Transfusion: Literature search strategies

Contents:

Search strategies used for the Transfusion guideline are outlined below and were run in accordance with the methodology in the NICE guidelines manual 2012.{National Institute for Health and Clinical Excellence, 2012 NICE2012 /id} All searches were run up to **29 January 2015** unless otherwise stated. Any studies added to the databases after this date (even those 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 28 January 2014
Embase	1980 to January 2015 (week 4)
The Cochrane Library	Cochrane Reviews to 2015 Issue 1 of 12
	CENTRAL to 2014 Issue 12 of 12
	DARE, HTA and NHSEED to 2014 Issue 4 of 4
CINAHL	1981 to January 2015
PsycINFO	1806 to January 2015 (week 4)
HMIC	1979 to November 2014

Searches for the **clinical reviews** were run in Medline (OVID), Embase (OVID) and the Cochrane Library (Wiley). Additional searches were run in CINAHL, PsycINFO and HMIC for some 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). Searches in NHS EED and HEED were constructed using population terms only. For Medline and Embase an economic filter (instead of a study type filter) was added to the same clinical search strategy.

A.1   Population search strategies

There was no single population search strategy used for this guideline. The population search terms used for each question, and for the economic searches, are reported in the relevant sections below.

A.2   Study filter search terms

A.2.1   Systematic review 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.
1	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.
1	cochrane.jw.
1	or/1-10

A.2.2   Randomised controlled trials (RCTs) search terms

Medline search terms

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

Embase search terms

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

8	single blind procedure/
9	randomized controlled trial/
1	or/1-9

A.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/
1	cohort*.ti,ab.
1	9 and 10
1	case control.ti,ab.
1	(cohort adj (study or studies or analys*)).ti,ab.
1	((follow up or observational or uncontrolled or non randomi#ed or nonrandomi#ed or epidemiologic*) adj (study or studies)).ti,ab.
1	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort*)).ti,ab.
1	or/1-8,11-15

A.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/
1	budget*.ti,ab.
1	cost*.ti.
1	(economic* or pharmaco?economic*).ti.
1	(price* or pricing*).ti,ab.
1	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
1	(financ* or fee or fees).ti,ab.
1	(value adj2 (money or monetary)).ti,ab.
1	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.
1	(price* or pricing*).ti,ab.
1	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
1	(financ* or fee or fees).ti,ab.
1	(value adj2 (money or monetary)).ti,ab.
1	or/1-13

A.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.
1	(hui or hui1 or hui2 or hui3).ti,ab.
1	health* year* equivalent*.ti,ab.
1	(hye or hyes).ti,ab.
1	rosser.ti,ab.
1	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
1	(sf36 or sf 36 or short form 36 or shortform 36 or shortform36).ti,ab.
1	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
1	(sf12 or sf 12 or short form 12 or shortform 12 or shortform12).ti,ab.
1	(sf8 or sf 8 or short form 8 or shortform 8 or shortform8).ti,ab.
1	(sf6 or sf 6 or short form 6 or shortform 6 or shortform6).ti,ab.
2	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.
1	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
1	(health utility* or utility score* or disutilit*).ti,ab.

1	(hui or hui1 or hui2 or hui3).ti,ab.	
1	health* year* equivalent*.ti,ab.	
1	(hye or hyes).ti,ab.	
1	rosser.ti,ab.	
1	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.	
1	(sf36 or sf 36 or short form 36 or shortform 36 or shortform36).ti,ab.	
1	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.	
1	(sf12 or sf 12 or short form 12 or shortform 12 or shortform12).ti,ab.	
2	(sf8 or sf 8 or short form 8 or shortform 8 or shortform8).ti,ab.	
2	(sf6 or sf 6 or short form 6 or shortform 6 or shortform6).ti,ab.	
2	or/1-21	

A.2.6 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
1	randomized controlled trial/ or random*.ti,ab.
1	9 not 10
1	animals/ not humans/
1	exp animals, laboratory/
1	exp animal experimentation/

1	exp models, animal/
1	exp rodentia/
1	(rat or rats or mouse or mice).ti.
1	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/
1	nonhuman/
1	exp animal experiment/
1	exp experimental animal/
1	animal model/
1	exp rodent/
1	(rat or rats or mouse or mice).ti.
1	or/8-15

A.3   Searches for specific questions

A.3.1   Alternatives to transfusion: iron and EPO

What is the clinical and cost effectiveness of oral iron, IV iron and erythropoietin in reducing blood transfusion requirements in surgical patients?

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
Anaemia surgical patients	Iron or EPO	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in

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

Medline search terms

1	exp anemia/
2	an?emi*.ti,ab.
3	hemoglobinometry/
4	((h?emoglobin or hb) adj2 (level* or volume* or measure*)).ti,ab.
5	or/1-4
6	(surg* or operat* or preoperat* or pre-operat* or perioperat* or peri-operat* or intraoperat* or intra-operat* or postoperat* or post-operat*).ti,ab.
7	exp perioperative period/
8	exp perioperative care/
9	or/6-8
1	5 and 9
1	exp hematinics/
1	exp iron compounds/
1	iron/
1	((iron or ferrous or ferric or ferumoxytol or magnetite or "ferriferous oxide") adj5 (supplement* or therap* or treat* or oral or iv or intravenous or diet*)).ti,ab.
1	(h?ematinic* or h?ematopoieti*).ti,ab.
1	erythropoietin/
1	(erythropoie* or epoetin* or epoietin* or epo or epogen or eporatio or procrit or binocrit or eprex or mircera or neorecormon or recormon or retacrit or darbopoetin or darbepoetin or darbepoietin or aranesp or r-huepo or huepo or r-hepo or rhepo or glycol-epoetin).ti,ab.
1	(anti-an?emi* or antian?emi*).ti,ab.
1	or/11-18
2	10 and 19

Embase search terms

1	exp *anemia/
2	an?emi*.ti,ab.
3	*hemoglobin determination/
4	((h?emoglobin or hb) adj2 (level* or volume* or measure*)).ti,ab.
5	or/1-4
6	exp *surgery/
7	(surg* or operat* or preoperat* or pre-operat* or perioperat* or peri-operat* or

		intraoperat* or intra-operat* or postoperat* or post-operat*).ti,ab.
8		or/6-7
9		5 and 8
1		exp *antianemic agent/
1		*iron/
1		*iron derivative/
1		*iron intake/
1		((iron or ferrous or ferric or ferumoxytol or magnetite or "ferriferous oxide") adj5 (supplement* or therap* or treat* or oral or iv or intravenous or diet*)).ti,ab.
1		(h?ematinic* or h?ematopoieti*).ti,ab.
1		(erythropoieti* or epoetin* or epoietin* or epo or epogen or eporatio or procrit or binocrit or eprex or mircera or neorecormon or recormon or retacrit or darbopoetin or darbepoetin or darbepoietin or aranesp or r-huepo or huepo or r-hepo or rhepo or glycol-epoetin).ti,ab.
1		(anti-an?emi* or antian?emi*).ti,ab.
1		or/10-17
1		9 and 18

Cochrane search terms

#		[mh anemia]
#		(anaemi* or anemi*):ti,ab
#		[mh hemoglobinometry]
#		((hemoglobin or haemoglobin or hb) near/2 (level* or volume* or measure*)):ti,ab
#		#1 or #2 or #3 or #4
#		[mh hematinics]
#		[mh "iron compounds"]
#		[mh ^iron]
#		((iron or ferrous or ferric or ferumoxytol or magnetite or "ferriferous oxide") near/6 (supplement* or therap* or treat* or oral or iv or intravenous or diet*)):ti,ab
#		(h?ematinic* or h?ematopoieti*):ti,ab
#		[mh ^erythropoietin]

#	
#	(erythropoieti* or epoetin* or epoietin* or epo or epogen or eporatio or procrit or binocrit or eprex or mircera or neorecormon or recormon or retacrit or darbopoetin or darbepoetin or darbepoietin or aranesp or r-huepo or huepo or r-hepo or rhepo or glycol-epoetin):ti,ab
#	(anti-anemi* or antianemi* or anti-anaemi* or antianaemi*):ti,ab
#	#6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
#	(surg* or operat* or preoperat* or pre-operat* or perioperat* or peri-operat* or intraoperat* or intra-operat* or postoperat* or post-operat*):ti,ab
#	[mh "perioperative period"]
#	[mh "perioperative care"]
#	{or #15-#17}
#	#5 and #14
#	#19 and #18

A.3.2 Alternatives to transfusion: TXA

What is the clinical and cost effectiveness of tranexamic acid in reducing blood transfusion requirements in surgical patients?

This search was run to update a Cochrane review for studies in adults.{Henry, 2011 HENRY2011 /id} It was run from 2010 onwards to pick up studies published since the Cochrane review searches were run. The search was also run with a paediatric filter and with no date restrictions to find studies in children. See below for the paediatric search terms used.

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
Surgery	TXA	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase No date limits were applied to

Population	Intervention or exposure	Comparison	Study design filter	Date parameters and other limits
				paediatric studies, adult studies were limited to 2010 onwards

Medline search terms

1	(surg* or operat* or preoperat* or pre-operat* or perioperat* or peri-operat* or intraoperat* or intra-operat* or postoperat* or post-operat*).ti,ab.
2	exp perioperative period/
3	exp perioperative care/
4	exp blood transfusion/
5	transfus*.ti,ab.
6	or/1-5
7	tranexamic acid/
8	(tranexamic or txa or cyklokapron).ti,ab.
9	or/7-8
1	6 and 9

Embase search terms

1	exp *surgery/
2	(surg* or operat* or preoperat* or pre-operat* or perioperat* or peri-operat* or intraoperat* or intra-operat* or postoperat* or post-operat*).ti,ab.
3	exp *blood transfusion/
4	transfus*.ti,ab.
5	or/1-4
6	*tranexamic acid/
7	(tranexamic or txa or cyklokapron).ti,ab.
8	or/6-7
9	5 and 8

Cochrane search terms

#	(surg* or operat* or preoperat* or pre-operat* or perioperat* or peri-operat* or intraoperat* or intra-operat* or postoperat* or post-operat*):ti,ab
#	[mh "perioperative period"]
#	[mh "perioperative care"]
#	[mh "blood transfusion"]
#	transfus*:ti,ab
#	{or #1-#5}
#	[mh "tranexamic acid"]
#	(tranexamic or txa or cyklokapron):ti,ab

#	#7 or #8
#	#6 and #9

Paediatric search terms

Medline search terms

1	exp child/
2	exp pediatrics/
3	child*.ti,ab.
4	infant/
5	infan*.ti,ab.
6	(baby or babies).ti,ab.
7	"adolescent"/
8	(pediatric*1 or paediatric*1).ti,ab.
9	or/1-8

Embase search terms

1	exp child/
2	exp pediatrics/
3	child*.ti,ab.
4	infan*.ti,ab.
5	(baby or babies).ti,ab.
6	exp adolescent/
7	(pediatric*1 or paediatric*1).ti,ab.
8	or/1-7

Cochrane search terms

#	[mh child]
#	[mh pediatrics]
#	child*:ti,ab
#	[mh ^infant]
#	infan*:ti,ab
#	(baby or babies):ti,ab
#	[mh ^adolescent]
#	(pediatric* or paediatric*):ti,ab
#	{or #1-#8}

A.3.3 Alternatives to transfusion: cell salvage

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

What is the clinical and cost effectiveness of cell salvage therapy in reducing blood transfusion requirements in surgical patients?

What is the clinical and cost-effectiveness of using alternatives to blood transfusion (cell salvage or tranexamic acid) alone or in combination with one another to reduce blood transfusion requirements?

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
No population terms used	Cell salvage	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	operative blood salvage/
2	(autotransfus* or auto-transfus*).ti,ab.
3	(intraoperat* adj (autologous or abt)).ti,ab.
4	(drain* adj2 (transfus* or retransfus* or re-transfus* or reinfus* or re-infus*)).ti,ab.
5	(((cell or blood) adj4 (salvag* or save* or scaveng* or retransfus* or re-transfus* or reinfus* or re-infus*)) or cell-saving).ti,ab.
6	or/1-5

Embase search terms

1	blood salvage/
2	(((cell or blood) adj4 (salvag* or save* or scaveng* or retransfus* or re-transfus* or reinfus* or re-infus*)) or cell-saving).ti,ab.
3	(autotransfus* or auto-transfus*).ti,ab.
4	(intraoperat* adj (autologous or abt)).ti,ab.
5	(drain* adj2 (transfus* or retransfus* or re-transfus* or reinfus* or re-infus*)).ti,ab.
6	or/1-5

Cochrane search terms

#	[mh "operative blood salvage"]
#	((cell or blood) near/4 (salvag* or save* or scaveng* or retransfus* or re-transfus* or reinfus* or re-infus*) or cell-saving):ti,ab
#	(autotransfus* or auto-transfus*):ti,ab
#	(intraoperat* next (autologous or abt)):ti,ab
#	(drain* near/2 (transfus* or retransfus* or re-transfus* or reinfus* or re-infus*)):ti,ab

#	{or #1-#5}

A.3.4 RBC: thresholds

What is the clinical and cost effectiveness of red blood cell transfusion at different haemoglobin concentrations?

This search was as update of the search for a Cochrane review.{Carson, 2012 CARSON2012A /id} It was run from 2011 onwards to pick up studies published since the Cochrane review searches were run.

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
No population terms used	Red blood cell transfusion thresholds	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase) 2011 onwards

Medline search terms

1	blood transfusion/ or erythrocyte transfusion/ or hemoglobins/ or hematocrit/
2	((red blood cell* or rbc or blood) adj3 (therap* or transfus*)).ti,ab.
3	or/1-2
4	reference standards/
5	3 and 4
6	hemoglobins/st
7	hematocrit/st
8	blood transfusion/st
9	erythrocyte transfusion/st
1	(transfus* adj3 (polic* or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)).ti,ab.
1	((red blood cell* or rbc) adj3 (polic* or protocol* or trigger* or threshold* or indicator* or strateg* or criteri* or standard*)).ti,ab.
1	((h?emoglobin or h?emocrit or h?ematocrit or hb or hgb or hct) adj3 (polic*or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)).ti,ab.
1	(transfus* adj3 (restrict* or liberal* or conserv*)).ti,ab.
1	or/5-13

Embase search terms

1	*blood transfusion/ or *erythrocyte transfusion/
2	*hemoglobin/
3	*hematocrit/

4	((red blood cell* or rbc or blood) adj3 (therap* or transfus*)).ti,ab.
5	or/1-4
6	standard/
7	5 and 6
8	(transfus* adj3 (polic* or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)).ti,ab.
9	((red blood cell* or rbc) adj3 (polic* or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)).ti,ab.
1	((h?emoglobin or h?emocrit or h?ematocrit or hb or hgb or hct) adj3 (polic* or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)).ti,ab.
1	(transfus* adj3 (restrict* or liberal* or conserv*)).ti,ab.
1	or/7-11

Cochrane search terms

#	[mh ^"blood transfusion"]
#	[mh ^"erythrocyte transfusion"]
#	[mh ^hemoglobins]
#	[mh ^hematocrit]
#	((red blood cell* or rbc or blood) near/3 (therap* or transfus*)):ti,ab
#	{or #1-#5}
#	[mh ^"reference standards"]
#	#6 and #7
#	mesh descriptor: [hemoglobins] this term only and with qualifiers: [standards - st]
#	mesh descriptor: [hematocrit] this term only and with qualifiers: [standards - st]
#	mesh descriptor: [blood transfusion] this term only and with qualifiers: [standards - st]
#	(transfus* near/3 (polic* or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)):ti,ab
#	((red blood cell* or rbc) near/3 (polic* or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)):ti,ab
#	((hemoglobin or haemoglobin or hemocrit or haemocrit or hematocrit or haematocrit or hb or hgb or hct) near/3 (polic* or protocol* or trigger* or threshold*or indicator* or strateg* or criteri* or standard*)):ti,ab

#	(transfus* near/3 (restrict* or liberal* or conserv*)):ti,ab
#	{or #8-#15}

A.3.5   RBC: targets

What is the clinical and cost effectiveness of different target levels of post-transfusion haemoglobin concentrations for red blood cell transfusion?

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
No population terms used	Red blood cell transfusion targets	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	blood transfusion/ or erythrocyte transfusion/
2	((red blood cell* or rbc or red cell* or blood) adj3 (therap* or transfus*)).ti,ab.
3	or/1-2
4	*hematocrit/
5	*hemoglobins/
6	((h?emoglobin or h?emocrit or h?ematocrit or hb or hgb or hct) adj3 (polic* or protocol* or target* or indicator* or strateg* or criteri* or standard* or goal* or high* or low*)).ti,ab.
7	(transfus* adj3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicator* or goal* or polic*)).ti,ab.
8	or/4-7
9	3 and 8

Embase search terms

1	*blood transfusion/ or *erythrocyte transfusion/
2	((red blood cell* or rbc or red cell* or blood) adj3 (therap* or transfus*)).ti,ab.
3	or/1-2
4	*hematocrit/
5	*hemoglobin/
6	((h?emoglobin or h?emocrit or h?ematocrit or hb or hgb or hct) adj3 (polic* or protocol* or target* or indicator* or strateg* or criteri* or standard* or goal* or high* or low*)).ti,ab.
7	(transfus* adj3 (restrict* or liberal* or conserv* or strategy* or criteri* or protocol* or target* or indicator* or goal* or polic*)).ti,ab.
8	or/4-7
9	3 and 8

Cochrane search terms

#	[mh ^"blood transfusion"]
#	[mh ^"erythrocyte transfusion"]
#	((red blood cell* or rbc or red cell* or blood) near/3 (therap* or transfus*)):ti,ab
#	{or #1-#3}
#	[mh ^hematocrit]
#	[mh ^hemoglobins]
#	{or #5-#6}
#	(polic* or protocol* or target* or indicator* or strateg* or criteri* or standard* or goal* or high* or low*):ti,ab
#	#7 and #8
#	((hemoglobin or haemoglobin or hemocrit or haemocrit or hematocrit or haematocrit or hb or hgb or hct) near/3 (polic* or protocol* or target* or indicator* or strateg* or criteri* or standard* or goal* or high* or low*)):ti,ab
#	(transfus* near/3 (restrict* or liberal* or conserv* or strategy* or criteri* or protocol* or target* or indicator* or goal* or polic*)):ti,ab
#	{or #9-#11}
#	#4 and #12

A.3.6   RBC: dose

What is the clinical and cost effectiveness of different doses of red blood cell transfusion?

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
RBC transfusion	RBC units	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	blood transfusion/ or erythrocyte transfusion/
2	((red blood cell* or rbc or prbc or red cell* or blood or packed cell* or erythroctye*) adj3 (therap* or transfus*)).ti,ab.

3	or/1-2
4	((blood or transfus*) adj3 (dose* or dosage*) adj2 (high* or low*)).ti,ab.
5	((unit* or bag*) adj3 (single or double or multiple or one or two or more) adj3 (blood or transfus*)).ti,ab.
6	(transfus* adj3 (restrict* or liberal* or conserv*)).ti,ab.
7	or/4-6
8	3 and 7

Embase search terms

1	*blood transfusion/ or *erythrocyte transfusion/
2	((red blood cell* or rbc or prbc or red cell* or blood or packed cell* or erythroctye*) adj3 (therap* or transfus*)).ti,ab.
3	or/1-2
4	((blood or transfus*) adj3 (dose* or dosage*) adj2 (high* or low*)).ti,ab.
5	((unit* or bag*) adj3 (single or double or multiple or one or two or more) adj3 (blood or transfus*)).ti,ab.
6	(transfus* adj3 (restrict* or liberal* or conserv*)).ti,ab.
7	or/4-6
8	3 and 7

Cochrane search terms

#	[mh ^"blood transfusion"]
#	[mh ^"erythrocyte transfusion"]
#	((red next blood next cell* or rbc or prbc or red next cell* or packed next cell* or erythrocyte* or blood) near/3 (therap* or transfus*)):ti,ab
#	{or #1-#3}
#	((blood or transfus*) near/3 (dose* or dosage*) near/2 (high* or low*)):ti,ab
#	((unit* or bag*) near/3 (single or double or multiple or one or two or more) near/3 (blood or transfus*)):ti,ab
#	(transfus* near/3 (restrict* or liberal* or conserv*)):ti,ab
#	{or #5-#7}
#	#4 and #8

A.3.7   Platelets: thresholds and targets

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

What is the clinical and cost effectiveness of platelet transfusion at different platelet count thresholds?

What is the clinical and cost effectiveness of different target levels of post-transfusion platelet counts?

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
Platelet transfusion	Thresholds and targets	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	platelet transfusion/
2	((platelet* or thrombocyte*) adj3 (transfus* or prophyla* or therap* or infus* or administ*)).ti,ab.
3	blood platelets/
4	exp blood transfusion/
5	3 and 4
6	or/1-2,5
7	(transfus* adj3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicator* or goal* or polic* or trigger* or threshold* or standard*)).ti,ab.
8	((platelet* or thrombocyte*) adj3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicator* or goal* or polic* or trigger* or threshold* or standard*)).ti,ab.
9	st.fs.
1	((platelet* or thrombocyte*) adj1 count* adj3 (low or high)).ti,ab.
1	((platelet* or thrombocyte*) adj1 (count* or increment*) adj6 (((pre or post or before or after) adj transfus*) or pre-transfus* or post-transfus* or pretransfus* or posttransfus*)).ti,ab.
1	*platelet count/
1	or/7-12
1	6 and 13

Embase search terms

1	*thrombocyte transfusion/
2	((platelet* or thrombocyte*) adj3 (transfus* or prophyla* or therap* or infus* or administ*)).ti,ab.
3	*thrombocyte/
4	exp *blood transfusion/
5	3 and 4
6	or/1-2,5
7	(transfus* adj3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicat* or goal* or polic* or trigger* or threshold* or standard*)).ti,ab.

8	((platelet* or thrombocyte*) adj3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicat* or goal* or polic* or trigger* or threshold* or standard*)).ti,ab.
9	((platelet* or thrombocyte*) adj1 count* adj3 (low or high)).ti,ab.
1	((platelet* or thrombocyte*) adj1 (count* or increment*) adj6 (((pre or post or before or after) adj transfus*) or pre-transfus* or post-transfus* or pretransfus* or posttransfus*)).ti,ab.
1	*thrombocyte count/
1	or/7-11
1	6 and 12

Cochrane search terms

#	[mh ^"platelet transfusion"]
#	((platelet* or thrombocyte*) near/3 (transfus* or prophyla* or therap* or infus* or administ*)):ti,ab
#	[mh ^"blood platelets"]
#	[mh "blood transfusion"]
#	#3 and #4
#	#1 or #2 or #5
#	(transfus* near/3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicat* or goal* or polic* or trigger* or threshold* or standard*)):ti,ab
#	((platelet* or thrombocyte*) near/3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicat* or goal* or polic* or trigger* or threshold* or standard*)):ti,ab
#	((platelet* or thrombocyte*) near count* near/3 (low or high)):ti,ab
#	(((platelet* or thrombocyte*) near (count* or increment*)) near/6 (((pre or post or before or after) next transfus*) or pre-transfus* or post-transfus*or pretransfus* or posttransfus*)):ti,ab
#	{or #7-#10}
#	#6 and #11

A.3.8   Platelets: dose

What is the clinical and cost effectiveness of different doses of platelet transfusion?

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
Platelet transfusion	Platelet dose	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	platelet transfusion/
2	((platelet* or thrombocyte*) adj3 (transfus* or prophyla* or therap* or infus* or administ*)).ti,ab.
3	blood platelets/
4	exp blood transfusion/
5	3 and 4
6	or/1-2,5
7	((dose* or dosage* or dosing) adj2 (high* or low* or usual or platelet* or thrombocyte*)).ti,ab.
8	(unit* adj2 (single or double or multiple or one or two or more)).ti,ab.
9	or/7-8
1	6 and 9

Embase search terms

1	*thrombocyte transfusion/
2	((platelet* or thrombocyte*) adj3 (transfus* or prophyla* or therap* or infus* or administ*)).ti,ab.
3	*thrombocyte/
4	exp *blood transfusion/
5	3 and 4
6	or/1-2,5
7	((dose* or dosage* or dosing) adj2 (high* or low* or usual or platelet* or thrombocyte*)).ti,ab.
8	(unit* adj2 (single or double or multiple or one or two or more)).ti,ab.
9	or/7-8
1	6 and 9

Cochrane search terms

#	[mh ^"platelet transfusion"]
#	((platelet* or thrombocyte*) near/3 (transfus* or prophyla* or therap* or infus* or administ*)):ti,ab
#	[mh ^"blood platelets"]
#	[mh "blood transfusion"]
#	#3 and #4

#	
#	#1 or #2 or #5
#	((dose* or dosage* or dosing) near/2 (high* or low* or usual or platelet* or thrombocyte*)):ti,ab
#	(unit* near/2 (single or double or multiple or one or two or more)):ti,ab
#	#7 or #8
#	#6 and #9

A.3.9 FFP: thresholds and targets

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

What is the clinical and cost effectiveness of transfusions of fresh frozen plasma (FFP) to treat and prevent bleeding?

What is the clinical and cost effectiveness of different target levels of post-transfusion haemostasis tests with the use of fresh frozen plasma FFP for prophylactic transfusions?

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
FFP	thresholds and targets	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	exp *plasma/
2	blood component transfusion/
3	(ffp or ((frozen or fresh) adj3 plasma)).ti,ab.
4	or/1-3
5	h?emosta*.ti,ab.
6	hemostasis/
7	(inr or international normali#ed ratio*).ti,ab.
8	exp blood coagulation tests/
9	((thromboplastin or prothrombin) adj2 time).ti,ab.
1	(ptt or aptt).ti,ab.
1	(coagul* adj2 abnormal*).ti,ab.
1	(transfus* adj3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicat* or goal* or polic* or trigger* or threshold* or standard* or therap* or prophyl* or level*)).ti,ab.

1	((ffp or plasma) adj2 (therap* or prophyl*)).ti,ab.
1	or/25-33
1	24 and 34

Embase search terms

1	fresh frozen plasma/
2	plasma transfusion/
3	(ffp or ((frozen or fresh) adj3 plasma)).ti,ab.
4	or/1-3
5	*hemostasis/
6	exp *blood clotting parameters/
7	h?emosta*.ti,ab.
8	(inr or international normali#ed ratio*).ti,ab.
9	((thromboplastin or prothrombin) adj2 time).ti,ab.
1	(ptt or aptt).ti,ab.
1	(coagul* adj2 abnormal*).ti,ab.
1	(transfus* adj3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicat* or goal* or polic* or trigger* or threshold* or standard* or therap* or prophyl* or level*)).ti,ab.
1	((ffp or plasma) adj2 (therap* or prophyl*)).ti,ab.
1	or/23-31
1	22 and 32

Cochrane search terms

#	[mh plasma]
#	[mh ^"blood component transfusion"]
#	(ffp or ((frozen or fresh) near/3 plasma)):ti,ab
#	{or #1-#3}
#	[mh ^hemostasis]
#	(hemosta* or haemosta*):ti,ab
#	(inr or international next normalized next ratio* or international next normalised next ratio*) .ti,ab
#	[mh "blood coagulation tests"]

#	(coagul* near/2 abnormal*):ti,ab
#	(transfus* near/3 (restrict* or liberal* or conserv* or strateg* or criteri* or protocol* or target* or indicat* or goal* or polic* or trigger* or threshold* or standard* or therap* or prophyl* or level*)):ti,ab
#	((ffp or plasma) near/2 (therap* or prophyl*)):ti,ab
#	{or #5-#11}
#	#4 and #12

A.3.10   FFP: dose

What is the clinical and cost effectiveness of different doses of fresh frozen plasma (FFP) for transfusion?

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
FFP	dose	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	exp *plasma/
2	blood component transfusion/
3	(ffp or ((frozen or fresh) adj3 plasma)).ti,ab.
4	or/1-3
5	(unit* adj2 (single or double or multiple* or one or two or more or number* or plasma or "1" or "2" or "4" or "6" or additional or extra or further)).ti,ab.
6	(dose* or dosage* or dosing).ti,ab.
7	or/5-6
8	4 and 7

Embase search terms

1	fresh frozen plasma/
2	plasma transfusion/
3	(ffp or ((frozen or fresh) adj3 plasma)).ti,ab.
4	or/1-3
5	(unit* adj2 (single or double or multiple* or one or two or more or number* or plasma or "1" or "2" or "4" or "6" or additional or extra or further)).ti,ab.
6	(dose* or dosage* or dosing).ti,ab.

7	or/5-6
8	4 and 7

Cochrane search terms

#	[mh plasma]
#	[mh ^"blood component transfusion"]
#	(ffp or ((frozen or fresh) near/3 plasma)):ti,ab
#	{or #1-#3}
#	(unit* near/2 (single or double or multiple or one or two or more or number or plasma or "1" or "2" or "4" or "6" or additional or extra or further)):ti,ab
#	(dose* or dosage* or dosing):ti,ab
#	#5 or #6
#	#4 and #7

A.3.11 Cryoprecipitate

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

What is the clinical and cost effectiveness of transfusions of cryoprecipitate to treat and prevent bleeding?

What is the clinical and cost effectiveness of different doses of cryoprecipitate for transfusion?

What is the clinical and cost effectiveness of different target levels of post-transfusion haemostasis tests with the use of cryoprecipitate for prophylactic transfusions?

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
Cryoprecipitate	n/a	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	cryoprecipitate*.ti,ab.

Embase search terms

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

Cochrane search terms

#	cryoprecipitate*:ti,ab

A.3.12 PCC: thresholds and targets

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

What is the clinical and cost effectiveness of transfusions of prothrombin complex concentrates (PCC) to treat and prevent bleeding?

What is the clinical and cost effectiveness of different target levels of post-transfusion haemostasis tests with the use of prothrombin complex concentrates (PCC) for prophylactic transfusions?

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
PCC	Blood coagulation tests	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	(pcc* or ppsb or beriplex or "beriplex p n" or "beriplex b-n" or " beriplex p/n" or confidex or kaskadil or kcentra or octaplex or ocplex or cofact or prothar or ppconc or "protein c concentrate").ti,ab.
2	("prothrombin complex" adj2 (concentrate* or preparation)).ti,ab.
3	("prothrombin convert*" adj2 (complex or enzyme)).ti,ab.
4	or/1-3
5	h?emosta*.ti,ab.
6	hemostasis/
7	(inr or international normali#ed ratio*).ti,ab.
8	exp blood coagulation tests/
9	((thromboplastin or prothrombin) adj2 time*).ti,ab.
1	(ptt or pt or aptt).ti,ab.
1	(coagul* adj2 abnormal*).ti,ab.
1	or/5-11
1	4 and 12

Embase search terms

1	(pcc* or ppsb or beriplex or "beriplex p n" or "beriplex b-n" or " beriplex p/n" or confidex or kaskadil or kcentra or octaplex or ocplex or cofact or prothar or ppconc or "protein c concentrate").ti,ab.
2	("prothrombin complex" adj2 (concentrate* or preparation)).ti,ab.

3	("prothrombin convert*" adj2 (complex or enzyme)).ti,ab.	
4	or/1-3	
5	h?emosta*.ti,ab.	
6	exp *hemostasis/	
7	(inr or international normali#ed ratio*).ti,ab.	
8	exp *blood clotting parameters/	
9	((thromboplastin or prothrombin) adj2 time$).ti,ab.	
1	(ptt or pt or aptt).ti,ab.	
1	(coagul* adj2 abnormal*).ti,ab.	
1	or/5-11	
1	4 and 12	

Cochrane search terms

#	(pcc* or ppsb or beriplex or beriplex next pn or beriplex next b-n or beriplex next pn or confidex or kaskadil or kcentra or octaplex or ocplex or cofact or prothar or ppconc or protein next c next concentrate):ti,ab
#	(prothrombin next complex near/2 (concentrate* or preparation)):ti,ab
#	prothrombin next convert* near/2 (complex or enzyme):ti,ab
#	{or #1-#3}
#	[mh ^hemostasis]
#	(hemosta* or haemosta*):ti,ab
#	(inr or international next normalized next ratio* or international next normalised next ratio*):ti,ab
#	[mh "blood coagulation tests"]
#	(coagul* near/2 abnormal*):ti,ab
#	((thromboplastin or prothrombin) adj2 time$):ti,ab
#	(ptt or pt or aptt):ti,ab
#	{or #5-#11}
#	#4 and #12

A.3.13   PCC: dose

What is the clinical and cost effectiveness of different doses of prothrombin complex concentrates (PCC) for transfusion?

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
PCC	dose	n/a	The following filters were used in Medline and Embase only: RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	(pcc* or ppsb or beriplex or "beriplex p n" or "beriplex b-n" or " beriplex p/n" or confidex or kaskadil or kcentra or octaplex or ocplex or cofact or prothar or ppconc or "protein c concentrate").ti,ab.
2	("prothrombin complex" adj2 (concentrate* or preparation)).ti,ab.
3	("prothrombin convert*" adj2 (complex or enzyme)).ti,ab.
4	or/1-3
5	(dose* or dosage* or dosing).ti,ab.
6	(unit* adj2 (single or double or multiple* or one or two or more or number* or pcc or prothrombin or additional or extra or further)).ti,ab.
7	or/5-6
8	4 and 7

Embase search terms

1	(pcc* or ppsb or beriplex or "beriplex p n" or "beriplex b-n" or " beriplex p/n" or confidex or kaskadil or kcentra or octaplex or ocplex or cofact or prothar or ppconc or "protein c concentrate").ti,ab.
2	("prothrombin complex" adj2 (concentrate* or preparation)).ti,ab.
3	("prothrombin convert*" adj2 (complex or enzyme)).ti,ab.
4	or/1-3
5	(dose* or dosage* or dosing).ti,ab.
6	(unit* adj2 (single or double or multiple* or one or two or more or number* or pcc or prothrombin or additional or extra or further)).ti,ab.
7	or/5-6
8	4 and 7

Cochrane search terms

#	(pcc* or ppsb or beriplex or beriplex next pn or beriplex next b-n or beriplex next pn or confidex or kaskadil or kcentra or octaplex or ocplex or cofact or prothar or ppconc or protein next c next concentrate):ti,ab
#	(prothrombin next complex near/2 (concentrate* or preparation)):ti,ab
#	prothrombin next convert* near/2 (complex or enzyme):ti,ab

#	
#	{or #1-#3}
#	(dose* or dosage* or dosing):ti,ab
#	(unit* near/2 (single or double or multiple* or one or two or more or number* or pcc or prothrombin or additional or extra or further)):ti,ab
#	#5 or #6
#	#4 and #7

A.3.14 Monitoring

What is the clinical and cost effectiveness of monitoring for acute reactions at different times in relation to the transfusion?

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
Transfusion reactions	Monitoring	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	exp *blood transfusion/
2	((blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin) adj3 (transfus* or retransfus* or therap* or prescri*)).ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	exp blood transfusion/ae, co, de [adverse effects, complications, drug effects]
6	(transfus* adj2 (react* or side effect* or side-effect* or adverse effect* or adverse event*)).ti,ab.
7	(((adverse or acute) adj2 (react* or respon* or effect* or event* or outcome*)) or atr or atrs).ti,ab.
8	or/1-4
9	7 and 8
1	or/5-6,9
1	monitoring, physiologic/
1	(monitor* or check up* or check-up*).ti,ab.
1	"signs and symptoms"/
1	vital signs/

1	((clinical* adj1 assess*) or "signs and symptoms" or ((vital or clinical) adj1 sign*)).ti,ab.
1	or/11-15
1	10 and 16

Embase search terms

1	exp *blood transfusion/
2	((blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin) adj3 (transfus* or retransfus* or therap* or prescri*)).ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	(((adverse or acute) adj2 (react* or respon* or effect* or event* or outcome*)) or atr or atrs).ti,ab.
7	5 and 6
8	exp blood transfusion reaction/
9	exp blood transfusion/ae, co [adverse drug reaction, complication]
1	(transfus* adj2 (react* or side effect* or side-effect* or adverse effect* or adverse event*)).ti,ab.
1	or/7-10
1	*monitoring/ or *patient monitoring/ or physiologic monitoring/
1	vital sign/
1	(monitor* or check up* or check-up*).ti,ab.
1	((clinical* adj1 assess*) or "signs and symptoms" or ((vital or clinical) adj1 sign*)).ti,ab.
1	or/12-15
1	11 and 16

Cochrane search terms

#	[mh "blood transfusion"]
#	((blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin) near/3 (transfus* or retransfus* or therap* or prescri*)):ti,ab
#	(hemotransfus* or haemotransfus*):ti,ab
#	((blood near/2 (management or administ* or component*1)) or blood support):ti,ab
#	{or #1-#4}
#	(((adverse or acute) near/2 (react* or respon* or effect* or event* or outcome*)) or atr or atrs):ti,ab

#	
#	#5 and #6
#	mesh descriptor: [blood transfusion] explode all trees and with qualifiers: [adverse effects - ae]
#	(transfus* near/2 (react* or side next effect* or side-effect* or adverse next effect* or adverse next event*)):ti,ab
#	{or #7-#9}
#	[mh ^"monitoring, physiologic"]
#	[mh ^"signs and symptoms"]
#	[mh ^"vital signs"]
#	(monitor* or check next up* or check-up*):ti,ab
#	((clinical* next assess*) or "signs and symptoms" or ((vital or clinical) near (sign or signs))):ti,ab
#	{or #11-#15}
#	#10 and #16

CINAHL search terms

S	
S	(mh "blood transfusion+")
S	transfus* OR hemotransfus* OR haemotransfus*
S	((blood n2 (management or administ* or component*)) or blood support)
S	S1 or S2 or S3
S	(((adverse or acute) n2 (react* or respon* or effect* or event* or outcome*)) or atr or atrs)
S	(mh "adverse health care event+")
S	S5 or S6
S	S4 and S7
S	(mh "blood transfusion reaction+")
S	(mh "blood transfusion+/ae")

S	(transfus* n2 (react* or side effect* or side-effect* or adverse effect* or adverse event*))
S	s8 or s9 or s10 or s11
S	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
S	S12 not S13
S	(mh "monitoring, physiologic") or (mh "vital signs") or (mh "signs and symptoms (non-cinahl)")
S	(monitor* or check up* or check-up*)
S	((clinical* n1 assess*) or "signs and symptoms" or ((vital or clinical) n1 sign*))
S	S15 or S16 or S17
S	S14 and S18

A.3.15 Patient identification

What are the clinical and cost effectiveness of electronic patient identification systems such as patient identification band, bar code or radiofrequency identification (RFID) to ensure patient safety during blood transfusions?

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
Transfusion	Patient ID	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	exp blood transfusion/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	exp patient identification systems/
7	exp medical records systems, computerized/
8	safety management/
9	blood group incompatibility/pc [prevention & control]
1	checklist/
1	(radiofrequency identification* or rfid).ti,ab.
1	(bar code* or barcode* or wristband* or wrist band*).ti,ab.
1	(checklist* or double check*).ti,ab.
1	(patient* adj2 (identification or id or misidentification)).ti,ab.
1	blood safety/mt, st [methods, standards]
1	or/6-15
1	5 and 16

Embase search terms

1	exp *blood transfusion/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	patient identification/
7	*electronic medical record/
8	blood safety/
9	blood group incompatibility/pc [prevention]
1	radiofrequency identification/
1	*checklist/
1	(radiofrequency identification* or rfid).ti,ab.
1	(bar code* or barcode* or wristband* or wrist band*).ti,ab.
1	(checklist* or double check*).ti,ab.
1	(patient* adj2 (identification or id or misidentification)).ti,ab.

1	or/6-15
1	5 and 16

Cochrane search terms

#	[mh "blood transfusion"]
#	transfus*:ti,ab
#	(hemotransfus* or haemotransfus*):ti,ab
#	((blood near/2 (management or administ* or component*)) or blood support):ti,ab
#	{or #1-#4}
#	[mh "patient identification systems"]
#	[mh "medical records systems, computerized"]
#	[mh ^"safety management"]
#	mesh descriptor: [blood group incompatibility] this term only and with qualifiers: [prevention & control - pc]
#	[mh ^checklist]
#	mesh descriptor: [blood safety] this term only and with qualifiers: [methods - mt, standards - st]
#	(radiofrequency identification* or rfid):ti,ab
#	(bar code* or barcode* or wristband* or wrist band*):ti,ab
#	(checklist* or double check*):ti,ab
#	(patient* near/2 (identification or id or misidentification)):ti,ab
#	{or #6-#15}
#	#5 and #16

Cinahl search terms

S	(mh "blood transfusion+")

S	transfus* or hemotransfus* or haemotransfus*
S	((blood n2 (management or administ* or component*)) or blood support)
S	S1 or S2 or S3
S	(mh "patient identification") or (mh "computerized patient record") or (mh "bar coding") or (mh "checklists")
S	(radiofrequency identification* or rfid)
S	(bar code* or barcode* or wristband* or wrist band*)
S	checklist* or double check*
S	(patient* n2 (identification or id or misidentification))
S	S5 or S6 or S7 or S8 or S9
S	S4 and S10
S	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
S	S11 not S12

HMIC search terms

1	blood transfusion/ or blood transfusion equipment/ or blood transfusion services/ or blood transfusion units/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	exp patient identification systems/ or electronic patient records/
7	(radiofrequency identification* or rfid).ti,ab.
8	(bar code* or barcode* or wristband* or wrist band*).ti,ab.
9	(checklist* or double check*).ti,ab.
1	(patient* adj2 (identification or id or misidentification)).ti,ab.
1	or/6-10
1	5 and 11

A.3.16 Electronic decision support

What is the clinical and cost effectiveness of electronic decision-support blood order systems to reduce inappropriate blood transfusions?

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
Transfusion	Decision support	n/a	The following filters were used in Medline and Embase only: OBS, RCT, SR	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	exp blood transfusion/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	exp medical records systems, computerized/
7	electronic prescribing/
8	decision support systems, clinical/
9	exp medication systems/
1	medical informatics applications/ or decision making, computer-assisted/ or therapy, computer-assisted/ or medical informatics computing/
1	reminder systems/
1	clinical laboratory information systems/ or decision support systems, management/ or exp hospital information systems/
1	(((computer* or electronic*) adj3 (decision* or tool* or support* or prescri*or blood or transfus*)) or eprescri* or e-prescri*).ti,ab.
1	((computer* adj3 order entry) or cpoe).ti,ab.
1	((clinical support or decision support) adj3 system*).ti,ab.
1	reminder*.ti,ab.
1	or/6-16
1	5 and 17

Embase search terms

1	exp *blood transfusion/
2	transfus*.ti,ab.

3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	exp *electronic medical record/
7	exp computerized provider order entry/
8	decision support system/
9	*medical informatics/
1	computer assisted therapy/
1	hospital information system/ or medical information system/ or nursing information system/ or reminder system/
1	*information system/
1	*computer system/
1	(((computer* or electronic*) adj3 (decision* or tool* or support* or prescri*or blood or transfus*)) or eprescri* or e-prescri*).ti,ab.
1	((computer* adj3 order entry) or cpoe).ti,ab.
1	((clinical support or decision support) adj3 system*).ti,ab.
1	reminder*.ti,ab.
1	or/6-17
1	5 and 18

Cochrane search terms

#	[mh "blood transfusion"]
#	transfus*:ti,ab
#	(hemotransfus* or haemotransfus*):ti,ab
#	((blood near/2 (management or administ* or component*)) or blood support):ti,ab
#	{or #1-#4}
#	[mh "medical records systems, computerized"]
#	[mh ^"electronic prescribing"]
#	[mh ^"decision support systems, clinical"]
#	[mh "medication systems"]
#	[Mh ^"medical informatics applications"]

#	
#	[Mh ^"decision making, computer-assisted"]
#	[Mh ^"therapy, computer-assisted"]
#	[Mh ^"medical informatics computing"]
#	[mh ^"reminder systems"]
#	[mh ^"clinical laboratory information systems"]
#	[mh ^"decision support systems, management"]
#	[mh "hospital information systems"]
#	(((computer* or electronic*) near/3 (decision* or tool* or support* or prescri*or blood or transfus*)) or eprescri* or e-prescri*):ti,ab
#	((computer* near/3 order next entry) or cpoe):ti,ab
#	((clinical next support or decision next support) near/3 system*):ti,ab
#	reminder*:ti,ab
#	{or #6-#21}
#	#5 and #22

HMIC search terms

1	blood transfusion/ or blood transfusion equipment/ or blood transfusion services/ or blood transfusion units/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	electronic patient records/
7	electronic prescribing/
8	computer aided decision making/ or computerised control systems/ or computerised

	information handling/ or decision support systems/
9	medication systems/ or medication orders/
1	medical informatics/
1	information systems/ or computerised information systems/ or medical information systems/
1	(((computer* or electronic*) adj3 (decision* or tool* or support* or prescri*or blood or transfus*)) or eprescri* or e-prescri*).ti,ab.
1	((computer* adj3 order entry) or CPOE).ti,ab.
1	((clinical support or decision support) adj3 system*).ti,ab.
1	or/6-14
1	5 and 15

A.3.17   Patient information

What is the information and support patients under consideration for a blood transfusion and their family members or carers would value and how would they prefer to receive it?

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
Transfusion	Patient information	n/a	Qualitative terms were added to the search – see below	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	exp blood transfusion/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	"patient acceptance of health care"/ or exp patient satisfaction/ or exp consumer satisfaction/ or personal satisfaction/
7	patient education as topic/
8	(information* adj3 (patient* or need* or requirement* or support* or seek* or access* or disseminat*)).ti,ab.
9	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother*) adj2 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform* or experience or experiences or opinion* or knowledge or awareness or misconception* or understanding or misunderstanding or concern* or belief* or feeling* or acceptance or need* or requirement* or support* or

	communication* or involvement)).ti,ab.
1	or/6-9
1	qualitative research/
1	exp interviews as topic/
1	exp questionnaires/
1	health care surveys/
1	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
1	or/11-15
1	10 and 16
1	5 and 17

Embase search terms

1	exp *blood transfusion/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	patient attitude/ or patient preference/ or patient satisfaction/ or consumer attitude/
7	patient information/ or consumer health information/
8	patient education/
9	(information* adj3 (patient* or need* or requirement* or support* or seek* or access* or disseminat*)).ti,ab.
1	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother*) adj2 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform* or experience or experiences or opinion* or knowledge or awareness or misconception* or understanding or misunderstanding or concern* or belief* or feeling* or acceptance or need* or requirement* or support* or communication* or involvement)).ti,ab.
1	or/6-10
1	qualitative research/
1	exp interview/
1	exp questionnaire/
1	health care survey/
1	(qualitative or interview* or focus group* or theme* or questionnaire* or

	survey*).ti,ab.
1	or/12-16
1	11 and 17
1	5 and 18

Cochrane search terms

#	[mh "blood transfusion"]
#	transfus*:ti,ab
#	(hemotransfus* or haemotransfus*):ti,ab
#	((blood near/2 (management or administ* or component*)) or blood support):ti,ab
#	{or #1-#4}
#	[mh ^"patient acceptance of health care"]
#	[mh "patient satisfaction"]
#	[mh "consumer satisfaction"]
#	[mh ^"personal satisfaction"]
#	[mh ^"patient education as topic"]
#	(information* near/3 (patient* or need* or requirement* or support* or seek* or access* or disseminat*)):ti,ab
#	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother*) near/2 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform* or experience or experiences or opinion* or knowledge or awareness or misconception* or understanding or misunderstanding or concern* or belief* or feeling* or acceptance or need* or requirement* or support* or communication* or involvement)):ti,ab
#	{or #6-#12}
#	#5 and #13
#	[mh ^"qualitative research"]
#	[mh "interviews as topic"]

#	
#	[mh questionnaires]
#	[mh ^"health care surveys"]
#	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*):ti,ab
#	{or #15-#19}
#	#14 and #20

CINAHL search terms

S	
S	(mh "blood transfusion+")
S	transfus* or hemotransfus* or haemotransfus*
S	((blood n2 (management or administ* or component*)) or blood support)
S	S1 or S2 or S3
S	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
S	S4 not S5
S	(mh "consumer satisfaction+") or (mh "patient education+") or (mh "personal satisfaction")
S	(information* n3 (patient* or need* or requirement* or support* or seek* or access* or disseminat*))
S	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother*) n2 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform* or experience or experiences or opinion* or knowledge or awareness or misconception* or understanding or misunderstanding or concern* or belief* or feeling* or acceptance or need* or requirement* or support* or communication* or involvement))
S	S7 or S8 or S9
S	(mh "qualitative studies+") or (mh "interviews+") or (mh "focus groups") or (mh "surveys") or (mh "questionnaires+")

S	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*)
S	S11 or S12
S	S10 and S13
S	S6 and S14

PsycINFO search terms

1	blood transfusion/
2	transfus*.ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4
6	client education/
7	health education/
8	exp client attitudes/
9	consumer satisfaction/ or client satisfaction/
1	(information* adj3 (patient* or need* or requirement* or support* or seek* or access* or disseminat*)).ti,ab.
1	((client* or patient* or user* or carer* or consumer* or customer* or famil* or parent* or father* or mother*) adj2 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform* or experience or experiences or opinion* or knowledge or awareness or misconception* or understanding or misunderstanding or concern* or belief* or feeling* or acceptance or need* or requirement* or support* or communication* or involvement)).ti,ab.
1	or/6-11
1	5 and 12

A.4   Health economics searches

A.4.1   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
Transfusion	n/a	n/a	The following filters were used in Medline and Embase only: HE	See Table 1 English only Medline and Embase were searched from 2012 onwards, all

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
				other databases from their date of inception
				No new studies were added to HEED after July 2014, and the database was taken offline in January 2015

Medline search terms

1	exp blood transfusion/
2	((blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin) adj3 (transfus* or retransfus* or therap*)).ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4

Embase search terms

1	exp *blood transfusion/
2	((blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin) adj3 (transfus* or retransfus* or therap*)).ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4

CRD search terms

#	mesh descriptor blood transfusion explode all trees in NHSEED,HTA
#	(((blood or red cell or RBC or platelet* or plasma or ffp or cryoprecipitate or prothrombin) adj3 (transfus* or retransfus* or therap*))) in NHSEED, HTA
#	((hemotransfus* or haemotransfus*)) in NHSEED, HTA
#	(blood adj2 (management or administ* or component*)) OR (blood support) in NHSEED, HTA
#	#1 or #2 or #3 or #4

HEED search terms

1	ax=blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin
2	ax=transfus* or retransfus*
3	cs=1 and 2
4	ax=hemotransfus* or haemotransfus*
5	ax=blood management
6	ax=blood support
7	cs=3 or 4 or 5 or 6

A.4.2   Quality of life reviews

Quality of life searches were conducted in Medline and Embase.

Population	Intervention or exposure	Comparison	Study design filters	Date parameters and other limits
Transfusion	n/a	n/a	The following filters were used in Medline and Embase only: QOL	See Table 1 English only Exclusion filter applied in Medline and Embase

Medline search terms

1	exp blood transfusion/
2	((blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin) adj3 (transfus* or retransfus* or therap*)).ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4

Embase search terms

1	exp *blood transfusion/
2	((blood or red cell or rbc or platelet* or plasma or ffp or cryoprecipitate or prothrombin) adj3 (transfus* or retransfus* or therap*)).ti,ab.
3	(hemotransfus* or haemotransfus*).ti,ab.
4	((blood adj2 (management or administ*5 or component*1)) or blood support).ti,ab.
5	or/1-4