonograph* or ultrasound or durometer or durometry or elastometer or haptic finger or digital imag* or digital colo?r imag* or spectrometer or multispectral imag* or multiwavelength imag* or clinical assessment or transcutaneous oximetry or tympanic thermometer* or Doppler blood flowmetry or laser Doppler imag* or Minimum Data Set or MDS or RAI or skin assess* or skin inspect* or skin exam* or skin eval* or skin observ* or skin risk assess* or skin status or skin condition or clinical judgment or skin temperature or thermograph* scan*):ti,ab,kw
#2.	MeSH descriptor: [Ultrasonics] explode all trees
#3.	MeSH descriptor: [Ultrasonography] explode all trees
#4.	MeSH descriptor: [Skin Temperature] explode all trees
#5.	MeSH descriptor: [Judgment] explode all trees
#6.	MeSH descriptor: [Blood Gas Monitoring, Transcutaneous] explode all trees
#7.	#1 or #2 or #3 or #4 or #5 or #6

CINAHL search terms

S1.	MH Blood Gas Monitoring, Transcutaneous

S2.	MH judgment
S3.	MH skin temperature
S4.	MH ultrasonics
S5.	MH ultrasonography
S6.	finger method or transparent disk* or diascopy or ultrasonograph* or ultrasound or durometer or durometry or elastometer or haptic finger or digital imag* or digital colo?r imag* or spectrometer or multispectral imag* or multiwavelength imag* or clinical assessment or transcutaneous oximetry or tympanic thermometer* or Doppler blood flowmetry or laser Doppler imag* or Minimum Data Set or MDS or RAI or skin assess* or skin inspect* or skin exam* or skin eval* or skin observ* or skin risk assess* or skin status or skin condition or clinical judgment or skin temperature or thermograph* scan*
S7.	S1 or S2 or S3 or S4 or S5 or S6

F.3.4 Repositioning

5. How and at what frequency should repositioning be undertaken for the prevention of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Repositioning	None	SR, RCT (Medline, Embase only). Standard exclusions (Medline, Embase and CINAHL only)	See Table 1

Medline search terms

1.	exp posture/
2.	exp patient positioning/
3.	"moving and lifting patients"/
4.	(re-position* or reposition*).ti,ab.
5.	(mobilis* or mobiliz*).ti,ab.
6.	(turn* adj5 (patient* or interval* or frequen*)).ti,ab.
7.	or/1-6

Embase search terms

1.	exp position/
2.	patient positioning/
3.	patient lifting/
4.	mobilization/
5.	(re-position* or reposition*).ti,ab.
6.	(mobilis* or mobiliz*).ti,ab.
7.	(turn* adj5 (patient* or interval* or frequen*)).ti,ab.
8.	or/1-7

Cochrane search terms

#1.	MeSH descriptor Posture explode all trees
#2.	MeSH descriptor Patient Positioning explode all trees
#3.	MeSH descriptor Moving and Lifting Patients explode all trees

#4.	(mobilis* or mobiliz*):ti,ab,kw
#5.	(re-position* or reposition*):ti,ab,kw
#6.	(turn* near/5 (patient* or interval* or frequen*)):ti,ab,kw
#7.	(#1 OR #2 OR #3 OR #4 OR #5 OR #6)

CINAHL search terms

S1.	(MH "Patient Positioning+")
S2.	(MH "Posture+")
S3.	re-position* or reposition*
S4.	mobilis* or mobiliz*
S5.	turn* N5 patient*
S6.	turn* N5 interval*
S7.	turn* N5 frequen*
S8.	S1 or S2 or S3 or S4 or S5 or S6 or S7

F.3.5 Skin massage and rubbing

6. What is the clinical and cost effectiveness of skin massage and rubbing in the prevention of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Skin massage / skin rubbing	None	SR, RCT, standard exclusions (Medline, Embase only)	See Table 1

Medline search terms

1.	massage/
2.	massage*.tw.
3.	rub*.tw.
4.	emollients/
5.	emollient*.tw.
6.	moistur*.tw.
7.	skin care/
8.	(skin care or (car* adj2 skin)).tw.
9.	or/1-8

Embase search terms

1.	exp massage/
2.	massage*.ti,ab.
3.	rub*.ti,ab.
4.	exp emollient agent/
5.	(emollient* or moistur*).ti,ab.
6.	exp skin care/
7.	(skin care or (car* adj2 skin)).tw.
8.	or/1-7

Cochrane search terms

#1.	MeSH descriptor: [Massage] explode all trees
#2.	(massage* or rub* or emollient* or moistur*):ti,ab,kw
#3.	MeSH descriptor: [Emollients] explode all trees
#4.	MeSH descriptor: [Skin Care] explode all trees
#5.	(skin near/2 car*):ti,ab,kw
#6.	#1 or #2 or #3 or #4 or #5

CINAHL search terms

S1.	MH massage
S2.	massage* or rub* or emollient* or moistur*
S3.	MH emollients+
S4.	MH skin care
S5.	skin N2 car*
S6.	S1 or S2 or S3 or S4 or S5

F.3.6 Nutritional interventions

The hydration and nutrition searches were run separately. See below for the hydration search strategies. Searches for the following two questions were run as one search in order to update a Cochrane review.[1]

7. What are the most clinically and cost effective nutritional interventions for the prevention of pressure ulcers?
13. What are the most clinically and cost effective nutritional interventions for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Nutrition	None	SR, RCT (Medline, Embase only). Standard exclusions (Medline, Embase and CINAHL)	2002 to dates in Table 1

Medline search terms

1.	exp diet/
2.	exp food/
3.	exp nutritional support/
4.	enteral nutrition/
5.	exp parenteral nutrition/
6.	malnutrition/
7.	exp diet therapy/
8.	dh.fs.
9.	(nutri* or food* or diet*).ti,ab.
10.	or/1-9

Embase search terms

1.	exp diet/
2.	exp food/

3.	exp diet therapy/
4.	exp nutritional support/
5.	exp artificial feeding/
6.	exp food intake/
7.	exp malnutrition/
8.	(nutri* or food* or diet*).ti,ab.
9.	or/1-8

Cochrane search terms

#1.	Any MeSH descriptor with qualifier: DH
#2.	(nutri* or food* or diet*):kw,ti,ab
#3.	(#1 OR #2)

CINAHL search terms

S1.	nutri* or food* or diet*

F.3.7 Hydration strategies

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

7. What are the most clinically and cost effective hydration strategies for the prevention of pressure ulcers?
13. What are the most clinically and cost effective hydration strategies for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Hydration	None	Standard exclusions (Medline, Embase only)	See Table 1

Medline search terms

1.	fluid therapy/
2.	dehydration/
3.	drinking/
4.	(hydrat* or rehydrat* or re-hydrat* or dehydrat* or de-hydrat*).ti,ab.
5.	or/1-4

Embase search terms

1.	rehydration/
2.	fluid therapy/
3.	drinking/
4.	(hydrat* or rehydrat* or re-hydrat* or dehydrat* or de-hydrat*).ti,ab.
5.	or/1-4

Cochrane search terms

#1.	MeSH descriptor Fluid Therapy explode all trees
#2.	MeSH descriptor Drinking explode all trees
#3.	MeSH descriptor Dehydration explode all trees

#4.	(hydrat* or rehydrat* or re-hydrat* or de-hydrat* or dehydrat*):ti,ab,kw
#5.	(#1 OR #2 OR #3 OR #4)

CINAHL search terms

S1.	(MH "Dehydration")
S2.	(MH "Fluid Therapy")
S3.	hydrat* or rehydrat* or re-hydrat* or dehydrat* or de-hydrat*
S4.	S1 or S2 or S3

F.3.8 Pressure-redistributing devices

Two searches were run for the following three questions:

8. What are the most clinically and cost effective pressure-redistributing devices for the prevention of pressure ulcers?
9. What is the clinical and cost effectiveness of pressure-redistributing devices for the prevention of heel pressure ulcers?
14. What are the most clinically and cost effective pressure-redistributing devices for the management of pressure ulcers?

The first search was for material published since 2010 to update two Cochrane reviews[2,3] relating to the first two questions above. A subsequent search was carried out for all dates to identify both devices specific to heel pressure ulcer prevention and some devices not covered in the two Cochrane reviews, most notably, seating and wheelchairs.

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Pressure-redistributing devices	None	SR, RCT, standard exclusions (Medline, Embase only)	2010 – dates in Table 1

Medline search terms

1.	exp beds/
2.	(mattress* or cushion* or foam or transfoam or overlay* or pad or pads or gel).ti,ab.
3.	(pressure adj2 (device* or support* or constant)).ti,ab.
4.	(static adj air).ti,ab.
5.	(air adj (suspension or bag*)).ti,ab.
6.	(pressure adj2 (relie* or reduc* or alleviat* or redistribut* or re-distribut* or alternat*)).ti,ab.
7.	water suspension*.ti,ab.
8.	(elevation adj2 device*).ti,ab.
9.	(clinifloat or maxifloat or vaperm or therarest or sheepskin or hammock or foot waffle or silicore or pegasus or cairwave).ti,ab.
10.	((turn* or tilt*) adj2 (bed* or frame*)).ti,ab.
11.	(kinetic adj (therapy or table*)).ti,ab.
12.	net bed*.ti,ab.
13.	(positioning or repositioning or re-positioning).ti,ab.
14.	or/1-13

Embase search terms

1.	(mattress* or cushion* or foam or transfoam or overlay* or pad or pads or gel).ti,ab.
2.	(pressure adj2 (device* or support* or constant)).ti,ab.
3.	(static adj air).ti,ab.
4.	(air adj (suspension or bag*)).ti,ab.
5.	(pressure adj2 (relie* or reduc* or alleviat* or redistribut* or re-distribut* or alternat*)).ti,ab.
6.	water suspension*.ti,ab.
7.	(elevation adj2 device*).ti,ab.
8.	(clinifloat or maxifloat or vaperm or therarest or sheepskin or hammock or foot waffle or silicore or pegasus or cairwave).ti,ab.
9.	((turn* or tilt*) adj2 (bed* or frame*)).ti,ab.
10.	(kinetic adj (therapy or table*)).ti,ab.
11.	net bed*.ti,ab.
12.	(positioning or repositioning or re-positioning).ti,ab.
13.	exp bed/
14.	or/1-13

Cochrane search terms

#1.	MeSH descriptor Beds explode all trees
#2.	(mattress* or cushion* or foam or transfoam or overlay* or pad or pads or gel):ti,ab,kw
#3.	(pressure NEAR/2 (device* or support* or constant)):ti,ab,kw
#4.	(static NEAR/2 air):ti,ab,kw
#5.	(air NEAR/2 (suspension or bag*)):ti,ab,kw
#6.	(pressure NEAR/2 (relie* or reduc* or alleviat* or redistribut* or re-distribut* or alternat*)):ti,ab,kw
#7.	water suspension*:ti,ab,kw
#8.	(elevation NEAR/2 device*):ti,ab,kw
#9.	(clinifloat or maxifloat or vaperm or therarest or sheepskin or hammock or foot waffle or silicore or pegasus or cairwave):ti,ab,kw
#10.	((turn* or tilt*) NEAR/2 (bed* or frame*)):ti,ab,kw
#11.	net bed*:ti,ab,kw
#12.	(positioning or repositioning or re-positioning):ti,ab,kw
#13.	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12)

CINAHL search terms

S1.	(MH "Beds and Mattresses+")
S2.	(MH "Pillows and Cushions")
S3.	(MH "Wheelchairs+")
S4.	mattress* or cushion* or foam or transfoam or overlay* or pad or pads or gel
S5.	pressure and (device* or support* or constant)
S6.	static air
S7.	air suspension or air bag*
S8.	pressure and (relie* or reduc* or alleviat* or redistribut* or re-distribut* or alternat*)
S9.	water suspension*
S10.	elevation N2 device*
S11.	clinifloat or maxifloat or vaperm or therarest or sheepskin or hammock or foot waffle or silicore or pegasus or cairwave
S12.	(turn* or tilt*) and (bed* or frame*)

S13.	kinetic and (therapy or table*)
S14.	net bed*
S15.	positioning or repositioning or re-positioning
S16.	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Heel pressure-redistributing devices / pressure-redistributing devices	None	SR, RCT (Medline, Embase only). Standard exclusions (Medline, Embase and CINAHL)	See Table 1

Medline search terms

1.	(seat* or chair* or wheelchair* or pillow*).ti,ab.
2.	wheelchairs/
3.	(bed or beds).ti,ab.
4.	(cutfoam or padding or sheepskin* or sheep-skin* or gels).ti,ab.
5.	(alternat* adj2 pressure).ti,ab.
6.	shoes/
7.	exp orthotic devices/
8.	(orthotic adj2 (device* or therap* or treat*)).ti,ab.
9.	(shoe* or boot* or footwear or foot-wear).ti,ab.
10.	(orthos* or insole).ti,ab.
11.	((contact or walk*) adj2 cast*).ti,ab.
12.	(aircast* or scotchcast*).ti,ab.
13.	((foot or feet or heel*) adj2 (pressure or protect* or device*)).ti,ab.
14.	((foot or feet or heel* or leg*) adj2 trough*).ti,ab.
15.	(heel* adj2 (lift* or splint* or float* or glove* or suspen* or elevat*)).ti,ab.
16.	(shaped adj3 (pad* or dressing*)).ti,ab.
17.	(heel* adj3 (pad* or cushion*)).ti,ab.
18.	heel/
19.	heel*.ti,ab.
20.	prevent*.ti,ab.
21.	or/18-19
22.	20 and 21
23.	or/1-17,22

Embase search terms

1.	(seat* or chair* or wheelchair* or pillow*).ti,ab.
2.	exp wheelchair/
3.	(bed or beds).ti,ab.
4.	(cutfoam or padding or sheepskin* or sheep-skin* or gels).ti,ab.
5.	(alternat* adj2 pressure).ti,ab.
6.	orthopedic shoe/
7.	shoe/

8.	orthotics/
9.	(orthotic adj2 (device* or therap* or treat*)).ti,ab.
10.	(shoe* or boot* or footwear or foot-wear).ti,ab.
11.	(orthos* or insole).ti,ab.
12.	((contact or walk*) adj2 cast*).ti,ab.
13.	(aircast* or scotchcast*).ti,ab.
14.	((foot or feet or heel*) adj2 (pressure or protect* or device*)).ti,ab.
15.	((foot or feet or heel* or leg*) adj2 trough*).ti,ab.
16.	(heel* adj2 (lift* or splint* or float* or glove* or suspen* or elevat*)).ti,ab.
17.	(shaped adj3 (pad* or dressing*)).ti,ab.
18.	(heel* adj3 (pad* or cushion*)).ti,ab.
19.	heel/
20.	heel*.ti,ab.
21.	prevent*.ti,ab.
22.	or/19-20
23.	21 and 22
24.	or/1-18,23

Cochrane search terms

#1.	(seat* or chair* or wheelchair* or pillow*):ti,ab,kw
#2.	MeSH descriptor: [Wheelchairs] explode all trees
#3.	MeSH descriptor: [Shoes] explode all trees
#4.	MeSH descriptor: [Orthotic Devices] explode all trees
#5.	(bed or beds or cutfoam or padding or sheepskin* or sheep-skin* or gels or shoe* or boot* or footwear or foot-wear or orthos* or insole or aircast* or scotchcast*):ti,ab,kw
#6.	(alternat* near/2 pressure):ti,ab,kw
#7.	(orthotic near/2 (device* or therap* or treat*)):ti,ab,kw
#8.	((contact or walk*) near/2 cast*):ti,ab,kw
#9.	((foot or feet or heel*) near/2 (pressure or protect* or device*)):ti,ab,kw
#10.	((foot or feet or heel* or leg*) near/2 trough*):ti,ab,kw
#11.	(heel* near/2 (lift* or splint* or float* or glove* or suspen* or elevat*)):ti,ab,kw
#12.	(shaped near/3 (pad* or dressing*)):ti,ab
#13.	(heel* near/3 (pad* or cushion*)):ti,ab
#14.	(heel* and prevent*):ti,ab,kw
#15.	#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

CINAHL search terms

S1.	(MH "Wheelchairs+")
S2.	seat* or chair* or wheelchair* or pillow*
S3.	(MH "Shoes+")
S4.	(MH "Orthoses+")
S5.	(MH "Seating")
S6.	(MH "Orthopedic Footwear")
S7.	bed or beds or cutfoam or padding or sheepskin* or sheep-skin* or gels or shoe* or boot* or footwear or foot-wear or orthos* or insole or aircast* or scotchcast*
S8.	alternat* N2 pressure

S9.	orthotic N2 treat* OR orthotic N2 therap* OR orthotic N2 device*
S10.	contact N2 cast* OR walk* N2 cast*
S11.	(foot OR feet OR heel*) AND (pressure OR protect* OR device*)
S12.	(foot or feet or heel* or leg*) and trough*
S13.	heel* AND (lift* OR splint* OR float* OR glove* OR suspen* OR elevat*)
S14.	shaped N3 pad* OR shaped N3 dressing*
S15.	heel* N3 pad* OR heel* N3 cushion*
S16.	heel* AND prevent*
S17.	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16

F.3.9 Topical barrier preparations

8. What are the most clinically and cost effective topical barrier preparations for the prevention of pressure ulcers and moisture lesions?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers / moisture lesions / perineal dermatitis	Topical barrier preparations	None	SR, RCT, standard exclusions (Medline, Embase only)	See Table 1

Medline search terms

1.	pressure ulcer/
2.	decubit*.ti,ab.
3.	(pressure adj (sore* or ulcer* or damage)).ti,ab.
4.	(bedsore* or bed-sore*).ti,ab.
5.	(incontinen* adj2 dermatitis).ti,ab.
6.	((moist* or friction or shear) adj2 (sore* or ulcer* or damage or wound* or injur* or lesion*)).ti,ab.
7.	((perineum or perineal) adj2 (damage or dermatitis or injur* or breakdown or wound* or lesion* or ulcer* or sore*)).ti,ab.
8.	perineum/ and exp dermatitis/
9.	or/1-8
10.	(cream* or oil* or gel* or barrier* or ointment* or emollient*).ti,ab.
11.	ointments/
12.	exp emollients/
13.	protective agents/
14.	exp silicones/
15.	zinc oxide/
16.	exp petrolatum/
17.	paraffin/
18.	exp dermatologic agents/
19.	(conotrane or morhulin or sprilon or sudocrem).ti,ab.
20.	exp fatty acids/
21.	exp plant extracts/
22.	mepentol.ti,ab.

23.	fatty acid*.ti,ab.
24.	exp glycerides/
25.	(sanyrene or corpitol*).ti,ab.
26.	or/10-25
27.	9 and 26

Embase search terms

1.	decubitus/
2.	decubit*.ti,ab.
3.	(pressure adj (sore* or ulcer* or damage)).ti,ab.
4.	(bedsore* or bed-sore*).ti,ab.
5.	((moist* or friction or shear) adj2 (sore* or ulcer* or damage or wound* or injur* or lesion*)).ti,ab.
6.	(incontinen* adj2 dermatitis).ti,ab.
7.	((perineum or perineal) adj2 (damage or dermatitis or injur* or breakdown or wound* or lesion* or ulcer* or sore*)).ti,ab.
8.	perineum/ and exp dermatitis/
9.	or/1-8
10.	(cream* or oil* or gel* or barrier* or ointment* or emollient*).ti,ab.
11.	exp ointment/
12.	emollient agent/
13.	exp skin protective agent/
14.	zinc oxide/
15.	exp gel/
16.	cream/
17.	exp ointment base/
18.	exp dermatological agent/
19.	(conotrane or morhulin or sprilon or sudocrem).ti,ab.
20.	mepentol.ti,ab.
21.	fatty acid*.ti,ab.
22.	(sanyrene or corpitol*).ti,ab.
23.	exp fatty acid/
24.	exp plant extract/
25.	exp acylglycerol/
26.	or/10-25

Cochrane search terms

#1.	MeSH descriptor: [Pressure Ulcer] explode all trees
#2.	decubit*:ti,ab,kw
#3.	(pressure near/2 (sore* or ulcer* or damage)):ti,ab,kw
#4.	(bedsore* or bed-sore*):ti,ab,kw
#5.	(incontinen* near/2 dermatitis):ti,ab,kw
#6.	((moist* or friction or shear) near/2 (sore* or ulcer* or damage or wound* or injur* or lesion*)):ti,ab,kw
#7.	((perineum or perineal) near/2 (damage or dermatitis or injur* or breakdown or wound* or lesion* or ulcer* or sore*)):ti,ab,kw
#8.	#1 or #2 or #3 or #4 or #5 or #6 or #7

#9.	(cream* or silicone* or oil* or zinc* or gel* or barrier* or ointment* or emollient*):ti,ab,kw
#10.	(petrolatum or "petroleum jelly" or vaseline or paraffin or parafilm):ti,ab,kw
#11.	(conotrane or morhulin or sprilon or sudocrem):ti,ab,kw
#12.	MeSH descriptor: [Protective Agents] explode all trees
#13.	MeSH descriptor: [Dermatologic Agents] explode all trees
#14.	(mepentol or fatty acid* or sanyrene or corpitol* or plant extract* or glyceride*):ti,ab,kw
#15.	MeSH descriptor: [Glycerides] explode all trees
#16.	MeSH descriptor: [Plant Extracts] explode all trees
#17.	MeSH descriptor: [Fatty Acids] explode all trees
#18.	#9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17
#19.	#8 and #18

CINAHL search terms

S1.	(MH "Pressure Ulcer")
S2.	decubit*
S3.	pressure n1 sore* OR pressure n1 ulcer* OR pressure n1 damage*
S4.	bedsore* OR bed-sore*
S5.	incontinen* n2 dermatitis
S6.	((moist* or friction or shear) and (sore* or ulcer* or damage or wound* or injur* or lesion*))
S7.	((perineum or perineal) n2 (damage or dermatitis or injur* or breakdown or wound* or lesion* or ulcer* or sore*))
S8.	(MH "Dermatitis, Perineal")
S9.	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8
S10.	cream* or silicone* or oil* or zinc* or gel* or barrier* or ointment* or emollient*
S11.	petrolatum or "petroleum jelly" or vaseline or paraffin or parafilm
S12.	conotrane or morhulin or sprilon or sudocrem
S13.	(MH "Dermatologic Agents+")
S14.	mepentol
S15.	fatty acid*
S16.	sanyrene or corpitol*
S17.	(MH "Fatty Acids+")
S18.	(MH "Plant Extracts+")
S19.	(MH "Glycerides+")
S20.	S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19
S21.	S9 and S20

F.4 Searches for specific questions (management)

F.4.1 Ulcer measurement

9. What are the most reliable techniques/tools to measure the dimensions of a pressure ulcer?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Pressure ulcer measurement techniques/tools	None	None	See Table 1

Medline search terms

1.	photography/
2.	ultrasonography/
3.	((ulcer* or sore* or wound*) adj5 (ruler*1 or tape measur* or (measuring adj tape*) or trace or tracing or traced or grid or planimetry or kundin)).ti,ab.
4.	((ulcer* or wound*) adj measur*).ti,ab.
5.	or/1-4

Embase search terms

1.	medical photography/
2.	photography/
3.	echography/
4.	((ulcer* or sore* or wound*) adj5 (ruler*1 or tape measur* or (measuring adj tape*) or trace or tracing or traced or grid or planimetry or kundin)).ti,ab.
5.	((ulcer* or wound*) adj measur*).ti,ab.
6.	or/1-5

Cochrane search terms

#1.	((ulcer* or wound*) near measur*):ti,ab
#2.	(photograph* or photo or photos):ti,ab,kw
#3.	(ultrasonography or ultrasound):ti,ab,kw
#4.	((ulcer* or sore* or wound*) near/5 (ruler* or (tape near measur*) or trace or tracing or traced or grid or planimetry or kundin)):ti,ab
#5.	(#1 OR #2 OR #3 OR #4 OR #5)

CINAHL search terms

S1.	(MH "Ultrasonography")
S2.	(MH "Photography")
S3.	(MH "Digital Imaging")
S4.	ulcer* measur* or measur* ulcer*
S5.	wound* measur* or measur* wound*
S6.	(ulcer* or sore* or wound*) and (ruler* or tape measur* or measur* tape* or trace or tracing or traced or grid or planimetry or kundin)
S7.	S1 or S2 or S3 or S4 or S5 or S6

F.4.2 Ulcer categorisation

10.What is the best method of categorising different types of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Pressure ulcer categorisation methods	None	Standard exclusions (Medline, Embase and CINAHL)	See Table 1

Medline search terms

1.	((class* or categor* or stage* or staging or grade* or grading) adj4 (ulcer* or sore* or bedsore* or damage* or pressure or decubit*)).ti,ab.
2.	pressure ulcer/cl

3.	(reliab* or accura* or impact* or variation*).ti,ab.
4.	"severity of illness index"/
5.	observer variation/
6.	"reproducibility of results"/
7.	or/3-6
8.	(1 and 7) or 2

Embase search terms

1.	((class* or categor* or stage* or staging or grade* or grading) adj4 (ulcer* or sore* or bedsore* or damage* or pressure or decubit*)).ti,ab.
2.	clinical classification/
3.	classification/
4.	staging/
5.	or/1-4
6.	observer variation/
7.	disease severity/
8.	"severity of illness index"/
9.	reproducibility/
10.	(reliab* or accura* or impact* or variation*).ti,ab.
11.	or/6-10
12.	5 and 11

Cochrane search terms

#1.	((class* or categor* or stage* or staging or grade* or grading) near/4 (ulcer* or sore* or bedsore* or damage* or pressure or decubit*)):ti,ab,kw

CINAHL search terms

S1.	(class* or categor* or stage* or staging or grade* or grading) N4 (ulcer* or sore* or bedsore* or damage* or pressure or decubit*)
S2.	(MH "Pressure Ulcer+/CL")
S3.	reliab* or accura* or impact* or variation* or reproduc* or sever*
S4.	(S1 AND S3) OR S2

F.4.3 Negative pressure wound therapy

15. What is the clinical and cost effectiveness of negative pressure wound therapy for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Negative pressure wound therapy	None	Standard exclusions (Medline, Embase)	See Table 1

Medline search terms

1.	negative-pressure wound therapy/
2.	negative pressure.ti,ab.
3.	vacuum/

4.	suction/
5.	(sub-atmospheric or subatmospheric).ti,ab.
6.	(vacuum adj2 (therapy or dressing* or closure or seal* or compression or pack or drainage)).ti,ab.
7.	((suction or drainage) adj2 (dressing* or wound* or therapy or closure)).ti,ab.
8.	or/1-7

Embase search terms

1.	vacuum assisted closure/
2.	negative pressure.ti,ab.
3.	(sub-atmospheric or subatmospheric).ti,ab.
4.	(vacuum adj2 (therapy or dressing* or closure or seal* or compression or pack or drainage)).ti,ab.
5.	((suction or drainage) adj2 (dressing* or wound* or therapy or closure)).ti,ab.
6.	vacuum/
7.	suction drainage/
8.	suction/
9.	or/1-8

Cochrane search terms

#1.	MeSH descriptor Negative-Pressure Wound Therapy explode all trees
#2.	MeSH descriptor Vacuum explode all trees
#3.	MeSH descriptor Suction explode all trees
#4.	negative pressure:ti,ab,kw
#5.	(sub-atmospheric or subatmospheric):ti,ab,kw
#6.	(vacuum near/2 (therapy or dressing* or closure or seal* or compression or pack or drainage)):ti,ab,kw
#7.	((suction or drainage) near/2 (dressing* or wound* or therapy or closure)):ti,ab,kw
#8.	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7)

xCINAHL search terms

S1.	(MH "Negative Pressure Wound Therapy")
S2.	(MH "Vacuum")
S3.	(MH "Suction")
S4.	negative pressure
S5.	sub-atmospheric or subatmospheric
S6.	(vacuum and (therapy or dressing* or closure or seal* or compression or pack or drainage))
S7.	((suction or drainage) and (dressing* or wound* or therapy or closure))
S8.	S1 or S2 or S3 or S4 or S5 or S6 or S7

F.4.4 Electrotherapy

16.What is the clinical and cost effectiveness of electrotherapy for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Electrotherapy	None	Standard exclusions (Medline,	See Table 1

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
			Embase)	

Medline search terms

1.	electric stimulation therapy/
2.	(electrotherap* or electro-therap*).ti,ab.
3.	(electric* adj3 (stimulat* or current*)).ti,ab.
4.	((frequenc* or intensity) adj3 (current* or pulsed)).ti,ab.
5.	((pulse or pulsed) adj3 current*).ti,ab.
6.	(interferential adj3 therap*).ti,ab.
7.	((direct or monophas* or galvan* or alternating) adj3 (pulse or pulsed or current*)).ti,ab.
8.	high voltage.ti,ab.
9.	or/1-8

Embase search terms

1.	electrostimulation therapy/
2.	(electrotherap* or electro-therap*).ti,ab.
3.	(electric* adj3 (stimulat* or current*)).ti,ab.
4.	((frequenc* or intensity) adj3 (current* or pulsed)).ti,ab.
5.	((pulse or pulsed) adj3 current*).ti,ab.
6.	(interferential adj3 therap*).ti,ab.
7.	((direct or monophas* or galvan* or alternating) adj3 (pulse or pulsed or current*)).ti,ab.
8.	high voltage.ti,ab.
9.	or/1-8

Cochrane search terms

#1.	MeSH descriptor Electric Stimulation Therapy, this term only
#2.	(electrotherap* or electro-therap*):ti,ab,kw
#3.	(electric* near/3 (stimulat* or current*)):ti,ab,kw
#4.	((frequenc* or intensity) near/3 (current* or pulsed)):ti,ab,kw
#5.	((pulse or pulsed) near/3 current*):ti,ab,kw
#6.	(interferential near/3 therap*):ti,ab,kw
#7.	((direct or monophas* or galvan* or alternating) near/3 (pulse or pulsed or current*)):ti,ab,kw
#8.	high voltage:ti,ab,kw
#9.	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8)

CINAHL search terms

S1.	(MH "electrotherapy")
S2.	electrotherap* or electro-therap*
S3.	(electric* and (stimulat* or current*))
S4.	((frequenc* or intensity) and (current* or pulsed))
S5.	((pulse or pulsed) and current*)
S6.	(interferential and therap*)
S7.	((direct or monophas* or galvan* or alternating) and (pulse or pulsed or current*))
S8.	high voltage
S9.	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8

F.4.5 Hyperbaric oxygen therapy

17. What is the clinical and cost effectiveness of hyperbaric oxygen therapy for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Hyperbaric oxygen therapy	None	Standard exclusions (Medline, Embase)	See Table 1

Medline search terms

1.	exp hyperbaric oxygenation/
2.	atmosphere exposure chambers/
3.	oxygen inhalation therapy/
4.	hyperbar*.ti,ab.
5.	(hbo or hbot).ti,ab.
6.	100% oxygen.ti,ab.
7.	pure oxygen.ti,ab.
8.	(pressur* adj5 oxygen).ti,ab.
9.	((multiplace or monoplace or oxygen* or hyperbar*) adj5 chamber*).ti,ab.
10.	((topical or local or portable) adj5 oxygen).ti,ab.
11.	(oxygen adj2 (therap* or treat*)).ti,ab.
12.	or/1-11

Embase search terms

1.	hyperbaric oxygen/
2.	oxygen therapy/
3.	hyperbar*.ti,ab.
4.	(hbo or hbot).ti,ab.
5.	100% oxygen.ti,ab.
6.	pure oxygen.ti,ab.
7.	(pressur* adj5 oxygen).ti,ab.
8.	((multiplace or monoplace or oxygen* or hyperbar*) adj5 chamber*).ti,ab.
9.	((topical or local or portable) adj5 oxygen).ti,ab.
10.	(oxygen adj2 (therap* or treat*)).ti,ab.
11.	or/1-10

Cochrane search terms

#1.	MeSH descriptor Hyperbaric Oxygenation explode all trees
#2.	MeSH descriptor Oxygen Inhalation Therapy, this term only
#3.	MeSH descriptor Atmosphere Exposure Chambers, this term only
#4.	(hyperbar* or HBO or HBOT):ti,ab,kw
#5.	(100% oxygen or pure oxygen):ti,ab,kw
#6.	(pressur* near/5 oxygen):ti,ab,kw
#7.	((multiplace or monoplace or oxygen* or hyperbar*) near/5 chamber*):ti,ab,kw
#8.	((topical or local or portable) near/5 oxygen):ti,ab,kw

#9.	(oxygen near/2 (therap* or treat*)):ti,ab,kw
#10.	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9)

CINAHL search terms

S1.	(MH "Hyperbaric Oxygenation")
S2.	(MH "Oxygen Therapy")
S3.	hyperbar*
S4.	HBO or HBOT
S5.	100% oxygen or pure oxygen
S6.	pressur* N5 oxygen
S7.	((multiplace or monoplace or oxygen*) and chamber*)
S8.	topical N5 oxygen OR portable N5 oxygen OR local N5 oxygen
S9.	oxygen N2 therap* OR oxygen N2 treat*
S10.	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9

F.4.6 Debridement

18. What are the most clinically and cost effective methods of debridement of non-viable tissue for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Debridement	None	SR, RCT (Medline, Embase only)	See Table 1

Medline search terms

1.	debridement/
2.	collagenases/
3.	papain/
4.	urea/
5.	(debridement* and (surg* or autolytic* or enzymatic* or mechanic* or maggot* or wound or ulcer)).tw.
6.	((maggot* or larv* or larval) and (debridement or debriding)).ti,ab.
7.	(sharp and (debridement or debriding)).ti,ab.
8.	(pulsatile lavage or hydrotherapy or versajet or stryker pulsed irrigation).ti,ab.
9.	((wet-to-dry dressing* or mechanic*) and (debridement or debriding)).ti,ab.
10.	excis*.tw.
11.	collagenase.ti,ab.
12.	urea.ti,ab.
13.	papain.ti,ab.
14.	papain-urea.ti,ab.
15.	or/1-14

Embase search terms

1.	exp debridement/
2.	exp collagenase/
3.	exp papain/
4.	exp urea/

5.	debridement*.ti,ab.
6.	(debridement* and (surg* or autolytic* or enzymatic* or mechanic* or maggot* or wound or ulcer)).tw.
7.	((maggot* or larv* or larval) and (debridement or debriding)).ti,ab.
8.	(sharp and (debridement or debriding)).ti,ab.
9.	(pulsatile lavage or hydrotherapy or versajet or stryker pulsed irrigation).ti,ab.
10.	((wet-to-dry dressing* or mechanic*) and (debridement or debriding)).ti,ab.
11.	excis*.ti,ab.
12.	collagenase.ti,ab.
13.	urea.ti,ab.
14.	papain.ti,ab.
15.	papain-urea.ti,ab.
16.	exp papain plus urea/
17.	or/1-16

Cochrane search terms

#1.	MeSH descriptor: [Collagenases] explode all trees
#2.	MeSH descriptor: [Debridement] explode all trees
#3.	MeSH descriptor: [Papain] explode all trees
#4.	MeSH descriptor: [Urea] explode all trees
#5.	(debridement* and (surg* or autolytic* or enzymatic* or mechanic* or maggot* or wound or ulcer)):ti,ab,kw
#6.	collagenase:ti,ab,kw
#7.	excis*:ti,ab,kw
#8.	papain:ti,ab,kw
#9.	papain-urea:ti,ab,kw
#10.	urea:ti,ab,kw
#11.	{or #1-#10}

CINAHL search terms

S1.	debridement* N1 (surg* or autolytic*or enzymatic* or mechanic* or maggot* or wound or ulcer*)
S2.	excis*
S3.	collagenase
S4.	papain
S5.	urea
S6.	papain-urea
S7.	(MH "Urea")
S8.	(MH "Debridement+")
S9.	((maggot* or larv* or larval) and (debridement or debriding))
S10.	(sharp and (debridement or debriding))
S11.	(pulsatile lavage or hydrotherapy or versajet or stryker pulsed irrigation)
S12.	((wet-to-dry dressing* or mechanic*) and (debridement or debriding))
S13.	S1 or S2 or S3 or S4 or S5 or S6 or s7 or S8 or S9 or S10 or S11 or S12

F.4.7 Maggot debridement

19. What are the most clinically effective methods of maggot debridement of non-viable tissue for treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Maggot debridement	None	None	See Table 1

Medline search terms

1.	((maggot* or larv* or larval) and (debridement or debriding)).ti,ab.

Embase search terms

1.	((maggot* or larv* or larval) and (debridement or debriding)).ti,ab.

Cochrane search terms

#1.	((maggot* or larv* or larval) and (debridement or debriding)):ti,ab,kw

CINAHL search terms

S1.	(maggot* or larv* or larval) and (debridement or debriding)

F.4.8 Topical agents

20. What are the most clinically and cost effective topical agents for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Topical agents	None	SR,RCT (Medline, Embase)	See Table 1

Medline search terms

1.	exp administration, topical/
2.	exp alcohols/
3.	exp anti-infective agents/
4.	exp baths/
5.	exp benzoyl peroxide/
6.	exp chlorhexidine/
7.	exp detergents/
8.	exp gentian violet/
9.	exp hydrogen peroxide/
10.	exp hydrotherapy/
11.	exp iodophors/
12.	exp ointments/
13.	exp saline solution, hypertonic/
14.	exp sodium chloride/
15.	exp sodium hypochlorite/
16.	exp solutions/
17.	emollients/
18.	(normal saline or hypochlorite* or iodophor* or povidone or iodine or chlorhexidine or hibitane or betadine or antiseptic* or disinfectant* or detergent* or soap* or hydrogen

	peroxide or benzoyl peroxide or gentian violet or eusol or dakin* or permanganate or water or alcohol* or solution*).mp.
19.	(wash* or scrub* or swab* or shower* or bath* or soak* or irrigate* or whirlpool).mp.
20.	balm*.tw.
21.	barrier*.tw.
22.	cream*.tw.
23.	emollient*.tw.
24.	ointment*.tw.
25.	past*.tw.
26.	salve*.tw.
27.	topic* agent*.tw.
28.	topic* preparation*.tw.
29.	topic* therap*.tw.
30.	topic* treatment*.tw.
31.	unction*.tw.
32.	unguent*.tw.
33.	wound* cleans*.tw.
34.	wound* irrigation.tw.
35.	wound* solution*.tw.
36.	or/1-35

Embase search terms

1.	exp wound irrigation/
2.	exp hydrotherapy/
3.	exp bath/
4.	exp sodium chloride/
5.	exp anti-infective agents/
6.	exp detergent/
7.	exp soap/
8.	exp water/
9.	exp alcohol/
10.	exp emollient agent/
11.	exp ointments/
12.	exp paste/
13.	exp salve/
14.	exp cream/
15.	exp topical agent/
16.	exp topical treatment/
17.	exp wound irrigation/
18.	topic* agent*.ti,ab.
19.	topic* preparation*.ti,ab.
20.	topic* therap*.ti,ab.
21.	topic* treatment*.ti,ab.
22.	wound* cleans*.ti,ab.
23.	wound* irrigation.ti,ab.
24.	wound* solution*.ti,ab.

25.	past*.ti,ab.
26.	salve*.ti,ab.
27.	cream*.ti,ab.
28.	unguent*.ti,ab.
29.	balm*.ti,ab.
30.	unction*.ti,ab.
31.	emollient*.ti,ab.
32.	ointment*.ti,ab.
33.	barrier*.ti,ab.
34.	(normal saline or hypochlorite* or iodophor* or povidone or iodine or chlorhexidine or hibitane or betadine or antiseptic* or disinfectant* or detergent* or soap* or hydrogen peroxide or benzoyl peroxide or gentian violet or eusol or dakin* or permanganate or water or alcohol* or solution*).ti,ab.
35.	(wash* or scrub* or swab* or shower* or bath* or soak* or irrigate* or whirlpool).ti,ab.
36.	"solution and solubility"/
37.	or/1-36

Cochrane search terms

#1.	(topic* agent* or topic* preparation* or topic* therap* or topic* treatment* or wound* cleans* or wound* irrigation* or wound* solution* or past* or salve* or cream* or unguent* or balm* or unction* or emollient* or ointment* or barrier* or no-sting barrier*):ti,ab,kw
#2.	(normal saline or hypochlorite* or iodophor* or povidone or iodine or chlorhexidine or hibitane or betadine or antiseptic* or disinfectant* or detergent* or soap* or hydrogen peroxide or benzoyl peroxide or gentian violet or eusol or dakin* or permanganate or water or alcohol* or solution*)
#3.	(wash* or scrub* or swab* or shower* or bath* or soak* or irrigate* or whirlpool)
#4.	MeSH descriptor: [Administration, Topical] explode all trees
#5.	MeSH descriptor: [Emollients] explode all trees
#6.	MeSH descriptor: [Ointments] explode all trees
#7.	MeSH descriptor: [Sodium Chloride] explode all trees
#8.	MeSH descriptor: [Saline Solution, Hypertonic] explode all trees
#9.	MeSH descriptor: [Sodium Hypochlorite] explode all trees
#10.	MeSH descriptor: [Chlorhexidine] explode all trees
#11.	MeSH descriptor: [Iodophors] explode all trees
#12.	MeSH descriptor: [Anti-Infective Agents] explode all trees
#13.	MeSH descriptor: [Disinfectants] explode all trees
#14.	MeSH descriptor: [Detergents] explode all trees
#15.	MeSH descriptor: [Soaps] explode all trees
#16.	MeSH descriptor: [Hydrogen Peroxide] explode all trees
#17.	MeSH descriptor: [Water] explode all trees
#18.	MeSH descriptor: [Gentian Violet] explode all trees
#19.	MeSH descriptor: [Alcohols] explode all trees
#20.	MeSH descriptor: [Solutions] explode all trees
#21.	MeSH descriptor: [Hydrotherapy] explode all trees
#22.	MeSH descriptor: [Baths] explode all trees
#23.	{or #1-#22}

CINAHL search terms

S1.	MH sodium chloride
S2.	MH sodium hypochlorite
S3.	MH saline solution, hypertonic
S4.	MH antiinfective agents+
S5.	MH povidone-iodine
S6.	MH detergents+
S7.	MH soaps
S8.	MH hydrogen peroxide
S9.	MH gentian violet
S10.	MH water+
S11.	MH alcohols+
S12.	MH solutions+
S13.	MH irrigation
S14.	(MH "bathing and baths")
S15.	MH administration, topical+
S16.	MH emollients+
S17.	MH ointments
S18.	topic* agent*
S19.	topic* preparation*
S20.	topic* therap*
S21.	topic* treatment*
S22.	wound* cleans*
S23.	wound* irrigation*
S24.	wound* solution*
S25.	past* or salve* or cream* or unguent* or balm* or unction* or emollient* or barrier*
S26.	normal saline or hypochlorite* or iodophor* or povidone or iodine or chlorhexidine or hibitane or betadine or antiseptic* or disinfectant* or detergent* or soap* or hydrogen peroxide or benzoyl peroxide or gentian violet or eusol or dakin* or permanganate or water or alcohol* or solution*
S27.	wash* or scrub* or swab* or shower* or bath* or soak* or irrigate* or whirlpool
S28.	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27

F.4.9 Systemic agents

21. What are the most clinically and cost effective systemic agents for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Systemic agents	None	None	See Table 1

Medline search terms

1.	exp anti-bacterial agents/
2.	exp antibiotic prophylaxis/
3.	exp anti-infective agents/
4.	exp antifungal agents/

5.	exp penicillins/
6.	exp cephalosporins/
7.	exp aminoglycosides/
8.	exp quinolones/
9.	exp clindamycin/
10.	exp lincosamides/
11.	exp metronidazole/
12.	exp trimethoprim/
13.	exp trimethoprim-sulfamethoxazole combination/
14.	(antibiotic* or anti-biotic* or antimicrobial* or anti-microbial* or antifungal* or anti-fungal* or antiinfective* or anti-infective*).tw.
15.	(anti-mycobacterial* or antimycobacterial* or bacteriocid* or bactericid* or fungicid*).ti,ab.
16.	(penicillin* or cephalosporin* or aminoglycoside* or quinolone* or clindamycin* or lyncomycin* or metronidazole* or trimethoprim* or trimethoprim-sulfamethoxazole*).ti,ab.
17.	or/1-16

Embase search terms

1.	exp antibiotic agent/
2.	exp antiinfective agent/
3.	exp antifungal agent/
4.	exp penicillin g/
5.	exp cephalosporin/
6.	exp aminoglycoside/
7.	exp quinoline/
8.	exp clindamycin/
9.	exp lincosamide/
10.	exp metronidazole/
11.	exp trimethoprim/
12.	exp cotrimoxazole/
13.	(penicillin* or cephalosporin* or aminoglycoside* or quinolone* or clindamycin* or lyncomycin* or metronidazole* or trimethoprim* or trimethoprim-sulfamethoxazole*).ti,ab.
14.	(antibiotic or anti-biotic or antimicrobial or anti-microbial or antifungal or anti-fungal or antiinfective or anti-infective).ti,ab.
15.	(anti-mycobacterial or antimycobacterial or bacteriocid or bactericid or fungicid).ti,ab.
16.	or/1-15

Cochrane search terms

#1.	MeSH descriptor: [Anti-Bacterial Agents] explode all trees
#2.	MeSH descriptor: [Antibiotic Prophylaxis] explode all trees
#3.	MeSH descriptor: [Anti-Infective Agents] explode all trees
#4.	MeSH descriptor: [Antifungal Agents] explode all trees
#5.	MeSH descriptor: [Penicillins] explode all trees
#6.	MeSH descriptor: [Cephalosporins] explode all trees
#7.	MeSH descriptor: [Aminoglycosides] explode all trees
#8.	MeSH descriptor: [Quinolines] explode all trees
#9.	MeSH descriptor: [Clindamycin] explode all trees
#10.	MeSH descriptor: [Lincosamides] explode all trees

#11.	MeSH descriptor: [Metronidazole] explode all trees
#12.	MeSH descriptor: [Trimethoprim] explode all trees
#13.	(penicillin* or cephalosporin* or aminoglycoside* or quinolone* or clindamycin* or lyncomycin* or metronidazole* or trimethoprim* or trimethoprim-sulfamethoxazole*):ti,ab,kw
#14.	(antibiotic* or anti-biotic* or antimicrobial* or anti-microbial* or antifungal* or anti-fungal* or antiinfective* or anti-infective*):ti,ab,kw
#15.	(anti-mycobacterial* or antimycobacterial* or bacteriocid* or bactericid* or fungicid*):ti,ab,kw
#16.	{or #1-#15}

CINAHL search terms

S1.	MH "antibiotics+"
S2.	MH “aminoglycosides+”
S3.	MH “antibiotic prophylaxis+”
S4.	MH “antifungal agents+”
S5.	MH “antiinfective agents+”
S6.	MH “cephalosporins+”
S7.	MH “clindamycin+”
S8.	MH “metronidazole+”
S9.	MH “penicillins+”
S10.	MH “trimethoprim+”
S11.	antibiotic* or anti-biotic* or antimicrobial* or anti-microbial* or antifungal* or anti-fungal* or antiinfective* or anti-infective*
S12.	anti-mycobacterial* or antimycobacterial* or bacteriocid* or bactericid* or fungicid*
S13.	penicillin* or cephalosporin* or aminoglycoside* or quinolone* or clindamycin* or lyncomycin* or metronidazole* or trimethoprim*
S14.	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13

F.4.10 Dressings

22.What are the most clinically and cost effective dressings for the treatment of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Dressings	None	SR, RCT (Medline, Embase)	See Table 1

Medline search terms

1.	cellulose, oxidized/
2.	exp bandages/
3.	exp collagen/
4.	exp colloids/
5.	exp growth substances/
6.	skin, artificial/
7.	(bandage* or dressing* or hydrocolloid* or colloid* or gauze* or film* or foam* or layer* or bind* or wrap* or tulle* or occlusive or alginate* or absorbing or impregnate* or capillary* or hydrofibre* or hydrofiber* or collagen* or hyaluronic acid or hydrogel or hydropolymer* or charcoal or silver or honey or sugar or cellulose* or non adheren* or matrix or polysaccharide*

	or compress* or knitted viscose or saline soak or growth factor* or growth substance* or skin substitute*).tw.
8.	exp polysaccharides/
9.	or/1-8

Embase search terms

1.	exp colloid/
2.	exp collagen/
3.	exp hyaluronic acid/
4.	exp growth factor/
5.	exp growth substances/
6.	exp artificial skin/
7.	exp polysaccharide/
8.	(bandage* or dressing* or hydrocolloid* or colloid* or gauze* or film* or foam* or layer* or bind* or wrap* or tulle* or occlusive or alginate* or absorbing or impregnate* or capillary* or hydrofibre* or hydrofiber* or collagen* or hyaluronic acid or hydrogel or hydropolymer* or charcoal or silver or honey or sugar or cellulose* or non adheren* or matrix or polysaccharide* or compress* or knitted viscose or saline soak or growth factor* or growth substance* or skin substitute*).ti,ab.
9.	exp "bandages and dressings"/
10.	or/1-9

Cochrane search terms

#1.	(bandage* or dressing* or hydrocolloid* or colloid* or gauze* or film* or foam* or layer* or bind* or wrap* or tulle* or occlusive or alginate* or absorbing or impregnat* or capillar* or hydrofib* or collagen* or hyaluronic acid or hydrogel or hydropolymer* or charcoal or silver or honey or sugar or knitted viscose or saline soak or cellulose* or growth factor* or growth substance* or compress* or skin substitute* or polysaccharide* or matrix or non adheren* or non-adheren*):ti,ab,kw
#2.	MeSH descriptor: [Bandages] explode all trees
#3.	MeSH descriptor: [Colloids] explode all trees
#4.	MeSH descriptor: [Collagen] explode all trees
#5.	MeSH descriptor: [Cellulose, Oxidized] explode all trees
#6.	MeSH descriptor: [Growth Substances] explode all trees
#7.	MeSH descriptor: [Skin, Artificial] explode all trees
#8.	MeSH descriptor: [Polysaccharides] explode all trees
#9.	{or #1-#8}

CINAHL search terms

S1.	bandage* or dressing* or hydrocolloid* or colloid* or gauze* or film* or foam* or layer* or bind* or wrap* or tulle* or occlusive or alginate* or absorbing or impregnat* or capillar* or hydrofiber or hydrofibre or collagen* or hyaluronic acid or hydrogel or hydropolymer* or charcoal or silver or honey or knitted viscose or saline soak or cellulose* or growth factor* or growth substance* or compress* or skin substitute* or polysaccharide* or matrix or non adheren* or non-adheren*
S2.	MH “Bandages and Dressings+”
S3.	MH colloids+
S4.	MH collagen
S5.	(MH "Hydrofiber Dressings")
S6.	MH ionic silver dressings

S7.	(MH "Hydrogel Dressings")
S8.	MH cellulose
S9.	MH growth substances+
S10.	MH skin, artificial
S11.	(MH "Polysaccharides+")
S12.	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11

F.4.11 Management of pressure ulcers of the heel

23. What is the most clinically and cost effective method for management of pressure ulcers of the heel?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Heel pressure ulcers	Treatment	None	Standard exclusions (Medline, Embase)	See Table 1

Medline search terms

1.	heel*.ti,ab.
2.	heel/
3.	or/1-2

Embase search terms

1.	heel*.ti,ab.
2.	heel/
3.	or/1-2

Cochrane search terms

#1.	heel*:ti,ab,kw

CINAHL search terms

S1.	heel*

F.4.12 Patient information / healthcare professionals training and education

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

24. What information is required for patients/carers to prevent the occurrence of pressure ulcers?
25. What training and education is required for healthcare professionals to prevent the occurrence of pressure ulcers?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	Topical agents	None	Standard exclusions (Medline, Embase and CINAHL)	See Table 1

Medline search terms

1.	ed.fs.
2.	patient education as topic/
3.	publications/ or pamphlets/ or teaching materials/
4.	((patient* or carer* or caregiver*) adj3 (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.
5.	((patient* or carer* or caregiver*) adj3 (information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach*)).ti,ab.
6.	((information* or educat* or learn* or train* or advi?e* or instruction* or teach*) adj3 (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.
7.	(self adj4 (manag* or caring or care) adj4 (information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach*)).ti,ab.
8.	or/2-7
9.	education, continuing/ or education, medical/ or education, medical, continuing/ or education, nursing/ or education, nursing, continuing/ or education, pharmacy/ or education, pharmacy, continuing/ or exp inservice training/
10.	nurses' aides/ or community health workers/ or home health aides/ or physician assistants/
11.	nurses/ or nurse clinicians/ or nurse practitioners/
12.	physicians/ or general practitioners/ or hospitalists/ or physicians, family/ or physicians, primary care/ or physicians, women/
13.	dermatology/ or dietetics/ or pharmacists/ or physical therapists/ or physical therapist assistants/ or occupational therapy/
14.	(health worker* or health professional* or health care professional* or doctor* or physician* or clinician* or registrar* or dermatologist* or gp or gps or general practitioner* or nurse* or hca or hcas or health care assistant* or health visitor* or dietician* or pharmacist* or occupational therapist* or physiotherapist* or physio*1).ti,ab.
15.	or/10-14
16.	(educat* or learn* or train* or program*).ti,ab.
17.	15 and 16
18.	9 or 17
19.	1 or 8 or 18

Embase search terms

1.	patient education/ or information dissemination/ or patient information/
2.	((patient* or carer* or caregiver*) adj3 (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.
3.	((patient* or carer* or caregiver*) adj3 (information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach*)).ti,ab.
4.	((information* or educat* or learn* or train* or advi?e* or instruction* or teach*) adj3 (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.
5.	(self adj4 (manag* or caring or care) adj4 (information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach*)).ti,ab.
6.	or/1-5
7.	continuing education/ or in service training/
8.	exp nurse/ or nursing assistant/
9.	health care personnel/ or health auxiliary/ or medical staff/ or hospital personnel/ or medical personnel/ or medical assistant/ or physician assistant/

10.	hospital physician/ or resident/ or physician/ or dermatologist/ or female physician/ or general practitioner/ or occupational physician/
11.	dietitian/ or health practitioner/ or health visitor/ or occupational therapist/ or occupational therapy assistant/ or pharmacist/ or physiotherapist/ or physiotherapist assistant/
12.	(health worker* or health professional* or health care professional* or doctor* or physician* or clinician* or registrar* or dermatologist* or gp or gps or general practitioner* or nurse* or hca or hcas or health care assistant* or health visitor* or dietician* or pharmacist* or occupational therapist* or physiotherapist* or physio*1).ti,ab.
13.	or/8-12
14.	(educat* or learn* or train* or program*).ti,ab.
15.	13 and 14
16.	7 or 15
17.	6 or 16

Cochrane search terms

#1.	MeSH descriptor: [Patient Education as Topic] this term only
#2.	MeSH descriptor: [Publications] this term only
#3.	MeSH descriptor: [Pamphlets] this term only
#4.	MeSH descriptor: [Teaching Materials] this term only
#5.	((patient* or carer* or caregiver*) near/3 (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,kw
#6.	((patient* or carer* or caregiver*) near/3 (information* or educat* or learn* or train* or program* or advi?e* or instruction* or teach*)):ti,ab,kw
#7.	((information* or educat* or learn* or train* or advi?e* or instruction* or teach*) near/3 (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,kw
#8.	(self near/4 (manag* or caring or care) near/4 (information* or educat* or learn* or train* or program* or advice* or advise* or instruction* or teach*)):ti,ab,kw
#9.	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
#10.	MeSH descriptor: [Education, Continuing] this term only
#11.	MeSH descriptor: [Education, Medical] this term only
#12.	MeSH descriptor: [Education, Medical, Continuing] this term only
#13.	MeSH descriptor: [Education, Nursing] this term only
#14.	MeSH descriptor: [Education, Nursing, Continuing] this term only
#15.	MeSH descriptor: [Education, Pharmacy] this term only
#16.	MeSH descriptor: [Education, Pharmacy, Continuing] this term only
#17.	MeSH descriptor: [Inservice Training] explode all trees
#18.	#10 or #11 or #12 or #13 or #14 or #15 or #16 or #17
#19.	MeSH descriptor: [Nurses' Aides] this term only
#20.	MeSH descriptor: [Community Health Workers] this term only
#21.	MeSH descriptor: [Home Health Aides] this term only
#22.	MeSH descriptor: [Physician Assistants] this term only
#23.	MeSH descriptor: [Nurses] this term only
#24.	MeSH descriptor: [Nurse Clinicians] this term only
#25.	MeSH descriptor: [Nurse Practitioners] this term only
#26.	MeSH descriptor: [Physicians] this term only
#27.	MeSH descriptor: [General Practitioners] this term only

#28.	MeSH descriptor: [Hospitalists] this term only
#29.	MeSH descriptor: [Physicians, Family] this term only
#30.	MeSH descriptor: [Physicians, Primary Care] this term only
#31.	MeSH descriptor: [Physicians, Women] this term only
#32.	MeSH descriptor: [Dermatology] this term only
#33.	MeSH descriptor: [Dietetics] this term only
#34.	MeSH descriptor: [Pharmacists] this term only
#35.	MeSH descriptor: [Physical Therapists] this term only
#36.	MeSH descriptor: [Occupational Therapy] this term only
#37.	("health worker" or "health workers" or "health professional" or "health professionals" or "health care professional" or "health care professionals" or doctor* or physician* or clinician* or registrar* or dermatologist* or GP or GPs or "general practitioner" or "general practitioners" or nurse* or HCA or HCAs or "health care assistant" or "health care assistants" or "health visitor" or "health visitors" or dietician* or pharmacist* or "occupational therapist" or "occupational therapists" or physiotherapist*):ti,ab,kw
#38.	#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
#39.	(educat* or learn* or train* or program*):ti,ab,kw
#40.	#38 and #39
#41.	#18 or #40
#42.	#9 or #41

CINAHL search terms

S1.	(MH "patient education") or (MH "patient discharge education")
S2.	(MH "pamphlets") or (MH "publication formats")
S3.	(MH "teaching materials+")
S4.	TX ((patient* or carer* or caregiver*) N3 (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*))
S5.	TX ((patient* or carer* or caregiver*) N3 (information* or educat* or learn* or train* or program* or advice* or advise* or instruction* or teach*))
S6.	TX ((information* or educat* or learn* or train* or advi?e* or instruction* or teach*) N3 (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.	TX (self n4 (manag* or caring or care) N4 (information* or educat* or learn* or train* or program* or advice* or advise* or instruction* or teach*))
S8.	S1 or S2 or S3 or S4 or S5 or S6 or S7
S9.	(MH "education, continuing") or (MH "education, medical, continuing") or (MH "education, nursing, continuing")
S10.	(MH "nurses") or (MH "advanced practice nurses") or (MH "clinical nurse specialists") or (MH "nurse practitioners") or (MH "adult nurse practitioners") or (MH "family nurse practitioners") or (MH "staff nurses") or (MH "rn first assistants") or (MH "nursing assistants") or (MH "practical nurses")
S11.	(MH "dietitians") or (MH "medical assistants") or (MH "occupational therapists") or (MH "occupational therapy assistants") or (MH "physical therapist assistants") or (MH "physical therapists") or (MH "physician assistants") or (MH "medical staff, hospital") or (MH "hospitalists") or (MH "physicians") or (MH "physicians, family") or (MH "physicians, women")
S12.	(MH "dermatology")
S13.	(MH "pharmacists") or (MH "pharmacy technicians")
S14.	TI (health worker* or health professional* or health care professional* or doctor* or

	physician* or clinician* or registrar* or dermatologist* or gp or gps or general practitioner* or nurse* or hca or hcas or health care assistant* or health visitor* or dietician* or pharmacist* or occupational therapist* or physiotherapist*)
S15.	AB (health worker* or health professional* or health care professional* or doctor* or physician* or clinician* or registrar* or dermatologist* or gp or gps or general practitioner* or nurse* or hca or hcas or health care assistant* or health visitor* or dietician* or pharmacist* or occupational therapist* or physiotherapist*)
S16.	S10 or S11 or S12 or S13 or S14 or S15
S17.	TI (educat* or learn* or train* or program*)
S18.	AB (educat* or learn* or train* or program*)
S19.	S17 or S18
S20.	S16 and S19
S21.	S9 or S20
S22.	S8 or S21

F.5 Health economics searches

F.5.1 Economic evaluations

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers	None	None	Economic (Medline and Embase only)	Medline and Embase: 2010 – 28th August 2013 CRD and HEED: All dates – 28th August 2013

CRD search terms

#1.	MeSH DESCRIPTOR pressure ulcer EXPLODE ALL TREES WITH QUALIFIER undefined
#2.	(decubit*) OR (pressure AND (sore* OR ulcer* OR damage)) OR (bedsore* or bed-sore*)
#3.	#1 OR #2

HEED search terms

1.	AX=decubit*
2.	AX=pressure AND (sore* OR ulcer* OR damage)
3.	AX=bedsore* OR bed-sore*
4.	CS=1 OR 2 OR 3

F.5.2 Topical barrier preparations (economics)

An additional economics search was run for the following question which had a broader population than the original search for economic evaluations:

10. What are the most clinically and cost effective topical barrier preparations for the prevention of pressure ulcers and moisture lesions?

Search constructed by combining the columns in the following table using the AND Boolean operator

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
Pressure ulcers /	Topical barrier	None	Economic (Medline	Medline and

Population	Intervention / exposure	Comparison	Study filter used	Date parameters
moisture lesions / perineal dermatitis	preparations		and Embase only)	Embase: 2012 – 28th August 2013 CRD and HEED: All dates – 28th August 2013

Medline search terms

1.	pressure ulcer/
2.	decubit*.ti,ab.
3.	(pressure adj (sore* or ulcer* or damage)).ti,ab.
4.	(bedsore* or bed-sore*).ti,ab.
5.	(incontinen* adj2 dermatitis).ti,ab.
6.	((moist* or friction or shear) adj2 (sore* or ulcer* or damage or wound* or injur* or lesion*)).ti,ab.
7.	((perineum or perineal) adj2 (damage or dermatitis or injur* or breakdown or wound* or lesion* or ulcer* or sore*)).ti,ab.
8.	perineum/ and exp dermatitis/
9.	or/1-8
10.	(cream* or oil* or gel* or barrier* or ointment* or emollient*).ti,ab.
11.	ointments/
12.	exp emollients/
13.	protective agents/
14.	exp silicones/
15.	zinc oxide/
16.	exp petrolatum/
17.	paraffin/
18.	exp dermatologic agents/
19.	(conotrane or morhulin or sprilon or sudocrem).ti,ab.
20.	exp fatty acids/
21.	exp plant extracts/
22.	mepentol.ti,ab.
23.	fatty acid*.ti,ab.
24.	exp glycerides/
25.	(sanyrene or corpitol*).ti,ab.
26.	or/10-25
27.	9 and 26

Embase search terms

1.	decubitus/
2.	decubit*.ti,ab.
3.	(pressure adj (sore* or ulcer* or damage)).ti,ab.
4.	(bedsore* or bed-sore*).ti,ab.
5.	((moist* or friction or shear) adj2 (sore* or ulcer* or damage or wound* or injur* or lesion*)).ti,ab.
6.	(incontinen* adj2 dermatitis).ti,ab.
7.	((perineum or perineal) adj2 (damage or dermatitis or injur* or breakdown or wound* or

	lesion* or ulcer* or sore*)).ti,ab.
8.	perineum/ and exp dermatitis/
9.	or/1-8
10.	(cream* or oil* or gel* or barrier* or ointment* or emollient*).ti,ab.
11.	exp ointment/
12.	emollient agent/
13.	exp skin protective agent/
14.	zinc oxide/
15.	exp gel/
16.	cream/
17.	exp ointment base/
18.	exp dermatological agent/
19.	(conotrane or morhulin or sprilon or sudocrem).ti,ab.
20.	mepentol.ti,ab.
21.	fatty acid*.ti,ab.
22.	(sanyrene or corpitol*).ti,ab.
23.	exp fatty acid/
24.	exp plant extract/
25.	exp acylglycerol/
26.	or/10-25
27.	9 and 26

CRD search terms

#1.	MeSH DESCRIPTOR pressure ulcer EXPLODE ALL TREES WITH QUALIFIER undefined
#2.	(decubit*) OR (pressure AND (sore* OR ulcer* OR damage)) OR (bedsore* or bed-sore*)
#3.	((incontinen* NEAR2 dermatitis))
#4.	(((moist* or friction or shear) NEAR2 (sore* or ulcer* or damage or wound* or injur* or lesion*)))
#5.	(((perineum or perineal) near2 (damage or dermatitis or injur* or breakdown or wound* or lesion* or ulcer* or sore*)))
#6.	MeSH DESCRIPTOR Perineum EXPLODE ALL TREES
#7.	MeSH DESCRIPTOR dermatitis EXPLODE ALL TREES
#8.	#6 AND #7
#9.	#1 OR #2 OR #3 OR #4 OR #5 OR #8
#10.	((cream* or oil* or gel* or barrier* or ointment* or emollient*))
#11.	((conotrane or morhulin or sprilon or sudocrem))
#12.	MeSH DESCRIPTOR ointments
#13.	MeSH DESCRIPTOR emollients EXPLODE ALL TREES
#14.	MeSH DESCRIPTOR Protective Agents EXPLODE ALL TREES
#15.	MeSH DESCRIPTOR Silicones EXPLODE ALL TREES
#16.	MeSH DESCRIPTOR Zinc Oxide EXPLODE ALL TREES
#17.	MeSH DESCRIPTOR Petrolatum EXPLODE ALL TREES
#18.	MeSH DESCRIPTOR Paraffin EXPLODE ALL TREES
#19.	MeSH DESCRIPTOR dermatologic agents EXPLODE ALL TREES
#20.	((mepentol or fatty acid* or sanyrene or corpitol* or plant extract* or glyceride*))
#21.	MeSH DESCRIPTOR Fatty Acids EXPLODE ALL TREES

#22.	MeSH DESCRIPTOR Plant Extracts EXPLODE ALL TREES
#23.	MeSH DESCRIPTOR Glycerides EXPLODE ALL TREES
#24.	#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
#25.	#9 AND #24

HEED search terms

1.	AX=decubit*
2.	AX=pressure AND (sore* OR ulcer* OR damage)
3.	AX=bedsore* OR bed-sore*
4.	AX=(incontinen* AND dermatitis)
5.	AX=(moist* OR friction OR shear) AND (sore* OR ulcer* OR damage OR wound* OR injur* OR lesion*)
6.	AX=(perineum OR perineal) AND (damage OR dermatitis OR injur* OR breakdown OR wound* OR lesion* OR ulcer* OR sore*)
7.	CS=1 OR 2 OR 3 OR 4 OR 5 OR 6
8.	AX=(cream* OR oil* OR gel* OR barrier* OR ointment* OR emollient* OR conotrane OR morhulin OR sprilon OR sudocrem OR silicone* OR zinc oxide OR petrolatum OR paraffin OR mepentol OR fatty* OR sanyrene OR corpitol* OR plant* OR glyceride*)
9.	CS=7 AND 8

F.6 References

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