THE TOP 29 QUESTIONS IN ORDER OF PRIORITY AS AGREED at the Final Workshop. (For all remaining questions in other categories please see later in this worksheet).		AGREED PRIORITY AT THE WORKSHOP	Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has received a blood transfusion, B = Blood Donor, H = Health professional, NK = no details provided.	Previous Related & up-to-date Research
D11	What would encourage more people (especially black and ethnic minority groups or people with rare blood type) to donate blood?	1	How can we encourage people to donate	H	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Memon A, Moiz B. Why are we losing our precious blood donors? A systematic review from Pakistan. Haematologica. 2016;101((s1)):P877- ABSTRACT NO.PB2222 3. Appiah BA, Bates BA. Cultural context and role of communication in promoting adequate blood donation in sub-Saharan Africa: a systematic literature review. Vox Sanguinis. 2015;109((Suppl. 1)):p128. Abstract P-142
			How can the rest of the population (especially minorities) be encouraged to become regular donors ?	H	
			How do we encourage more donors?	H	
			It should be mandatory to donate/ or be paid to do it	B	
			people should be encouraged to donate more by better campaigning	P B	
			What would encourage people to donate blood?	H	
			What can we do to encourage more people to become blood donors?	P R B H	
			How can we make giving blood more appealing to the public?	P R B H	
			How can we make donating blood more appealing to the public?	P R B H	
			How is recruitment for more blood donors being developed.	P R B	
			How can we encourage more ethnic minorities to give blood?	R B H	
			How can the public be made aware of the need to be donors?	R H	
			How do you plan getting more people to donate?	P B	
			How important is blood type and does marketing for new donors target rare types?	P	
			Should be patients friends & family be asked to join campaign to get more donors as they've seen firsthand how it helps...this happened with me	P	
			I have a major concern in our declining stock of blood. What is preventing the general public from donating? Is it lack of knowledge? Are they concerned about the safety of receiving another's blood?	H	
			Encouraging people to become donors, but without putting too much pressure on those already signed up	R B H	
			How do we increase number of people donating?	B H	
			How can more people be encouraged to become donors?	NK	
			How can more people from minority ethnic backgrounds be encouraged to think about donating?	B	
			How can I help promote the blood donation process?	B	
			When you give blood it is quite an old fashioned type of service, it needs updating to get younger donors interested and involved	B	
			The most effective ways and time to give blood and blood products	R H	
			Would sending information about where/how donations have been received increase the popularity of donating blood?	B	
DtTr1	How can health professionals be discouraged from using blood inapproriately?	2	Explore the level of knowledge and understanding of prescribing and administrating blood transfusions by healthcare professionals.	H	1. Hibbs SP, Nielsen ND, Brunskill S, Doree C, Yazer MH, Kaufman RM, et al. The impact of electronic decision support on transfusion practice: a systematic review. Transfusion Medicine Reviews. 2015;29(1):14-23.
			What systems can we put in place to limit unnecessary use of blood and blood products on the ICU?	B H	
			How can we improve knowledge of and reduce incidence of TRALI	R B H	
			What can be done to make it easier to give blood in the bleeding patient (i.e. not 1:1:1) [ratio question]	H	
			NICE GUIDELINE RESEARCH KEY RECOMMENDATION:Electronic decision support: [Guideline Dev Gp fully assessed all evidence to Jan 2015 = "inconclusive and of very low quality"]. What is the clinical and cost effectiveness of an electronic decision support system compared with current practice in reducing inappropriate blood transfusions, overall rates of blood transfusion and mortality?	Question not derived from the survey but from another source.	
			Red cell transfusion: dose, frequency, end points, outcome, home vs. hospital, efficacy in patients with chronic malignant haematologic diseases	H	
			Transfusion is a quick fix, but is it always the best fix?	H	
			A bigger push on hospitals etc on " Why use 2 when 1 will do". Lets get out profesiso	H	
			Ensuring that all hospital staff realise that blood transfusion is akin to transplantation and not be blase about administering it	R B H	
			How can Hospitals reduce the requirements for Blood Transfusions	R B H	
			How can the risks and complications associated with blood transfusions be more clearly understood by the wider medical community?	NK	
			How can we improve the hospitals clinicians that blood is a limited resource, I feel they should be encouraged to be donors.	B H	
			How do we encourage staff to use blood only when necessary	H	
			How do we unify blood transfusion practices across disciplines (.e.g. cardiac surgery vs. general ICU)?	R B H	
			Should blood and blood product transfusion in trauma be better applied in NHS hospitals? Is current guidance actually being followed?	H	
			To save time and resources (for both patients and health care professionals) is it possible to reduce the amount of blood products that are prescribed?	B H	
			What measures could prevent blood transfusions?	H	
			Why do clinical staff seemingly ignore SOPs and improvise a procedure and end up getting it wrong - move to A7?	B	
			Who should decide that a patient should receive a blood transfusion?	R B H	

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			How decision to transfuse is made	R B H	
			How can health care professionals in general be better informed about alternatives to blood transfusion?	NK	
			How can we ensure that evidence based best practice regarding optimising pre-op haemoglobin is implemented	H	
			What factors are the most important to ward clinical staff (consultants & junior doctors) in deciding when to initiate blood transfusion	H	
			How do we promote transfusion triggers and make doctors keep to it!	R B H	
			Should doctors have mandatory updates on blood transfusion, no matter what their seniority?	B H	
			What factors influence the usage demand for donated blood products & can waste be reduced?	B	
			What should determine the need to transfuse?	H	
			When is blood transfusion absolutely indicated and when can it be avoided	R B H	
			When should I transfuse patients?	H	
			Would it be beneficial to transfuse blood based on an ideal body weight rather than everyone receiving a similar amount?	H	
A2	How can the wastage of donor blood be minimised?	3	How can we reduce the lag time between request and availability of blood for transfusion?	H	No up-to-date SR evidence
			What is the basis for the 30 minute rule?	B H	
			How ethical is it to collect blood that will be destroyed e.g. from AB+ve females	B H	
			How can we reduce blood wastage by improving transport / administration whilst ensuring ready access to blood when required	H	
			How much blood donated is "wasted" by disposal?	B	
			How might this percentage (i.e. wastage/redundancy) be reduced?	B	
			Why are giving sets not flushed with 0.9% sodium chloride on completion of transfusion	B H	
			Why is blood thrown out in the giving set?	P	
			Can I be sure my donation will not be wasted?	B H	
			Are too many donations rejected unnecessarily?	B H	
			What happens to unused donations?	B H	
			What happens to blood that is not used after donation?	P B H	
			Percentage of donations that are transfused	B H	
			What percentage, if any, of all blood donated for transfusion gets wasted?	P	
			Does all the blood donated at donor sessions get used?	R B H	
			When a child needs blood ,why is a whole bag used .why is there so much wasted.	B H	
			Is all collected blood used usefully or is there wastage?	R B	
			Is all the donated blood used	H	
			What percentage of blood donations are found to be unusable because of contamination?	B	
			how do I know how my blood is being used?	R B	
			What percentage of donated blood gets used?	B	
			How many units have been wasted due to 30 minute rule violations? If this information is not captured, why not?	B H	
			How much blood is wasted by the health services and we're is that most common	B H	
			What percentage of blood is actually used per year?	R B	
			How many units are 'wasted' in hospitals (e.g. poor storage)?	B H	
			How much blood/blood products is wasted by hospitals which have blood on standby for surgical procedures?	P H	
DtTr12a	What is the optimal type and combination of blood products [red blood cells, platelets, frozen plasma] for adult patients* with a major haemorrhage that requires a transfusion of 4 or more units of blood]? * Aged over 16 years old.	4	Are major haemorrhage protocols optimised for different age groups e.g. elderly?	H	1. Yu F, Zhong T, Wu G. [Efficacy of high versus low plasma: red blood cell ratio resuscitation in patients with severe trauma requiring massive blood transfusion: a meta-analysis]. Nan Fang Yi Ke Da Xue Xue Bao = Journal of Southern Medical University. 2017;37(-1):119-23. 2. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or rotational thromboelastometry (ROTEM) to monitor haemostatic treatment in bleeding patients: a systematic review with meta-analysis and trial sequential analysis. Anaesthesia. 2017. Apr;72(4):519-531. doi: 10.1111/anae.13765 3. Cannon JW, Khan MA, Raja AS, Cohen MJ, Como JJ, Cotton BA, et al. Damage control resuscitation in patients with severe traumatic hemorrhage: a practice management guideline from the Eastern Association for the Surgery of Trauma. The Journal of Trauma and Acute Care Surgery. 2017;82(-3):605-17. 4. Fahrendorff M, Oliveri RS, Johansson PI. The use of viscoelastic haemostatic assays in goal-directing treatment with allogeneic blood products - a systematic review and meta-analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2017;25(-1):39-. 5. Deppe AC, Weber C, Zimmermann J, Kuhn EW, Slottosch I, Liakopoulos OJ, et al. Point-of-care thromboelastography/thromboelastometry-based coagulation management in cardiac surgery: a meta-analysis of 8332 patients. The Journal of Surgical Research. 2016;203(-2):424-33. 6. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or thromboelastometry (ROTEM) to monitor
			How can we clarify and improve the guidance on massive haemorrhage?	B H	
			In major haemorrhage settings for example trauma, is there any information how older or younger patients respond to generic major haemorrhage protocols?	H	
			Improved protocols for massive haemorrhages in the critical care unit	B H	
			Wider knowledge of best way to manage brisk haemorrhage i.e. ratio of blood:FFP:platelets	P R B H	
			What is the ideal blood:ffp:platelets ratio during major haemorrhage in the operating theatre	B H	
			what is the best ratio of blood products during massive haemorrhage	H	
			What are the ideal ratios of a major haemorrhage policy e.g. RBC:FFP: platelets: cryo. Which strategies & techniques result in improved patient outcomes?	H	
			In major trauma bleeding, there is evidence of early platelet dysfunction and the PROPPR study gave upfront platelets, however not all trauma units have readily available stocks of platelets. Are there alternatives to platelet transfusion e.g. fibrinogen replacement that might compensate for this?	H	

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			how should we arrange blood product transfusion in major haemorrhage, and can near-patient testing help?	H	haemostatic treatment versus usual care in adults or children with bleeding. The Cochrane Database of Systematic Reviews. 2016(-8):CD007871-CD. 7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68. 8. Jiang LB, Zhang M, Jiang SY, Ma YF. Early goal-directed resuscitation for patients with severe sepsis and septic shock: a meta-analysis and trial sequential analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2016;24(-1):23-. 9. Boutin A, Chasse M, Shemilt M, Lauzier F, Moore L, Zarychanski R, et al. Red blood cell transfusion in patients with traumatic brain injury: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016;30(-1):15-24. 10. McQuilten ZK, Crighton G, Engelbrecht S, Gotmaker R, Brunskill SJ, Murphy MF, et al. Transfusion interventions in critical bleeding requiring massive transfusion: a systematic review. Transfusion Medicine Reviews. 2015;29(-2):127-37. 11. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.
			What is the optimal 'formulation' of blood (i.e., combination of packed red blood cells, platelets, fresh frozen plasma, whole blood) for patients prescribed a massive transfusion (e.g., more than four units of blood)?	R H	
			Role of whole blood in managing trauma haemorrhage	B H	
			Can more be done to promote better blood loss management?	NK	
			should we have whole blood available for major haemorrhage	H	
			Why haven't we adopted the military usage of using blood products: not RBC but more platelets & WC?	B H	
			How much thought is put into the option of using alternatives to blood in an emergency situation?	NK	
			Is blood transfusion still the best treatment for sudden blood loss due to cardiac cath lab complications?	H	
			How can over transfusion be prevented for patients with traumatic haemorrhage?	R B H	
			Is blood transfusion still the best treatment for sudden haemorrhage due to cardiac cath lab complications?	H	
			What are ideal products for trauma haemorrhage Rhesus in the prehospital environment? Saline, FFP alone, RBC & FFP or RBC & lyoplas or fibrinogen concentrate/ cryo?	H	
DtTr3	How can patients, relatives and carers be empowered to have greater say about their choices in relation to blood transfusion and it's alternatives?	5	Could alternatives be further explained to patients prior to transfusion route?	B H	1. NICE Guideline Recommendations: Patient information 43. Provide verbal and written information to patients who may have or who have had a transfusion, and their family members or carers (as appropriate), explaining: • the reason for the transfusion • the risks and benefits • the transfusion process • any transfusion needs specific to them • any alternatives that are available, and how they might reduce their need for a transfusion • that they are no longer eligible to donate blood • that they are encouraged to ask questions. 44. Document discussions in the patient's notes. 45. Provide the patient and their GP with copies of the discharge summary or other written communication that explains: • the details of any transfusions they had • the reasons for the transfusion • any adverse events • that they are no longer eligible to donate blood. 46. For guidance on communication and patient-centred care for adults, see the NICE guideline on patient experience in adult NHS services
			How can the world of medicine become more open minded with patients who do no desire a blood transfusion as treatment	H	
			Should people about to undergo transfusion be counselled about their future ability to donate blood?	P B H	
			How do we improve public perception that having a blood transfusion is not the "answer to everything"	H	
			How could we empower patients to improve anaemia?	R H	
			Once a decision is made, why are Jehovah's Witnesses put under pressure to change their minds?	NK	
			Why are there so many different blood products. How do I know which is right for me?	R B H	
			Why was I put under pressure by hospital staff to change my decision to avoid blood and its derivatives?	NK	
			Where blood products are refused are there still clinicians who consider this an affront to their superior knowledge?	NK	
			Is it automatically assumed that the traditional use of blood products is the only option, or is it standard practise to advise patients of alternatives?	NK	
			Transfusion Avoidance	R B H	
			Do I really need a transfusion?	R B H	
			How can I be sure that my wishes regarding the avoidance of blood transfusion will be respected?	NK	
			How can patients be empowered to ensure they get only appropriate transfusion?	H	
			How much information is given to patients so that they can make an individual choice whether to have blood or alternatives?	NK	
			To avoid a blood transfusion how can I build up my red blood cell count	B	
			How could we empower patients to avoid unnecessary transfusion?	R H	
			We need more of an awareness of the alternatives to blood transfusion. It should not always be the first thing thought of when a patient presents with a low Hb. Lets think about optimising with oral iron/IV iron/ Health Promotion on diet and be strict on a cut off point if the patient is asymptomatic. Are all patients being told that they cannot be a blood donor once they have become a receiver? Perhaps this may give cause for the patient to think further about receiving in cases where they are asymptomatic and other forms are optimisation may be as effective for them?	H	
			What information is available to tell people if the alternatives to a blood transfusion?	R B H	
DtTr6	How can patients with anaemia be identified and treated in a timely manner so that the need for transfusion is avoided?	6	Are patients being screened and treated for anaemia before surgery to prevent the need for blood transfusion?	H	1. Potter LJ, Doleman B, Moppett IK. A systematic review of pre-operative anaemia and blood transfusion in patients with fractured hips. Anaesthesia. 2015;70(4):483-500. 2. Ng O, Keeler BD, Mishra A, Simpson A, Neal K, Brookes MJ, et al. Iron therapy for pre-operative anaemia. Cochrane Database of Systematic Reviews. 2015(-12):CD011588-CD. 3. Hogan M, Klein AA, Richards T. The impact of anaemia and intravenous iron replacement therapy on outcomes in cardiac surgery. European Journal of Cardio-Thoracic Surgery. 2015;47(2):218-26. 4. Chan AW, de Gara CJ. An evidence-based approach to red blood cell transfusions in asymptomatically anaemic patients. Annals of the Royal College of Surgeons of England. 2015;97(-8):556-62. 5. Borstlap WA, Stellingwerf ME, Moolla Z, Musters GD, Buskens CJ, Tanis PJ, et al. Iron therapy for the treatment of preoperative anaemia in patients with colorectal carcinoma: a systematic review. Colorectal Disease. 2015;17(-12):1044-54. ***Other Types:*** 1. Bonovas S, Fiorino G, Allocca M, Lytras T, Tsantes A, Peyrin-Biroulet L, et al. Intravenous versus oral iron for the treatment of
			How can patients be empowered to have greater say about their choices in relation to blood transfusion and it's alternatives?	R B H	
			How to promote early identification of patients who are anaemic who are going to need a transfusion and treat it to avoid them needing a transfusion	R B H	
			Does a transfusion to correct anaemia lead to the true cause of the anaemia beingh missed?	H	
			How do Blood Transfusion experts penetrate into the Commissioners and GPs in order to fully employ Patient Blood Management which I believe should start in the community?	B H	
			How important is anaemia during pregnancy, what are the clinical consequences, how should oral iron be used (including prevention)?	B R H	
			How should anaemia be managed before elective surgery to reduce the risk of transfusion	P B R H	
			How can GPs be more engaged in the pre-operative process to ensure that blood counts are optimised before admission to hospital?	NK	
			Are hospital patients more or less likely to develop delirium with a lower haemoglobin	B H	

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			Why do general doctors in hospital and GP surgeries understand so few facts about donor blood and the treatment of anaemia?	R B H	anemia in inflammatory bowel disease: a systematic review and meta-analysis of randomized controlled trials. Medicine. 2016;95(-2):e2308-e. 2. Tay HS, Soiza RL. Systematic review and meta-analysis: what is the evidence for oral iron supplementation in treating anaemia in elderly people? Drugs & Aging. 2015;32(2):149-58.
DTtR18a&b	What are the best drug alternatives to blood transfusion to reduce and prevent bleeding?	7	Antifibrinolytic amino acids for upper gastrointestinal bleeding in people with acute or chronic liver disease. Implications for research: This updated Cochrane review has identified the need for well-designed, adequately powered randomised clinical trials to assess the benefits and harms of antifibrinolytic amino acids in people with upper gastrointestinal bleeding due to acute or chronic liver disease. According to Brown 2006, questions such as the following could be answered using randomised clinical trials. What regimen is most effective: single or combined? When can intravenous antifibrinolytic regimens be switched to oral administration? The randomised clinical trials should include participant-relevant clinical outcomes such as mortality, failure to control bleeding, and adverse events. Potential trials should be planned according to SPIRIT (Standard Protocol Items: Recommendations for Interventional Trials) statement (Chan 2013a; Chan 2013b). The trials should be reported according to the CONSORT (CONsolidated Standards Of Reporting Trials) statement (Moher 2010), which helps in improving the quality of reporting of benefits and harms in clinical research (Ioannidis 2004; Moher 2010). Trials should include participant-centred outcomes such as mortality, re-bleeding, and serious and non-serious adverse events as recommended by the Patient-Centered Outcomes Research Institute (P-CORI) statement (Selby 2013; Frank 2014; Selby 2014).	Question not derived from the survey but from another source.	1. Zhang P, Liang Y, Chen P, Fang Y, He J, Wang J. Combined application versus topical and intravenous application of tranexamic acid following primary total hip arthroplasty: a meta-analysis. Bmc Musculoskeletal Disorders. 2017;18(-1):90-. 2. Xie J, Hu Q, Huang Q, Ma J, Lei Y, Pei F. Comparison of intravenous versus topical tranexamic acid in primary total hip and knee arthroplasty: an updated meta-analysis. Thrombosis Research. 2017;153:28-36. 3. Wu Y, Yang T, Zeng Y, Si H, Li C, Shen B. Tranexamic acid reduces blood loss and transfusion requirements in primary simultaneous bilateral total knee arthroplasty: a meta-analysis of randomized controlled trials. Blood Coagulation & Fibrinolysis : an International Journal in Haemostasis and Thrombosis. 2017. 4. Watterson C, Beacher N. Preventing perioperative bleeding in patients with inherited bleeding disorders. Evidence-Based Dentistry. 2017;18(-1):28-9. 5. Topsoee MF, Settnes A, Ottesen B, Bergholt T. A systematic review and meta-analysis of the effect of prophylactic tranexamic acid treatment in major benign uterine surgery. International Journal of Gynaecology and Obstetrics: the Official Organ of the International Federation of Gynaecology and Obstetrics. 2017;136(-2):120-7. 6. Takagi H, Ando T, Umemoto T. Seizures associated with tranexamic acid for cardiac surgery: a meta-analysis of randomized and non-randomized studies. The Journal of Cardiovascular Surgery. 2017 Aug;58(4):633-641 7. Mi B, Liu G, Zhou W, Lv H, Liu Y, Zha K, et al. Intra-articular versus intravenous tranexamic acid application in total knee arthroplasty: a meta-analysis of randomized controlled trials. Archives of Orthopaedic and Trauma Surgery. 2017 Jul;137(7):997-1009. 8. Mi B, Liu G, Lv H, Liu Y, Zha K, Wu Q, et al. Is combined use of intravenous and intraarticular tranexamic acid superior to intravenous or intraarticular tranexamic acid alone in total knee arthroplasty? A meta-analysis of randomized controlled trials. Journal of Orthopaedic Surgery and Research. 2017 Apr 18;12(1):61. doi: 10.1186/s13018-017-0559-2. 9. Meena S, Benazzo F, Dwivedi S, Ghiara M. Topical versus intravenous tranexamic acid in total knee arthroplasty. Journal of Orthopaedic Surgery (Hong Kong).2017 Jan;25(1):2309499016684300. doi: 10.1177/2309499016684300. 10. Liu X, Liu J, Sun G. A comparison of combined intravenous and topical administration of tranexamic acid with intravenous tranexamic acid alone for blood loss reduction after total hip arthroplasty: a meta-analysis. International Journal of Surgery (London, England). 2017. May;41:34-43. doi: 10.1016/j.ijsu.2017.03.031. Epub 2017 Mar 21. 11. Li JF, Li H, Zhao H, Wang J, Liu S, Song Y, et al. Combined use of intravenous and topical versus intravenous tranexamic acid in primary total knee and hip arthroplasty: a meta-analysis of randomised controlled trials. Journal of Orthopaedic Surgery and Research. 2017;12(-1):22. 12. Li C, Gong Y, Dong L, Xie B, Dai Z. Is prophylactic tranexamic acid administration effective and safe for postpartum hemorrhage prevention? A systematic review and meta-analysis. Medicine. 2017;96(-1):e5653-e. 13. Chen TP, Chen YM, Jiao JB, Wang YF, Qian LG, Guo Z, et al. Comparison of the effectiveness and safety of topical versus intravenous tranexamic acid in primary total knee arthroplasty: a meta-analysis of randomized controlled trials. Journal of Orthopaedic Surgery and Research. 2017;12(1):11. 14. Cannon JW, Khan MA, Raja AS, Cohen MJ, Como JJ, Cotton BA, et al. Damage control resuscitation in patients with severe traumatic hemorrhage: a practice management guideline from the Eastern Association for the Surgery of Trauma. The Journal of Trauma and Acute Care Surgery. 2017;82(3):605-17. 15. Zhang XQ, Ni J, Ge WH. Combined use of intravenous and topical versus intravenous tranexamic acid in primary total joint arthroplasty: a meta-analysis of randomized controlled trials. International Journal of Surgery (London, England). 2016. 16. Zhang P, Liang Y, Chen P, Fang Y, He J, Wang J. 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Topical versus intravenous tranexamic acid in total knee arthroplasty: a meta-analysis of randomized controlled trials. International Orthopaedics. 2016. 22. Sun X, Dong Q, Zhang YG. Intravenous versus topical tranexamic acid in primary total hip replacement: a systemic review and meta-analysis. International Journal of Surgery (London, England). 2016. 23. Simonazzi G, Bisulli M, Saccone G, Moro E, Marshall A, Berghella V. Tranexamic acid for preventing postpartum blood loss after cesarean delivery: a systematic review and meta-analysis of randomized controlled trials. Acta Obstetricia et Gynecologica Scandinavica. 2016;95(-1):28-37. 24. Shin YS, Yoon JR, Lee HN, Park SH, Lee DH. Intravenous versus topical tranexamic acid administration in primary total knee
			Tranexamic acid for preventing postpartum haemorrhage. Implications for research: Further research is needed to examine the effects of TA on maternal mortality, severe morbidity and thromboembolic events. Studies assessing TA for preventing PPH in high-risk women with placenta praevia, placental abruption, uterine rupture and other conditions causing PPH are important. Comparison of different doses of TA as well as prophylactic use of TA without prophylactic uterotonics is necessary, using large, well-designed trials.	Question not derived from the survey but from another source.	
			Antifibrinolytic drugs for acute traumatic injury. Implications for research: The knowledge that TXA safely reduces the risk of death from traumatic bleeding raises the possibility that it might also be effective in other situations where bleeding can be life threatening or disabling and further research is warranted to explore this potential. Randomised trials involving patients with isolated traumatic brain injury (TBI) that assess both mortality and disability outcomes are required before TXA can be recommended for use in these patients. The ongoing NCT01402882 trial with a planned sample size of 10,000 patients with TBI and the planned trial of prehospital TXA in TBI (NCT01990768), will contribute to resolving the uncertainty about the effects of TXA in this group.	Question not derived from the survey but from another source.	
			Antifibrinolytics (lysine analogues) for the prevention of bleeding in people with haematological disorders. Implications for research: The only evidence available is for adults with acute leukaemia receiving chemotherapy. We await the results of the two ongoing trials that are expected to recruit 916 participants in total by 2020. These studies are recruiting adults with a mixture of haematological malignancies. There is currently no evidence for the use of antifibrinolytics in children with haematological disorders who are thrombocytopenic and usually require treatment with platelet transfusions and there are no ongoing studies that include children.	Question not derived from the survey but from another source.	
			IS IT TIME for a risk-adjusted, retrospective trial comparing "bloodless" and transfusion strategies in the UK?	NK	
			Trials at Johns Hopkins, Baltimore, Englewood,NJ in USA and in Brussels,Belgium indicate that there are similar or better outcomes with equivalent lower costs in the bloodless care group. If this is correct research should be undertaken in the UK	NK	
			Are drugs that are known to reduce blood loss and transfusion such as aprotinin and tranexamic acid being used appropriately in all suitable patients	H	
			Novel haemostatic agents either given topically or intravenously to arrest haemorrhage	B H	
			Optimisation of surgical patients using alternative techniques to avoid blood transfusion - in particular safe low levels of Hb	B H	
			Can drugs, such as desmopressin or tranexamic acid, be used instead of fresh frozen plasmaor platelets to prevent bleeding for people undergoing invasive procedures?	H	
			Effectiveness of tranexamic acid in reducing blood loss during cytoreductive surgery for advanced ovarian cancer. Implications for research: There is a need for an adequately sized, placebo-controlled trial with a well-defined protocol for blood transfusion and a protocol for evaluating tranexamic acid-related adverse events to shed more light on the effectiveness of tranexamic acid given perioperatively to reduce blood loss during cytoreductive surgery for advanced ovarian cancer.	Question not derived from the survey but from another source.	
			What are the risks and benefits of tranexamic acid when trying to avoid blood transfusion for hip fracture surgery?	R B H	

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			Fibrin sealants for the prevention of postoperative pancreatic fistula following pancreatic surgery. Implications for research: Further trials with low risk of bias and sufficient sample size are necessary to assess various fibrin sealants (e.g. glue, patch) for preventing postoperative pancreatic fistula. Future trials should report the rate and the grade of the postoperative pancreatic fistula according to the definition of the International Study Group on Pancreatic Fistula (Bassi 2005). Future randomized trials should use adequate methods of randomization and allocation concealment. Future trials need to employ blinding of participants and outcome assessors.	Question not derived from the survey but from another source.	arthroplasty: a meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016. 25. Shang J, Wang H, Zheng B, Rui M, Wang Y. Combined intravenous and topical tranexamic acid versus intravenous use alone in primary total knee and hip arthroplasty: a meta-analysis of randomized controlled trials. International Journal of Surgery (London, England). 2016. 26. Ray S, Ray A. Non-surgical interventions for treating heavy menstrual bleeding (menorrhagia) in women with bleeding disorders. The Cochrane Database of Systematic Reviews. 2016(-11):CD010338-CD. 27. Prutsky G, Domecq JP, Salazar CA, Accinelli R. Antifibrinolytic therapy to reduce haemoptysis from any cause. The Cochrane Database of Systematic Reviews. 2016(-11):CD008711-CD. 28. Olsen JJ, Skov J, Ingerslev J, Thorn JJ, Pinholt EM. Prevention of bleeding in orthognathic surgery - a systematic review and meta-analysis of randomized controlled trials. Journal of Oral and Maxillofacial Surgery : Official Journal of the American Association of Oral and Maxillofacial Surgeons. 2016;74(-1):139-50. 29. Murphy GR, Glass GE, Jain A. The efficacy and safety of tranexamic acid in cranio-maxillofacial and plastic surgery. The Journal of Craniofacial Surgery. 2016;27(-2):374-9. 30. McNicol ED, Tzortzopoulou A, Schumann R, Carr DB, Kalra A. Antifibrinolytic agents for reducing blood loss in scoliosis surgery in children. The Cochrane Database of Systematic Reviews. 2016(-9):CD006883-CD. 31. Lin Z, Xiaoyi Z. Tranexamic acid-associated seizures: a meta-analysis. Seizure. 2016;36:70-3. 32. Lin C, Qi Y, Jie L, Li HB, Zhao XC, Qin L, et al. Is combined topical with intravenous tranexamic acid superior than topical, intravenous tranexamic acid alone and control groups for blood loss controlling after total knee arthroplasty: a meta-analysis. Medicine. 2016;95(-51):e5344-e. 33. Li J, Zhang Z, Chen J. Comparison of efficacy and safety of topical versus intravenous tranexamic acid in total hip arthroplasty: a meta-analysis. Medicine. 2016;95(-36):e4689-e. 34. Li G, Sun TW, Luo G, Zhang C. Efficacy of antifibrinolytic agents on surgical bleeding and transfusion requirements in spine surgery: a meta-analysis. European Spine Journal : Official Publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society. 2016. 35. Kietpeerakool C, Supoken A, Laopaiboon M, Lumbiganon P. Effectiveness of tranexamic acid in reducing blood loss during cytoreductive surgery for advanced ovarian cancer. The Cochrane Database of Systematic Reviews. 2016(-1):CD011732-CD. 36. Ker K, Shakur H, Roberts I. Does tranexamic acid prevent postpartum haemorrhage? A systematic review of randomised controlled trials. Bjog : an International Journal of Obstetrics and Gynaecology. 2016. 37. Kamhieh Y, Fox H. Tranexamic acid in epistaxis: a systematic review. Clinical Otolaryngology : Official Journal of Ent-Uk ; Official Journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery. 2016. 38. Jiang X, Ma XL, Ma JX. Efficiency and safety of intravenous tranexamic acid in simultaneous bilateral total knee arthroplasty: a systematic review and meta-analysis. Orthopaedic Surgery. 2016;8(-3):285-93. 39. Jiang M, Chen P, Gao Q. Systematic review and network meta-analysis of upper gastrointestinal hemorrhage interventions. Cellular Physiology and Biochemistry : International Journal of Experimental Cellular Physiology, Biochemistry, and Pharmacology
			The role and optimal use of alternatives like desmopressin/tranexamic acid to cover invasive procedures in sick patients	B H	
			What is the evidence for systematic targeted preoperative haemoglobin optimisation reducing the rate of preoperative blood transfusion	H	
			Effectiveness of various methods of improving Hb preoperatively.	H	
			What are the best methods of preventing/ reducing haemorrhage during myomectomy?	B H	
			Antifibrinolytic agents for reducing blood loss in scoliosis surgery in children. Implications for research: Evidence demonstrating reduced blood loss and less requirement for transfusion is based on very limited numbers of participants and is susceptible to publication bias. Therefore, larger studies are required to increase the robustness of our findings. Future studies should assess head-to-head comparisons of different antifibrinolytic drugs to identify any differences in effectiveness or safety. Studies should also enrol more patients with secondary scoliosis and should report results separately for this population. Optimal dosing regimens have not been established; studies employing different regimens for the same agent will help to clarify this question. Although challenging, we also recommend that the long-term safety of antifibrinolytic drugs in children should be evaluated in view of safety concerns with some antifibrinolytic drugs when used in adults.	Question not derived from the survey but from another source.	
DtTr15	How can the blood transfusion process be delivered more safely in hospitals?	8	How can we educate healthcare professionals to adopt best practice in RBC transfusion	B H	No available up-to-date evience.
			Is the training given to junior doctors on transfusion enough?	B H	
			JUNIOR DOCTORS. How consistent is their training in Transfusion Avoidance June 2015 and use of Alternatives?	Jehovah's Witness	
			Nursing and medical team to have a better and in depth understanding of the side effects of blood transfusions and be aware of common haematology medical problems which can interfere with blood donation/transfusion.	B H	
			Shouldn't NMS put more money in to researching and training surgeons in blood conservation techniques?	NK	
			Why can't medical staff give advice on non-blood products?	NK	
			Why is there such a disconnect between knowledge and practice regarding transfusion requirements in clinical medicine? i.e. Are medical students taught the indications and evidence for transfusion?	H	
			How do we improve the sharing of knowledge in transfusion science to juniors staff	B H	
			Why is blood transfusion training not a nationally required core mandatory training subject	H	
			How do we safeguard unnecessary transfusion?	H	
			Why can't experienced nursing staff prescribe blood?	R B H	
			Do you reassess after giving each unit?	H	
			Is ever a 1 or 2 pint transfusion valid since this amount can be donated by an individual?	NK	
D3	What medical conditions make it unsafe for a person to be a blood donor?	9	Are the donor exclusion criteria truly evidence based?	R B	1. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58-. 2. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(-3):354-62. 3.Estcourt LJ, Malouf R, Hopewell S, Trivella M, Doree C, Stanworth SJ, Murphy MF. Pathogen-reduced platelets for the prevention of bleeding. Cochrane Database of Systematic Reviews 2017, Issue 7. Art. No.: CD009072. DOI: 10.1002/14651858.CD009072.pub3. 4. Chasse M, McIntyre L, English SW, Tinmouth A, Knoll G, Wolfe D, et al. Effect of blood donor characteristics on transfusion outcomes: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016. 5. Chasse M, Tinmouth AT, English SW, McIntyre L, Knoll G, Wolfe D, et al. Effect of blood donor characteristics on transfusion outcomes: a systematic review and meta-analysis. Transfusion. 2015;55((Suppl. 3)):123A-A. 6. De Buck E, Dieltjens T, Compernolle V, Vandekerckhove P. Is having sex with other men a risk factor for transfusion-transmissible infections in male blood donors in Western countries? A systematic review. PLoS ONE [Electronic Resource]. 2015;10(4):e0122523-e. 7. Webster J, Bell-Syer SE, Foxlee R. Skin preparation with alcohol versus alcohol followed by any antiseptic for preventing
			When is safe to donate blood after contacting hepatitis A?	P B	
			Why do I need to wait after travelling abroad if I have not been unwell or vaccinated?	B H	
			Can a person with HIV be able to donate blood?	P H	
			Why can't people with diabetes give blood - are there real evidence based reasons for the ban?	B	
			Is it always necessary to turn blood donors away for various reasons	P B	
			Why can't I give blood anymore as I'm on anti-hypertensive drugs?	R B H	
			Can I donate blood if I have asthma?	H	
			What are the criteria for being able to donate blood?	R H	
			Donor Selection	R B H	
			Can I give blood after having had meningococcal septicaemia?	B	

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			It is not clear on the blood donation that first time donors of 17 or 18 years old need to have eaten within the 4 hours prior to donation. It just states eaten and drunk that day. Does it really matter if they have not eaten within 4 hours - not everyone eats that regularly	B H	bacteraemia or contamination of blood for transfusion. Cochrane Database of Systematic Reviews. 2015(2):CD007948-CD.
			How to insure donors and their health	R B H	
			I have ALL, therefore I have been told I can't give blood any more. I suspect I had blood cancer for a while before I was told by my GP. Does the service test donations for blood cancer before giving blood to a recipient?	P B	
			I have a blood cancer, how would it be picked up if I tried to donate blood?	R B	
			Can a person who suffers with Chronic Lymphatic leukaemia donate blood if that patients HB is high enough?	NK	
			I assume that now I am diagnosed with a blood cancer I would not be able to give blood!!	B	
			Is the blood drop iron level test a good indicator of ability to donate?	B	
			Can any use be made of blood components (other than abnormal cells) if donated by MPN patients	P	
			For someone who has not participated in the donation of blood, is there any qualitative aspect to the pre-screening questions?	NK	
			How are donors screened?	NK	
			Why is it getting harder to meet the criteria to give blood, as it seems to change every time I go?	B	
			What if someone lies on their medical form?	R B H	
			Why are patients having had illegal (? Should this be illeal) conduit surgery that did not receive a transfusion during surgery unable to ever give blood in the future?	B	
			What precautions should be taken and the blood tests to be carried out?	R H	
			Why exclude ALL females from plasma donation regardless of history of previous (possible) pregnancies? Assumption that HLA/HPA antibodies present in all females.	R B H	
			I'm asthmatic, so if there is a connection to blood donation and asthma I'd be interested.	B	
			What medications stop you from donating blood = make a single question	H	
			What can be done to safely relax existing rules around donation, for people who want to donate but are exempt i.e. with individual consultant permission , or further screening?	P H	
			After a critical illness, can I safely donate again?	P B	
			Does the general fitness of the donor have any impact on the quality of blood donated? If so, would it/should it be part of the collection strategy to target sections of society who maintain a healthier life-style e.g. Health-centres and gymnasiums etc?	NK	
			Is it good enough to rely on people's honesty about their health?	R B	
D8	What are the most effective ways to educate the general public about the process and purpose of blood donation?	10	Need to raise awareness of what blood donations are used for	P	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Memon A, Moiz B. Why are we losing our precious blood donors? A systematic review from Pakistan. Haematologica. 2016;101((s1)):P877- ABSTRACT NO.PB2222 3. Appiah BA, Bates BA. Cultural context and role of communication in promoting adequate blood donation in sub-Saharan Africa: a systematic literature review. Vox Sanguinis. 2015;109((Suppl. 1)):p128. Abstract P-142
			How can we improve the understanding of the general public for transfusion	P B H	
			To persuade new donors, why not illustrate, say by video maybe speeded up, the immediate improvements transfusions bring	R B	
			How can social media improve the knowledge of transfusion and numbers for donation	H	
			If it doesn't already feature; could blood transfusion and collection be added to the national curriculum and feature in the PSHE course?	NK	
			Why do you not go into schools explaining the importance of blood donation	R B	
			Why is the public not educated more about giving blood.	P B H	
			Do the general public know about the process of blood transfusion from donation to a patient receiving blood	B H	
			Donor Recruitment - Is there potential for there to be a national campaign (including all four devolved countries) to recruit more donors?	B H	
			How long it takes?	B	
			How do I give bloo0d transfusion	B	
			Why does it appear that you seem reluctant to reward those donors of large numbers of donations nowadays? Cutbacks?	B H	
			Why is the profile of donation days in an area not better flagged ?	B H	
			Do you think being a blood donor could be mandated for all 20-40 year olds	P B H	
			Should blood donation be made compulsory for healthy adults?	H	
			Do you approach businesses asking them to send a donation registration pack with their recruitment process?	R B	
			Why don't you raise the profile of blood donation? National campaign; blood donor day; blood donation featuring in a soap	B	
			Why isn't there any school/college visits about why giving blood is so important?	B	
			More info on donating plasma, platelets etc	R B	
B&C 8	What is the psychological impact of blood transfusion on the patient?	11	Transfusion recipients feelings about the transfusion and its effect on them	P R B H	1. Brunskill SJ, Millette SL, Shokoohi A, Pulford EC, Doree C, Murphy MF, et al. Red blood cell transfusion for people undergoing hip fracture surgery. Cochrane Database of Systematic Reviews. 2015

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			Regular long-term red blood cell transfusions for managing chronic chest complications in sickle cell disease. Implications for research: There is a need for RCTs looking at the effect of long-term transfusion therapy on pulmonary hypertension and chronic sickle lung disease. The most likely starting point for any series of trials will be the effect of transfusion on existing pulmonary hypertension. The effect of transfusion on disease incidence and mortality would require trials with longer-term follow-on, making them more costly and conceptually more difficult. The definition of chronic sickle lung disease include is not agreed by consensus and this is a stumbling block for further studies in this area. New trials could consider using a combination of objective and subjective outcome measures. Effectiveness could be measured objectively, for example, through echocardiogram or pulmonary function testing, or subjectively by measuring symptoms such as chest pain on a standardised scale. Such trials might provide useful information on the rate of deterioration in chronic chest complications. Given the chronic nature of the condition, trials could consider measuring pre-intervention 'severity' using an extended baseline 'steady state' period. It should be remembered that transfusions may reduce symptoms such as breathlessness by increasing the haemoglobin level rather than having any beneficial effect per se on the chronic chest complication. Future RCTs in this area should have clear protocols for the aims of transfusion (such as a target haemoglobin level, or target sickle haemoglobin percentage) and how the long-term transfusion programme is to be carried out, for example, by simple or exchange transfusion. Possible transfusion complications are a key concern, and it would be important to collect information on the complications arising from long-term transfusion therapy in trial participants	Question not derived from the survey but from another source.	fracture surgery. Cochrane Database of Systematic Reviews. 2015;
			Blood transfusions for treating acute chest syndrome in people with sickle cell disease.Implications for research: We found only one very small randomised controlled trial; this is not enough to make any reliable conclusion to support the use of blood transfusion. This review highlights the need of further high quality research to provide reliable evidence for the effectiveness of these interventions for the relief of the symptoms of ACS in people with sickle cell disease.	Question not derived from the survey but from another source.	
			What is the psychological impact on a patient, of a blood transfusion?	R B H	
			Are the improvements in blood pressure after tansfusion related to simple mchanges in blood volumen or the nitric oxide scavenging effects of hamoglobin in stored blood increasing resting vascular tone and improving blood pressure by this mechanism? i.e. increasing after load as well as pre-load?	H	
			Does transfusion reduce length of stay after hip & knee replacement surgery?	B H	
			Did you feel better after your transfusion for anaemia? If so how quickly?	P R H	
			What are the early symptomatic benefits of blood transfusion after hip fracture?	R B H	
			Does receipt of a whole blood transfusion confer any cell mediated immunity on the recipient?	H	
			Does the body attempt a rejection process after transfusion?	Jehovah's Witness	
			What is the patient's perception on going through blood transfusion?	R H	
D6	How can donation sessions be organised to make them easier and more convenient for blood donors?	12	Many people express frustration at not being able to get an appointment to donate blood, there seems to be very limited donor sessions	H	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Fisher SA, Allen D, Doree C, Naylor J, Angelantonio ED, Roberts DJ. Interventions to reduce vasovagal reactions in blood donors: a systematic review and meta-analysis. Transfusion Medicine (Oxford, England). 2016;26(1):15-33. 3. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(3):354-62.
			Why can you not provide enough slots for donors.	B H	
			Could you have more flexibility for donation sessions	H	
			Why do donors fall off the active list and how can we look after them better?	B H	
			Sometimes donor sessions are restricted to specific time slots. Can there be more scope to turn up without an appointment?	R B H	
			I am finding it increasingly difficult to donate as often as I would like, why is that.	R B	
			There seems to be less sessions at my donation centre, why?	R B	
			Why does donating blood affect people differently? (Some faint, some feel no effect etc)	B	
			Why do some people give blood easily and quickly compared to others?	B	
			Why can't local health services be supplemented to take blood donations?	B	
			How can the decisions around limiting donor pool for platelets and plasma be best communicated to the public?	B	
			Why does it sometimes seem difficult to arrange my next donation as soon as I would be eligible, especially as we have two donation venues in this city? At the one venue there are no future schedules available and the staff are unable to provide information about other local venues.	B H	
			Would happily donate as often as possible but sessions at the location only twice a year	R	
			Why are some Donation Places so busy that it is hard to get an appointment?	B	
			Why do you not weigh patients who do not know their weight prior to blood donor sessions - instead of turning them away to come back another day	B H	
			Why aren't there more places to donate platelets?	P	
			Why isn't there more open drop in sessions for blood donors	B H	
			From a donor point of view: when my letter comes through the door with my next appointment the session is already fully booked when I ring up to confirm, this puts me off organising an alternative date.	B H	
			Why do you not put on donation sessions at hospitals?	H	

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			Last donor session booking slot is early evening and gives little time to get back from work to attend - whilst understanding the need for packing up time after - can there be later donor slots/evening donor sessions?	B R P H	
			Why don't NHSBT have blood donor sessions in hospitals? This would increase the number of donors hugely	B R P H	
			Why is there such variation in opportunities or places to donate between different areas of England?	B	
			Why not have more fixed places where donations can take place e.g. at hospitals?	B	
			Why aren't there more donation centres?	B H	
			Why is the donation service hours so short and everyone stops at lunch and breaks	B	
			Why don't you get donation points at gap surgeries	B	
			Is the waiting time at donor sessions acceptable?	B	
			I would like to be a platelet donor but the location is not very accessible. Could there be more invested in this to have more venues?	B	
			Could a mobile facility be made available? Obviously cost is at the heart of that question.	B	
			Why are there so few platelet donation venues if it is so important?	B	
			Why do you not work Saturdays and Sundays? people who work - would be easier to donate	B	
			Why do donors fall off the active list and how can we look after them better?	B H	
			What is the donors experience when doing this specifically to donate to an individual.	H	
			How can blood donors best be thanked and rewarded ?	H	
			How can the experience for blood donors be improved	B H	
			Why do donors get upset if they cannot donate for any reason.	B H	
			How can we improve the feedback on the fate of blood post transfusion	P B H	
			Have you considered thank you test to donors?	B H	
			What can we do to improve your experience?	R B	
			Why don't you use skin analgesia prior to donation as I feel this may prevent donation	R B H	
			Why does a service which relies on public goodwill fail perform so poorly in basic customer service at point of delivery?	B	
			Is it possible to inform the donor when there blood has been used?	R B	
			Why does it seem that by donating blood you are doing me a favour?	B	
			Could donors be given information while waiting on other forms of donation?	B	
			Why are blood donors so undervalued?	R B	
			Why do people not donate?	P B	
			Can the process of blood donation be made more efficient?	B H	
			How can we make blood donation easier for donors	B H	
			Is there a way of cutting down waiting times especially when attendees are getting cold/dehydrated?	P R B H	
			Process of donating blood, how to streamline service	B H	
			How can the appointment system be refined to ensure prompt donations?	B H	
			Is the waiting time at donor sessions acceptable?	B	
			Why do you make so many hurdles to people who want to give blood	B	
			How uncomfortable is it to donate and does this put people off coming again?	P B R H	
			Would home self-testing of haemoglobin before attending blood donation sessions be acceptable, feasible, accurate, and save time and money?	B	
			How well rolled out is the text message service notifying donors of usage?	H	
			What would the impact of paying donor expenses be?	P H	
			Is there a way to make the donation process simper/more efficient?	R B	
DtTr21	Which patients groups would benefit most from artificial blood* products? *Artifical blood ois a product made to act as a substitute for red blood cells wiothj the sole purpose of transporting oxygen and carbon dioxide throughout the body.	13	Trial of synthetic RBC substitutes vs PRC	H	No SR evidence available
			where is the development of artificial blood and blood products?	R B H	
			Are there substances that can be used to avoid blood transfusion	R B H	
			Is there research going on into artificial blood replacement? Not just ectoplasm but whole blood or RBC?	B H	
			Has there been any successful research in the production of a laboratory manufactured blood replacement ?	B H	
			Can other products replace blood?	H	
			What is the progress on the current research into manufactured red cells?	P R	
			What is the future for factory produced red cells?	B H	
			How accessible are blood transfusion alternatives?	NK	
			How close are we to 'artificial' blood components so we don't have to rely on donors anymore	R B H	

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			How can alternatives to blood transfusions be made more freely available?	NK	
			How do we develop artificial blood products?	B H	
			Are there any synthetic alternatives so that one does not have to donate?	P B H	
			Do you see any promise of a safe artificial oxygen carrying agent to replace RBC transfusion soon?	Jehovah's Witness	
			Is there a likely hood of modified Haemoglobin products come into UK practice in the near future?	NK	
			Is there an alternative to human blood products	R B H	
			Why are we not investing more in blood substitutes?	H	
			Are there government funded projects to promote bloodless alternatives?	NK	
			Will viable blood substitutes be available in the near future?	NK	
			Are non-blood oxygen carrying fluids a viable option?	H	
			Can we use synthetic agents to carry oxygen in the blood until the body is able to manufacture its own red cells and therefore avoid the need for interhuman transfusion	H	
			Have you considered alternatives to blood ?	NK	
			With the advancement of science has there been true research into alternative's) to blood , considering the hidden implications associated with blood?	NK	
			What are developments in artificial blood currently?	R B H	
DTtR18	Are drugs* a cost effective alternative to blood transfusion for the management of anaemia? *Drug alternatives are medicines that can be used in place of a blood transfusion, for examples drugs such as iron and recombinant erythropoietin for the treatment of anemia.	14	What alternatives provide the best outcome	P B H	1. NICE Guideline Recommendations 1-5: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin 1. Do not offer erythropoietin to reduce the need for blood transfusion in patients having surgery, unless: • the patient has anaemia and meets the criteria for blood transfusion, but declines it because of religious beliefs or other reasons or • the appropriate blood type is not available because of the patient's red cell antibodies. 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence) • are diagnosed with functional iron deficiency • are diagnosed with iron-deficiency anaemia, and the interval between the diagnosis of anaemia and surgery is predicted to be too short for oral iron to be effective. 4. For guidance on managing anaemia in patients with chronic kidney disease, see the NICE guideline on anaemia management in chronic kidney disease. 5. For guidance on managing blood transfusions for people with acute upper gastrointestinal bleeding, see section 1.2 in the NICE guideline on acute upper gastrointestinal bleeding. NICE Guideline Recommendations 6-9: Alternatives to blood transfusion for patients having surgery: Cell salvage and tranexamic acid 6. Offer tranexamic acid to adults undergoing surgery who are expected to have at least moderate blood loss (greater than 500 ml) 7. Consider tranexamic acid for children undergoing surgery who are expected to have at least moderate blood loss (greater than 10% blood volume). 8. Do not routinely use cell salvage without tranexamic acid. 9. Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery). 2. Li C, Gong Y, Dong L, Xie B, Dai Z. Is prophylactic tranexamic acid administration effective and safe for postpartum hemorrhage prevention? A systematic review and meta-analysis. Medicine. 2017;96(-1):e5653-e. 3. Ray S, Ray A. Non-surgical interventions for treating heavy menstrual bleeding (menorrhagia) in women with bleeding disorders. The Cochrane Database of Systematic Reviews. 2016(-11):CD010338-CD. 4. Prutsky G, Domecq JP, Salazar CA, Accinelli R. Antifibrinolytic therapy to reduce haemoptysis from any cause. The Cochrane Database of Systematic Reviews. 2016(-11):CD008711-CD. 5. Jiang M, Chen P, Gao Q. Systematic review and network meta-analysis of upper gastrointestinal hemorrhage interventions. Cellular Physiology and Biochemistry : International Journal of Experimental Cellular Physiology, Biochemistry, and Pharmacology. 2016;39(-6):2477-91. 6. Roberts I, Shakur H, Ker K, Coats T, collaborators C-T. Antifibrinolytic drugs for acute traumatic injury. Cochrane Database of Systematic Reviews. 2015;5:CD004896-CD. 7. Marti-Carvajal AJ, Sola I. Antifibrinolytic amino acids for upper gastrointestinal bleeding in people with acute or chronic liver disease. Cochrane Database of Systematic Reviews. 2015(-6):CD006007-CD. 8. Alam A, Choi S. Prophylactic use of tranexamic acid for postpartum bleeding outcomes: a systematic review and meta-analysis of randomized controlled trials. Transfusion Medicine Reviews. 2015;29(-4):231-41.
			Minimising the use of donated blood and blood products, without compromising patient safety	R B H	
			Alternatives to transfusion in children	R B H	
			What are the alternatives to receiving a blood transfusion?	R B	
			Why are alternatives to transfusions not more widely offered.	NK	
			What strategies exist to avoid transfusion in chronic anaemia?	B H	
			How can we minimize blood transfusions?	H	
			Alternatives to blood transfusion	H	
			what happens when an individual cannot receive transfusion due to reaction	P H	
			When considering transfusion alternatives, how can more money be put into researching these alternatives and sharing the knowledge of these alternatives?	NK	
			Alternative strategies	H	
			What are the alternatives to blood transfusion	R	
			C	H	
			If an alternative is appropriate, how efficient is this compared to transfusion?	H	
			Alternative options for blood products to treat patients needing transfusion	B R H	
			What further can be done to mitigate the need for a transfusion	NK	
			The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: It may also be helpful to explore reasons why improved anaemia may lead to better outcomes; that is, whether ESAs allow better compliance with chemotherapy.	Question not derived from the survey but from another source.	
			The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: More evidence is needed to assess the impact of Hb normalisation on utility. If clinical studies of normalisation are conducted it would also be valuable for HRQoL outcomes to be measured, preferably using the EQ-5D or another universal HRQoL questionnaire, so that incremental QALYs resulting from normalising from a higher Hb level can be modelled directly rather than by using the surrogate of Hb level.	Question not derived from the survey but from another source.	
			Early versus delayed erythropoietin for the anaemia of end-stage kidney disease. Implications for research: This Cochrane Review has highlighted a need for well-designed, high-quality RCTs to assess the benefits and harms of early versus delayed erythropoietin for the anaemia of end-stage kidney disease. The potential study should include main clinical outcomes (patients-oriented outcomes) such as all-cause mortality, cardiovascular mortality, quality of life, adverse events and cardiovascular events according to their occurrence during study follow-up. The study should be reported according to the Consolidated standards of reporting trials (CONSORT) statement for improving the quality of reporting of efficacy and to get better reports of harms in clinical research (Ioannidis 2004; Moher 2010; Turner 2012). Future studies should be planned according to the recommendations of Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT) (Chan 2013a; Chan 2013b) and the Foundation of Patient-Centered Outcomes Research (Gabriel 2012; PCORI 2012). Future studies should be conducted by independent researchers and reported according to the Consolidated Standards of Reporting Trials (CONSORT) guidelines (Ioannidis 2004; Moher 2010) and using the Foundation of Patient-Centered Outcomes Research recommendations (Gabriel 2012; PCORI 2012).	Question not derived from the survey but from another source.	

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			Recombinant human erythropoietin versus placebo or no treatment for the anaemia of chronic kidney disease in people not requiring dialysis. Implications for research: A future RCT to look specifically at whether rHuEPO can delay or hasten RRT in patients with chronic kidney failure is required. Nephrology is a low volume specialty and multicentre studies are therefore necessary to recruit sufficient numbers to achieve acceptable statistical power. Further RCTs should be designed to be large enough and of long enough duration to address this question adequately. These studies could also examine the proposition that a patient with a higher haemoglobin is in better health and better able to cope with the commencement of dialysis when it is eventually necessary. Hospitalisation duration for initiation of dialysis, hospitalisation rates and mortality for the first three months of RRT should provide further relatively hard end-points. Considering the demonstrable effectiveness of rHuEPO in improving haemoglobin it may be impossible to blind health care providers effectively in such a study.	Question not derived from the survey but from another source.	
			The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: If ESAs are thought to have a major potential for improving cancer care, large RCTs meeting current methodological and reporting standards with adequate follow-up are needed to evaluate ESAs as administered in line with current marketing authorisations (including licence criteria for Hb levels)	Question not derived from the survey but from another source.	
			The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: There is a need for improved estimates of the impact of ESAs on tumour response and mortality; if these estimates are neutral or slightly beneficial it is plausible that ESAs could be cost-effective.	Question not derived from the survey but from another source.	
			The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: There should be assessment of the frequency of the key potential AEs related to ESA administration.	Question not derived from the survey but from another source.	
			The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: More data are needed to assess the impact of ESAs on HRQoL. Such studies should include the effect of ESAs on the EQ-5D.	Question not derived from the survey but from another source.	
			The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: In addition to new trials it may be valuable to revisit the Cochrane IPD meta-analysis7 and select studies that better fit 'licensed recommendations' with respect to Hb criteria and dose administered.	Question not derived from the survey but from another source.	
			What are best regimes for managing immediate peri-operative anaemia in various common conditions e.g. emergency laparotomy, hip fracture, distal femur fracture (could include Hb transfusion trigger or other agents e.g. tranexamic acid)	H	
			What cheaper alternatives are their to blood transfusion	NK	
			What are alternative options to a transfusion	B	
			What alternatives are there to blood transfusions	H	
			Are we doing enough with patient blood management?	B H	
B&C4	How can any negative long term effects of blood transfusion be prevented?	15	What future harm does a transfusion cause	P B H	1. Li SL, Ye Y, Yuan XH. Association between allogeneic or autologous blood transfusion and survival in patients after radical prostatectomy: a systematic review and meta-analysis. Plos One. 2017;12(-1):e0171081-e. 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13. 3. Thongprayoon C, Cheungpasitporn W, Gillaspie EA, Greason KL, Kashani KB. Association of blood transfusion with acute kidney injury after transcatheter aortic valve replacement: A meta-analysis. World Journal of Nephrology. 2016;5(-5):482-8. 4. Mainou M, Alahdab F, Tobian AA, Asi N, Mohammed K, Murad MH, et al. Reducing the risk of transfusion-transmitted cytomegalovirus infection: a systematic review and meta-analysis. Transfusion. 2016. 5. Kim JL, Park JH, Han SB, Cho IY, Jang KM. Allogeneic blood transfusion is a significant risk factor for surgical-site infection following total hip and knee arthroplasty: a meta-analysis. The Journal of Arthroplasty. 2016. 6. Keir AK, Wilkinson D, Andersen C, Stark MJ. Washed versus unwashed red blood cells for transfusion for the prevention of morbidity and mortality in preterm infants. The Cochrane Database of Systematic Reviews. 2016(-1):CD011484-CD. 7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68. 8. Harnan S, Ren S, Gomersall T, Everson-Hock ES, Sutton A, Dhanasiri S, et al. Association between transfusion status and overall survival in patients with myelodysplastic syndromes: a systematic literature review and meta-analysis. Acta Haematologica. 2016;136(-1):23-42. 9. Cata JP, Lasala J, Pratt G, Feng L, Shah JB. Association between perioperative blood transfusions and clinical outcomes in patients undergoing bladder cancer surgery: a systematic review and meta-analysis study. Journal of Blood Transfusion. 2016;2016:9876394-. 10. Sarai M, Tejani AM. Loop diuretics for patients receiving blood transfusions. Cochrane Database of Systematic Reviews. 2015(2):CD010138-CD. 11. Muller MC, van Stein D, Binnekade JM, van Rhenen DJ, VlaarAp. Low-risk transfusion-related acute lung injury donor strategies and the impact on the onset of transfusion-related acute lung injury: a meta-analysis. Transfusion. 2015;55(1):164-75. 12. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, NolanJ, et al. Blood transfusion after percutaneous coronary intervention and risk of subsequent adverse outcomes: a systematic review and meta-analysis. JACC: Cardiovascular Interventions. 2015;8(3):436-46. 13. Kopolovic I, Ostro J, Tsubota H, Lin Y, Cserti-Gazdewich CM, Messner HA, et al. A systematic review of transfusion-associated graft-versus-host disease. Blood. 2015;126(-3):406-14. 14. Keir AK, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. A systematic review and meta-analysis of risks of red cell transfusion for neonatal morbidities or mortality. Vox Sanguinis. 2015;109((Suppl. 1)):31-2. 15. Keir A. Pal S. Trivella M. Lieberman L. Callum J. Sheheta N. et al. Adverse effects of RBC transfusions in neonates: a systematic
			Harm caused by blood transfusion	R B H	
			What proportion of frequent platelet recipients develop HLA or specific antibodies?	H	
			What are the effects of blood transfusion on the immune system, infection rates, cancer recurrence etc?	B H	
			What are the long-term consequences of blood product transfusion?	B H	
			Long term risks	B	
			What are the long term risks of receiving a blood transfusion?	B H	
			Are any patients at particular risk of long-term complications when receiving blood transfusion?	B H	
			What is the long term effect on health of blood transfusion	B H	
			What is the relationship between blood transfusion and poorer outcome in the era of leukocyte-depleted blood?	H	
			Are there any dangers associated with Blood Transfusion?	P	
			With multiple transfusions how do the risks of complications increase with each additional unit transfused	H	
			Is there any long term follow up for patients who have received the wrong unit of blood?	P B R H	
			what are the long term problems after blood transfusion	H	
			Can we produce more evidence regarding risks and benefits of blood transfusion in different clinical scenarios.	H	
			Risk of transfusion	H	
			what are the risks of blood transfusions	H	
			How does a blood transfusion impact on the recipient's future health. Are there any negative outcomes that we know of?	P B	
			What about as yet unknown risks?	R B H	
			What can be done to decrease the number of reactions in multitransfused patients?	P R	
			Are all transfusions safe to have?	R B H	
			Benefits and risks from treatment with blood transfusion	H	

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			What is the effect of blood product transfusion on immunity?	H	review and meta-analysis. Abstracts of the HAA 2015 Annual Scientific Meeting. 2015:196-7.
			Are breast cancer surgeons aware of the potential immunosuppressive effects of blood transfusion (or tissue trauma)	R B H	16. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.
B&C 9	What characteristics identify patients who would benefit from a blood transfusion?	16	What is the benefit of blood transfusion in patients with evidence of poor oxygen delivery/ organ dysfunction?	H	1. Hunt H; Stanworth S; Curry N; Woolley T; Cooper C; UkoumunneO; Zhelev Z; Hyde C. Thromboelastography (TEG) and rotational thromboelastometry (ROTEM) for trauma-induced coagulopathy in adult trauma patients with bleeding. Cochrane Database of Systematic Reviews. 2015;(2):CD010438
			How well does donated blood carry oxygen in particular for patients with respiratory disease?	R B H	
			what is the reason for blood transfusion?	R H	
			What should be the criteria for transfusion?	B H	
			Will it benefit my patient in the best possible way	R B H	
			blood products given to a lot of patients who should possibly not be given one-need robust data to decide	R B H	
			Does transfusion improve patient's outcome?	B H	
			What clinical markers should we use to show that patients have benefited from blood transfusion (particularly in preterm neonates)?	R H	
DtTr24	Does the use of oral or intravenous iron for patients with iron deficiency anaemia reduce the need for some transfusions?	17	The role of iron in the management of chemotherapy-induced anaemia in cancer patients receiving erythropoiesis-stimulating agents. Implications for research: Since the included RCTs had shorter follow-up duration (up to 20 weeks), the long-term effects of iron supplementation are unknown. Nonetheless, further studies are required to define the optimal dosage of iron. Future trials with a longer follow-up and various re-dosing regimens are also required to determine the risk of adverse events and the impact of iron supplementation on mortality as well as the optimal re-dosing schedule after the patients received the initial cumulative iron supplementation.	Question not derived from the survey but from another source.	Nice Guideline Recommendations: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence) • are diagnosed with functional iron deficiency • are diagnosed with iron-deficiency anaemia, and the interval between the diagnosis of anaemia and surgery is predicted to be too short for oral iron to be effective. 4. For guidance on managing anaemia in patients with chronic kidney disease, see the NICE guideline on anaemia management in chronic kidney disease. 5. For guidance on managing blood transfusions for people with acute upper gastrointestinal bleeding, see section 1.2 in the NICE guideline on acute upper gastrointestinal bleeding. 1. Aksan A, Isik H, Radeke HH, Dignass A, Stein J. Systematic review with network meta-analysis: comparative efficacy and tolerability of different intravenous iron formulations for the treatment of iron deficiency anaemia in patients with inflammatory bowel disease. Alimentary Pharmacology & Therapeutics. 2017. 2. Shepshelovich D, Rozen-Zvi B, Avni T, Gafter U, Gafter-Gvili A. Intravenous versus oral iron supplementation for the treatment of anemia in CKD: an updated systematic review and meta-analysis. American Journal of Kidney Diseases : the Official Journal of the National Kidney Foundation. 2016. 3. Shah A, Roy NB, McKechnie S, Doree C, Fisher SA, Stanworth SJ. Iron supplementation to treat anaemia in adult critical care patients: a systematic review and meta-analysis. Critical Care (London, England). 2016. Sep 29;20(1):306.. 4. Rognoni C, Venturini S, Meregaglia M, Marmifero M, Tarricone R. Efficacy and safety of ferric carboxymaltose and other formulations in iron-deficient patients: a systematic review and network meta-analysis of randomised controlled trials. Clinical Drug Investigation. 2016;36(-3):177-94. 5. Roger SD, Tio M, Park HC, Choong HL, Goh B, Cushway TR, et al. Intravenous iron and erythropoiesis-stimulating agents in haemodialysis: a systematic review and meta-analysis. Nephrology (Carlton, Vic). 2016. 6. Qian C, Wei B, Ding J, Wu H, WangY. The efficacy and safety of iron supplementation in patients with heart failure and iron deficiency: a systematic review and meta-analysis. The Canadian Journal of Cardiology. 2016;32(-2):151-9. 7. Mhaskar R, Wao H, Miladinovic B, Kumar A, Djulbegovic B. The role of iron in the management of chemotherapy-induced anemia in cancer patients receiving erythropoiesis-stimulating agents. The Cochrane Database of Systematic Reviews. 2016(-2):CD009624-CD. 8. Jankowska EA, Tkaczyszyn M, Suchocki T, Drozd M, von Haehling S, Doehner W, et al. Effects of intravenous iron therapy in iron-deficient patients with systolic heart failure: a meta-analysis of randomized controlled trials. European Journal of Heart Failure. 2016. 9. Clevenger B, Gurusamy K, Klein AA, Murphy GJ, Anker SD, Richards T. Systematic review and meta-analysis of iron therapy in anaemic adults without chronic kidney disease: updated and abridged Cochrane review. European Journal of Heart Failure. 2016. 10. Bonovas S, Fiorino G, Allocca M, Lytras T, Tsantes A, Peyrin-Biroulet L, et al. Intravenous versus oral iron for the treatment of anemia in inflammatory bowel disease: a systematic review and meta-analysis of randomized controlled trials. Medicine. 2016;95(-2):e2308-e. 11. Tay HS, Soiza RL. Systematic review and meta-analysis: what is the evidence for oral iron supplementation in treating anaemia in elderly people? Drugs & Aging. 2015;32(2):149-58. 12. Shi Q, Leng W, Wazir R, Li J, Yao Q, Mi C, et al. Intravenous iron sucrose versus oral iron in the treatment of pregnancy with iron deficiency anaemia: a systematic review. Gynecologic & Obstetric Investigation. 2015;80(-3):170-8.
			Does use of pre-op/pre-procedure iv iron in iron deficient patients improve clinic outcomes and reduce peri-operative blood product use?	H	
			Is their good evidence for the use of iron to reduce risk of needing a transfusion in the setting of a normal ferritin level	H	
			Oral or parenteral iron supplementation to reduce deferral iron deficiency and/or anaemia in blood donors.	Question not derived from the survey but from another source.	
			Would controlling the HB status with alternatives such as iron prevent the need for some blood transfusions?	B	
			Does intravenous iron reduce the need for blood transfusion post op?	H	
			Does avoiding peri-operative transfusion improve outcomes?	H	
			Does improving Hb preoperatively improve outcomes?	H	
			Would you try iron therapy first?	H	
			what is best regime for managing pre-op anaemia for elective surgical patients (where there is time to give iron)	Question not derived from the survey but from another source.	
			Treatment for women with postpartum iron deficiency anaemia. Implications for research: After 40 years of research and 22 included studies on the subject, we are still not able to make a clear statement on how we should treat the clinical consequences of postpartum iron deficiency anaemia. The reasons for this are trial quality, the chosen interventions, the chosen outcomes and the many different study designs. Researchers tend to evaluate efficacy trough Hb values. The correlation between Hb levels and anaemia symptoms in postpartum women has not yet been clarified. We strongly encourage authors to choose clinically relevant outcomes, using validated measuring tools. Researchers should distinguish between anaemia symptoms and adverse effects of treatment to evaluate the overall clinical effect. Also, researchers should choose clinically relevant time points during follow-up. Studies should report on survival and severe morbidity in all study participants. Trials should be designed following the CONSORT Consolidated Standards of Reporting Trials) guidelines in order to minimise sources of bias. We encourage future researchers to conduct more randomised controlled trials on the treatment for postpartum iron deficiency anaemia focusing on interventions such as oral iron and IV iron treatment, comparing these with each other or placebo. Multicentre trials with large populations are encouraged. Due to the risk of irreversible adverse effects to mother and child, RBC transfusion studies should be reserved for bleeding or severe anaemia, and care should be taken to monitor all adverse effects, including allo-immunisation. Also, it is of great importance to investigate the long-term effects of any treatment on both mother and child.	Question not derived from the survey but from another source.	
			Should we use more iron/epo therapy in ICU, rather than transfusions?	B H	
			If a healthy woman refuses to have a blood transfusion (recommended after childbirth because of hb7 for e.g.), how long, on average, would it take for her hb to recover to a normal level by taking an iron supplement?	B H	

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			Iron therapy for pre-operative anaemia. Implications for research: Higher quality studies are required to determine the efficacy of iron therapy for the treatment of pre-operative anaemia. Ideally these should be adequately powered large multi-centre trials across the surgical specialities. They should include only anaemic patients and assess for iron deficiency. Outcome measurements should include some measure of quality of life, post-operative complications, morbidity and mortality in addition to the haematological parameters and frequency of allogeneic blood transfusion reported in current studies. It will be important in the design of any future studies to also include strict transfusion guidelines and definitions of iron deficiency.	Question not derived from the survey but from another source.	13. Peyrin-Biroulet L, Williet N, Cacoub P. Guidelines on the diagnosis and treatment of iron deficiency across indications: a systematic review. American Journal of Clinical Nutrition. 2015;102(-6):1585-94. 14. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58-. 15. Nielsen OH, Ainsworth M, Coskun M, Weiss G. Management of iron-deficiency anemia in inflammatory bowel disease: a systematic review. Medicine. 2015;94(-23):e963-e. 16. Ng O, Keeler BD, Mishra A, Simpson A, Neal K, Brookes MJ, et al. Iron therapy for pre-operative anaemia. Cochrane Database of Systematic Reviews. 2015(-12):CD011588-CD. 17. Markova V, Norgaard A, Jorgensen KJ, Langhoff-Roos J. Treatment for women with postpartum iron deficiency anaemia. Cochrane Database of Systematic Reviews. 2015(-8):CD010861-CD. 18. Jin HX, Wang RS, Chen SJ, Wang AP, Liu XY. Early and late iron supplementation for low birth weight infants: a meta-analysis. Italian Journal of Pediatrics. 2015;41(1):16-. 19. Hogan M, Klein AA, Richards T. The impact of anaemia and intravenous iron replacement therapy on outcomes in cardiac surgery. European Journal of Cardio-Thoracic Surgery. 2015;47(2):218-26. 20. Borstlap WA, Stellingwerf ME, Moolla Z, Musters GD, Buskens CJ, Tanis PJ, et al. Iron therapy for the treatment of preoperative anaemia in patients with colorectal carcinoma: a systematic review. Colorectal Disease. 2015;17(-12):1044-54. 21. Bauer M, Ressl S, Walter E. Iron deficiency in patients with chronic heart failure: a systematic literature review. Value in Health. 2015;18(-7):A405-A. 22. Avni T, Amir B, Alon G, Hefziba G, Leonard L, Anat GG. The safety of intravenous iron preparations: systematic review and meta-analysis. Mayo Clinic Proceedings. 2015;90(1):12-23.
A1	What is the best administrative process for hospital blood transfusion to keep patients safe and minimises delay?	18	How can modern technology e.g. apps for patients/healthcare professionals improve the transfusion process ?	H	1. NICE Guideline Recommendation: Electronic patient identification 12. Consider using a system that electronically identifies patients to improve the safety and efficiency of the blood transfusion process. 2. Sellen KM, Jovanovic A, Perrier L, Chignell M. Systematic review of electronic remote blood issue. Vox Sanguinis. 2015;109(-1):35-43. 3. Manning N, Heddle NM, Arnold D, Crowther MA, Siegal D. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion: a systematic review. Journal of Thrombosis and Haemostasis. 2015;13((Suppl. 2)):974-5. 4. Manning M, Heddle N, Arnold D, Crowther MA, Siegal DM. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion: a systematic review. Blood. 2015. 5. Hibbs SP, Nielsen ND, Brunskill S, Doree C, Yazer MH, Kaufman RM, et al. The impact of electronic decision support on transfusion practice: a systematic review. Transfusion Medicine Reviews. 2015;29(1):14-23. 6. Coustasse A, Cunningham B, Deslich S, Willson E, Meadows P. Benefits and barriers of implementation and utilization of Radio-Frequency Identification (RFID) systems in transfusion medicine. Perspectives in Health Information Management. 2015;12((Fall)):1d-d.
			Why do you have to replicate all the info about blood transfusions on two separate forms that repeat the same information	R B H	
			Can we rationalise the requesting process to reduce delays in urgent situations	H	
			Is it possible to design a "reminder" for staff regarding component times for transfusion that is easy to access and carry?	H	
			How can we be sure there are no errors in blood product delivery?	P B H	
			How can the experience of blood transfusion for mothers during/after labour be improved?	NK	
			Is there a more efficient way of networking to support optimal use of blood bank supplies than our existing methods	P R B H	
			How to maintain safety for recipients of blood and blood products	B H	
			Why do we (West Yorkshire) need a second patient checker when areas in Scotland don't	P R B H	
			Is the procedure for prescription through to administration of a transfusion standardised across all NHS trusts?	P	
			How can we reduce lengthy stays in hospital due to transfusion?	B H	
			How do we ensure patient safety individually and collectively in blood transfusion ?	H	
			How safe is it for a patient to have a transfusion in their own home rather than travel to the hospital?	B H	
			why does each trust have a different transfusion record	B H	
			Why is there not a universal procedure when administering prescribed blood products, documentation often differs in other health boards.	H	
			How can patients receiving a transfusion experience a higher rate of safety?	R B	
			Avoid transfusion errors	P R H	
			Do the control measures designed to ensure 'safe blood' have an evidence base or are some based on assumption of risk?	R B H	
			Are there any strategies to reduce the development of Abs in Tx dependent patients?	R B H	
			Improving safety of community transfusions (with aim to reduce acute hospital bed use)	B H	
			How can we improve communication between hospitals for patients needing special requirements?	P B H	
			Why don't patient ID wristbands have barcodes/ matrix to be scanned instead of second checker	P R B H	
			What checks are made to ensure a patient receives the right type and amount of blood?	NK	
			Why can we not have a way of using patient barcodes to link to the computer system, to reduce risk of mis-labelling?	R B H	
			Why can't transfusions be given evenings and weekends (in all hospitals) for patients on long term transfusion regimes?	P R	
DtTr10g	At what haemoglobin level [blood count] should a patient who has experienced a haematological (blood or bone marrow) disorder receivce a blood transfusion?	19	Comparison of a restrictive versus liberal red cell transfusion policy for patients with myelodysplasia aplastic anaemia and other congenital bone marrow failure disorders. Implications for research: As the incidence of MDS rises with an ageing population, many of whom are unable to tolerate curative therapy, further clinical trials with robust methodology are now required to develop the optimal transfusion strategy for such people.	Question not derived from the survey but from another source.	

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			Patients with cancer/haematological malignancies/leukaemia/MDS, and production failure, what are the optimal red cell transfusion strategies	B H	
			Does transfusion to a haemoglobin >100 or >110 or >120 improve the quality of life of MDS patients?	B H	
			Red cell transfusion thresholds in the management of patients with AML	H	
			What is the optimal red cell transfusion threshold for patients with acute leukaemia receiving intensive treatment?	R B H	
DtTr8	Do patients and their relatives and/or carers receive enough information to help them understand about blood transfusion?	20	Are patients given enough information about the potential side effects ?	P B H	1. NICE Guideline Recommendations: Patient information 43. Provide verbal and written information to patients who may have or who have had a transfusion, and their family members or carers (as appropriate), explaining: • the reason for the transfusion • the risks and benefits • the transfusion process • any transfusion needs specific to them • any alternatives that are available, and how they might reduce their need for a transfusion • that they are no longer eligible to donate blood • that they are encouraged to ask questions. 44. Document discussions in the patient's notes. 45. Provide the patient and their GP with copies of the discharge summary or other written communication that explains: • the details of any transfusions they had • the reasons for the transfusion • any adverse events • that they are no longer eligible to donate blood. 46. For guidance on communication and patient-centred care for adults, see the NICE guideline on patient experience in adult NHS services
			Are there any requirements or preparations I need to do before receiving a blood transfusion?	P	
			Did you understand the information provided to you before you were given a Blood Transfusion?	H	
			do patients receive enough information about blood transfusion	B H	
			How can I be sure the transfusion is safe.	P	
			How can we reassure the public that the transfusion is virus free	H	
			How certain are you that patients understand the risks of blood transfusions?	R B H	
			How certain are you that patients understand the risks of blood transfusions?	R B H	
			How do I explain side effects	R B H	
			How do I know that my transfusion blood is free from any health conditions that could be detrimental to me	R B	
			How do we best inform/consent patients for blood transfusion	H	
			How effective is the consent process for patients? Do recipients of blood products really understand the risks and benefits?	R B H	
			How much chance is there of getting illness through transfused blood	P	
			How well are the risks associated with blood transfusion conveyed to potential recipients?	R H	
			How well recipient of transfusion know the adverse reactions?	P B H	
			if I have a blood transfusion am I likely to stay in hospital longer	B H	
			If I needed an operation how much blood would I need?	B	
			if I have a blood transfusion is my cancer more likely to reoccur	B H	
			If I have a blood transfusion, can I be sure that I won't catch any viruses from it?	B	
			In non urgent transfusions is it possible to discuss with the recipient if requested the moral/ethical/religious implications of accepting someone else's blood into their body?	P	
			Is it possible that my body will reject or react badly to blood from a transfusion?	B	
			Is receipt of a blood transfusion protective against allergic disorders?	H	
			What are the dangers from a blood transfusion	B	
			What are the implications of receiving blood...like a leaflet to read	P	
			What are the known risks?	R B H	
			How do I know I have had a blood transfusion?	B	
			I don't think anyone is actually informed about what they received, how much and why.	R B H	
			Why do we not give relatives a simple comprehensive information leaflet when their relative is having a transfusion	H	
D12b	What is the impact of iron deficiency on blood donors and how may its impact be prevented?	21	Research elsewhere suggests women would need iron supplements to prevent anaemia if donating more than twice a year, should this be included in recommendations?	B H	1. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58. Abstract No. 4C-S25-03.
DtTr13	What is the optimal blood transfusion dose [number of units] [in any situation] for maximum patient benefit?	22	Is it better to give a little blood, i.e. 1 unit at a time to top a patient up in the BMT process rather than say a 3 unit transfusion to last a longer time.	B H	1. NICE Guideline Recommendations: 17. Consider single-unit red blood cell transfusions for adults (or equivalent volumes calculated based on body weight for children or adults with low body weight) who do not have active bleeding. 18. After each single-unit red blood cell transfusion (or equivalent volumes calculated based on body weight for children or adults with low body weight), clinically reassess and check haemoglobin levels, and give further transfusions if needed. 1. Torres ME, Rodriguez JN, Ramos JL, Gomez FA. Transfusion in palliative cancer patients: a review of the literature. Journal of Palliative Medicine. 2014;17(1):88-104
			Why do blood transfusions always include two units and not just one?	P	
			How much blood can one transfuse in an acute setting?	H	
DtTr28	How cost effective is cell salvage* for the avoidance of transfusion of donor blood during major surgery?	23	How can we use cell salvage to reduce the need for donor blood?	H	NICE Guideline Recommendations: Alternatives to blood transfusion for patients having surgery: Cell salvage and tranexamic acid 8. Do not routinely use cell salvage without tranexamic acid. 9. Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery).
			Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the wider economic costs and benefits of alternative autologous techniques?	Question not derived from the survey but from another source.	
			Are we using Autologous blood systems efficiently?	703	

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			Allogeneic blood is a precious and life saving resource. but need to be used wisely and only in situations where it is unavoidable. There are many situations where 'cell salvage' can be used to minimise the use of allogeneic blood but is not currently in wide practice. How can we ensure that this 'recycling' of spilt blood is encouraged.	H	Other refs: 1. Liu JM, Fu BQ, Chen WZ, Chen JW, Huang SH, Liu ZL. Cell salvage used in scoliosis surgery: is it really effective? World Neurosurgery. 2017. May;101:568-576 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13. 3. Xie H, Pan JK, Hong KH, Guo D, Fang J, Yang WY, et al. Postoperative autotransfusion drain after total hip arthroplasty: a meta-analysis of randomized controlled trials. Scientific Reports. 2016 Jul 1;6:27461. doi: 10.1038/srep27461 4. Stone N, Sardana V, Missiuna P. Indications and outcomes of cell saver in adolescent scoliosis correction surgery: a systematic review. Spine. 2017 Mar 15;42(6):E363-E370. doi: 10.1097/BRS.0000000000001780. 5. Pawaskar A, Salunke AA, Kekatpure A, Chen Y, Nambi GI, Tan J, et al. Do autologous blood transfusion systems reduce allogeneic blood transfusion in total knee arthroplasty? Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016. 6. Pan JK, Hong KH, Xie H, Luo MH, Guo D, Liu J. The efficacy and safety of autologous blood transfusion drainage in patients undergoing total knee arthroplasty: a meta-analysis of 16 randomized controlled trials. Bmc Musculoskeletal Disorders. 2016;17(-1):452-. 7. Meybohm P, Choorapoikayil S, Wessels A, Herrmann E, Zacharowski K, Spahn DR. Washed cell salvage in surgical patients: a review and meta-analysis of prospective randomized trials under PRISMA. Medicine. 2016;95(-31):e4490-e. 8. Hong KH, Pan JK, Yang WY, Luo MH, Xu SC, Liu J. Comparison between autologous blood transfusion drainage and closed-suction drainage/no drainage in total knee arthroplasty: a meta-analysis. Bmc Musculoskeletal Disorders. 2016;17(-1):142-. 9. Barile L, Fominskiy E, Di Tomasso N, Alpizar Castro LE, Landoni G, De Luca M, et al. Acute normovolemic hemodilution reduces allogeneic red blood cell transfusion in cardiac surgery: a systematic review and meta-analysis of randomized trials. Anesthesia and Analgesia. 2017 Mar;124(3):743-752. 10. Zhou X, Zhang C, Wang Y, Yu L, Yan M. Preoperative acute normovolemic hemodilution for minimizing allogeneic blood transfusion: a meta-analysis. Anesthesia & Analgesia. 2015;121(-6):1443-55. 11. Xie J, Feng X, Ma J, Kang P, Shen B, Yang J, et al. Is postoperative cell salvage necessary in total hip or knee replacement? A meta-analysis of randomized controlled trials. International Journal Of Surgery. 2015;21:135-44. 12. White N, Bayliss S, Moore D. Systematic review of interventions for minimizing perioperative blood transfusion for surgery for craniosynostosis. Journal of Craniofacial Surgery. 2015;26(1):26-36. 13. Li J, Sun SL, Tian JH, Yang K, Liu R, Li J. Cell salvage in emergency trauma surgery. Cochrane Database of Systematic Reviews. 2015(1):CD007379-CD. 14. Al-Khabori M, Al-Riyami A, Siddiqi S, Al-Sabti H. Cell salvage during cardiac surgery may decrease red blood cell transfusion: a systematic review and meta-analysis. Haematologica. 2015;100((S1)):138-9.
			Is there a risk of disseminating micrometastases when reinfusing cell saved blood	H	
			Can the use of cell salvage be expanded?	H	
			Why the current cell savers are not efficient enough to avoid blood transfusion	B H	
			How do we promote cell salvage so it is routine	R B H	
			How can cell salvage be better resourced within hospitals? (Money and trained staff)	NK	
			How can cell salvage machines be adapted for low income countries? (e.g. simplified, battery back-up, works in high temperatures))	B	
			How can we make cell salvage better for major haemorrhage situations	B H	
			Post-operative cell salvage: For patients having cardiac surgery with a significant risk of post-operative blood loss, is post-operative cell salvage and reinfusion clinically and cost effective in reducing red blood cell use and improving clinical outcomes, compared with existing practice	Question not derived from the survey but from another source.	
			Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: Are combinations of autologous blood transfusion techniques feasible, effective and cost-effective?	Question not derived from the survey but from another source.	
			Could the volume of blood collected with cell salvage machines be improved so that it would be worth using this tool for more operations?	P R B H	
			Can more research be done into cell saver technology as standard rather than relying on donation	P H	
			Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the long term effects of transfusion on survival and the long-term effects of the serious hazards of transfusion on survival, health status and health related quality of life?	Question not derived from the survey but from another source.	
			Cell Saver technique, is it proven method of reducing bank blood transfusions ?	B H	
			Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the benefits clinically and as regards patient preferences of avoiding allogeneic blood transfusion by giving autologous transfusion instead?	Question not derived from the survey but from another source.	
			Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: (as addendum to the research recommendation) Do these benefits vary by procedure, timing and technique of cell salvage?	Question not derived from the survey but from another source.	
			Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion:	Question not derived from the survey but from another source.	
			Cell salvage in emergency trauma surgery. Implications for research: We identified only one study that met the inclusion criteria for this review. In the future, multicentre, methodologically rigorous trials are needed to assess the relative efficacy, safety and cost-effectiveness of cell salvage in different surgical procedures.	Question not derived from the survey but from another source.	
			Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: Is acute normovolaemic haemodilution more effective and cost-effective than cell salvage?	Question not derived from the survey but from another source.	
DtTr10b	At what haemoglobin level [blood count] should a non-surgical, general medical patient receive a blood transfusion?	24	At what haemoglobin level should blood transfusion be considered for critical care patients.	R B H	1. NICE Guideline Recommendations: 13. Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not: • have major haemorrhage or • have acute coronary syndrome or • need regular blood transfusions for chronic anaemia. 14. When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 g/litre and a haemoglobin concentration target of 70–90 g/litre after transfusion. 16. Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia. Other refs: 1. Odutayo A, Desborough MJ, Trivella M, Stanley AJ, Doree C, Collins GS, et al. Restrictive versus liberal blood transfusion for gastrointestinal bleeding: a systematic review and meta-analysis of randomised controlled trials. The Lancet Gastroenterology & Hepatology. 2017;2(-5):354-60. 2. Estcourt LJ, Malouf R, Trivella M, Fergusson DA, Hopewell S, Murphy MF. Restrictive versus liberal red blood cell transfusion
			At what Hb threshold should post-partum women be transfused to improve maternal recovery?	B H	
			Transfusion threshold in different situations and context. e.g. TRICC/other trials guide us but for what length of duration in ICU stay does these trials apply? Surely situation at day 20 is very different that day 2.	B H	
			Transfusion thresholds for general intensive care patients with and without acute coronary syndromes	H	
			Restrictive policies for medical patients for both blood and platelets	H	
			transfusion trigger in the critically ill	B H	
			what is the correct Hb to transfuse in the postnatal period given that maternal physiology is so different from standard adults	H	
			What is the optimal blood transfusion threshold for patients at different stages in the evolution of critical illness?	R B H	
			What is the best threshold for blood transfusion on the ICU?	B H	

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			What is the optimum level ([hb]) to transfuse red cells in the severely ill patient	H	strategies for people with haematological malignancies treated with intensive chemotherapy or radiotherapy, or both, with or without haematopoietic stem cell support. The Cochrane Database of Systematic Reviews. 2017(-1):CD011305-CD. 3. Dupuis C, Sonneville R, Adrie C, Gros A, Darmon M, Bouadma L, et al. Impact of transfusion on patients with sepsis admitted in intensive care unit: a systematic review and meta-analysis. Annals of Intensive Care. 2017;7(-1):5-. 4. Veigas PV, Callum J, Rizoli S, Nascimento B, da Luz LT. A systematic review on the rotational thrombelastometry (ROTEM(R)) values for the diagnosis of coagulopathy, prediction and guidance of blood transfusion and prediction of mortality in trauma patients. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2016;24(-1):114-. 5. Prescott LS, Taylor JS, Lopez-Olivo MAMMF, VonVille HM, Lairson DR, Bodurka DC. How low should we go: a systematic review and meta-analysis of the impact of restrictive red blood cell transfusion strategies in oncology. Cancer Treatment Reviews. 2016;46:1-8. 6. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. Adverse effects of red blood cell transfusions in neonates: a systematic review and meta-analysis. Transfusion. 2016. 7. Estcourt LJ, Ingram C, Doree C, Trivella M, Stanworth SJ. Use of platelet transfusions prior to lumbar punctures or epidural anaesthesia for the prevention of complications in people with thrombocytopenia. The Cochrane Database of Systematic Reviews. 2016(-5):CD011980-CD. 8. Christou G, Iyengar A, Shorr R, Tinmouth A, Saidenberg E, Maze D, et al. Optimal transfusion practices after allogeneic hematopoietic cell transplantation: a systematic scoping review of evidence from randomized controlled trials. Transfusion. 2016. 9. Boutin A, Chasse M, Shemilt M, Lauzier F, Moore L, Zarychanski R, et al. Red blood cell transfusion in patients with traumatic brain injury: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016;30(-1):15-24. 10. McQuilten ZK, Crighton G, Brunskill S, Morrison JK, Richter T, Waters N, Murphy MF, Wood EM. Optimal Dose, Timing and Ratio of Blood Products in Massive Transfusion: Results from a Systematic Review. Transfusion Medicine Reviews. 2017. 11. Gu Y, Estcourt LJ, Doree C, Hopewell S, Vyas P. Comparison of a restrictive versus liberal red cell transfusion policy for patients with myelodysplasia, aplastic anaemia, and other congenital bone marrow failure disorders. Cochrane Database of Systematic Reviews. 2015(-10):CD011577-CD. 12. Estcourt LJ, Stanworth SJ, Doree C, Hopewell S, Trivella M, Murphy MF. Comparison of different platelet count thresholds to guide administration of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-11):CD010983-CD. 13. Estcourt LJ, Stanworth S, Doree C, Trivella M, Hopewell S, Blanco P, et al. Different doses of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-10):CD010984-CD. 14. Estcourt LJ, Desborough M, Hopewell S, Doree C, Stanworth SJ. Comparison of different platelet transfusion thresholds prior to insertion of central lines in patients with thrombocytopenia. Cochrane Database of Systematic Reviews. 2015(-12):CD011771-CD. 15. English SW, Chasse M, Turgeon AF, Tinmouth A, Boutin A, Pagliarello G, et al. Red blood cell transfusion and mortality effect in
B&C2	How can the immediate side effects of receiving a blood transfusion be reduced?	25	What detrimental effects are caused my transfusing blood products in a surgical bleed?	R H	1. Li SL, Ye Y, Yuan XH. Association between allogeneic or autologous blood transfusion and survival in patients after radical prostatectomy: a systematic review and meta-analysis. Plos One. 2017;12(-1):e0171081-e. 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13. 3. Thongprayoon C, Cheungpasitporn W, Gillaspie EA, Greason KL, Kashani KB. Association of blood transfusion with acute kidney injury after transcatheter aortic valve replacement: A meta-analysis. World Journal of Nephrology. 2016;5(-5):482-8. 4. Mainou M, Alahdab F, Tobian AA, Asi N, Mohammed K, Murad MH, et al. Reducing the risk of transfusion-transmitted cytomegalovirus infection: a systematic review and meta-analysis. Transfusion. 2016. 5. Kim JL, Park JH, Han SB, Cho IY, Jang KM. Allogeneic blood transfusion is a significant risk factor for surgical-site infection following total hip and knee arthroplasty: a meta-analysis. The Journal of Arthroplasty. 2016. 6. Keir AK, Wilkinson D, Andersen C, Stark MJ. Washed versus unwashed red blood cells for transfusion for the prevention of morbidity and mortality in preterm infants. The Cochrane Database of Systematic Reviews. 2016(-1):CD011484-CD. 7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68. 8. Harnan S, Ren S, Gomersall T, Everson-Hock ES, Sutton A, Dhanasiri S, et al. Association between transfusion status and overall survival in patients with myelodysplastic syndromes: a systematic literature review and meta-analysis. Acta Haematologica. 2016;136(-1):23-42. 9. Cata JP, Lasala J, Pratt G, Feng L, Shah JB. Association between perioperative blood transfusions and clinical outcomes in patients undergoing bladder cancer surgery: a systematic review and meta-analysis study. Journal of Blood Transfusion. 2016;2016:9876394-. 10. Sarai M, Tejani AM. Loop diuretics for patients receiving blood transfusions. Cochrane Database of Systematic Reviews. 2015(2):CD010138-CD. 11. Muller MC, van Stein D, Binnekade JM, van Rhenen DJ, VlaarAp. Low-risk transfusion-related acute lung injury donor strategies and the impact on the onset of transfusion-related acute lung injury: a meta-analysis. Transfusion. 2015;55(1):164-75. 12. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, NolanJ, et al. Blood transfusion after percutaneous coronary
			What complications occur from massive transfusion in children from trauma?	H	
			Skin preparation with alcohol versus alcohol followed by any antiseptic for preventing bacteraemia or contamination of blood for transfusion. Implications for research: It is common for people who are critically ill to become coagulopathic, and many of these will require insertion of a central venous catheter (CVC). The question of whether prophylactic plasma transfusion is indicated remains unanswered. An adequately-powered trial which is able to recruit sufficient number of participants to address this is required. The ongoing trials that are due to be completed by February 2018 will be unable to answer the primary questions of this review because the studies are too small. To detect a doubling in the number of participants with major bleeding from 1% to 2% would require a two-arm study with over 4600 participants; the three ongoing studies are only planning to recruit 355 participants in total.	Question not derived from the survey but from another source.	
			What is the mortality rate following major blood transfusion	H	
			What is the true risk to life (attributable mortality) of a red cell transfusion?	H	
			When undergoing a transfusion what risks can occur?	NK	
			What is the current safety of blood transfusion for recipients?	H	
DtTr10f	At what haemoglobin level [blood count] should a patient with cancer receivce a blood transfusion?	26	There was no individual survey question generated on this topic.		
D12a	If the blood taken from a donor shows a result that might impact their future health, how should this best be communicated to the donor?	27	What would the donor centre do if a test came back with "bad news"	P R P H	No available SR evidence
			Would I be told if an abnormality were found in my blood donation?	R B	
			Can a blood Donor have a full health check of their blood. E.G. Vitamins, Minerals, Hormone Levels and health of the blood.	B	
DtTr29	How should patients who refuse blood transfusion be managed?	28	What alternatives can be used to replace blood transfusion in Jehovah's witness patients who have sudden blood loss due to cardiac cath lab complications?	H	1. Han SB, Kim HJ, Kim TK, In Y, Oh KJ, Koh IJ, et al. Computer navigation is effective in reducing blood loss but has no effect on transfusion requirement following primary total knee arthroplasty: a meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016.
			how useful are coagulation factors without blood transfusion for Jehovah's witnesses	B H	
			What alternatives do you offer to people who do not wish to have a blood transfusion?	NK	

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			Is it now time for retrospective controlled trials to be undertaken in the UK comparing patients who have refused blood transfusion in comparison with those in matching capacities who were transfused?	Jehovah's Witness	
			What alternatives to blood transfusion are best to treat sudden blood loss, in Jehovah's Witness patients, due to cardiac cath lab complications?	H	
			What safe alternatives are available for patients who do not want to receive blood transfusions	H	
			What safe alternatives exist for patients who do not want, or cannot receive, blood transfusions?	B H	
			Benefits from non-blood transfusion-alternative treatment	H	
D2	Why aren't previous recipients of a blood product transfusion allowed to be blood donors?	29	Why, if it's deemed as safe, to receive blood products can you no longer be a blood donor once you have been transfused?	P B H	No up-to-date evidence.
			Why are people not allowed to donate blood when they have had a transfusion even if it is many years ago?	B H	
			Why am I unable to donate after having a transfusion, surely the blood is checked before transfusing and is safe!?	B	
			is it safe for someone who has previously had a transfusion to donate blood subsequently	P B R H	
			Can you never ever give blood if you've had a transfusion?	P R H	
			I can no longer give blood due to having a blood transfusion 20yrs ago-what is being done to research this	P B H	
			How should we tell blood donors that they can never give blood again after receiving a blood transfusion	P B H	
			Why cannot patients who have received a transfusion then go on to donate?	B R H	
			Why can't people who have received a blood donation give blood?	R H	
			Why did I have to stop being a blood donor after having blood transfusions?	P B	
			I received a transfusion in 1997 and since then have been told I cannot give blood having been a recipient of a transfusion (I was informed this was standard practice). Is this likely to change in the future? What is the cause of this refusal?	P B	
			why can't I donate blood after receiving it	B	
			Why can't I donate blood after receiving a transfusion?	P H	
			When will you relax the restriction on people who have had blood transfusions from giving blood	B R	
			Why does having anti bodies following transfusion prevent any future blood donation?	R H	
			Why can individuals who have received blood prior to a certain date not donate?	P	
			Do we really still need to worry about CJD? This is preventing many possible donors from being able to donate when they have had blood themselves. Isn't it all theoretical now?	H	
			Why can't people who have had IVF donate?	R B H	
			Is vCJD really a legitimate concern for plasma donation in the UK?	H	

The 50 questions included in the interim survey

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
D11	What would encourage more people (especially black and ethnic minority groups or people with rare blood type) to donate blood?	How can we encourage people to donate	H	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Memon A, Moiz B. Why are we losing our precious blood donors? A systematic review from Pakistan. Haematologica. 2016;101((s1)):P877- ABSTRACT NO.PB2222 3. Appiah BA, Bates BA. Cultural context and role of communication in promoting adequate blood donation in sub-Saharan Africa: a systematic literature review. Vox Sanguinis. 2015;109((Suppl. 1)):p128. Abstract P-142	N
		How can the rest of the population (especially minorities) be encouraged to become regular donors ?	H		
		How do we encourage more donors?	H		
		It should be mandatory to donate/ or be paid to do it	B		
		people should be encouraged to donate more by better campaigning	P B		
		What would encourage people to donate blood?	H		
		What can we do to encourage more people to become blood donors?	P R B H		
		How can we make giving blood more appealing to the public?	P R B H		
		How can we make donating blood more appealing to the public?	P R B H		
		How is recruitment for more blood donors being developed.	P R B		
		How can we encourage more ethnic minorities to give blood?	R B H		
		How can the public be made aware of the need to be donors?	R H		
		How do you plan getting more people to donate?	P B		
		How important is blood type and does marketing for new donors target rare types?	P		
		Should be patients friends & family be asked to join campaign to get more donors as they've seen firsthand how it helps...this happened with me	P		
		I have a major concern in our declining stock of blood. What is preventing the general public from donating? Is it lack of knowledge? Are they concerned about the safety of receiving another's blood?	H		
		Encouraging people to become donors, but without putting too much pressure on those already signed up	R B H		
		How do we increase number of people donating?	B H		
		How can more people be encouraged to become donors?	NK		
		How can more people from minority ethnic backgrounds be encouraged to think about donating?	B		
		How can I help promote the blood donation process?	B		
		When you give blood it is quite an old fashioned type of service, it needs updating to get younger donors interested and involved	B		
		The most effective ways and time to give blood and blood products	R H		
		Would sending information about where/how donations have been received increase the popularity of donating blood?	B		
A2	How can the wastage of donor blood be minimised?	How can we reduce the lag time between request and availability of blood for transfusion?	H	No up-to-date SR evidence	N
		What is the basis for the 30 minute rule?	B H		
		How ethical is it to collect blood that will be destroyed e.g. from AB+ve females	B H		
		How can we reduce blood wastage by improving transport / administration whilst ensuring ready access to blood when required	H		
		How much blood donated is "wasted" by disposal?	B		
		How might this percentage (i.e. wastage/redundancy) be reduced?	B		
		Why are giving sets not flushed with 0.9% sodium chloride on completion of transfusion	B H		
		Why is blood thrown out in the giving set?	P		
		Can I be sure my donation will not be wasted?	B H		
		Are too many donations rejected unnecessarily?	B H		
		What happens to unused donations?	B H		
		What happens to blood that is not used after donation?	P B H		
		Percentage of donations that are transfused	B H		
		What percentage, if any, of all blood donated for transfusion gets wasted?	P		
		Does all the blood donated at donor sessions get used?	R B H		
		When a child needs blood ,why is a whole bag used .why is there so much wasted.	B H		
		Is all collected blood used usefully or is there wastage?	R B		
		Is all the donated blood used	H		
		What percentage of blood donations are found to be unusable because of contamination?	B		
		how do I know how my blood is being used?	R B		
		What percentage of donated blood gets used?	B		
		How many units have been wasted due to 30 minute rule violations? If this information is not captured, why not?	B H		
		How much blood is wasted by the health services and we're is that most common	B H		
		What percentage of blood is actually used per year?	R B		
		How many units are 'wasted' in hospitals (e.g. poor storage)?	B H		
		How much blood/blood products is wasted by hospitals which have blood on standby for surgical procedures?	P H		
DtTr6	How can patients with anaemia be identified and treated in a	Are patients being screened and treated for anaemia before surgery to prevent the need for blood transfusion?	H	1. Potter LJ, Doleman B, Moppett IK. A systematic review of pre-operative anaemia and blood transfusion in patients with fractured hips. Anaesthesia. 2015;70(4):483-500. 2. Ng O, Keeler BD, Mishra A, Simpson A, Neal K, Brookes MJ, et al. Iron therapy for pre-operative anaemia. Cochrane Database of Systematic Reviews. 2015(-12):CD011588-CD.	N

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	timely manner so that the need for transfusion ius avoided?	How to promote early identification of patients who are anaemic who are going to need a transfusion and treat it to avoid them needing a transfusion	R B H	3. Hogan M, Klein AA, Richards T. The impact of anaemia and intravenous iron replacement therapy on outcomes in cardiac surgery. European Journal of Cardio-Thoracic Surgery. 2015;47(2):218-26. 4. Chan AW, de Gara CJ. An evidence-based approach to red blood cell transfusions in asymptomatically anaemic patients. Annals of the Royal College of Surgeons of England. 2015;97(-8):556-62. 5. Borstlap WA, Stellingwerf ME, Moolla Z, Musters GD, Buskens CJ, Tanis PJ, et al. Iron therapy for the treatment of preoperative anaemia in patients with colorectal carcinoma: a systematic review. Colorectal Disease. 2015;17(-12):1044-54. ***Other Types:*** 1. Bonovas S, Fiorino G, Allocca M, Lytras T, Tsantes A, Peyrin-Biroulet L, et al. Intravenous versus oral iron for the treatment of anemia in inflammatory bowel disease: a systematic review and meta-analysis of randomized controlled trials. Medicine. 2016;95(-2):e2308-e. 2. Tay HS, Soiza RL. Systematic review and meta-analysis: what is the evidence for oral iron supplementation in treating anaemia in elderly people? Drugs & Aging. 2015;32(2):149-58.	
		Does a transfusion to correct anaemia lead to the true cause of the anaemia beingh missed?	H		
		How do Blood Transfusion experts penetrate into the Commissioners and GPs in order to fully employ Patient Blood Management which I believe should start in the community?	B H		
		How important is anaemia during pregnancy, what are the clinical consequences, how should oral iron be used (including prevention)?	B R H		
		How should anaemia be managed before elective surgery to reduce the risk of transfusion	P B R H		
		How can GPs be more engaged in the pre-operative process to ensure that blood counts are optimised before admission to hospital?	NK		
		Are hospital patients more or less likely to develop delirium with a lower haemoglobin	B H		
		Why do general doctors in hospital and GP surgeries understand so few facts about donor blood and the treatment of anaemia?	R B H		
DtTr21	Which patients groups would benefit most from artificial blood* products? *Artifical blood ois a product made to act as a substitute for red blood cells wiothj the sole purpose of transporting oxygen and carbon dioxide throughout the body.	Trial of synthetic RBC substitutes vs PRC	H	No SR evidence available	N
		where is the development of artificial blood and blood products?	R B H		
		Are there substances that can be used to avoid blood transfusion	R B H		
		Is there research going on into artificial blood replacement? Not just ectoplasm but whole blood or RBC?	B H		
		Has there been any successful research in the production of a laboratory manufactured blood replacement ?	B H		
		Can other products replace blood?	H		
		What is the progress on the current research into manufactured red cells?	P R		
		What is the future for factory produced red cells?	B H		
		How accessible are blood transfusion alternatives?	NK		
		How close are we to 'artificial' blood components so we don't have to rely on donors anymore	R B H		
		How can alternatives to blood transfusions be made more freely available?	NK		
		How do we develop artificial blood products?	B H		
		Are there any synthetic alternatives so that one does not have to donate?	P B H		
		Do you see any promise of a safe artificial oxygen carrying agent to replace RBC transfusion soon?	Jehovah's Witness		
		Is there a likely hood of modified Haemoglobin products come into UK practice in the near future?	NK		
		Is there an alternative to human blood products	R B H		
		Why are we not investing more in blood substitutes?	H		
		Are there government funded projects to promote bloodless alternatives?	NK		
		Will viable blood substitutes be available in the near future?	NK		
		Are non-blood oxygen carrying fluids a viable option?	H		
		Can we use synthetic agents to carry oxygen in the blood until the body is able to manufacture its own red cells and therefore avoid the need for interhuman transfusion	H		
		Have you considered alternatives to blood ?	NK		
		With the advancement of science has there been true research into alternative's) to blood , considering the hidden implications associated with blood?	NK		
		What are developments in artificial blood currently?	R B H		
D8	What are the most effective ways to educate the general public about the process and purpose of blood donation?	Need to raise awareness of what blood donations are used for	P	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Memon A, Moiz B. Why are we losing our precious blood donors? A systematic review from Pakistan. Haematologica. 2016;101((s1)):P877- ABSTRACT NO.PB2222 3. Appiah BA, Bates BA. Cultural context and role of communication in promoting adequate blood donation in sub-Saharan Africa: a systematic literature review. Vox Sanguinis. 2015;109((Suppl. 1)):p128. Abstract P-142	N
		How can we improve the understanding of the general public for transfusion	P B H		
		To persuade new donors, why not illustrate, say by video maybe speeded up, the immediate improvements transfusions bring	R B		
		How can social media improve the knowledge of transfusion and numbers for donation	H		
		If it doesn't already feature; could blood transfusion and collection be added to the national curriculum and feature in the PSHE course?	NK		
		Why do you not go into schools explaining the importance of blood donation	R B		
		Why is the public not educated more about giving blood.	P B H		

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		Do the general public know about the process of blood transfusion from donation to a patient receiving blood	B H		
		Donor Recruitment - Is there potential for there to be a national campaign (including all four devolved countries) to recruit more donors?	B H		
		How long it takes?	B		
		How do I give bloo0d transfusion	B		
		Why does it appear that you seem reluctant to reward those donors of large numbers of donations nowadays? Cutbacks?	B H		
		Why is the profile of donation days in an area not better flagged ?	B H		
		Do you think being a blood donor could be mandated for all 20-40 year olds	P B H		
		Should blood donation be made compulsory for healthy adults?	H		
		Do you approach businesses asking them to send a donation registration pack with their recruitment process?	R B		
		Why don't you raise the profile of blood donation? National campaign; blood donor day; blood donation featuring in a soap	B		
		Why isn't there any school/college visits about why giving blood is so important?	B		
		More info on donating plasma, platelets etc	R B		
D6	How can donation sessions be organised to make them easier and more convenient for blood donors?	Many people express frustration at not being able to get an appointment to donate blood, there seems to be very limited donor sessions	H	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Fisher SA, Allen D, Doree C, Naylor J, Angelantonio ED, Roberts DJ. Interventions to reduce vasovagal reactions in blood donors: a systematic review and meta-analysis. Transfusion Medicine (Oxford, England). 2016;26(1):15-33. 3. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(3):354-62.	N
		Why can you not provide enough slots for donors.	B H		
		Could you have more flexibility for donation sessions	H		
		Why do donors fall off the active list and how can we look after them better?	B H		
		Sometimes donor sessions are restricted to specific time slots. Can there be more scope to turn up without an appointment?	R B H		
		I am finding it increasingly difficult to donate as often as I would like, why is that.	R B		
		There seems to be less sessions at my donation centre, why?	R B		
		Why does donating blood affect people differently? (Some faint, some feel no effect etc)	B		
		Why do some people give blood easily and quickly compared to others?	B		
		Why can't local health services be supplemented to take blood donations?	B		
		How can the decisions around limiting donor pool for platelets and plasma be best communicated to the public?	B		
		Why does it sometimes seem difficult to arrange my next donation as soon as I would be eligible, especially as we have two donation venues in this city? At the one venue there are no future schedules available and the staff are unable to provide information about other local venues.	B H		
		Would happily donate as often as possible but sessions at the location only twice a year	R		
		Why are some Donation Places so busy that it is hard to get an appointment?	B		
		Why do you not weigh patients who do not know their weight prior to blood donor sessions - instead of turning them away to come back another day	B H		
		Why aren't there more places to donate platelets?	P		
		Why isn't there more open drop in sessions for blood donors	B H		
		From a donor point of view: when my letter comes through the door with my next appointment the session is already fully booked when I ring up to confirm, this puts me off organising an alternative date.	B H		
		Why do you not put on donation sessions at hospitals?	H		
		Last donor session booking slot is early evening and gives little time to get back from work to attend - whilst understanding the need for packing up time after - can there be later donor slots/evening donor sessions?	B R P H		
		Why don't NHSBT have blood donor sessions in hospitals? This would increase the number of donors hugely	B R P H		
		Why is there such variation in opportunities or places to donate between different areas of England?	B		
		Why not have more fixed places where donations can take place e.g. at hospitals?	B		
		Why aren't there more donation centres?	B H		
		Why is the donation service hours so short and everyone stops at lunch and breaks	B		
		Why don't you get donation points at gap surgeries	B		
		Is the waiting time at donor sessions acceptable?	B		
		I would like to be a platelet donor but the location is not very accessible. Could there be more invested in this to have more venues?	B		
		Could a mobile facility be made available? Obviously cost is at the heart of that question.	B		
		Why are there so few platelet donation venues if it is so important?	B		

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		Why do you not work Saturdays and Sundays? people who work - would be easier to donate	B		
		Why do donors fall off the active list and how can we look after them better?	B H		
		What is the donors experience when doing this specifically to donate to an individual.	H		
		How can blood donors best be thanked and rewarded ?	H		
		How can the experience for blood donors be improved	B H		
		Why do donors get upset if they cannot donate for any reason.	B H		
		How can we improve the feedback on the fate of blood post transfusion	P B H		
		Have you considered thank you test to donors?	B H		
		What can we do to improve your experience?	R B		
		Why don't you use skin analgesia prior to donation as I feel this may prevent donation	R B H		
		Why does a service which relies on public goodwill fail perform so poorly in basic customer service at point of delivery?	B		
		Is it possible to inform the donor when there blood has been used?	R B		
		Why does it seem that by donating blood you are doing me a favour?	B		
		Could donors be given information while waiting on other forms of donation?	B		
		Why are blood donors so undervalued?	R B		
		Why do people not donate?	P B		
		Can the process of blood donation be made more efficient?	B H		
		How can we make blood donation easier for donors	B H		
		Is there a way of cutting down waiting times especially when attendees are getting cold/dehydrated?	P R B H		
		Process of donating blood, how to streamline service	B H		
		How can the appointment system be refined to ensure prompt donations?	B H		
		Is the waiting time at donor sessions acceptable?	B		
		Why do you make so many hurdles to people who want to give blood	B		
		How uncomfortable is it to donate and does this put people off coming again?	P B R H		
		Would home self-testing of haemoglobin before attending blood donation sessions be acceptable, feasible, accurate, and save time and money?	B		
		How well rolled out is the text message service notifying donors of usage?	H		
		What would the impact of paying donor expenses be?	P H		
		Is there a way to make the donation process simper/more efficient?	R B		
DtTr1	How can health professionals be discouraged from using blood inapproriately?	Explore the level of knowledge and understanding of prescribing and administrating blood transfusions by healthcare professionals.	H	1. Hibbs SP, Nielsen ND, Brunskill S, Doree C, Yazer MH, Kaufman RM, et al. The impact of electronic decision support on transfusion practice: a systematic review. Transfusion Medicine Reviews. 2015;29(1):14-23.	N
		What systems can we put in place to limit unnecessary use of blood and blood products on the ICU?	B H		
		How can we improve knowledge of and reduce incidence of TRALI	R B H		
		What can be done to make it easier to give blood in the bleeding patient (i.e. not 1:1:1) [ratio question]	H		
		NICE GUIDELINE RESEARCH KEY RECOMMENDATION:Electronic decision support: [Guideline Dev Gp fully assessed all evidence to Jan 2015 = "inconclusive and of very low quality"]. What is the clinical and cost effectiveness of an electronic decision support system compared with current practice in reducing inappropriate blood transfusions, overall rates of blood transfusion and mortality?	Question not derived from the survey but from another source.		
		Red cell transfusion: dose, frequency, end points, outcome, home vs. hospital, efficacy in patients with chronic malignant haematologic diseases	H		
		Transfusion is a quick fix, but is it always the best fix?	H		
		A bigger push on hospitals etc on " Why use 2 when 1 will do". Lets get out profesiso	H		
		Ensuring that all hospital staff realise that blood transfusion is akin to transplantation and not be blase about administering it	R B H		
		How can Hospitals reduce the requirements for Blood Transfusions	R B H		
		How can the risks and complications associated with blood transfusions be more clearly understood by the wider medical community?	NK		
		How can we improve the hospitals clinicians that blood is a limited resource, I feel they should be encouraged to be donors.	B H		
		How do we encourage staff to use blood only when necessary	H		
		How do we unify blood transfusion practices across disciplines (.e.g. cardiac surgery vs. general ICU)?	R B H		
		Should blood and blood product transfusion in trauma be better applied in NHS hospitals? Is current guidance actually being followed?	H		
		To save time and resources (for both patients and health care professionals) is it possible to reduce the amount of blood products that are prescribed?	B H		
		What measures could prevent blood transfusions?	H		

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		Why do clinical staff seemingly ignore SOPs and improvise a procedure and end up getting it wrong - move to A7?	B		
		Who should decide that a patient should receive a blood transfusion?	R B H		
		How decision to transfuse is made	R B H		
		How can health care professionals in general be better informed about alternatives to blood transfusion?	NK		
		How can we ensure that evidence based best practice regarding optimising pre-op haemoglobin is implemented	H		
		What factors are the most important to ward clinical staff (consultants & junior doctors) in deciding when to initiate blood transfusion	H		
		How do we promote transfusion triggers and make doctors keep to it!	R B H		
		Should doctors have mandatory updates on blood transfusion, no matter what their seniority?	B H		
		What factors influence the usage demand for donated blood products & can waste be reduced?	B		
		What should determine the need to transfuse?	H		
		When is blood transfusion absolutely indicated and when can it be avoided	R B H		
		When should I transfuse patients?	H		
		Would it be beneficial to transfuse blood based on an ideal body weight rather than everyone receiving a similar amount?	H		
A1	What is the best administrative process for hospital blood transfusion to keep patients safe and minimises delay?	How can modern technology e.g. apps for patients/healthcare professionals improve the transfusion process ?	H	1. NICE Guideline Recommendation: Electronic patient identification 12. Consider using a system that electronically identifies patients to improve the safety and efficiency of the blood transfusion process. 2. Sellen KM, Jovanovic A, Perrier L, Chignell M. Systematic review of electronic remote blood issue. Vox Sanguinis. 2015;109(-1):35-43. 3. Manning N, Heddle NM, Arnold D, Crowther MA, Siegal D. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion: a systematic review. Journal of Thrombosis and Haemostasis. 2015;13((Suppl. 2)):974-5. 4. Manning M, Heddle N, Arnold D, Crowther MA, Siegal DM. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion: a systematic review. Blood. 2015. 5. Hibbs SP, Nielsen ND, Brunskill S, Doree C, Yazer MH, Kaufman RM, et al. The impact of electronic decision support on transfusion practice: a systematic review. Transfusion Medicine Reviews. 2015;29(1):14-23. 6. Coustasse A, Cunningham B, Deslich S, Willson E, Meadows P. Benefits and barriers of implementation and utilization of Radio-Frequency Identification (RFID) systems in transfusion medicine. Perspectives in Health Information Management. 2015;12((Fall)):1d-d.	Y
		Why do you have to replicate all the info about blood transfusions on two separate forms that repeat the same information	R B H		
		Can we rationalise the requesting process to reduce delays in urgent situations	H		
		Is it possible to design a "reminder" for staff regarding component times for transfusion that is easy to access and carry?	H		
		How can we be sure there are no errors in blood product delivery?	P B H		
		How can the experience of blood transfusion for mothers during/after labour be improved?	NK		
		Is there a more efficient way of networking to support optimal use of blood bank supplies than our existing methods	P R B H		
		How to maintain safety for recipients of blood and blood products	B H		
		Why do we (West Yorkshire) need a second patient checker when areas in Scotland don't	P R B H		
		Is the procedure for prescription through to administration of a transfusion standardised across all NHS trusts?	P		
		How can we reduce lengthy stays in hospital due to transfusion?	B H		
		How do we ensure patient safety individually and collectively in blood transfusion ?	H		
		How safe is it for a patient to have a transfusion in their own home rather than travel to the hospital?	B H		
		why does each trust have a different transfusion record	B H		
		Why is there not a universal procedure when administering prescribed blood products, documentation often differs in other health boards.	H		
		How can patients receiving a transfusion experience a higher rate of safety?	R B		
		Avoid transfusion errors	P R H		
		Do the control measures designed to ensure 'safe blood' have an evidence base or are some based on assumption of risk?	R B H		
		Are there any strategies to reduce the development of Abs in Tx dependent patients?	R B H		
		Improving safety of community transfusions (with aim to reduce acute hospital bed use)	B H		
		How can we improve communication between hospitals for patients needing special requirements?	P B H		
		Why don't patient ID wristbands have barcodes/ matrix to be scanned instead of second checker	P R B H		
		What checks are made to ensure a patient receives the right type and amount of blood?	NK		
		Why can we not have a way of using patient barcodes to link to the computer system, to reduce risk of mis-labelling?	R B H		
		Why can't transfusions be given evenings and weekends (in all hospitals) for patients on long term transfusion regimes?	P R		
D3	What medical conditions make it unsafe for a person to be a blood donor?	Are the donor exclusion criteria truly evidence based?	R B	1. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58-. 2. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(-3):354-62. 3.Estcourt LJ, Malouf R, Hopewell S, Trivella M, Doree C, Stanworth SJ, Murphy MF. Pathogen-reduced platelets for the prevention of bleeding. Cochrane Database of Systematic Reviews 2017, Issue 7. Art. No.: CD009072. DOI: 10.1002/14651858.CD009072.pub3. 4. Chasse M, McIntyre L, English SW, Tinmouth A, Knoll G, Wolfe D, et al. Effect of blood donor characteristics on transfusion outcomes: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016. 5. Chasse M, Tinmouth AT, English SW, McIntyre L, Knoll G, Wolfe D, et al. Effect of blood donor characteristics on transfusion outcomes: a systematic review and meta-analysis. Transfusion. 2015;55((Suppl. 3)):123A-A. 6. De Buck E, Dieltjens T, Compernolle V, Vandekerckhove P. Is having sex with other men a risk factor for transfusion-transmissible infections in male blood donors in Western countries? A systematic review. PLoS ONE [Electronic Resource]. 2015;10(4):e0122523-e. 7. Webster J, Bell-Syer SE, Foxlee R. Skin preparation with alcohol versus alcohol followed by any antiseptic for preventing bacteraemia or contamination of blood for transfusion. Cochrane Database of Systematic Reviews. 2015(2):CD007948-CD.	N
		When is safe to donate blood after contacting hepatitis A?	P B		
		Why do I need to wait after travelling abroad if I have not been unwell or vaccinated?	B H		
		Can a person with HIV be able to donate blood?	P H		
		Why can't people with diabetes give blood - are there real evidence based reasons for the ban?	B		
		Is it always necessary to turn blood donors away for various reasons	P B		
		Why can't I give blood anymore as I'm on anti-hypertensive drugs?	R B H		
		Can I donate blood if I have asthma?	H		

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		What are the criteria for being able to donate blood?	R H		
		Donor Selection	R B H		
		Can I give blood after having had meningococcal septicaemia?	B		
		It is not clear on the blood donation that first time donors of 17 or 18 years old need to have eaten within the 4 hours prior to donation. It just states eaten and drunk that day. Does it really matter if they have not eaten within 4 hours - not everyone eats that regularly	B H		
		How to insure donors and their health	R B H		
		I have ALL, therefore I have been told I can't give blood any more. I suspect I had blood cancer for a while before I was told by my GP. Does the service test donations for blood cancer before giving blood to a recipient?	P B		
		I have a blood cancer, how would it be picked up if I tried to donate blood?	R B		
		Can a person who suffers with Chronic Lymphatic leukaemia donate blood if that patients HB is high enough?	NK		
		I assume that now I am diagnosed with a blood cancer I would not be able to give blood!!	B		
		Is the blood drop iron level test a good indicator of ability to donate?	B		
		Can any use be made of blood components (other than abnormal cells) if donated by MPN patients	P		
		For someone who has not participated in the donation of blood, is there any qualitative aspect to the pre-screening questions?	NK		
		How are donors screened?	NK		
		Why is it getting harder to meet the criteria to give blood, as it seems to change every time I go?	B		
		What if someone lies on their medical form?	R B H		
		Why are patients having had illegal (? Should this be illeal) conduit surgery that did not receive a transfusion during surgery unable to ever give blood in the future?	B		
		What precautions should be taken and the blood tests to be carried out?	R H		
		Why exclude ALL females from plasma donation regardless of history of previous (possible) pregnancies? Assumption that HLA/HPA antibodies present in all females.	R B H		
		I'm asthmatic, so if there is a connection to blood donation and asthma I'd be interested.	B		
		What medications stop you from donating blood = make a single question	H		
		What can be done to safely relax existing rules around donation, for people who want to donate but are exempt i.e. with individual consultant permission , or further screening?	P H		
		After a critical illness, can I safely donate again?	P B		
		Does the general fitness of the donor have any impact on the quality of blood donated? If so, would it/should it be part of the collection strategy to target sections of society who maintain a healthier life-style e.g. Health-centres and gymnasiums etc?	NK		
		Is it good enough to rely on people's honesty about their health?	R B		
D12a	If the blood taken from a donor shows a result that might impact their future health, how should this best be communicated to the donor?	What would the donor centre do if a test came back with "bad news"	P R P H	No available SR evidence	N
		Would I be told if an abnormality were found in my blood donation?	R B		
		Can a blood Donor have a full health check of their blood. E.G. Vitamins, Minerals, Hormone Levels and health of the blood.	B		
DtTr15	How can the blood transfusion process be delivered more safely in hospitals?	How can we educate healthcare professionals to adopt best practice in RBC transfusion	B H	No available up-to-date evience.	N
		Is the training given to junior doctors on transfusion enough?	B H		
		JUNIOR DOCTORS. How consistent is their training in Transfusion Avoidance June 2015 and use of Alternatives?	Jehovah's Witness		
		Nursing and medical team to have a better and in depth understanding of the side effects of blood transfusions and be aware of common haematology medical problems which can interfere with blood donation/transfusion.	B H		
		Shouldn't NMS put more money in to researching and training surgeons in blood conservation techniques?	NK		
		Why can't medical staff give advice on non-blood products?	NK		
		Why is there such a disconnect between knowledge and practice regarding transfusion requirements in clinical medicine? i.e. Are medical students taught the indications and evidence for transfusion?	H		
		How do we improve the sharing of knowledge in transfusion science to juniors staff	B H		
		Why is blood transfusion training not a nationally required core mandatory training subject	H		
		How do we safeguard unnecessary transfusion?	H		
		Why can't experienced nursing staff prescribe blood?	R B H		

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		Do you reassess after giving each unit?	H		
		Is ever a 1 or 2 pint transfusion valid since this amount can be donated by an individual?	NK		
B&C4	How can any negative long term effects of blood transfusion be prevented?	What future harm does a transfusion cause	P B H	1. Li SL, Ye Y, Yuan XH. Association between allogeneic or autologous blood transfusion and survival in patients after radical prostatectomy: a systematic review and meta-analysis. Plos One. 2017;12(-1):e0171081-e. 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13. 3. Thongprayoon C, Cheungpasitporn W, Gillaspie EA, Greason KL, Kashani KB. Association of blood transfusion with acute kidney injury after transcatheter aortic valve replacement: A meta-analysis. World Journal of Nephrology. 2016;5(-5):482-8. 4. Mainou M, Alahdab F, Tobian AA, Asi N, Mohammed K, Murad MH, et al. Reducing the risk of transfusion-transmitted cytomegalovirus infection: a systematic review and meta-analysis. Transfusion. 2016. 5. Kim JL, Park JH, Han SB, Cho IY, Jang KM. Allogeneic blood transfusion is a significant risk factor for surgical-site infection following total hip and knee arthroplasty: a meta-analysis. The Journal of Arthroplasty. 2016. 6. Keir AK, Wilkinson D, Andersen C, Stark MJ. Washed versus unwashed red blood cells for transfusion for the prevention of morbidity and mortality in preterm infants. The Cochrane Database of Systematic Reviews. 2016(-1):CD011484-CD. 7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68. 8. Harnan S, Ren S, Gomersall T, Everson-Hock ES, Sutton A, Dhanasiri S, et al. Association between transfusion status and overall survival in patients with myelodysplastic syndromes: a systematic literature review and meta-analysis. Acta Haematologica. 2016;136(-1):23-42. 9. Cata JP, Lasala J, Pratt G, Feng L, Shah JB. Association between perioperative blood transfusions and clinical outcomes in patients undergoing bladder cancer surgery: a systematic review and meta-analysis study. Journal of Blood Transfusion. 2016;2016:9876394-. 10. Sarai M, Tejani AM. Loop diuretics for patients receiving blood transfusions. Cochrane Database of Systematic Reviews. 2015(2):CD010138-CD. 11. Muller MC, van Stein D, Binnekade JM, van Rhenen DJ, VlaarAp. Low-risk transfusion-related acute lung injury donor strategies and the impact on the onset of transfusion-related acute lung injury: a meta-analysis. Transfusion. 2015;55(1):164-75. 12. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, NolanJ, et al. Blood transfusion after percutaneous coronary intervention and risk of subsequent adverse outcomes: a systematic review and meta-analysis. JACC: Cardiovascular Interventions. 2015;8(3):436-46. 13. Kopolovic I, Ostro J, Tsubota H, Lin Y, Cserti-Gazdewich CM, Messner HA, et al. A systematic review of transfusion-associated graft-versus-host disease. Blood. 2015;126(-3):406-14. 14. Keir AK, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. A systematic review and meta-analysis of risks of red cell transfusion for neonatal morbidities or mortality. Vox Sanguinis. 2015;109((Suppl. 1)):31-2. 15. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Sheheta N, et al. Adverse effects of RBC transfusions in neonates: a systematic review and meta-analysis. Abstracts of the HAA 2015 Annual Scientific Meeting. 2015:196-7. 16. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.	N
		Harm caused by blood transfusion	R B H		
		What proportion of frequent platelet recipients develop HLA or specific antibodies?	H		
		What are the effects of blood transfusion on the immune system, infection rates, cancer recurrence etc?	B H		
		What are the long-term consequences of blood product transfusion?	B H		
		Long term risks	B		
		What are the long term risks of receiving a blood transfusion?	B H		
		Are any patients at particular risk of long-term complications when receiving blood transfusion?	B H		
		What is the long term effect on health of blood transfusion	B H		
		What is the relationship between blood transfusion and poorer outcome in the era of leukocyte-depleted blood?	H		
		Are there any dangers associated with Blood Transfusion?	P		
		With multiple transfusions how do the risks of complications increase with each additional unit transfused	H		
		Is there any long term follow up for patients who have received the wrong unit of blood?	P B R H		
		what are the long term problems after blood transfusion	H		
		Can we produce more evidence regarding risks and benefits of blood transfusion in different clinical scenarios.	H		
		Risk of transfusion	H		
		what are the risks of blood transfusions	H		
		How does a blood transfusion impact on the recipient's future health. Are there any negative outcomes that we know of?	P B		
		What about as yet unknown risks?	R B H		
		What can be done to decrease the number of reactions in multitransfused patients?	P R		
		Are all transfusions safe to have?	R B H		
		Benefits and risks from treatment with blood transfusion	H		
		What is the effect of blood product transfusion on immunity?	H		
		Are breast cancer surgeons aware of the potential immunosuppressive effects of blood transfusion (or tissue trauma)	R B H		
DtTr24	Does the use of oral or intravenous iron for patients with iron deficiency anaemia reduce the need for some transfusions?	The role of iron in the management of chemotherapy-induced anaemia in cancer patients receiving erythropoiesis-stimulating agents. Implications for research: Since the included RCTs had shorter follow-up duration (up to 20 weeks), the long-term effects of iron supplementation are unknown. Nonetheless, further studies are required to define the optimal dosage of iron. Future trials with a longer follow-up and various re-dosing regimens are also required to determine the risk of adverse events and the impact of iron supplementation on mortality as well as the optimal re-dosing schedule after the patients received the initial cumulative iron supplementation.	Question not derived from the survey but from another source.	Nice Guideline Recommendations: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence) • are diagnosed with functional iron deficiency • are diagnosed with iron-deficiency anaemia, and the interval between the diagnosis of anaemia and surgery is predicted to be too short for oral iron to be effective. 4. For guidance on managing anaemia in patients with chronic kidney disease, see the NICE guideline on anaemia management in chronic kidney disease. 5. For guidance on managing blood transfusions for people with acute upper gastrointestinal bleeding, see section 1.2 in the NICE guideline on acute upper gastrointestinal bleeding. 1. Aksan A, Isik H, Radeke HH, Dignass A, Stein J. Systematic review with network meta-analysis: comparative efficacy and tolerability of different intravenous iron formulations for the treatment of iron deficiency anaemia in patients with inflammatory bowel disease. Alimentary Pharmacology & Therapeutics. 2017. 2. Shepshelovich D, Rozen-Zvi B, Avni T, Gafter U, Gafter-Gvili A. Intravenous versus oral iron supplementation for the treatment of anemia in CKD: an updated systematic review and meta-analysis. American Journal of Kidney Diseases : the Official Journal of the National Kidney Foundation. 2016. 3. Shah A, Roy NB, McKechnie S, Doree C, Fisher SA, Stanworth SJ. Iron supplementation to treat anaemia in adult critical care patients: a systematic review and meta-analysis. Critical Care (London, England). 2016. Sep 29;20(1):306.. 4. Rognoni C, Venturini S, Meregaglia M, Marmifero M, Tarricone R. Efficacy and safety of ferric carboxymaltose and other formulations in iron-deficient patients: a systematic review and network meta-analysis of randomised controlled trials. Clinical Drug Investigation. 2016;36(-3):177-94. 5. Roger SD, Tio M, Park HC, Choong HL, Goh B, Cushway TR, et al. Intravenous iron and erythropoiesis-stimulating agents in haemodialysis: a systematic review and meta-analysis. Nephrology (Carlton, Vic). 2016. 6. Qian C, Wei B, Ding J, Wu H, WangY. The efficacy and safety of iron supplementation in patients with heart failure and iron deficiency: a systematic review and meta-analysis. The Canadian Journal of Cardiology. 2016;32(-2):151-9. 7. Mhaskar R, Wao H, Miladinovic B, Kumar A, Djulbegovic B. The role of iron in the management of chemotherapy-induced anemia in cancer patients receiving erythropoiesis-stimulating agents. The Cochrane Database of Systematic Reviews. 2016(-2):CD009624-CD. 8. Jankowska EA, Tkaczyszyn M, Suchocki T, Drozd M, von Haehling S, Doehner W, et al. Effects of intravenous iron therapy in iron-deficient patients with systolic heart failure: a meta-analysis of randomized controlled trials. European Journal of Heart Failure. 2016. 9. Clevenger B, Gurusamy K, Klein AA, Murphy GJ, Anker SD, Richards T. Systematic review and meta-analysis of iron therapy in anaemic adults without chronic kidney disease: updated and abridged Cochrane review. European Journal of Heart Failure. 2016. 10. Bonovas S, Fiorino G, Allocca M, Lytras T, Tsantes A, Peyrin-Biroulet L, et al. Intravenous versus oral iron for the treatment of anemia in inflammatory bowel disease: a systematic review and meta-analysis of randomized controlled trials. Medicine. 2016;95(-2):e2308-e. 11. Tay HS, Soiza RL. Systematic review and meta-analysis: what is the evidence for oral iron supplementation in treating anaemia in elderly people? Drugs & Aging. 2015;32(2):149-58. 12. Shi Q, Leng W, Wazir R, Li J, Yao Q, Mi C, et al. Intravenous iron sucrose versus oral iron in the treatment of pregnancy with iron deficiency anaemia: a systematic review. Gynecologic & Obstetric Investigation. 2015;80(-3):170-8.	Y
		Does use of pre-op/pre-procedure iv iron in iron deficient patients improve clinic outcomes and reduce peri-operative blood product use?	H		
		Is their good evidence for the use of iron to reduce risk of needing a transfusion in the setting of a normal ferritin level	H		
		Oral or parenteral iron supplementation to reduce deferral iron deficiency and/or anaemia in blood donors.	Question not derived from the survey but from another source.		
		Would controlling the HB status with alternatives such as iron prevent the need for some blood transfusions?	B		
		Does intravenous iron reduce the need for blood transfusion post op?	H		
		Does avoiding peri-operative transfusion improve outcomes?	H		
		Does improving Hb preoperatively improve outcomes?	H		
		Would you try iron therapy first?	H		
		what is best regime for managing pre-op anaemia for elective surgical patients (where there is time to give iron)	Question not derived from the survey but from another source.		

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
		Treatment for women with postpartum iron deficiency anaemia. Implications for research: After 40 years of research and 22 included studies on the subject, we are still not able to make a clear statement on how we should treat the clinical consequences of postpartum iron deficiency anaemia. The reasons for this are trial quality, the chosen interventions, the chosen outcomes and the many different study designs. Researchers tend to evaluate efficacy trough Hb values. The correlation between Hb levels and anaemia symptoms in postpartum women has not yet been clarified. We strongly encourage authors to choose clinically relevant outcomes, using validated measuring tools. Researchers should distinguish between anaemia symptoms and adverse effects of treatment to evaluate the overall clinical effect. Also, researchers should choose clinically relevant time points during follow-up. Studies should report on survival and severe morbidity in all study participants. Trials should be designed following the CONSORT Consolidated Standards of Reporting Trials) guidelines in order to minimise sources of bias. We encourage future researchers to conduct more randomised controlled trials on the treatment for postpartum iron deficiency anaemia focusing on interventions such as oral iron and IV iron treatment, comparing these with each other or placebo. Multicentre trials with large populations are encouraged. Due to the risk of irreversible adverse effects to mother and child, RBC transfusion studies should be reserved for bleeding or severe anaemia, and care should be taken to monitor all adverse effects, including allo-immunisation. Also, it is of great importance to investigate the long-term effects of any treatment on both mother and child.	Question not derived from the survey but from another source.	13. Peyrin-Biroulet L, Williet N, Cacoub P. Guidelines on the diagnosis and treatment of iron deficiency across indications: a systematic review. American Journal of Clinical Nutrition. 2015;102(-6):1585-94. 14. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58-. 15. Nielsen OH, Ainsworth M, Coskun M, Weiss G. Management of iron-deficiency anemia in inflammatory bowel disease: a systematic review. Medicine. 2015;94(-23):e963-e. 16. Ng O, Keeler BD, Mishra A, Simpson A, Neal K, Brookes MJ, et al. Iron therapy for pre-operative anaemia. Cochrane Database of Systematic Reviews. 2015(-12):CD011588-CD. 17. Markova V, Norgaard A, Jorgensen KJ, Langhoff-Roos J. Treatment for women with postpartum iron deficiency anaemia. Cochrane Database of Systematic Reviews. 2015(-8):CD010861-CD. 18. Jin HX, Wang RS, Chen SJ, Wang AP, Liu XY. Early and late iron supplementation for low birth weight infants: a meta-analysis. Italian Journal of Pediatrics. 2015;41(1):16-. 19. Hogan M, Klein AA, Richards T. The impact of anaemia and intravenous iron replacement therapy on outcomes in cardiac surgery. European Journal of Cardio-Thoracic Surgery. 2015;47(2):218-26. 20. Borstlap WA, Stellingwerf ME, Moolla Z, Musters GD, Buskens CJ, Tanis PJ, et al. Iron therapy for the treatment of preoperative anaemia in patients with colorectal carcinoma: a systematic review. Colorectal Disease. 2015;17(-12):1044-54. 21. Bauer M, Ressl S, Walter E. Iron deficiency in patients with chronic heart failure: a systematic literature review. Value in Health. 2015;18(-7):A405-A. 22. Avni T, Amir B, Alon G, Hefziba G, Leonard L, Anat GG. The safety of intravenous iron preparations: systematic review and meta-analysis. Mayo Clinic Proceedings. 2015;90(1):12-23.	
		Should we use more iron/epo therapy in ICU, rather than transfusions?	B H		
		If a healthy woman refuses to have a blood transfusion (recommended after childbirth because of hb7 for e.g.), how long, on average, would it take for her hb to recover to a normal level by taking an iron supplement?	B H		
		Iron therapy for pre-operative anaemia. Implications for research: Higher quality studies are required to determine the efficacy of iron therapy for the treatment of pre-operative anaemia. Ideally these should be adequately powered large multi-centre trials across the surgical specialities. They should include only anaemic patients and assess for iron deficiency. Outcome measurements should include some measure of quality of life, post-operative complications, morbidity and mortality in addition to the haematological parameters and frequency of allogeneic blood transfusion reported in current studies. It will be important in the design of any future studies to also include strict transfusion guidelines and definitions of iron deficiency.	Question not derived from the survey but from another source.		
DtTr28	How cost effective is cell salvage* for the avoidance of transfusion of donor blood during major surgery?	How can we use cell salvage to reduce the need for donor blood?	H	NICE Guideline Recommendations: Alternatives to blood transfusion for patients having surgery: Cell salvage and tranexamic acid 8. Do not routinely use cell salvage without tranexamic acid. 9. Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery). Other refs: 1. Liu JM, Fu BQ, Chen WZ, Chen JW, Huang SH, Liu ZL. Cell salvage used in scoliosis surgery: is it really effective? World Neurosurgery. 2017. May;101:568-576 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13. 3. Xie H, Pan JK, Hong KH, Guo D, Fang J, Yang WY, et al. Postoperative autotransfusion drain after total hip arthroplasty: a meta-analysis of randomized controlled trials. Scientific Reports. 2016 Jul 1;6:27461. doi: 10.1038/srep27461 4. Stone N, Sardana V, Missiuna P. Indications and outcomes of cell saver in adolescent scoliosis correction surgery: a systematic review. Spine. 2017 Mar 15;42(6):E363-E370. doi: 10.1097/BRS.0000000000001780. 5. Pawaskar A, Salunke AA, Kekatpure A, Chen Y, Nambi GI, Tan J, et al. Do autologous blood transfusion systems reduce allogeneic blood transfusion in total knee arthroplasty? Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016. 6. Pan JK, Hong KH, Xie H, Luo MH, Guo D, Liu J. The efficacy and safety of autologous blood transfusion drainage in patients undergoing total knee arthroplasty: a meta-analysis of 16 randomized controlled trials. Bmc Musculoskeletal Disorders. 2016;17(-1):452-. 7. Meybohm P, Choorapoikayil S, Wessels A, Herrmann E, Zacharowski K, Spahn DR. Washed cell salvage in surgical patients: a review and meta-analysis of prospective randomized trials under PRISMA. Medicine. 2016;95(-31):e4490-e. 8. Hong KH, Pan JK, Yang WY, Luo MH, Xu SC, Liu J. Comparison between autologous blood transfusion drainage and closed-suction drainage/no drainage in total knee arthroplasty: a meta-analysis. Bmc Musculoskeletal Disorders. 2016;17(-1):142-. 9. Barile L, Fominskiy E, Di Tomasso N, Alpizar Castro LE, Landoni G, De Luca M, et al. Acute normovolemic hemodilution reduces allogeneic red blood cell transfusion in cardiac surgery: a systematic review and meta-analysis of randomized trials. Anesthesia and Analgesia. 2017 Mar;124(3):743-752. 10. Zhou X, Zhang C, Wang Y, Yu L, Yan M. Preoperative acute normovolemic hemodilution for minimizing allogeneic blood transfusion: a meta-analysis. Anesthesia & Analgesia. 2015;121(-6):1443-55. 11. Xie J, Feng X, Ma J, Kang P, Shen B, Yang J, et al. Is postoperative cell salvage necessary in total hip or knee replacement? A meta-analysis of randomized controlled trials. International Journal Of Surgery. 2015;21:135-44. 12. White N, Bayliss S, Moore D. Systematic review of interventions for minimizing perioperative blood transfusion for surgery for craniosynostosis. Journal of Craniofacial Surgery. 2015;26(1):26-36. 13. Li J, Sun SL, Tian JH, Yang K, Liu R, Li J. Cell salvage in emergency trauma surgery. Cochrane Database of Systematic Reviews. 2015(1):CD007379-CD. 14. Al-Khabori M, Al-Riyami A, Siddiqi S, Al-Sabti H. Cell salvage during cardiac surgery may decrease red blood cell transfusion: a systematic review and meta-analysis. Haematologica. 2015;100((S1)):138-9.	Y
		Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the wider economic costs and benefits of alternative autologous techniques?	Question not derived from the survey but from another source.		
		Are we using Autologous blood systems efficiently?	703		
		Allogeneic blood is a precious and life saving resource. but need to be used wisely and only in situations where it is unavoidable. There are many situations where 'cell salvage' can be used to minimise the use of allogeneic blood but is not currently in wide practice. How can we ensure that this 'recycling' of spilt blood is encouraged.	H		
		Is there a risk of disseminating micrometastases when reinfusing cell saved blood	H		
		Can the use of cell salvage be expanded?	H		
		Why the current cell savers are not efficient enough to avoid blood transfusion	B H		
		How do we promote cell salvage so it is routine	R B H		
		How can cell salvage be better resourced within hospitals? (Money and trained staff)	NK		
		How can cell salvage machines be adapted for low income countries? (e.g. simplified, battery back-up, works in high temperatures))	B		
		How can we make cell salvage better for major haemorrhage situations	B H		
		Post-operative cell salvage: For patients having cardiac surgery with a significant risk of post-operative blood loss, is post-operative cell salvage and reinfusion clinically and cost effective in reducing red blood cell use and improving clinical outcomes, compared with existing practice	Question not derived from the survey but from another source.		
		Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: Are combinations of autologous blood transfusion techniques feasible, effective and cost-effective?	Question not derived from the survey but from another source.		

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		Could the volume of blood collected with cell salvage machines be improved so that it would be worth using this tool for more operations?	P R B H		
		Can more research be done into cell saver technology as standard rather than relying on donation	P H		
		Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the long term effects of transfusion on survival and the long-term effects of the serious hazards of transfusion on survival, health status and health related quality of life?	Question not derived from the survey but from another source.		
		Cell Saver technique, is it proven method of reducing bank blood transfusions ?	B H		
		Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the benefits clinically and as regards patient preferences of avoiding allogeneic blood transfusion by giving autologous transfusion instead?	Question not derived from the survey but from another source.		
		Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: (as addendum to the research recommendation) Do these benefits vary by procedure, timing and technique of cell salvage?	Question not derived from the survey but from another source.		
		Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion:	Question not derived from the survey but from another source.		
		Cell salvage in emergency trauma surgery. Implications for research: We identified only one study that met the inclusion criteria for this review. In the future, multicentre, methodologically rigorous trials are needed to assess the relative efficacy, safety and cost-effectiveness of cell salvage in different surgical procedures.	Question not derived from the survey but from another source.		
		Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: Is acute normovolaemic haemodilution more effective and cost-effective than cell salvage?	Question not derived from the survey but from another source.		
DTtR18	Are drugs* a cost effective alternative to blood transfusion for the management of anaemia? *Drug alternatives are medicines that can be used in place of a blood transfusion, for examples drugs such as iron and recombinant erythropoetin for the treatment of anaelia.	What alternatives provide the best outcome	P B H	1. NICE Guideline Recommendations 1-5: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin 1. Do not offer erythropoietin to reduce the need for blood transfusion in patients having surgery, unless: • the patient has anaemia and meets the criteria for blood transfusion, but declines it because of religious beliefs or other reasons or • the appropriate blood type is not available because of the patient's red cell antibodies. 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence) • are diagnosed with functional iron deficiency • are diagnosed with iron-deficiency anaemia, and the interval between the diagnosis of anaemia and surgery is predicted to be too short for oral iron to be effective. 4. For guidance on managing anaemia in patients with chronic kidney disease, see the NICE guideline on anaemia management in chronic kidney disease. 5. For guidance on managing blood transfusions for people with acute upper gastrointestinal bleeding, see section 1.2 in the NICE guideline on acute upper gastrointestinal bleeding. NICE Guideline Recommendations 6-9: Alternatives to blood transfusion for patients having surgery: Cell salvage and tranexamic acid 6. Offer tranexamic acid to adults undergoing surgery who are expected to have at least moderate blood loss (greater than 500 ml) 7. Consider tranexamic acid for children undergoing surgery who are expected to have at least moderate blood loss (greater than 10% blood volume). 8. Do not routinely use cell salvage without tranexamic acid. 9. Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery). 2. Li C, Gong Y, Dong L, Xie B, Dai Z. Is prophylactic tranexamic acid administration effective and safe for postpartum hemorrhage prevention? A systematic review and meta-analysis. Medicine. 2017;96(-1):e5653-e. 3. Ray S, Ray A. Non-surgical interventions for treating heavy menstrual bleeding (menorrhagia) in women with bleeding disorders. The Cochrane Database of Systematic Reviews. 2016(-11):CD010338-CD. 4. Prutsky G, Domecq JP, Salazar CA, Accinelli R. Antifibrinolytic therapy to reduce haemoptysis from any cause. The Cochrane Database of Systematic Reviews. 2016(-11):CD008711-CD. 5. Jiang M, Chen P, Gao Q. Systematic review and network meta-analysis of upper gastrointestinal hemorrhage interventions. Cellular Physiology and Biochemistry : International Journal of Experimental Cellular Physiology, Biochemistry, and Pharmacology. 2016;39(-6):2477-91. 6. Roberts I, Shakur H, Ker K, Coats T, collaborators C-T. Antifibrinolytic drugs for acute traumatic injury. Cochrane Database of Systematic Reviews. 2015;5:CD004896-CD. 7. Marti-Carvajal AJ, Sola I. Antifibrinolytic amino acids for upper gastrointestinal bleeding in people with acute or chronic liver disease. Cochrane Database of Systematic Reviews. 2015(-6):CD006007-CD. 8. Alam A, Choi S. Prophylactic use of tranexamic acid for postpartum bleeding outcomes: a systematic review and meta-analysis of randomized controlled trials. Transfusion Medicine Reviews. 2015;29(-4):231-41.	Y
		Minimising the use of donated blood and blood products, without compromising patient safety	R B H		
		Alternatives to transfusion in children	R B H		
		What are the alternatives to receiving a blood transfusion?	R B		
		Why are alternatives to transfusions not more widely offered.	NK		
		What strategies exist to avoid transfusion in chronic anaemia?	B H		
		How can we minimize blood transfusions?	H		
		Alternatives to blood transfusion	H		
		what happens when an individual cannot receive transfusion due to reaction	P H		
		When considering transfusion alternatives, how can more money be put into researching these alternatives and sharing the knowledge of these alternatives?	NK		
		Alternative strategies	H		
		What are the alternatives to blood transfusion	R		
		What are all the alternatives to transfusion?	H		
		If an alternative is appropriate, how efficient is this compared to transfusion?	H		
		Alternative options for blood products to treat patients needing transfusion	B R H		
		What further can be done to mitigate the need for a transfusion	NK		
		The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: It may also be helpful to explore reasons why improved anaemia may lead to better outcomes; that is, whether ESAs allow better compliance with chemotherapy.	Question not derived from the survey but from another source.		
		The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: More evidence is needed to assess the impact of Hb normalisation on utility. If clinical studies of normalisation are conducted it would also be valuable for HRQoL outcomes to be measured, preferably using the EQ-5D or another universal HRQoL questionnaire, so that incremental QALYs resulting from normalising from a higher Hb level can be modelled directly rather than by using the surrogate of Hb level.	Question not derived from the survey but from another source.		

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	Early versus delayed erythropoietin for the anaemia of end-stage kidney disease. Implications for research: This Cochrane Review has highlighted a need for well-designed, high-quality RCTs to assess the benefits and harms of early versus delayed erythropoietin for the anaemia of end-stage kidney disease. The potential study should include main clinical outcomes (patients-oriented outcomes) such as all-cause mortality, cardiovascular mortality, quality of life, adverse events and cardiovascular events according to their occurrence during study follow-up. The study should be reported according to the Consolidated standards of reporting trials (CONSORT) statement for improving the quality of reporting of efficacy and to get better reports of harms in clinical research (Ioannidis 2004; Moher 2010; Turner 2012). Future studies should be planned according to the recommendations of Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT) (Chan 2013a; Chan 2013b) and the Foundation of Patient-Centered Outcomes Research (Gabriel 2012; PCORI 2012). Future studies should be conducted by independent researchers and reported according to the Consolidated Standards of Reporting Trials (CONSORT) guidelines (Ioannidis 2004; Moher 2010) and using the Foundation of Patient-Centered Outcomes Research recommendations (Gabriel 2012; PCORI 2012).	Question not derived from the survey but from another source.	
	Recombinant human erythropoietin versus placebo or no treatment for the anaemia of chronic kidney disease in people not requiring dialysis. Implications for research: A future RCT to look specifically at whether rHuEPO can delay or hasten RRT in patients with chronic kidney failure is required. Nephrology is a low volume specialty and multicentre studies are therefore necessary to recruit sufficient numbers to achieve acceptable statistical power. Further RCTs should be designed to be large enough and of long enough duration to address this question adequately. These studies could also examine the proposition that a patient with a higher haemoglobin is in better health and better able to cope with the commencement of dialysis when it is eventually necessary. Hospitalisation duration for initiation of dialysis, hospitalisation rates and mortality for the first three months of RRT should provide further relatively hard end-points. Considering the demonstrable effectiveness of rHuEPO in improving haemoglobin it may be impossible to blind health care providers effectively in such a study.	Question not derived from the survey but from another source.	
	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: If ESAs are thought to have a major potential for improving cancer care, large RCTs meeting current methodological and reporting standards with adequate follow-up are needed to evaluate ESAs as administered in line with current marketing authorisations (including licence criteria for Hb levels)	Question not derived from the survey but from another source.	
	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: There is a need for improved estimates of the impact of ESAs on tumour response and mortality; if these estimates are neutral or slightly beneficial it is plausible that ESAs could be cost-effective.	Question not derived from the survey but from another source.	
	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: There should be assessment of the frequency of the key potential AEs related to ESA administration.	Question not derived from the survey but from another source.	
	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: More data are needed to assess the impact of ESAs on HRQoL. Such studies should include the effect of ESAs on the EQ-5D.	Question not derived from the survey but from another source.	
	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: In addition to new trials it may be valuable to revisit the Cochrane IPD meta-analysis7 and select studies that better fit 'licensed recommendations' with respect to Hb criteria and dose administered.	Question not derived from the survey but from another source.	
	What are best regimes for managing immediate peri-operative anaemia in various common conditions e.g. emergency laparotomy, hip fracture, distal femur fracture (could include Hb transfusion trigger or other agents e.g. tranexamic acid)	H	
	What cheaper alternatives are their to blood transfusion	NK	
	What are alternative options to a transfusion	B	
	What alternatives are there to blood transfusions	H	
	Are we doing enough with patient blood management?	B H	

The 50 questions included in the interim survey

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
DTtR18b	What are the best drug alternatives* to blood transfusion to reduce the need and prevent bleeding in no-surgical patients? *Drug alternatives are medicines that can be used in place of a blood transfusion or example tranexamic acid, desmopressin, aprotinin and fibrin sealants for the prevention of bleeding.	Antifibrinolytic amino acids for upper gastrointestinal bleeding in people with acute or chronic liver disease. Implications for research: This updated Cochrane review has identified the need for well-designed, adequately powered randomised clinical trials to assess the benefits and harms of antifibrinolytic amino acids in people with upper gastrointestinal bleeding due to acute or chronic liver disease. According to Brown 2006, questions such as the following could be answered using randomised clinical trials. What regimen is most effective: single or combined? When can intravenous antifibrinolytic regimens be switched to oral administration? The randomised clinical trials should include participant-relevant clinical outcomes such as mortality, failure to control bleeding, and adverse events. Potential trials should be planned according to SPIRIT (Standard Protocol Items: Recommendations for Interventional Trials) statement (Chan 2013a; Chan 2013b). The trials should be reported according to the CONSORT (CONsolidated Standards Of Reporting Trials) statement (Moher 2010), which helps in improving the quality of reporting of benefits and harms in clinical research (Ioannidis 2004; Moher 2010). Trials should include participant-centred outcomes such as mortality, re-bleeding, and serious and non-serious adverse events as recommended by the Patient-Centered Outcomes Research Institute (P-CORI) statement (Selby 2013; Frank 2014; Selby 2014).	Question not derived from the survey but from another source.	1. Zhang P, Liang Y, Chen P, Fang Y, He J, Wang J. 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Jiang X, Ma XL, Ma JX. Efficiency and safety of intravenous tranexamic acid in simultaneous bilateral total knee arthroplasty: a systematic review and meta-analysis. Orthopaedic Surgery. 2016;8(-3):285-93.	
		Tranexamic acid for preventing postpartum haemorrhage. Implications for research: Further research is needed to examine the effects of TA on maternal mortality, severe morbidity and thromboembolic events. Studies assessing TA for preventing PPH in high-risk women with placenta praevia, placental abruption, uterine rupture and other conditions causing PPH are important. Comparison of different doses of TA as well as prophylactic use of TA without prophylactic uterotonics is necessary, using large, well-designed trials.	Question not derived from the survey but from another source.		
		Antifibrinolytic drugs for acute traumatic injury. Implications for research: The knowledge that TXA safely reduces the risk of death from traumatic bleeding raises the possibility that it might also be effective in other situations where bleeding can be life threatening or disabling and further research is warranted to explore this potential. Randomised trials involving patients with isolated traumatic brain injury (TBI) that assess both mortality and disability outcomes are required before TXA can be recommended for use in these patients. The ongoing NCT01402882 trial with a planned sample size of 10,000 patients with TBI and the planned trial of prehospital TXA in TBI (NCT01990768), will contribute to resolving the uncertainty about the effects of TXA in this group.	Question not derived from the survey but from another source.		
		Antifibrinolytics (lysine analogues) for the prevention of bleeding in people with haematological disorders. Implications for research: The only evidence available is for adults with acute leukaemia receiving chemotherapy. We await the results of the two ongoing trials that are expected to recruit 916 participants in total by 2020. These studies are recruiting adults with a mixture of haematological malignancies. There is currently no evidence for the use of antifibrinolytics in children with haematological disorders who are thrombocytopenic and usually require treatment with platelet transfusions and there are no ongoing studies that include children.	Question not derived from the survey but from another source.		
DtTr3	How can patients, relatives and carers be empowered to have greater say about their choices in relation to blood transfusion and it's alternatives?	Could alternatives be further explained to patients prior to transfusion route?	B H	1. NICE Guideline Recommendations: Patient information 43. Provide verbal and written information to patients who may have or who have had a transfusion, and their family members or carers (as appropriate), explaining: • the reason for the transfusion • the risks and benefits • the transfusion process • any transfusion needs specific to them • any alternatives that are available, and how they might reduce their need for a transfusion • that they are no longer eligible to donate blood • that they are encouraged to ask questions. 44. Document discussions in the patient's notes. 45. Provide the patient and their GP with copies of the discharge summary or other written communication that explains: • the details of any transfusions they had • the reasons for the transfusion • any adverse events • that they are no longer eligible to donate blood. 46. For guidance on communication and patient-centred care for adults, see the NICE guideline on patient experience in adult NHS services	Y
		How can the world of medicine become more open minded with patients who do no desire a blood transfusion as treatment	H		
		Should people about to undergo transfusion be counselled about their future ability to donate blood?	P B H		
		How do we improve public perception that having a blood transfusion is not the "answer to everything"	H		
		How could we empower patients to improve anaemia?	R H		
		Once a decision is made, why are Jehovah's Witnesses put under pressure to change their minds?	NK		
		Why are there so many different blood products. How do I know which is right for me?	R B H		
		Why was I put under pressure by hospital staff to change my decision to avoid blood and its derivatives?	NK		
		Where blood products are refused are there still clinicians who consider this an affront to their superior knowledge?	NK		
		Is it automatically assumed that the traditional use of blood products is the only option, or is it standard practise to advise patients of alternatives?	NK		
		Transfusion Avoidance	R B H		
		Do I really need a transfusion?	R B H		
		How can I be sure that my wishes regarding the avoidance of blood transfusion will be respected?	NK		
		How can patients be empowered to ensure they get only appropriate transfusion?	H		

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
		How much information is given to patients so that they can make an individual choice whether to have blood or alternatives?	NK		
		To avoid a blood transfusion how can I build up my red blood cell count	B		
		How could we empower patients to avoid unnecessary transfusion?	R H		
		We need more of an awareness of the alternatives to blood transfusion. It should not always be the first thing thought of when a patient presents with a low Hb. Lets think about optimising with oral iron/IV iron/ Health Promotion on diet and be strict on a cut off point if the patient is asymptomatic. Are all patients being told that they cannot be a blood donor once they have become a receiver? Perhaps this may give cause for the patient to think further about receiving in cases where they are asymptomatic and other forms are optimisation may be as effective for them?	H		
		What information is available to tell people if the alternatives to a blood transfusion?	R B H		
DtTr10b	At what haemoglobin level [blood count] should a non-surgical, general medical patient receivce a blood transfusion?	At what haemoglobin level should blood transfusion be considered for critical care patients.	R B H	1. NICE Guideline Recommendations: 13. Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not: • have major haemorrhage or • have acute coronary syndrome or • need regular blood transfusions for chronic anaemia. 14. When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 g/litre and a haemoglobin concentration target of 70–90 g/litre after transfusion. 16. Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia. Other refs: 1. Odutayo A, Desborough MJ, Trivella M, Stanley AJ, Doree C, Collins GS, et al. 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Estcourt LJ, Desborough M, Hopewell S, Doree C, Stanworth SJ. Comparison of different platelet transfusion thresholds prior to insertion of central lines in patients with thrombocytopenia. Cochrane Database of Systematic Reviews. 2015(-12):CD011771-CD. 15. English SW, Chasse M, Turgeon AF, Tinmouth A, Boutin A, Pagliarello G, et al. Red blood cell transfusion and mortality effect in aneurysmal subarachnoid hemorrhage: a systematic review and meta-analysis protocol. Systems Review. 2015;4(-1):41-. 16. Crighton GL, Estcourt LJ, Wood EM, Trivella M, Doree C, Stanworth S. A therapeutic-only versus prophylactic platelet transfusion strategy for preventing bleeding in patients with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-9):CD010981-CD. 17. Chan AW, de Gara CJ. An evidence-based approach to red blood cell transfusions in asymptomatically anaemic patients. 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		Transfusion threshold in different situations and context. e.g. TRICC/other trials guide us but for what length of duration in ICU stay does these trials apply? Surely situation at day 20 is very different that day 2.	B H		
		Transfusion thresholds for general intensive care patients with and without acute coronary syndromes	H		
		Restrictive policies for medical patients for both blood and platelets	H		
		transfusion trigger in the critically ill	B H		
		what is the correct Hb to transfuse in the postnatal period given that maternal physiology is so different from standard adults	H		
		What is the optimal blood transfusion threshold for patients at different stages in the evolution of critical illness?	R B H		
		What is the best threshold for blood transfusion on the ICU?	B H		
		What is the optimum level ([hb]) to transfuse red cells in the severely ill patient	H		
DtTr8	Do patients and their relatives and/or carers receive enough information to help them understand about blood transfusion?	Are patients given enough information about the potential side effects ?	P B H	1. NICE Guideline Recommendations: Patient information 43. Provide verbal and written information to patients who may have or who have had a transfusion, and their family members or carers (as appropriate), explaining: • the reason for the transfusion • the risks and benefits • the transfusion process • any transfusion needs specific to them • any alternatives that are available, and how they might reduce their need for a transfusion • that they are no longer eligible to donate blood • that they are encouraged to ask questions. 44. Document discussions in the patient's notes. 45. Provide the patient and their GP with copies of the discharge summary or other written communication that explains: • the details of any transfusions they had • the reasons for the transfusion • any adverse events • that they are no longer eligible to donate blood. 46. For guidance on communication and patient-centred care for adults, see the NICE guideline on patient experience in adult NHS services	Y
		Are there any requirements or preparations I need to do before receiving a blood transfusion?	P		
		Did you understand the information provided to you before you were given a Blood Transfusion?	H		
		do patients receive enough information about blood transfusion	B H		
		How can I be sure the transfusion is safe.	P		
		How can we reassure the public that the transfusion is virus free	H		
		How certain are you that patients understand the risks of blood transfusions?	R B H		
		How certain are you that patients understand the risks of blood transfusions?	R B H		
		How do I explain side effects	R B H		
		How do I know that my transfusion blood is free from any health conditions that could be detrimental to me	R B		
		How do we best inform/consent patients for blood transfusion	H		
		How effective is the consent process for patients? Do recipients of blood products really understand the risks and benefits?	R B H		

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
		How much chance is there of getting illness through transfused blood	P		
		How well are the risks associated with blood transfusion conveyed to potential recipients?	R H		
		How well recipient of transfusion know the adverse reactions?	P B H		
		if I have a blood transfusion am I likely to stay in hospital longer	B H		
		If I needed an operation how much blood would I need?	B		
		if I have a blood transfusion is my cancer more likely to reoccur	B H		
		If I have a blood transfusion, can I be sure that I won't catch any viruses from it?	B		
		In non urgent transfusions is it possible to discuss with the recipient if requested the moral/ethical/religious implications of accepting someone else's blood into their body?	P		
		Is it possible that my body will reject or react badly to blood from a transfusion?	B		
		Is receipt of a blood transfusion protective against allergic disorders?	H		
		What are the dangers from a blood transfusion	B		
		What are the implications of receiving blood...like a leaflet to read	P		
		What are the known risks?	R B H		
		How do I know I have had a blood transfusion?	B		
		I don't think anyone is actually informed about what they received, how much and why.	R B H		
		Why do we not give relatives a simple comprehensive information leaflet when their relative is having a transfusion	H		
DtTr13	What is the optimal blood transfusion dose [number of units] [in any situation] for maximum patient benefit?	Is it better to give a little blood, i.e. 1 unit at a time to top a patient up in the BMT process rather than say a 3 unit transfusion to last a longer time.	B H	1. NICE Guideline Recommendations: 17. Consider single-unit red blood cell transfusions for adults (or equivalent volumes calculated based on body weight for children or adults with low body weight) who do not have active bleeding. 18. After each single-unit red blood cell transfusion (or equivalent volumes calculated based on body weight for children or adults with low body weight), clinically reassess and check haemoglobin levels, and give further transfusions if needed. 1. Torres ME, Rodriguez JN, Ramos JL, Gomez FA. Transfusion in palliative cancer patients: a review of the literature. Journal of Palliative Medicine. 2014;17(1):88-104	Y
		Why do blood transfusions always include two units and not just one?	P		
		How much blood can one transfuse in an acute setting?	H		
DTtR18a	Are drugs* an effective alternative to blood transfusion for the prevention of bleeding in patients undergoing surgery? *drug alternatives are medicines that can be used in pl;ace of a blood transfusion, for example tranexamic acid, desmopressin, aprotinin and fibrin sealants for the prevention of bleeding.	IS IT TIME for a risk-adjusted, retrospective trial comparing "bloodless" and transfusion strategies in the UK?	NK	1. Ray S, Ray A. Non-surgical interventions for treating heavy menstrual bleeding (menorrhagia) in women with bleeding disorders. The Cochrane Database of Systematic Reviews. 2016(-11):CD010338-CD. 2. Desborough MJ, Oakland KA, Landoni G, Crivellari M, Doree C, Estcourt LJ, et al. Desmopressin for treatment of platelet dysfunction and reversal of antiplatelet agents: a systematic review and meta-analysis of randomised controlled trials. Journal of Thrombosis & Haemostasis. 2016. 3. Desborough M, Hadjinicolaou AV, Chaimani A, Trivella M, Vyas P, Doree C, et al. 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		Trials at Johns Hopkins, Baltimore, Englewood,NJ in USA and in Brussels,Belgium indicate that there are similar or better outcomes with equivalent lower costs in the bloodless care group. If this is correct research should be undertaken in the UK	NK		
		Are drugs that are known to reduce blood loss and transfusion such as aprotinin and tranexamic acid being used appropriately in all suitable patients	H		
		Novel haemostatic agents either given topically or intravenously to arrest haemorrhage	B H		
		Optimisation of surgical patients using alternative techniques to avoid blood transfusion - in particular safe low levels of Hb	B H		
		Can drugs, such as desmopressin or tranexamic acid, be used instead of fresh frozen plasmaor platelets to prevent bleeding for people undergoing invasive procedures?	H		
		Effectiveness of tranexamic acid in reducing blood loss during cytoreductive surgery for advanced ovarian cancer. Implications for research: There is a need for an adequately sized, placebo-controlled trial with a well-defined protocol for blood transfusion and a protocol for evaluating tranexamic acid-related adverse events to shed more light on the effectiveness of tranexamic acid given perioperatively to reduce blood loss during cytoreductive surgery for advanced ovarian cancer.	Question not derived from the survey but from another source.		
		What are the risks and benefits of tranexamic acid when trying to avoid blood transfusion for hip fracture surgery?	R B H		
		Fibrin sealants for the prevention of postoperative pancreatic fistula following pancreatic surgery. Implications for research: Further trials with low risk of bias and sufficient sample size are necessary to assess various fibrin sealants (e.g. glue, patch) for preventing postoperative pancreatic fistula. Future trials should report the rate and the grade of the postoperative pancreatic fistula according to the definition of the International Study Group on Pancreatic Fistula (Bassi 2005). Future randomized trials should use adequate methods of randomization and allocation concealment. Future trials need to employ blinding of participants and outcome assessors.	Question not derived from the survey but from another source.		

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
		The role and optimal use of alternatives like desmopressin/tranexamic acid to cover invasive procedures in sick patients	B H	5. White N, Bayliss S, Moore D. Systematic review of interventions for minimizing perioperative blood transfusion for surgery for craniosynostosis. Journal of Craniofacial Surgery. 2015;26(1):26-36. . Bajwa MS, Tudur-Smith C, Shaw RJ, Schache AG. Fibrin sealants in soft-tissue surgery of the head and neck: a systematic review and meta-analysis of randomised controlled trials. Clinical Otolaryngology : Official Journal of Ent-Uk ; Official Journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery. 2017. 2. Weniger M, D'Haese JG, Crispin A, Angele MK, Werner J, Hartwig W. Autologous but not fibrin sealant patches for stump coverage reduce clinically relevant pancreatic fistula in distal pancreatectomy: a systematic review and meta-analysis. World Journal of Surgery. 2016. 3. Wang Z, Xiao L, Guo H, Zhao G, Ma J. The efficiency and safety of fibrin sealant for reducing blood loss in primary total hip arthroplasty: a systematic review and meta-analysis. International Journal of Surgery (London, England). 2016;37:50-7. 4. Li J, Li HB, Zhao XC, Qin L, Jiang XQ, Zhang ZH. A systematic review and meta-analysis of the topical administration of fibrin sealant in total hip and knee arthroplasty. International Journal of Surgery (London, England). 2016. 5. Kayaalp C, Ertugrul I, Tolan K, Sumer F. Fibrin sealant use in pilonidal sinus: systematic review. World Journal of Gastrointestinal Surgery. 2016;8(-3):266-73. 6. Gao F, Ma J, Sun W, Guo W, Li Z, Wang W. Topical fibrin sealant versus intravenous tranexamic acid for reducing blood loss following total knee arthroplasty: a systematic review and meta-analysis. International Journal of Surgery (London, England). 2016. 7. Esposito F, Angileri FF, Kruse P, Cavallo LM, Solari D, Esposito V, et al. Fibrin sealants in dura sealing: a systematic literature review. PLoS ONE [Electronic Resource]. 2016;11(-4):e0151533-e. 8. Edwards SJ, Crawford F, van Velthoven MH, Berardi A, Osei-Assibey G, Bacelar M, et al. The use of fibrin sealant during non-emergency surgery: a systematic review of evidence of benefits and harms. Health Technology Assessment (Winchester, England). 2016;20(-94):1-224. 9. Cheng Y, Ye M, Xiong X, Peng S, Wu HM, Cheng N, et al. Fibrin sealants for the prevention of postoperative pancreatic fistula following pancreatic surgery. The Cochrane Database of Systematic Reviews. 2016(-2):CD009621-CD. 10. Yang TQ, Geng XL, Ding MC, Yang MX, Zhang Q. The efficacy of fibrin sealant in knee surgery: A meta-analysis. Orthopaedics & traumatology, surgery & research. 2015;101(-3):331-9. 11. Li ZJ, Fu X, Tian P, Liu WX, Li YM, Zheng YF, et al. Fibrin sealant before wound closure in total knee arthroplasty reduced blood loss: a meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy. 2015;23(-7):2019-25. 12. Lee KT, Mun GH. Fibrin sealants and quilting suture for prevention of seroma formation following latissimus dorsi muscle harvest: a systematic review and meta-analysis. Aesthetic Plastic Surgery. 2015;39(-3):399-409. 13. Weldrick C, Bashar K, O'Sullivan TA, Gillis E, Clarke Moloney M, Tang TY, et al. A comparison of fibrin sealant versus standard closure in the reduction of postoperative morbidity after groin dissection: A systematic review and meta-analysis. European Journal of Surgical Oncology. 2014;40(11):1391-8. 14. Wang H, Shan L, Zeng H, Sun M, Hua Y, Cai Z. Is fibrin sealant effective and safe in total knee arthroplasty? A meta-analysis of randomized trials. Journal of Orthopaedic Surgery. 2014;9(36). 15. Orci LA, Oldani G, Berney T, Andres A, Mentha G, Morel P, et al. Systematic review and meta-analysis of fibrin sealants for patients undergoing pancreatic resection. [Review]. HPB. 2014;16(1):3-11. 16. Liu J, Cao JG, Wang L, Ma XL. Effect of fibrin sealant on blood loss following total knee arthroplasty: a systematic review and meta-analysis. International Journal Of Surgery. 2014;12(2):95-102. 17. Sanjay P, Watt DG, Wigmore SJ. Systematic review and meta-analysis of haemostatic and biliostatic efficacy of fibrin sealants in elective liver surgery. Journal of Gastrointestinal Surgery. 2013;17(4):829-36. 18. Rousou JA. Use of fibrin sealants in cardiovascular surgery: a systematic review. Journal of Cardiac Surgery. 2013;28(3):238-47. 19. Ding H, Yuan JQ, Zhou JH, Zheng XY, Ye P, Mao C, et al. Systematic review and meta-analysis of application of fibrin sealant after liver resection. Current Medical Research & Opinion. 2013;29(4):387-94. 20. Dhillon S. Fibrin sealant (Evicel®, Quixil®/Crosseal): a review of its use as	
		What is the evidence for systematic targeted preoperative haemoglobin optimisation reducing the rate of preoperative blood transfusion	H		
		Effectiveness of various methods of improving Hb preoperatively.	H		
		What are the best methods of preventing/ reducing haemorrhage during myomectomy?	B H		
		Antifibrinolytic agents for reducing blood loss in scoliosis surgery in children. Implications for research: Evidence demonstrating reduced blood loss and less requirement for transfusion is based on very limited numbers of participants and is susceptible to publication bias. Therefore, larger studies are required to increase the robustness of our findings. Future studies should assess head-to-head comparisons of different antifibrinolytic drugs to identify any differences in effectiveness or safety. Studies should also enrol more patients with secondary scoliosis and should report results separately for this population. Optimal dosing regimens have not been established; studies employing different regimens for the same agent will help to clarify this question. Although challenging, we also recommend that the long-term safety of antifibrinolytic drugs in children should be evaluated in view of safety concerns with some antifibrinolytic drugs when used in adults.	Question not derived from the survey but from another source.		
D2	Why aren't previous recipients of a blood product transfusion allowed to be blood donors?	Why, if it's deemed as safe, to receive blood products can you no longer be a blood donor once you have been transfused?	P B H	No up-to-date evidence.	N
		Why are people not allowed to donate blood when they have had a transfusion even if it is many years ago?	B H		
		Why am I unable to donate after having a transfusion, surely the blood is checked before transfusing and is safe!?	B		
		is it safe for someone who has previously had a transfusion to donate blood subsequently	P B R H		
		Can you never ever give blood if you've had a transfusion?	P R H		
		I can no longer give blood due to having a blood transfusion 20yrs ago-what is being done to research this	P B H		
		How should we tell blood donors that they can never give blood again after receiving a blood transfusion	P B H		
		Why cannot patients who have received a transfusion then go on to donate?	B R H		
		Why can't people who have received a blood donation give blood?	R H		
		Why did I have to stop being a blood donor after having blood transfusions?	P B		
		I received a transfusion in 1997 and since then have been told I cannot give blood having been a recipient of a transfusion (I was informed this was standard practice). Is this likely to change in the future? What is the cause of this refusal?	P B		
		why can't I donate blood after receiving it	B		
		Why can't I donate blood after receiving a transfusion?	P H		
		When will you relax the restriction on people who have had blood transfusions from giving blood	B R		
		Why does having anti bodies following transfusion prevent any future blood donation?	R H		
		Why can individuals who have received blood prior to a certain date not donate?	P		
		Do we really still need to worry about CJD? This is preventing many possible donors from being able to donate when they have had blood themselves. Isn't it all theoretical now?	H		
		Why can't people who have had IVF donate?	R B H		
		Is vCJD really a legitimate concern for plasma donation in the UK?	H		

The 50 questions included in the interim survey

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
DtTr10g	At what haemoglobin level [blood count] should a patient who has experienced a haematological (blood or bone marrow) disorder receive a blood transfusion?	Comparison of a restrictive versus liberal red cell transfusion policy for patients with myelodysplasia aplastic anaemia and other congenital bone marrow failure disorders. Implications for research: As the incidence of MDS rises with an ageing population, many of whom are unable to tolerate curative therapy, further clinical trials with robust methodology are now required to develop the optimal transfusion strategy for such people.	Question not derived from the survey but from another source.		
		Patients with cancer/haematological malignancies/leukaemia/MDS, and production failure, what are the optimal red cell transfusion strategies	B H		
		Does transfusion to a haemoglobin >100 or >110 or >120 improve the quality of life of MDS patients?	B H		
		Red cell transfusion thresholds in the management of patients with AML	H		
		What is the optimal red cell transfusion threshold for patients with acute leukaemia receiving intensive treatment?	R B H		
DtTr10f	At what haemoglobin level [blood count] should a patient with cancer receive a blood transfusion?	There was no individual survey question generated on this topic.			
B&C 8	What is the psychological impact of blood transfusion on the patient?	Transfusion recipients feelings about the transfusion and its effect on them	P R B H	1. Brunskill SJ, Millette SL, Shokoohi A, Pulford EC, Doree C, Murphy MF, et al. Red blood cell transfusion for people undergoing hip fracture surgery. Cochrane Database of Systematic Reviews. 2015.	N
		Regular long-term red blood cell transfusions for managing chronic chest complications in sickle cell disease. Implications for research: There is a need for RCTs looking at the effect of long-term transfusion therapy on pulmonary hypertension and chronic sickle lung disease. The most likely starting point for any series of trials will be the effect of transfusion on existing pulmonary hypertension. The effect of transfusion on disease incidence and mortality would require trials with longer-term follow-on, making them more costly and conceptually more difficult. The definition of chronic sickle lung disease include is not agreed by consensus and this is a stumbling block for further studies in this area. New trials could consider using a combination of objective and subjective outcome measures. Effectiveness could be measured objectively, for example, through echocardiogram or pulmonary function testing, or subjectively by measuring symptoms such as chest pain on a standardised scale. Such trials might provide useful information on the rate of deterioration in chronic chest complications. Given the chronic nature of the condition, trials could consider measuring pre-intervention 'severity' using an extended baseline 'steady state' period. It should be remembered that transfusions may reduce symptoms such as breathlessness by increasing the haemoglobin level rather than having any beneficial effect per se on the chronic chest complication. Future RCTs in this area should have clear protocols for the aims of transfusion (such as a target haemoglobin level, or target sickle haemoglobin percentage) and how the long-term transfusion programme is to be carried out, for example, by simple or exchange transfusion. Possible transfusion complications are a key concern, and it would be important to collect information on the complications arising from long-term transfusion therapy in trial participants	Question not derived from the survey but from another source.		
		Blood transfusions for treating acute chest syndrome in people with sickle cell disease.Implications for research: We found only one very small randomised controlled trial; this is not enough to make any reliable conclusion to support the use of blood transfusion. This review highlights the need of further high quality research to provide reliable evidence for the effectiveness of these interventions for the relief of the symptoms of ACS in people with sickle cell disease.	Question not derived from the survey but from another source.		
		What is the psychological impact on a patient, of a blood transfusion?	R B H		
		Are the improvements in blood pressure after tansfusion related to simple mchanges in blood volumen or the nitric oxide scavenging effects of hamoglobin in stored blood increasing resting vascular tone and improving blood pressure by this mechanism? i.e. increasing after load as well as pre-load?	H		
		Does transfusion reduce length of stay after hip & knee replacement surgery?	B H		
		Did you feel better after your transfusion for anaemia? If so how quickly?	P R H		
		What are the early symptomatic benefits of blood transfusion after hip fracture?	R B H		
		Does receipt of a whole blood transfusion confer any cell mediated immunity on the recipient?	H		
		Does the body attempt a rejection process after transfusion?	Jehovah's Witness		
		What is the patient's perception on going through blood transfusion?	R H		

The 50 questions included in the interim survey

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
DtTr29	How should patients who refuse blood transfusion be managed?	What alternatives can be used to replace blood transfusion in Jehovah's witness patients who have sudden blood loss due to cardiac cath lab complications?	H	1. Han SB, Kim HJ, Kim TK, In Y, Oh KJ, Koh IJ, et al. Computer navigation is effective in reducing blood loss but has no effect on transfusion requirement following primary total knee arthroplasty: a meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016.	N
		how useful are coagulation factors without blood transfusion for Jehovah's witnesses	B H		
		What alternatives do you offer to people who do not wish to have a blood transfusion?	NK		
		Is it now time for retrospective controlled trials to be undertaken in the UK comparing patients who have refused blood transfusion in comparison with those in matching capacities who were transfused?	Jehovah's Witness		
		What alternatives to blood transfusion are best to treat sudden blood loss, in Jehovah's Witness patients, due to cardiac cath lab complications?	H		
		What safe alternatives are available for patients who do not want to receive blood transfusions	H		
		What safe alternatives exist for patients who do not want, or cannot receive, blood transfusions?	B H		
		Benefits from non-blood transfusion-alternative treatment	H		
D12b	What is the impact of iron deficiency on blood donors and how may its impact be prevented?	Research elsewhere suggests women would need iron supplements to prevent anaemia if donating more than twice a year, should this be included in recommendations?	B H	1. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58. Abstract No. 4C-S25-03.	N
B&C 9	What characteristics identify patients who would benefit from a blood transfusion?	What is the benefit of blood transfusion in patients with evidence of poor oxygen delivery/ organ dysfunction?	H	1. Hunt H; Stanworth S; Curry N; Woolley T; Cooper C; UkoumunneO; Zhelev Z; Hyde C. Thromboelastography (TEG) and rotational thromboelastometry (ROTEM) for trauma-induced coagulopathy in adult trauma patients with bleeding. Cochrane Database of Systematic Reviews. 2015;(2):CD010438	N
		How well does donated blood carry oxygen in particular for patients with respiratory disease?	R B H		
		what is the reason for blood transfusion?	R H		
		What should be the criteria for transfusion?	B H		
		Will it benefit my patient in the best possible way	R B H		
		blood products given to a lot of patients who should possibly not be given one-need robust data to decide	R B H		
		Does transfusion improve patient's outcome?	B H		
		What clinical markers should we use to show that patients have benefited from blood transfusion (particularly in preterm neonates)?	R H		
B&C2	How can the immediate side effects of receiving a blood transfusion be reduced?	What detrimental effects are caused my transfusing blood products in a surgical bleed?	R H	1. Li SL, Ye Y, Yuan XH. Association between allogeneic or autologous blood transfusion and survival in patients after radical prostatectomy: a systematic review and meta-analysis. Plos One. 2017;12(-1):e0171081-e. 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13. 3. Thongprayoon C, Cheungpasitporn W, Gillaspie EA, Greason KL, Kashani KB. Association of blood transfusion with acute kidney injury after transcatheter aortic valve replacement: A meta-analysis. World Journal of Nephrology. 2016;5(-5):482-8. 4. Mainou M, Alahdab F, Tobian AA, Asi N, Mohammed K, Murad MH, et al. Reducing the risk of transfusion-transmitted cytomegalovirus infection: a systematic review and meta-analysis. Transfusion. 2016. 5. Kim JL, Park JH, Han SB, Cho IY, Jang KM. Allogeneic blood transfusion is a significant risk factor for surgical-site infection following total hip and knee arthroplasty: a meta-analysis. The Journal of Arthroplasty. 2016. 6. Keir AK, Wilkinson D, Andersen C, Stark MJ. Washed versus unwashed red blood cells for transfusion for the prevention of morbidity and mortality in preterm infants. The Cochrane Database of Systematic Reviews. 2016(-1):CD011484-CD. 7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68. 8. Harnan S, Ren S, Gomersall T, Everson-Hock ES, Sutton A, Dhanasiri S, et al. Association between transfusion status and overall survival in patients with myelodysplastic syndromes: a systematic literature review and meta-analysis. Acta Haematologica. 2016;136(-1):23-42. 9. Cata JP, Lasala J, Pratt G, Feng L, Shah JB. Association between perioperative blood transfusions and clinical outcomes in patients undergoing bladder cancer surgery: a systematic review and meta-analysis study. Journal of Blood Transfusion. 2016;2016:9876394-. 10. Sarai M, Tejani AM. Loop diuretics for patients receiving blood transfusions. Cochrane Database of Systematic Reviews. 2015(2):CD010138-CD. 11. Muller MC, van Stein D, Binnekade JM, van Rhenen DJ, VlaarAp. Low-risk transfusion-related acute lung injury donor strategies and the impact on the onset of transfusion-related acute lung injury: a meta-analysis. Transfusion. 2015;55(1):164-75. 12. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, NolanJ, et al. Blood transfusion after percutaneous coronary intervention and risk of subsequent adverse outcomes: a systematic review and meta-analysis. JACC: Cardiovascular Interventions. 2015;8(3):436-46. 13. Kopolovic I, Ostro J, Tsubota H, Lin Y, Cserti-Gazdewich CM, Messner HA, et al. A systematic review of transfusion-associated graft-versus-host disease. Blood. 2015;126(-3):406-14. 14. Keir AK, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. A systematic review and meta-analysis of risks of red cell transfusion for neonatal morbidities or mortality. Vox Sanguinis. 2015;109((Suppl. 1)):31-2. 15. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Sheheta N, et al. Adverse effects of RBC transfusions in neonates: a systematic review and meta-analysis. Abstracts of the HAA 2015 Annual Scientific Meeting. 2015:196-7. 16. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.	N
		What compl;ications occur from massive transfusion in children from trauma?	H		
		Skin preparation with alcohol versus alcohol followed by any antiseptic for preventing bacteraemia or contamination of blood for transfusion. Implications for research: It is common for people who are critically ill to become coagulopathic, and many of these will require insertion of a central venous catheter (CVC). The question of whether prophylactic plasma transfusion is indicated remains unanswered. An adequately-powered trial which is able to recruit sufficient number of participants to address this is required. The ongoing trials that are due to be completed by February 2018 will be unable to answer the primary questions of this review because the studies are too small. To detect a doubling in the number of participants with major bleeding from 1% to 2% would require a two-arm study with over 4600 participants; the three ongoing studies are only planning to recruit 355 participants in total.	Question not derived from the survey but from another source.		
		What is the mortality rate following major blood transfusion	H		
		What is the true risk to life (attributable mortality) of a red cell transfusion?	H		
		When undergoing a transfusion what risks can occur?	NK		
		What is the current safety of blood transfusion for recipients?	H		
DtTr12a	What is the optimal type and combination of blood products [red blood cells, platelets, frozen plasma] for adult patients* with a major haemorrhage that requires a transfusion of 4 or more units of blood]? * Aged over 16 years old.	Are major haemorrhage protocols optimised for different age groups e.g. elderly?	H	1. Yu F, Zhong T, Wu G. [Efficacy of high versus low plasma: red blood cell ratio resuscitation in patients with severe trauma requiring massive blood transfusion: a meta-analysis]. Nan Fang Yi Ke Da Xue Xue Bao = Journal of Southern Medical University. 2017;37(-1):119-23. 2. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or rotational thromboelastometry (ROTEM) to monitor haemostatic treatment in bleeding patients: a systematic review with meta-analysis and trial sequential analysis. Anaesthesia. 2017. Apr;72(4):519-531. doi: 10.1111/anae.13765 3. Cannon JW, Khan MA, Raja AS, Cohen MJ, Como JJ, Cotton BA, et al. Damage control resuscitation in patients with severe traumatic hemorrhage: a practice management guideline from the Eastern Association for the Surgery of Trauma. The Journal of Trauma and Acute Care Surgery. 2017;82(-3):605-17. 4. Fahrendorff M, Oliveri RS, Johansson PI. The use of viscoelastic haemostatic assays in goal-directing treatment with allogeneic blood products - a systematic review and meta-analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2017;25(-1):39-. 5. Deppe AC, Weber C, Zimmermann J, Kuhn EW, Slottosch I, Liakopoulos OJ, et al. Point-of-care thromboelastography/thromboelastometry-based coagulation management in cardiac surgery: a meta-analysis of 8332 patients. The Journal of Surgical Research. 2016;203(-2):424-33. 6. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or thromboelastometry (ROTEM) to monitor haemostatic treatment versus usual care in adults or children with bleeding. The Cochrane Database of Systematic Reviews. 2016(-8):CD007871-CD. 7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68. 8. Jiang LB, Zhang M, Jiang SY, Ma YF. Early goal-directed resuscitation for patients with severe sepsis and septic shock: a meta-analysis and trial sequential analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2016;24(-1):23-.	N
		How can we clarify and improve the guidance on massive haemorrhage?	B H		
		In major haemorrhage settings for example trauma, is there any information how older or younger patients respond to generic major haemorrhage protocols?	H		
		Improved protocols for massive haemorrhages in the critical care unit	B H		
		Wider knowledge of best way to manage brisk haemorrhage i.e. ratio of blood:FFP:platelets	P R B H		
		What is the ideal blood:ffp:platelets ratio during major haemorrhage in the operating theatre	B H		
		what is the best ratio of blood products during massive haemorrhage	H		

The 50 questions included in the interim survey

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
		What are the ideal ratios of a major haemorrhage policy e.g. RBC:FFP: platelets: cryo. Which strategies & techniques result in improved patient outcomes?	H	9. Boutin A, Chasse M, Shemilt M, Lauzier F, Moore L, Zarychanski R, et al. Red blood cell transfusion in patients with traumatic brain injury: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016;30(-1):15-24. 10. McQuilten ZK, Crighton G, Engelbrecht S, Gotmaker R, Brunskill SJ, Murphy MF, et al. Transfusion interventions in critical bleeding requiring massive transfusion: a systematic review. Transfusion Medicine Reviews. 2015;29(-2):127-37. 11. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.	
		In major trauma bleeding, there is evidence of early platelet dysfunction and the PROPPR study gave upfront platelets, however not all trauma units have readily available stocks of platelets. Are there alternatives to platelet transfusion e.g. fibrinogen replacement that might compensate for this?	H		
		how should we arrange blood product transfusion in major haemorrhage, and can near-patient testing help?	H		
		What is the optimal 'formulation' of blood (i.e., combination of packed red blood cells, platelets, fresh frozen plasma, whole blood) for patients prescribed a massive transfusion (e.g., more than four units of blood)?	R H		
		Role of whole blood in managing trauma haemorrhage	B H		
		Can more be done to promote better blood loss management?	NK		
		should we have whole blood available for major haemorrhage	H		
		Why haven't we adopted the military usage of using blood products: not RBC but more platelets & WC?	B H		
		How much thought is put into the option of using alternatives to blood in an emergency situation?	NK		
		Is blood transfusion still the best treatment for sudden blood loss due to cardiac cath lab complications?	H		
		How can over transfusion be prevented for patients with traumatic haemorrhage?	R B H		
		Is blood transfusion still the best treatment for sudden haemorrhage due to cardiac cath lab complications?	H		
		What are ideal products for trauma haemorrhage Rhesus in the prehospital environment? Saline, FFP alone, RBC & FFP or RBC & lyoplas or fibrinogen concentrate/ cryo?	H		
D4	Can donating blood be beneficial to the health of the donor?	Is repeated donation of blood protective against cardiovascular disease?	H	No SR evidence available	N
		Are there any benefits to the donor of giving blood.	B		
A7	What training is required for the safe administration of blood products?	Why is it up to the nurses to give blood transfusions?	B H	1. NICE Guideline Recommendation: Monitoring for acute reactions 10. Monitor the patient's condition and vital signs before, during and after blood transfusions, to detect acute transfusion reactions that may need immediate investigation and treatment. 11. Observe patients who are having or have had a blood transfusion in a suitable environment with staff who are able to monitor and manage acute reactions. 2. Kopolovic I, Ostro J, Tsubota H, Lin Y, Cserti-Gazdewich CM, Messner HA, et al. A systematic review of transfusion-associated graft-versus-host disease. Blood. 2015;126(-3):406-14.	Y
		Who is to order blood transfusion DR or NURSE and what observation to be checked on the recipient	R H		
		Why can't we have specific blood transfusion specialist, who are there to set up infusions and stay for the duration?	B H		
		Why are some staff allowed to undertake transfusion practices i.e. collecting blood when they have no proven competency?	H		
		Do you think it's a waste of a registered nurses working day to pick up the units of blood from the lab as the wrong unit has been given at bedside in the past?	B H		
		Best way to diagnose transfusion reactions - to refute or confirm early so that we can get on with these. [BT Guideline: 7 Monitoring for Acute BT Reactions - 7.4 Evidence statements. "Clinical: No clinical evidence was identified for this review. Economic: No relevant economic evaluations were identified."]	B R H		
DtTr19	What is the optimal combination of drug alternatives and clinical procedures to enable surgery without the use of allogeneic blood?	Would non blood surgery not be of greater benefit to the public?	NK	NICE Guideline Recommendations 1-5: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin 1. Do not offer erythropoietin to reduce the need for blood transfusion in patients having surgery, unless: • the patient has anaemia and meets the criteria for blood transfusion, but declines it because of religious beliefs or other reasons or • the appropriate blood type is not available because of the patient's red cell antibodies. 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence) • are diagnosed with functional iron deficiency	Y
		Why is bloodless surgery see in a negative light?	NK		
		Would not blood conservation and bloodless surgery be the aim for all surgeons wanting to give their patients the best possible outcome?	NK		
		Does improving Hb preoperatively improve outcomes?	H		
		Why use donated blood for pre-arranged elective surgery when safe alternatives are available?	NK		
S1	When should whole blood transfusion be given? Whole blood transfusion means that thew blood unit undergoes minimal processing and all the components of blood (red cells, white cells, plasma and platelets) are transfused.	What are the indications for fresh whole blood transfusion	B R H	No available SR evidence	N
D1	What are the adverse effects or complications of donating blood, whether temporary (e.g. feeling faint or tired) or longer term (e.g. anaemia)?	Is there any risk to my health by giving blood?	B H	Short Term: 1. Fisher SA, Allen D, Doree C, Naylor J, Angelantonio ED, Roberts DJ. Interventions to reduce vasovagal reactions in blood donors: a systematic review and meta-analysis. Transfusion Medicine (Oxford, England). 2016;26(1):15-33. 2. Van Remoortel H, De Buck E, Compernolle V, Deldicque L, Vandekerckhove P. The effect of a standard whole blood donation on oxygen uptake and exercise capacity: a systematic review and meta-analysis. Transfusion. 2016;57(2):451-62. 3. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(3):354-62. Longer Term: 4. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58. Abstract No. 4C-S25-03.	N
		Have you ever had a complication from giving blood?	H		
		Is there some loss of personal vitality or weakening to the individual who gives blood?	B		
		How common is the development of anaemia after giving blood?	B		
		Is there any way to help the tiredness that lasts a few days after donating	B		
		Is there any known detriment to the donor?	B H		
		When giving blood what happens if you take too much?	NK		
		Why do some people feel no different when they give a pint of blood?	B		

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DtTr12b	What is the optimal type and combination of blood products [red blood cells, platelets, frozen plasma] for paediatric patients* with a major haemorrhage that requires a transfusion of 4 or more units of blood]? * Aged less than 16 years old.	What ratio should we transfuse children in trauma, massive haemorrhage?	H	No available SR evidence	X
DtTr14	When and how should prophylactic* platelets be given to reduce procedural bleeding complications in patients with low platelets? *Prophylactic platelets are given to prevent bleeding.	How can platelets be used efficiently to prevent peri-procedural bleeding in patients with thrombocytopenia	R B H	1. NICE Guideline Recommendations: Platelet: Thresholds and Targets i) Patients with thrombocytopenia who are bleeding 19. Offer platelet transfusions to patients with thrombocytopenia who have clinically significant bleeding (World Health Organization [WHO] grade 2) and a platelet count below 30×109 per litre. 20. Use higher platelet thresholds (up to a maximum of 100×109 per litre) for patients with thrombocytopenia and either of the following: • severe bleeding (WHO grades 3 and 4) • bleeding in critical sites, such as the central nervous system (including eyes). ii) Patients who are not bleeding or having invasive procedures or surgery 21. Offer prophylactic platelet transfusions to patients with a platelet count below 10×109 per litre who are not bleeding or having invasive procedures or surgery, and who do not have any of the following conditions: • chronic bone marrow failure • autoimmune thrombocytopenia • heparin-induced thrombocytopenia • thrombotic thrombocytopenic purpura. iii) Patients who are having invasive procedures or surgery 22. Consider prophylactic platelet transfusions to raise the platelet count above 50x109 per litre in patients who are having invasive procedures or surgery. 23. Consider a higher threshold (for example 50–75×109 per litre) for patients with a high risk of bleeding who are having invasive procedures or surgery, after taking into account: • the specific procedure the patient is having • the cause of the thrombocytopenia • whether the patient's platelet count is falling • any coexisting causes of abnormal haemostasis. 24. Consider prophylactic platelet transfusions to raise the platelet count above 100×109 per litre in patients having surgery in critical sites, such as the central nervous system (including the posterior segment of the eyes). iv) When prophylactic platelet transfusions are not indicated 25. Do not routinely offer prophylactic platelet transfusions to patients with any of the following: • chronic bone marrow failure • autoimmune thrombocytopenia • heparin-induced thrombocytopenia • thrombotic thrombocytopenic purpura. 26. Do not offer prophylactic platelet transfusions to patients having procedures with a low risk of bleeding, such as adults having central venous cannulation or any patients having bone marrow aspiration and trephine biopsy. Platelet: doses 27. Do not routinely transfuse more than a single dose of platelets. 28. Only consider giving more than a single dose of platelets in a transfusion for patients with severe thrombocytopenia and bleeding in a critical site, such as the central nervous system (including eyes). 29. Reassess the patient's clinical condition and check their platelet count after each platelet transfusion, and give further doses if needed. 2. Estcourt LJ, Ingram C, Doree C, Trivella M, Stanworth SJ. Use of platelet transfusions prior to lumbar punctures or epidural anaesthesia for the prevention of complications in people with thrombocytopenia. The Cochrane Database of Systematic Reviews. 2016(-5):CD011980-CD. 3. Desborough M, Hadjinicolaou AV, Chaimani A, Trivella M, Vyas P, Doree C, et al. Alternative agents to prophylactic platelet transfusion for preventing bleeding in people with thrombocytopenia due to chronic bone marrow failure: a meta-analysis and systematic review. The Cochrane Database of Systematic Reviews. 2016(-10):CD012055-CD. 4. Desborough M, Estcourt LJ, Doree C, Trivella M, Hopewell S, Stanworth SJ, et al. Alternatives, and adjuncts, to prophylactic platelet transfusion for people with haematological malignancies undergoing intensive chemotherapy or stem cell transplantation. The Cochrane Database of Systematic Reviews. 2016(-8):CD010982-CD. 5. Kumar A, Mhaskar R, Grossman BJ, Kaufman RM, Tobian AA, Kleinman S, et al. Platelet transfusion: a systematic review of the clinical evidence. Transfusion. 2015;55(-5):1116-27. 6. Estcourt LJ, Stanworth SJ, Doree C, Hopewell S, Trivella M, Murphy MF. Comparison of different platelet count thresholds to guide administration of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-11):CD010983-CD. 7. Estcourt LJ, Stanworth S, Doree C, Trivella M, Hopewell S, Blanco P, et al. Different doses of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell	Y
		Different doses of prophylactic platelet transfusion for preventing bleeding in people with ha Implications for research: Assessment of bleeding in future trials - One of the difficulties within this review was the variability between studies in assessing and grading bleeding. The WHO classification of bleeding, although widely used, has never been validated, and therefore the assumption that all WHO grade 2 bleeding is clinically significant has been brought into question. For future studies, an agreed international consensus on assessing and grading bleeding would greatly enhance the ability to compare platelet transfusion trials. This would need to be validated and to take into account the impact bleeding has upon the patient from both a medical perspective and with regard to their quality of life. The Biomedical Excellence for Safer Transfusion (BEST) Collaborative is currently developing a standardised bleeding assessment form. It is acknowledged that blinding in platelet transfusion trials is difficult. However, whenever possible, the bleeding assessor should be blinded to the intervention.ematological disorders after myelosuppressive chemotherapy or stem cell transplantation.	Question not derived from the survey but from another source.		
		A therapeutic-only versus prophylactic platelet transfusion strategy for preventing bleeding in patients with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Implications for research: One of the main constraints in performing the meta-analysis in this review was the different time periods in which trials reported bleeding. Implications for future research include standardised consensus time periods for reporting outcomes of interest such as bleeding. Further research is needed to identify the subgroups of patients for which it may be safe to adopt a therapeutic-only platelet transfusion policy, in particular patients receiving autologous HSCT. Whether the conditioning regimens, indication for HSCT, and number of viable CD34 positive cells in the autologous HSCT have any impact on duration of thrombocytopenia and bleeding rates. Another cohort of haematology patients who currently receive regular platelet transfusions include people with myelodysplasia, and an ongoing trial will be able to add further evidence in this area. Other areas of interest are the differences in leukaemia patients receiving different intensities of chemotherapy, that is induction chemotherapy versus consolidation chemotherapy. Double-blind, placebo-controlled RCTs are not feasible to compare a therapeutic-only versus prophylactic platelet transfusion policy because clinicians will be unblinded when they see the participants' platelet counts rise after receiving a prophylactic platelet transfusion and not rise after receiving a placebo. There is also a safety issue for participants. There is a risk that participants may receive placebo rather than a platelet transfusion when they have severe or life-threatening bleeding. However, blinding assessors of bleeding to the intervention is feasible if they do not see any of the participants' blood results.	Question not derived from the survey but from another source.		

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	Comparison of different platelet count thresholds to guide administration of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Conclusions on the non-inferiority of a platelet count threshold of 10 x 109/L compared to 20 x 109/L or 30 x 109/L have been based on underpowered studies leading to imprecise estimates for the outcomes within this review. In the Rebulla 1997 study (255 participants), the power calculations were based on the assumption that the rate of WHO Grade 2 or above bleeding was 30%, but the actual rate in this study was 20%. To detect a 50% increase in the rate of bleeding (that is from 20% to 30%) with 90% power would require 392 participants per arm of the study, and to detect a 25% increase in the rate of bleeding (that is from 20% to 25%) with 80% power would require 1098 participants per arm of the study. The combined results from all three studies would not be sufficiently powered to detect a 50% increase in the rate of bleeding in the standard platelet transfusion threshold (10 x 109/L) arm, if we assumed the rate of bleeding was 20% in all three studies. No RCTs have compared a lower platelet count threshold (5 x 109/L) versus standard platelet transfusion threshold (10 x 109/L); different platelet count thresholds (5 x 109/L, 20 x 109/L, 30 x 109/L, or 50 x 109/L) that did not include a comparison against the standard platelet transfusion threshold (10 x 109/L); or alternative thresholds to guide prophylactic platelet transfusions (for example platelet mass, immature platelet fraction, absolute immature platelet number) in people with haematological malignancies. Additional evidence is required from new RCTs to determine the most appropriate platelet transfusion threshold to guide prophylactic platelet transfusions. Assessment of bleeding in future trials: One of the difficulties within this review was the variability between studies in assessing and grading bleeding. The WHO classification of bleeding, although widely used, has never been validated, and therefore the assumption that all Grade 2 bleeding is clinically significant has been brought into question. For future studies, an international consensus on assessing and grading bleeding would greatly enhance the ability to compare platelet transfusion trials. This would need to be validated and to take into account the impact that bleeding has upon the patient from both a medical perspective and with regard to quality of life. It is acknowledged that blinding in platelet transfusion trials is difficult. However, whenever possible, the bleeding assessor should be blinded to the intervention.	Question not derived from the survey but from another source.	transplantation. Cochrane Database of Systematic Reviews. 2015(-10):CD010984-CD. 8. Estcourt LJ, Desborough M, Hopewell S, Doree C, Stanworth SJ. Comparison of different platelet transfusion thresholds prior to insertion of central lines in patients with thrombocytopenia. Cochrane Database of Systematic Reviews. 2015(-12):CD011771-CD. 9. Crighton GL, Estcourt LJ, Wood EM, Trivella M, Doree C, Stanworth S. A therapeutic-only versus prophylactic platelet transfusion strategy for preventing bleeding in patients with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-9):CD010981-CD.
	Use of platelet transfusions prior to lumbar punctures or epidural anaesthesia for the prevention of complications in people with thrombocytopenia. Implications for research: It is unlikely that any future randomised controlled trials will be performed with a primary outcome of major bleeding because the event is rare. To detect a doubling in the number of participants with major bleeding from 0.1% to 0.2% would require a study with more than 47,000 participants. A summary of the best available evidence from non-randomised studies is required, the last systematic search of the non-randomised literature was performed before 2010.	Question not derived from the survey but from another source.	
	Alternative agents to prophylactic platelet transfusion for preventing bleeding in people with thrombocytopenia due to chronic bone marrow failure: a meta-analysis and systematic review. Implications for research: Our search strategy has identified four further trials of TPO mimetics (eltrombopag) with 837 participants, which are presently underway for people with bone marrow failure. In order to demonstrate a fall in bleeding events from 26 in 100 to 16 in 100 participants (as seen in the eltrombopag data), a study would need to recruit 514 participants (80% power, 5% significance) and it is likely that the publication of additional data from ongoing trials will answer this question. There are no adequate randomised controlled trials assessing artificial platelet substitutes, platelet-poor plasma, rFVIIa, rFXIII, interleukin 6, interleukin 11, fibrinogen concentrate, DDAVP or antifibrinolytics for people with bone marrow failure and this remains a potential area for future research.	Question not derived from the survey but from another source.	

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		Alternatives and adjuncts to prophylactic platelet transfusion for people with haematological malignancies undergoing intensive chemotherapy or stem cell transplantation. Implications for research: Our search strategy identified five further trials of TPO mimetics (eltrombopag) that are presently underway for participants undergoing intensive chemotherapy and one further trial of AMG531 (romiplostim) that was completed but the results have not yet been reported. The problems with reporting outcomes of the trials in this systematic review make it difficult to interpret the value of additional trials of TPO mimetics and without further data, a recommendation cannot be made. To detect a decrease in the proportion of participants with clinically significant bleeding from 12 in 100 to 6 in 100 would require a trial containing at least 708 participants (80% power, 5% significance). Detection of a decrease from 43 in 100 to 22 in 100 would require a trial containing at least 150 participants (80% power, 5% significance). The search identified no trials of other alternative agents such as artificial platelets, fibrinogen concentrate, rFVIIa or DDAVP and further research will be necessary to determine whether these agents have a role in preventing bleeding for people with thrombocytopenia undergoing intensive chemotherapy.	Question not derived from the survey but from another source.		
		Comparison of different platelet transfusion thresholds prior to insertion of central lines in patients with thrombocytopenia. Implications for research: The ongoing trial that compares two different platelet count thresholds and is due to be completed in December 2017 will be unable to answer the primary questions of this review because the study is too small. To detect a doubling in the number of participants with major bleeding from 1% to 2% would require a study with over 4600 participants; the ongoing study is only planning to recruit 165 participants. No trials have been identified that compared no platelet transfusions versus a prespecified platelet count threshold. Further randomised controlled clinical trials are now required, in order to develop the optimal transfusion strategy for patients who are thrombocytopenic and require a central line insertion.	Question not derived from the survey but from another source.		
S2	What guidelines should there be on the approriate withdrawal of transfusion from palliative patients	Is there any guidelines on when to withdrawal transfusion from palliative patients	P H	1. Torres ME, Rodriguez JN, Ramos JL, Gomez FA. Transfusion in palliative cancer patients: a review of the literature. Journal of Palliative Medicine. 2014;17(1):88-104	N
D20	What is the impact of an individual's sexual practice on the safety of their blood?	Why aren't gay people allowed to donate blood?	B	1. De Buck E, Dieltjens T, Compernolle V, Vandekerckhove P. Is having sex with other men a risk factor for transfusion-transmissible infections in male blood donors in Western countries? A systematic review. PLoS ONE [Electronic Resource]. 2015;10(4):e0122523-e.	N
		Why can a monogamous homosexual male not give blood?	B H		
		What effect would allowing donations from men who have sex with men have on the safety of blood transfusions?	B H		
		Why are gay men barred from blood donation (stupid 12-month rules notwithstanding)?	H		
		Why can't homosexuals donate blood?	B H		
		Why is there a ban on gay men donating blood if they practice safe sex?	B		
		How come homosexuals can't donate blood even though they get tested for STDs and HIV at least 3 times a year?	B		
		Why deny donations from homosexual men? It seems antiquated.	R B H		
		I used to give blood, but recently, as I was born abroad, I have found I am having difficulty giving. Why?	B H		
		If I have sex in Africa but with my girlfriend that I travelled there with why do you need to know this?	B		
		Years ago my offer of blood donation was refused on the grounds of having lived abroad in Africa. Why was this and is this still a general rule?	B		
DtTr27	In patients with an acquired bleeding disorder what are the best drug alternatives* to blood transfusion to prevent or treat bleeding?	Recombinant factor VIIa concentrate versus plasma-derived concentrates for treating acute bleeding episodes in people with haemophilia and inhibitors. Implications for research: There is need for further well-designed, adequately-powered randomised controlled trials to assess the relative benefits and risks of using rFVIIa compared to human plasma-derived concentrates in people with haemophilia with inhibitors. It is advisable that researchers in the field define commonly agreed objective outcome measures in order to enable easier pooling of their results thus increasing the power of comparisons. To the same, scope reporting concordant and discordant pairs in cross-over trials would be recommended. Both tasks are difficult to pursue, but very relevant and should be sought in view of the high societal costs of treating people with haemophilia with inhibitors.	Question not derived from the survey but from another source.	1. National Guideline Recommendations: Prothrombin complex concentrate: thresholds and targets 39. Offer immediate prothrombin complex concentrate transfusions for the emergency reversal of warfarin anticoagulation in patients with either: • severe bleeding or • head injury with suspected intracerebral haemorrhage. 40. For guidance on reversing anticoagulation treatment in people who have a stroke and a primary intracerebral haemorrhage, see recommendation 1.4.2.8 in the NICE guideline on the initial diagnosis and management of stroke. 41. Consider immediate prothrombin complex concentrate transfusions to reverse warfarin anticoagulation in patients having emergency surgery, depending on the level of anticoagulation and the bleeding risk. 42. Monitor the international normalised ratio (INR) to confirm that warfarin anticoagulation has been adequately reversed, and consider further prothrombin complex concentrate. 2. Zeng L, Choonara I, Zhang L, Li Y, Shi J. Effectiveness of prothrombin complex concentrate (PCC) in neonates and infants with bleeding or risk of bleeding: a systematic review and meta-analysis. European Journal of Pediatrics. 2017. 3. Iorio A, Krishnan S, Myren KJ, Lethagen S, McCormick N, Yermakov S, et al. Indirect comparisons of efficacy and weekly factor consumption during continuous prophylaxis with recombinant factor VIII Fc fusion protein and conventional recombinant factor VIII products. Haemophilia : the Official Journal of the World Federation of Hemophilia. 2017. 4. Tone KJ, James TE, Fergusson DA, Tinmouth A, Tay J, Avey MT, et al. Acquired factor XIII inhibitor in hospitalized and perioperative patients: a systematic review of case reports and case series. Transfusion Medicine Reviews. 2016. 5. Pocoski J, Li N, Ayyagari R, Church N, Maas Enriquez M, Xiang Q, et al. Matching-adjusted indirect comparisons of efficacy of BAY 81-8973 vs two recombinant factor VIII for the prophylactic treatment of severe hemophilia A. Journal of Blood Medicine 7:129-37, 2016. 2016. 6. Mingot-Castellano ME, Alvarez-Roman MT, Lopez-Fernandez MF, Roca CA, Hirnyk MI, Jimenez-Yuste V, et al. Spanish consensus guidelines on prophylaxis with bypassing agents for surgery in patients with haemophilia and inhibitors. European Journal of Haematology. 2016;96(-5):461-74. 7. Jensen NH, Stensballe J, Afshari A. Comparing efficacy and safety of fibrinogen concentrate to cryoprecipitate in bleeding patients: a systematic review. Acta Anaesthesiologica Scandinavica. 2016. 8. Fominskiy E, Nepomniashchikh VA, Lomivorotov VV, Monaco F, Vitiello C, Zangrillo A, et al. Efficacy and safety of fibrinogen concentrate in surgical patients: a meta-analysis of randomized controlled trials. Journal of Cardiothoracic and Vascular	Y
		How may factor concentrates be optimally used to avoid administration of large volumes of FFP when attempting to prevent (or treat) bleeding in patients with a coagulopathy?	H		
		Are factor and fibrinogen concentrates safer than blood products to treat coagulapathies?	H		
		How can we use clotting factors to reduce the need for donor blood?	NK		

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		Prothrombin complex concentrate for reversal of vitamin K antagonist treatment in bleeding and non-bleeding patients. Implications for research: Further trials are urgently needed, and great emphasis must be placed on attempts to reduce bias and increase power to show differences in patient-relevant clinical outcomes (i.e. mortality).	Question not derived from the survey but from another source.	[illegible] Anesthesia. 2016 Oct;30(5):1196-204. doi: 10.1053/j.jvca.2016 9. Di Minno MN, Ambrosino P, Myasoedova VA, Amato M, Ventre I, Tremoli E, et al. Recombinant activated factor VII (eptacog alfa activated, NovoSeven (R)) in patients with rare congenital bleeding disorders. A systematic review on its use in surgical procedures. Current Pharmaceutical Design. 2016. 10. Devlin R, Bonanno L, Badeaux J. The incidence of thromboembolism formation following the use of recombinant factor VIIa in patients suffering from blunt force trauma compared with penetrating trauma: a systematic review. Jbi Database of Systematic Reviews and Implementation Reports. 2016;14(-3):116-38. 11. Desborough M, Hadjinicolaou AV, Chaimani A, Trivella M, Vyas P, Doree C, et al. Alternative agents to prophylactic platelet transfusion for preventing bleeding in people with thrombocytopenia due to chronic bone marrow failure: a meta-analysis and systematic review. The Cochrane Database of Systematic Reviews. 2016(-10):CD012055-CD. 12. Desborough M, Estcourt LJ, Doree C, Trivella M, Hopewell S, Stanworth SJ, et al. Alternatives, and adjuncts, to prophylactic platelet transfusion for people with haematological malignancies undergoing intensive chemotherapy or stem cell transplantation. The Cochrane Database of Systematic Reviews. 2016(-8):CD010982-CD. 13. Chai-Adisaksopha C, Hillis C, Siegal DM, Movilla R, Heddle N, Iorio A, et al. Prothrombin complex concentrates versus fresh frozen plasma for warfarin reversal. A systematic review and meta-analysis. Thrombosis and Haemostasis. 2016 Oct 28;116(5):879-890 14. Xi M, Blanchette V, Blatny J, Collins P, Dunn A, Fischer K, et al. Pharmacokinetic characteristics of factor VIII and IX concentrates – a systematic review. Journal of Thrombosis and Haemostasis. 2015;13((Suppl. 2)):357-. 15. Wikkelso, Aj. The role of fibrinogen and haemostatic assessment in postpartum haemorrhage. Danish Medical Journal. 2015;61(4):pii: B5055-pii: B. 16. Ranucci M, Jeppsson A, Baryshnikova E. Pre-operative fibrinogen supplementation in cardiac surgery patients: an evaluation of different trigger values. Acta Anaesthesiologica Scandinavica. 2015;59(-4):427-33. 17. McQuilten ZK, Crighton G, Engelbrecht S, Gotmaker R, Brunskill SJ, Murphy MF, et al. Transfusion interventions in critical bleeding requiring massive transfusion: a systematic review. Transfusion Medicine Reviews. 2015;29(-2):127-37. 18. Matino D, Makris M, Dwan K, D'Amico R, Iorio A. Recombinant factor VIIa concentrate versus plasma-derived concentrates for treating acute bleeding episodes in people with haemophilia and inhibitors. Cochrane Database of Systematic Reviews. 2015(-12):CD004449-CD. 19. Mantovani LG, Rota M, Cortesi P, Steinitz K, Reininger A, Gringeri A. Meta-analysis on incidence of inhibitors in 1,945 previously untreated patients treated with recombinant factor VIII products: is there a difference? Blood. 2015;126(-23)289. 20. Khorsand N, Kooistra HA, van Hest RM, Veeger NJ, Meijer K. A systematic review of prothrombin complex concentrate dosing strategies to reverse vitamin K antagonist therapy. Thrombosis Research. 2015;135(1):9-19. 21. Johansen M, Wikkelso A, Lunde J, Wetterslev J, Afshari A. Prothrombin complex concentrate for reversal of vitamin K antagonist treatment in bleeding and non-bleeding patients. Cochrane Database of Systematic Reviews. 2015(-7):CD010555-CD. 22. Azevedo M, Nigro Neto C, Santos Silva CG, Lobo da Rocha P, Iosto HH. Use of lyophilized fibrinogen concentrate in cardiac surgery: a systematic review. Heart Lung & Vessels. 2015;7(1):47-53.	
B&C1	Does blood transfusion increase the incidence of necrotising entercolitis*in preterm infants and how can we prevent this? *Necrotising entercolitis is a serious illness in which tissues in the intestine (gut) become inflamed and start to die. This can lead to a very dangerous infection.	Does blood transfusion lead to necrotising enterocolitis in preterm babies?	B H	1. Keir AK, Wilkinson D, Andersen C, Stark MJ. Washed versus unwashed red blood cells for transfusion for the prevention of morbidity and mortality in preterm infants.Cochrane Database of Systematic Reviews. 2016(-1):CD011484-CD. 2. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. Adverse effects of red blood cell transfusions in neonates: a systematic review and meta-analysis. Transfusion. 2016 Nov;56(11):2773-2780. doi: 10.1111/trf.13785 3. Keir AK, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. A systematic review and meta-analysis of risks of red cell transfusion for neonatal morbidities or mortality. Vox Sanguinis. 2015;109((Suppl. 1)):31-2. 4. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Sheheta N, et al. Adverse effects of RBC transfusions in neonates: a systematic review and meta-analysis. Abstracts of the HAA 2015 Annual Scientific Meeting. 2015:196-7.	N
		Among preterm infants who require a packed red cell transfusion (P), does withholding milk feeds around the time of infusion (before, during and after) (I), compared with feeding as usual (C), reduce the risk of developing necrotising enterocolitis (O)?	B H		
		What harm is blood transfusion associated with in preterm and low birth weight babies?	B H		
		Does blood transfusion increase the incidence of NEC in preterm infants and by what mechanism? How can we prevent this?	B H		
DtTr10e	At what haemoglobin level [blood count] should a patient who has experienced major trauma (e.g. a car accident) receivce a blood transfusion?				
DtTr10a	At what haemoglobin level [blood count] should patients in a perioperative* setting receivce a blood transfusion? *Perioperative means occuring or performed at or around the time of a transfusion.	Are liberal or restrictive transfusion practices in the peri-operative setting associated with benefit or harm?	H	1. NICE Guideline Recommendations: 13. Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not: • have major haemorrhage or • have acute coronary syndrome or • need regular blood transfusions for chronic anaemia. 14. When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 g/litre and a haemoglobin concentration target of 70–90 g/litre after transfusion. 16. Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia. Other refs: 1. Bennett S, Baker LK, Martel G, Shorr R, Pawlik TM, Tinmouth A, et al. The impact of perioperative red blood cell transfusions in patients undergoing liver resection: a systematic review. Hpb : the Official Journal of the International Hepato Pancreato Biliary Association. 2017. 2. Bagwe S, Chung LK, Lagman C, Voth BL, Barnette NE, Elhajjmoussa L, et al. Blood transfusion indications in neurosurgical patients: a systematic review. Clinical Neurology and Neurosurgery. 2017;155:83-9. 3. Hovaguimian F, Myles PS. Restrictive versus liberal transfusion strategy in the perioperative and acute care setting. A context-specific systematic review and meta-analysis of randomized controlled trials. Anesthesiology. 2016. 4. Teng Z, Zhu Y, Liu Y, Wei G, Wang S, Du S, et al. Restrictive blood transfusion strategies and associated infection in orthopedic patients: a meta-analysis of 8 randomized controlled trials. Scientific Reports. 2015;5:13421-. 5. Potter LJ, Doleman B, Moppett IK. A systematic review of pre-operative anaemia and blood transfusion in patients with fractured hips. Anaesthesia. 2015;70(4):483-500. 6. Patel NN, Avlonitis VS, Jones HE, Reeves BC, Sterne JA, Murphy GJ. Indications for red blood cell transfusion in cardiac surgery: a systematic review and meta-analysis. The Lancet Haematology. 2015;2(-12):e543-53. 7. Fominskiy E, Putzu A, Monaco F, Scandroglio AM, Karaskov A, Galas FR, et al. Liberal transfusion strategy improves survival in perioperative but not in critically ill patients. A meta-analysis of randomised trials. British Journal of Anaesthesia. 2015;115(-4):511-9. 8. Brunskill SJ, Millette SL, Shokoohi A, Pulford EC, Doree C, Murphy MF, et al. Red blood cell transfusion for people undergoing hip fracture surgery. Cochrane Database of Systematic Reviews. 2015.	Y
		Preoperative blood transfusions for sickle cell disease. Implications for research: Although information from a well-designed prospective randomised controlled trial of preoperative blood transfusion in people with SCD is ideal in order to make recommendations for the optimal use of this therapy, there are significant challenges in conducting randomised trials in people with haemoglobinopathies. In the Howard trial, out of 342 people screened only 70 were recruited with reasons for exclusion being decisions by treating clinicians, transfusion within the previous three months, refusal of consent, logistical reasons, low haemoglobin concentration, acute chest syndrome and orthopaedic surgery (Howard 2013). Issues that were not addressed in the included trials includes managing those with low risk surgery, efficacy of a regime of several top-up transfusions over four to six weeks in lieu of exchange transfusions, and the management of people with HBSC or HbSß+ disease.	Question not derived from the survey but from another source.		
		Can we agree on transfusion algorithms in the preoperative setting (evidence based, point of care tests used)?	H		
		Based on clinical trials of patient outcomes, blood transfusion in critical care is now much more conservative than in the past, have similar trials taken place for blood transfusion in other situations such as surgery or on medical wards?	H		
		In major joint replacement cases, what Hb % is the trigger point for PRBC transfusion?	B H		
		Does immediate postoperative [Hb] measurement after hip fracture improve patient outcome compared to standard postoperative [Hb] measurement?	R B H		
		Transfusion thresholds for post operative patients HDU/ward	H		

The 50 questions included in the interim survey		Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research	
		Red blood cell transfusion for people undergoing hip fracture surgery. Implications for research: Further research would be justified to evaluate transfusion thresholds in the immediate perioperative period: both preoperatively and including the first 24 hours post operation. In particular, such research would need to consider people who were symptomatic or haemodynamically unstable who were excluded from most of these trials. In clinical practice, this presentation in a frail older person with a hip fracture, often with a degree of cognitive impairment, and frequently with one or more vascular risk factors in addition to age, may pose a clinical dilemma for the surgeon, anaesthetist and physician. The effects of the transfusion itself need to be separated from the possible effects of increased monitoring and medical input, and a description of the wider management protocol and service would be useful in new trials. Future trials should more clearly report on causes of fracture (e.g. fragility or trauma), should consider including a measure for cognitive impairment (e.g. delirium) and should consider standardised assessments of health-related quality of life, adapted for use in an elderly population, or validated for completion by the participant's relative or carer. In addition, new research is needed to manage better anaemia identified preoperatively, including appropriate use of iron as part of the broader initiatives of patient blood management (Goodnough 2014).	Question not derived from the survey but from another source.		
DtTr12c	What is the optimal type and combination of blood products [red blood cells, platelets, frozen plasma] for obstetric patients with a major haemorrhage that requires [a transfusion of 4 or more units of blood]?	Is one unit blood transfusion policy appropriate within 24 hours of major postpartum haemorrhage?	H	1. Levy JH, Grottke O, Fries D, Kozek-Langenecker S. Therapeutic plasma transfusion in bleeding patients: a systematic review. Anesthesia and Analgesia. 2017;124(-4):1268-76. 2. Wikkelso, Aj. The role of fibrinogen and haemostatic assessment in postpartum haemorrhage. Danish Medical Journal. 2015;61(4):pii: B5055-pii: B.	N
		When should FFP be given during major obstetric haemorrhage?	H		
S4	How frequently should the blood count be checked in patients at high risk of bleeding or with recent bleeding?	How frequently should blood levels (i.e., hemoglobin) be checked in patients at high risk of bleeding (or with recent bleeding) (i.e., is the benefit of checking blood levels more frequently outweigh the risks)?	R H	1. Manning N, Heddle NM, Arnold D, Crowther MA, Siegal D. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion: a systematic review. Journal of Thrombosis and Haemostasis. 2015;13((Suppl. 2)):974-5.	N
DtTr10c	At what haemoglobin level [blood count] should patients with heart disease (including coronary artery disease, heart attacks or angina) receivce a blood transfusion?	Does ischemic heart disease impact on transfusion trigger?	B H	1. NICE Guideline Recommendation: 15. Consider a red blood cell transfusion threshold of 80 g/litre and a haemoglobin concentration target of 80–100 g/litre after transfusion for patients with acute coronary syndrome. 2. Wang Y, Shi X, Wen M, Chen Y, Zhang Q. Restrictive versus liberal blood transfusion in patients with coronary artery disease: a meta-analysis. Current Medical Research and Opinion. 2017:1-17. 3. Ripolles Melchor J, Casans Frances R, Espinosa A, Martinez Hurtado E, Navarro Perez R, Abad Gurumeta A, et al. Restrictive versus liberal transfusion strategy for red blood cell transfusion in critically ill patients and in patients with acute coronary syndrome: a systematic review, meta-analysis and trial sequential analysis. Minerva Anestesiologica. 2016;82(-5):582-98. 4. Docherty AB, O'Donnell R, Brunskill S, Trivella M, Doree C, Holst L, et al. Effect of restrictive versus liberal transfusion strategies on outcomes in patients with cardiovascular disease in a non-cardiac surgery setting: systematic review and meta-analysis. BMJ. 2016;352:i1351-i. 5. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, NolanJ, et al. Blood transfusion after percutaneous coronary intervention and risk of subsequent adverse outcomes: a systematic review and meta-analysis. JACC: Cardiovascular Interventions. 2015;8(3):436-46. 6. Chatterjee S, Wetterslev J, Sharma A, Lichstein E, Mukherjee D. Association of blood transfusion with increased mortality in myocardial infarction: a meta-analysis and diversity-adjusted study sequential analysis. JAMA Internal Medicine. 2013;173(2):132-9.	Y
		Do patients with ischemic heart disease need a higher trigger for transfusion	B H		
		what is the optimal transfusion for patients with unstable coronary artery disease	H		
		What is the optimal transfusion threshold in patients with stable coronary artery disease and intercurrent illness	H		
		NICE GUIDELINE RESEARCH KEY RECOMMENDATION: Red blood cell transfusion & cardiovascular disease: What is the clinical and cost effectiveness of restrictive compared with liberal red blood cell thresholds and targets for patients with chronic cardiovascular disease?	Question not derived from the survey but from another source.		
		What is the relation between different Hb target levels and myocardial performance in patients with heart disease?	H		
		does the transfusion trigger for those with IHD but no active ischaemia need further clarification	B H		
S3	What are the benefits of cold stored platelets versus platelets stored at the standard temperature of 22 degrees celsius for the management of acute bleeding?	[What are the] benefits of cold stored platelets for the management of acute bleeding?	B H	No available SR evidence	N
DtTr22	Is frozen plasma effective for the prevention of bleeding in patients undergoing invasive procedures or surgery and if so what dose is required?	Fresh frozen plasma for cardiovascular surgery. Implications for research: Further adequately powered studies of FFP are required to assess whether larger reductions in prothrombin time translate into clinical benefits, including mortality reduction. These studies should carefully consider the most appropriate schedule and dose for administration of FFP. There is clinical interest in the role of alternative comparable pro-haemostatic agents (for instance, prothrombin complex concentrate), but clinical trials need to be undertaken to evaluate any prophylactic role. There is insufficient evidence to inform any positive therapeutic role of FFP, which is an important gap in the research agenda (Desborough 2012).	Question not derived from the survey but from another source.	1. NICE Guideline Recommendations: Fresh frozen plasma: thresholds and targets 30. Only consider fresh frozen plasma transfusion for patients with clinically significant bleeding but without major haemorrhage if they have abnormal coagulation test results (for example, prothrombin time ratio or activated partial thromboplastin time ratio above 1.5). 31. Do not offer fresh frozen plasma transfusions to correct abnormal coagulation in patients who: • are not bleeding (unless they are having invasive procedures or surgery with a risk of clinically significant bleeding) • need reversal of a vitamin K antagonist. 32. Consider prophylactic fresh frozen plasma transfusions for patients with abnormal coagulation who are having invasive procedures or surgery with a risk of clinically significant bleeding. Fresh frozen plasma: doses 33. Reassess the patient's clinical condition and repeat the coagulation tests after fresh frozen plasma transfusion to ensure that they are getting an adequate dose, and give further doses if needed. 2. Levy JH, Grottke O, Fries D, Kozek-Langenecker S. Therapeutic plasma transfusion in bleeding patients: a systematic review. Anesthesia and Analgesia. 2017;124(-4):1268-76. 3. Marietta M, Franchini M, Bindi ML, Picardi F, Ruggeri M, De Silvestro G. Is solvent/detergent plasma better than standard fresh-frozen plasma? A systematic review and an expert consensus document. Blood Transfusion [Trasfusione Del Sangue] 2016:1-9. 4. Hall DP, Estcourt LJ, Doree C, Hopewell S, Trivella M, Walsh TS. Plasma transfusions prior to insertion of central lines for people with abnormal coagulation. The Cochrane Database of Systematic Reviews. 2016(-9):CD011756-CD.	Y
		Among preterm infants with abnormal coagulation in the first few days following birth (P), does the administration of fresh frozen plasma (or cryoprecipitate) (O), compared with not administering fresh frozen plasma (or cryoprecipitate) ©, reduce the risk of intraventricular haemorrhage and poor neurodevelopmental outcomes (O)?	B H		

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		KEY NICE GUIDELINE RESEARCH RECOMMENDATION: FFP: What dose of fresh frozen plasma is most clinically effective at preventing bleeding in patients with abnormal haemostasis who are having invasive procedures or surgery?	Question not derived from the survey but from another source.	5. Chai-Adisaksopha C, Hillis C, Siegal DM, Movilla R, Heddle N, Iorio A, et al. Prothrombin complex concentrates versus fresh frozen plasma for warfarin reversal. A systematic review and meta-analysis. Thrombosis and Haemostasis. 2016;116(-4). 6. Shah A, Stanworth SJ, McKechnie S. Evidence and triggers for the transfusion of blood and blood products. Anaesthesia. 2015;70(Suppl 1):10-9, e3. 7. Desborough M, Sandu R, Brunskill SJ, Doree C, Trivella M, Montedori A, et al. Fresh frozen plasma for cardiovascular surgery. Cochrane Database of Systematic Reviews. 2015(-7):CD007614-CD.	
		Plasma transfusions prior to insertion of central lines for people with abnormal coagulation. Implications for research: It is common for people who are critically ill to become coagulopathic, and many of these will require insertion of a central venous catheter (CVC). The question of whether prophylactic plasma transfusion is indicated remains unanswered. An adequately-powered trial which is able to recruit sufficient number of participants to address this is required. The ongoing trials that are due to be completed by February 2018 will be unable to answer the primary questions of this review because the studies are too small. To detect a doubling in the number of participants with major bleeding from 1% to 2% would require a two-arm study with over 4600 participants; the three ongoing studies are only planning to recruit 355 participants in total.	Question not derived from the survey but from another source.	1. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or rotational thromboelastometry (ROTEM) to monitor haemostatic treatment in bleeding patients: a systematic review with meta-analysis and trial sequential analysis. Anaesthesia. 2017. 2. Fahrendorff M, Oliveri RS, Johansson PI. The use of viscoelastic haemostatic assays in goal-directing treatment with allogeneic blood products - a systematic review and meta-analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2017;25(-1):39-. 3. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or thromboelastometry (ROTEM) to monitor haemostatic treatment versus usual care in adults or children with bleeding. The Cochrane Database of Systematic Reviews. 2016(-8):CD007871-CD. 4. Veigas PV, Callum J, Rizoli S, Nascimento B, da Luz LT. A systematic review on the rotational thrombelastometry (ROTEM(R)) values for the diagnosis of coagulopathy, prediction and guidance of blood transfusion and prediction of mortality in trauma patients. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2016;24(-1):114-. 5. Jensen NH, Stensballe J, Afshari A. Comparing efficacy and safety of fibrinogen concentrate to cryoprecipitate in bleeding patients: a systematic review. Acta Anaesthesiologica Scandinavica. 2016. 6. Whiting P, Al M, Westwood M, Ramos IC, Ryder S, Armstrong N, et al. Viscoelastic point-of-care testing to assist with the diagnosis, management and monitoring of haemostasis: a systematic review and cost-effectiveness analysis. Health Technology Assessment (Winchester, England). 2015;19(-58):1-228. 7. Hunt H, Stanworth S, Curry N, Woolley T, Cooper C, UkoumunneO, et al. Thromboelastography (TEG) and rotational thromboelastometry (ROTEM) for trauma-induced coagulopathy in adult trauma patients with bleeding. Cochrane Database of Systematic Reviews. 2015(2):CD010438-CD. 8. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.	
		What is the best treatment for coagulopathy - FFP or PCC?	H		
		Could transfusion of plasma be minimised by using a more appropriate testing algorithm in the laboratory?	H		
DtTr10d	At what haemoglobin level [blood count] should a patient who has experienced an acute neurological event (e.g. a stroke or brain injury) receivce a blood transfusion?	Transfusion thresholds for patients with acute brain injury	H		
D17	Is it safe for anaemic pateints (people with a lower haemoglobin) to donate blood?	Is the donor Hb cut off of 12.5g/dl excluding perfectly healthy donors unnecessarily?	R B H	1. Fisher SA; Allen D; Doree C; Naylor J; Angelantonio ED; Roberts DJ. Interventions to reduce vasovagal reactions in blood donors: a systematic review and meta-analysis. Transfusion Medicine (Oxford, England). 2016;26(-1):15-33. 2. Van Remoortel H; De Buck E; Compernolle V; Deldicque L; Vandekerckhove P. The effect of a standard whole blood donation on oxygen uptake and exercise capacity: a systematic review and meta-analysis. Transfusion. 2016. 3. Pasricha S; Speedy J; Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency?. Vox Sanguinis. 2015;109((Suppl. 1)):58. Abstract No. 4C-S25-03. 4. Hoogerwerf MD; Veldhuizen IJ; De Kort WL; Frings-Dresen MH; Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion 2015 ;13(-3):354-62.	N
		Why are you prohibited from blood donation for a year if your iron levels are too low?	B H		
		Can we develop a personalised measure of a safe haemoglobin level at which to take blood donations (rather than current standard cut-off points)?	B		
DtTr10	How do you decide at what haemoglobin level [trigger/threshold] a patient requires a blood transfusion?	How do you decide at what level (Hb) a patient needs a blood transfusion?	P R H	1. NICE Guideline Recommendations: 13. Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not: • have major haemorrhage or • have acute coronary syndrome or • need regular blood transfusions for chronic anaemia. 14. When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 16. Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia. 2. Desborough MJ, Colman KS, Prick BW, Duvekot JJ, Sweeney C, Odutayo A, et al. Effect of restrictive versus liberal red cell transfusion strategies on haemostasis: systematic review and meta-analysis. Thrombosis and Haemostasis. 2017. 3. Van Remoortel H, De Buck E, Dieltjens T, Pauwels NS, Compernolle V, Vandekerckhove P. Methodologic quality assessment of red blood cell transfusion guidelines and the evidence base of more restrictive transfusion thresholds. Transfusion. 2016;56(-2):472-80. 4. Carson JL, Stanworth SJ, Roubinian N, Fergusson DA, Triulzi D, Doree C, et al. Transfusion thresholds and other strategies for guiding allogeneic red blood cell transfusion. The Cochrane Database of Systematic Reviews. 2016(-10):CD002042-CD. 5. Shah A, Stanworth SJ, McKechnie S. Evidence and triggers for the transfusion of blood and blood products. Anaesthesia. 2015;70(Suppl 1):10-9, e3. 6. Kumar A, Mhaskar R, Grossman BJ, Kaufman RM, Tobian AA, Kleinman S, et al. Platelet transfusion: a systematic review of the clinical evidence. Transfusion. 2015;55(-5):1116-27. 7. Holst LB, Petersen MW, Haase N, Perner A, Wetterslev J. Restrictive versus liberal transfusion strategy for red blood cell transfusion: systematic review of randomised trials with meta-analysis and trial sequential analysis. BMJ. 2015;350:h1354-h.	Y
		How low can the haemoglobin be before transfusion needed?	H		
		How low can the haemoglobin be in an iron deficient patient before a transfusion is needed?	B H		
		Is the ideal haemoglobin target known for individual blood transfusion indications?	H		
		The threshold for transfusing a patient has been lowered to 70gm/dl. Why is that?	B H		
		Transfusion triggers?	H		
		What is considered to be the lowest HB to determine the need for transfusion?	B H		
		What is the ideal transfusion trigger?	B H		
		What is the lowest acceptable haemoglobin level at which transfusion is not beneficial to recovery?	R B H		
		What is the lowest transfusion threshold that is safe in stable patients?	H		
		What is the optimum threshold for transfusion in various patient groups	B H		
		What is the transfusion trigger	H		
		Is there a "correct" universal trigger for transfusion?	H		

The 50 questions included in the interim survey

The 50 questions included in the interim survey	Original Question received by the survey.	Who generated the question P = Person who has received a blood transfusion; R = relative or carer of someone who has	Previous Related & up-to-date Research
	Transfusion thresholds and other strategies for guiding allogeneic red blood cell transfusion. Implications for research: Further randomized trials should not be aimed at addressing the safety of RBC transfusion policies within the range of haemoglobin thresholds tested in the trials identified in this review or in unselected groups of patients across broad clinical settings. Rather, additional trials should be targeted to address specific research questions, where the strength of evidence-based recommendations has significant uncertainty, as highlighted in this review. Subsets of patients where there is currently no adequately powered randomized controlled trial data to inform optimal RBC transfusion treatment include those with acute cardiovascular disease, neurological disorders including (traumatic) brain injury, and haematological and other malignancies. Outcomes of importance in trials would be mortality, but also functional and bleeding endpoints, specifically in transfusion-dependent participants with cancer and haemological malignancies. We believe that in these clinical groups, the clinical goals and pathophysiology preclude generalisation from the completed studies included in this review. Trials are also needed to evaluate lower haemoglobin concentrations such as 6.0 g/dL, especially in countries with suboptimal blood safety and inadequate blood supply. Further research is needed to identify methods to measure oxygen delivery to vital organs directly. All trials should be large enough to measure the impact of lower thresholds on clinical outcomes and should apply consistent definitions for all clinical outcomes, such as myocardial infarction and ischaemic heart disease.	Question not derived from the survey but from another source.	
	Compliance with a transfusion trigger	B H	
	Despite a low Hb and experiencing the side effects of this is a blood transfusion still not given?	P R H	
	Does a higher clinical cut off for transfusion improve quality of life during recovery?	B H	
	What should be the level at which we transfuse blood products has this been researched.	B H	
	What are the causes of bad effects of transfusion that mean it is better to run Hb of 70 than transfuse to normal?	H	
	What are the risks/benefits of a restrictive transfusion strategy & what is the optimal target Hb?	B H	
	What level of Haemoglobin should trigger a blood transfusion in the non-major haemorrhage setting?	H	
	What is the optimum Haemoglobin level to transfuse a patient to	B H	
	When should a patient be prescribed a blood transfusion (i.e., at what haemoglobin level) when not actively bleeding?	R H	
	Can we explain the question around why giving blood to someone who's haem is above 7 helps reduce the need for inotropic support? should be do it , risks and benefits of each approach	H	
	Use of blood and other blood products in managing an active GI bleed in ICU, i.e. how much and what ratio to give	H	
	When should you transfuse in anaemia?	H	
	what are the optimum transfusion goals for the elderly (Co morbidities)	H	

All questions received by the PSP

	Blood Transfusion and Blood Donation JLA PSP					
			Original Question received by the survey.	Who generated the question P = Person who has received a	Previous Related & up-to-date Research	
	Indicative questions in grouped order.					
D1	What are the adverse effects or complications of donating blood, whether temporary (e.g. feeling faint or tired) or longer term (e.g. anaemia)?	30	Is there any risk to my health by giving blood?	B H	Short Term:	N
		92	Have you ever had a complication from giving blood?	H	1. Fisher SA, Allen D, Doree C, Naylor J, Angelantonio ED, Roberts DJ. Interventions to reduce vasovagal reactions in blood donors: a systematic review and meta-analysis. Transfusion Medicine (Oxford, England). 2016;26(1):15-33.	
		138	Is there some loss of personal vitality or weakening to the individual who gives blood?	B	2. Van Remoortel H, De Buck E, Compernolle V, Deldicque L, Vandekerckhove P. The effect of a standard whole blood donation on oxygen uptake and exercise capacity: a systematic review and meta-analysis. Transfusion. 2016;57(2):451-62.	
		153	How common is the development of anaemia after giving blood?	B	3. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(3):354-62.	
		601	Is there any way to help the tiredness that lasts a few days after donating	B		
		608	Is there any known detriment to the donor?	B H	Longer Term:	
		634	When giving blood what happens if you take too much?	NK	4. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58. Abstract No. 4C-525-03.	
		102	Why do some people feel no different when they give a pint of blood?	B		
D2	Why aren't previous recipients of a blood product transfusion allowed to be blood donors?	83	Why, if it's deemed as safe, to receive blood products can you no longer be a blood donor once you have been transfused?	P B H	No up-to-date evidence.	N
		89	Why are people not allowed to donate blood when they have had a transfusion even if it is many years ago?	B H		
		99	Why am I unable to donate after having a transfusion, surely the blood is checked before transfusing and is safe!?	B		
		179	is it safe for someone who has previously had a transfusion to donate blood subsequently	P B R H		
		261	Can you never ever give blood if you've had a transfusion?	P R H		
		272	I can no longer give blood due to having a blood transfusion 20yrs ago-what is being done to research this	P B H		
		313	How should we tell blood donors that they can never give blood again after receiving a blood transfusion	P B H		
		374	Why cannot patients who have received a transfusion then go on to donate?	B R H		
		406	Why can't people who have received a blood donation give blood?	R H		
		423	Why did I have to stop being a blood donor after having blood transfusions?	P B		
		503	I received a transfusion in 1997 and since then have been told I cannot give blood having been a recipient of a transfusion (I was informed this was standard practice). Is this likely to change in the future? What is the cause of this refusal?	P B		
		559	why can't I donate blood after receiving it	B		
		574	Why can't I donate blood after receiving a transfusion?	P H		
		576	When will you relax the restriction on people who have had blood transfusions from giving blood	B R		
		625	Why does having anti bodies following transfusion prevent any future blood donation?	R H		
		44	Why can individuals who have received blood prior to a certain date not donate?	P		
		442	Do we really still need to worry about CJD? This is preventing many possible donors from being able to donate when they have had blood themselves. Isn't it all theoretical now?	H		
		651	Why can't people who have had IVF donate?	R B H		
		669	Is vCJD really a legitimate concern for plasma donation in the UK?	H		
D3	What medical conditions make it unsafe for a person to be a blood donor?	53	Are the donor exclusion criteria truly evidence based?	R B	1. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58-.	N
		128	When is safe to donate blood after contacting hepatitis A?	P B	2. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(-3):354-62.	
		197	Why do I need to wait after travelling abroad if I have not been unwell or vaccinated?	B H	3.Estcourt LJ, Malouf R, Hopewell S, Trivella M, Doree C, Stanworth SJ, Murphy MF. Pathogen-reduced platelets for the prevention of bleeding. Cochrane Database of Systematic Reviews 2017, Issue 7. Art. No.: CD009072. DOI: 10.1002/14651858.CD009072.pub3.	
		495	Can a person with HIV be able to donate blood?	P H	4. Chasse M, McIntyre L, English SW, Tinmouth A, Knoll G, Wolfe D, et al. Effect of blood donor characteristics on transfusion outcomes: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016.	
		71	Why can't people with diabetes give blood - are there real evidence based reasons for the ban?	B	5. Chasse M, Tinmouth AT, English SW, McIntyre L, Knoll G, Wolfe D, et al. Effect of blood donor characteristics on transfusion outcomes: a systematic review and meta-analysis. Transfusion. 2015;55((Suppl. 3)):123A-A.	
		315	Is it always necessary to turn blood donors away for various reasons	P B	6. De Buck E, Dieltjens T, Compernolle V, Vandekerckhove P. Is having sex with other men a risk factor for transfusion-transmissible infections in male blood donors in Western countries? A systematic review. PLoS ONE [Electronic Resource]. 2015;10(4):e0122523-e.	
		395	Why can't I give blood anymore as I'm on anti-hypertensive drugs?	R B H	7. Webster J, Bell-Syer SE, Foxlee R. Skin preparation with alcohol versus alcohol followed by any antiseptic for preventing bacteraemia or contamination of blood for transfusion. Cochrane Database of Systematic Reviews. 2015(2):CD007948-CD.	
		399	Can I donate blood if I have asthma?	H		
		405	What are the criteria for being able to donate blood?	R H		
		516	Donor Selection	R B H		
		28	Can I give blood after having had meningococcal septicaemia?	B		
		167	It is not clear on the blood donation that first time donors of 17 or 18 years old need to have eaten within the 4 hours prior to donation. It just states eaten and drunk that day. Does it really matter if they have not eaten within 4 hours - not everyone eats that regularly	B H		
		323	How to insure donors and their health	R B H		
		289	I have ALL, therefore I have been told I can't give blood any more. I suspect I had blood cancer for a while before I was told by my GP. Does the service test donations for blood cancer before giving blood to a recipient?	P B		
		301	I have a blood cancer, how would it be picked up if I tried to donate blood?	R B		
		299	Can a person who suffers with Chronic Lymphatic leukaemia donate blood if that patients HB is high enough?	NK		
		349	I assume that now I am diagnosed with a blood cancer I would not be able to give blood!!	B		
		527	Is the blood drop iron level test a good indicator of ability to donate?	B		
		386	Can any use be made of blood components (other than abnormal cells) if donated by MPN patients	P		
		615	For someone who has not participated in the donation of blood, is there any qualitative aspect to the pre-screening questions?	NK		
		552	How are donors screened?	NK		
		561	Why is it getting harder to meet the criteria to give blood, as it seems to change every time I go?	B		
		672	What if someone lies on their medical form?	R B H		
		409	Why are patients having had illegal (? Should this be illeal) conduit surgery that did not receive a transfusion during surgery unable to ever give blood in the future?	B		
		341	What precautions should be taken and the blood tests to be carried out?	R H		
		504	Why exclude ALL females from plasma donation regardless of history of previous (possible) pregnancies? Assumption that HLA/HPA antibodies present in all females.	R B H		
		550	I'm asthmatic, so if there is a connection to blood donation and asthma I'd be interested.	B		
		229	What medications stop you from donating blood = make a single question	H		
		513	What can be done to safely relax existing rules around donation, for people who want to donate but are exempt i.e. with individual consultant permission , or further screening?	P H		
		571	After a critical illness, can I safely donate again?	P B		
		616	Does the general fitness of the donor have any impact on the quality of blood donated? If so, would it/should it be part of the collection strategy to target sections of society who maintain a healthier life-style e.g. Health-centres and gymnasiums etc?	NK		
		658	Is it good enough to rely on people's honesty about their health?	R B		
D4	Can donating blood be beneficial	192	Is repeated donation of blood protective against cardiovascular disease?	H	No SR evidence available	N

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	to the health of the donor?	398	Are there any benefits to the donor of giving blood.	B		
D6	How can donation sessions be organised to make them easier and more convenient for blood donors?	146	Many people express frustration at not being able to get an appointment to donate blood, there seems to be very limited donor sessions	H	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Fisher SA, Allen D, Doree C, Naylor J, Angelantonio ED, Roberts DJ. Interventions to reduce vasovagal reactions in blood donors: a systematic review and meta-analysis. Transfusion Medicine (Oxford, England). 2016;26(1):15-33. 3. Hoogerwerf MD, Veldhuizen IJ, De Kort WL, Frings-Dresen MH, Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion. 2015;13(3):354-62.	N
		420	Why can you not provide enough slots for donors.	B H		
		479	Could you have more flexibility for donation sessions	H		
		27	Why do donors fall off the active list and how can we look after them better?	B H		
		496	Sometimes donor sessions are restricted to specific time slots. Can there be more scope to turn up without an appointment?	R B H		
		539	I am finding it increasingly difficult to donate as often as I would like, why is that.	R B		
		541	There seems to be less sessions at my donation centre, why?	R B		
		611	Why does donating blood affect people differently? (Some faint, some feel no effect etc)	B		
		101	Why do some people give blood easily and quickly compared to others?	B		
		648	Why can't local health services be supplemented to take blood donations?	B		
		100	How can the decisions around limiting donor pool for platelets and plasma be best communicated to the public?	B		
		557	Why does it sometimes seem difficult to arrange my next donation as soon as I would be eligible, especially as we have two donation venues in this city? At the one venue there are no future schedules available and the staff are unable to provide information about other local venues.	B H		
		579	Would happily donate as often as possible but sessions at the location only twice a year	R		
		674	Why are some Donation Places so busy that it is hard to get an appointment?	B		
		166	Why do you not weigh patients who do not know their weight prior to blood donor sessions - instead of turning them away to come back another day	B H		
		296	Why aren't there more places to donate platelets?	P		
		358	Why isn't there more open drop in sessions for blood donors	B H		
		377	From a donor point of view: when my letter comes through the door with my next appointment the session is already fully booked when I ring up to confirm, this puts me off organising an alternative date.	B H		
		481	Why do you not put on donation sessions at hospitals?	H		
		505	Last donor session booking slot is early evening and gives little time to get back from work to attend - whilst understanding the need for packing up time after - can there be later donor slots/evening donor sessions?	B R P H		
		507	Why don't NHSBT have blood donor sessions in hospitals? This would increase the number of donors hugely	B R P H		
		526	Why is there such variation in opportunities or places to donate between different areas of England?	B		
		528	Why not have more fixed places where donations can take place e.g. at hospitals?	B		
		530	Why aren't there more donation centres?	B H		
		542	Why is the donation service hours so short and everyone stops at lunch and breaks	B		
		544	Why don't you get donation points at gap surgeries	B		
		675	Is the waiting time at donor sessions acceptable?	B		
		549	I would like to be a platelet donor but the location is not very accessible. Could there be more invested in this to have more venues?	B		
		564	Could a mobile facility be made available? Obviously cost is at the heart of that question.	B		
		647	Why are there so few platelet donation venues if it is so important?	B		
		663	Why do you not work Saturdays and Sundays? people who work - would be easier to donate	B		
		27	Why do donors fall off the active list and how can we look after them better?	B H		
		322	What is the donors experience when doing this specifically to donate to an individual.	H		
		376	How can blood donors best be thanked and rewarded ?	H		
		390	How can the experience for blood donors be improved	B H		
		397	Why do donors get upset if they cannot donate for any reason.	B H		
		404	How can we improve the feedback on the fate of blood post transfusion	P B H		
		422	Have you considered thank you test to donors?	B H		
		548	What can we do to improve your experience?	R B		
		560	Why don't you use skin analgesia prior to donation as I feel this may prevent donation	R B H		
		565	Why does a service which relies on public goodwill fail perform so poorly in basic customer service at point of delivery?	B		
		598	Is it possible to inform the donor when there blood has been used?	R B		
		607	Why does it seem that by donating blood you are doing me a favour?	B		
		636	Could donors be given information while waiting on other forms of donation?	B		
		657	Why are blood donors so undervalued?	R B		
		381	Why do people not donate?	P B		
		191	Can the process of blood donation be made more efficient?	B H		
		195	How can we make blood donation easier for donors	B H		
		545	Is there a way of cutting down waiting times especially when attendees are getting cold/dehydrated?	P R B H		
		586	Process of donating blood, how to streamline service	B H		
		635	How can the appointment system be refined to ensure prompt donations?	B H		
		675	Is the waiting time at donor sessions acceptable?	B		
		543	Why do you make so many hurdles to people who want to give blood	B		
		546	How uncomfortable is it to donate and does this put people off coming again?	P B R H		
		524	Would home self-testing of haemoglobin before attending blood donation sessions be acceptable, feasible, accurate, and save time and money?	B		
		480	How well rolled out is the text message service notifying donors of usage?	H		
		515	What would the impact of paying donor expenses be?	P H		
		597	Is there a way to make the donation process simper/more efficient?	R B		
D8	What are the most effective ways to educate the general public about the process and purpose of blood donation?	417	Need to raise awareness of what blood donations are used for	P	1. Bagot KL, Murray AL, Masser BM. How can we improve retention of the first-time donor? A systematic review of the current evidence. Transfusion Medicine Reviews. 2016;30(2):81-91. 2. Memon A, Moiz B. Why are we losing our precious blood donors? A systematic review from Pakistan. Haematologica. 2016;101((s1)):P877- ABSTRACT NO.PB2222 3. Appiah BA, Bates BA. Cultural context and role of communication in promoting adequate blood donation in sub-Saharan Africa: a systematic literature review. Vox Sanguinis. 2015;109((Suppl. 1)):p128. Abstract P-142	N
		490	How can we improve the understanding of the general public for transfusion	P B H		
		493	To persuade new donors, why not illustrate, say by video maybe speeded up, the immediate improvements transfusions bring	R B		
		529	How can social media improve the knowledge of transfusion and numbers for donation	H		
		554	If it doesn't already feature; could blood transfusion and collection be added to the national curriculum and feature in the PSHE course?	NK		
		578	Why do you not go into schools explaining the importance of blood donation	R B		
		585	Why is the public not educated more about giving blood.	P B H		
		587	Do the general public know about the process of blood transfusion from donation to a patient receiving blood	B H		
		618	Donor Recruitment - Is there potential for there to be a national campaign (including all four devolved countries) to recruit more donors?	B H		
		603	How long it takes?	B		
		670	How do I give blooÖd transfusion	B		
		558	Why does it appear that you seem reluctant to reward those donors of large numbers of donations nowadays? Cutbacks?	B H		
		478	Why is the profile of donation days in an area not better flagged ?	B H		
		433	Do you think being a blood donor could be mandated for all 20-40 year olds	P B H		

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		644	Should blood donation be made compulsory for healthy adults?	H		
		624	Do you approach businesses asking them to send a donation registration pack with their recruitment process?	R B		
		642	Why don't you raise the profile of blood donation? National campaign; blood donor day; blood donation featuring in a soap	B		
		655	Why isn't there any school/college visits about why giving blood is so important?	B		
		664	More info on donating plasma, platelets etc	R B		
D11	What would encourage more people (especially black and ethnic minority groups or people with rare blood type) to donate blood?	61	How can we encourage people to donate	H		N
		24	How can the rest of the population (especially minorities) be encouraged to become regular donors ?	H		
		144	How do we encourage more donors?	H		
		149	It should be mandatory to donate/ or be paid to do it	B		
		163	people should be encouraged to donate more by better campaigning	P B		
		176	What would encourage people to donate blood?	H		
		202	What can we do to encourage more people to become blood donors?	P R B H		
		213	How can we make giving blood more appealing to the public?	P R B H		
		214	How can we make donating blood more appealing to the public?	P R B H		
		309	How is recruitment for more blood donors being developed.	P R B		
		312	How can we encourage more ethnic minorities to give blood?	R B H		
		366	How can the public be made aware of the need to be donors?	R H		
		380	How do you plan getting more people to donate?	P B		
		407	How important is blood type and does marketing for new donors target rare types?	P		
		419	Should be patients friends & family be asked to join campaign to get more donors as they've seen firsthand how it helps...this happened with me	P		
		427	I have a major concern in our declining stock of blood. What is preventing the general public from donating? Is it lack of knowledge? Are they concerned about the safety of receiving another's blood?	H		
		452	Encouraging people to become donors, but without putting too much pressure on those already signed up	R B H		
		522	How do we increase number of people donating?	B H		
		553	How can more people be encouraged to become donors?	NK		
		610	How can more people from minority ethnic backgrounds be encouraged to think about donating?	B		
		630	How can I help promote the blood donation process?	B		
		414	When you give blood it is quite an old fashioned type of service, it needs updating to get younger donors interested and involved	B		
		467	The most effective ways and time to give blood and blood products	R H		
		620	Would sending information about where/how donations have been received increase the popularity of donating blood?	B		
D12a	If the blood taken from a donor shows a result that might impact their future health, how should this best be communicated to the donor?	152	What would the donor centre do if a test came back with "bad news"	P R P H	No available SR evidence	N
		555	Would I be told if an abnormality were found in my blood donation?	R B		
		631	Can a blood Donor have a full health check of their blood. E.G. Vitamins, Minerals, Hormone Levels and health of the blood.	B		
D12b	What is the impact of iron deficiency on blood donors and how may its impact be prevented?	162	Research elsewhere suggests women would need iron supplements to prevent anaemia if donating more than twice a year, should this be included in recommendations?	B H	1. Pasricha S, Speedy J, Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency? Vox Sanguinis. 2015;109((Suppl. 1)):58. Abstract No. 4C-S25-03.	N
D17	Is it safe for anaemic pateints (people with a lower haemoglobin) to donate blood?	257	Is the donor Hb cut off of 12.5g/dl excluding perfectly healthy donors unnecessarily?	R B H	1. Fisher SA; Allen D; Doree C; Naylor J; Angelantonio ED; Roberts DJ. Interventions to reduce vasovagal reactions in blood donors: a systematic review and meta-analysis. Transfusion Medicine (Oxford, England). 2016;26(-1):15-33. 2. Van Remoortel H; De Buck E; Compernolle V; Deldicque L; Vandekerckhove P. The effect of a standard whole blood donation on oxygen uptake and exercise capacity: a systematic review and meta-analysis. Transfusion. 2016. 3. Pasricha S; Speedy J; Low M. What do systematic reviews of iron supplementation in women tell us about the functional consequences of donor iron deficiency?. Vox Sanguinis. 2015;109((Suppl. 1)):58. Abstract No. 4C-S25-03. 4. Hoogerwerf MD; Veldhuizen IJ; De Kort WL; Frings-Dresen MH; Sluiter JK. Factors associated with psychological and physiological stress reactions to blood donation: a systematic review of the literature. Blood Transfusion 2015 ;13(-3):354-62.	N
		276	Why are you prohibited from blood donation for a year if your iron levels are too low?	B H		
		525	Can we develop a personalised measure of a safe haemoglobin level at which to take blood donations (rather than current standard cut-off points)?	B		
D20	What is the impact of an individual's sexual practice on the safety of their blood?	145	Why aren't gay people allowed to donate blood?	B	1. De Buck E, Dieltjens T, Compernolle V, Vandekerckhove P. Is having sex with other men a risk factor for transfusion-transmissible infections in male blood donors in Western countries? A systematic review. PLoS ONE [Electronic Resource]. 2015;10(4):e0122523-e.	N
		196	Why can a monogamous homosexual male not give blood?	B H		
		201	What effect would allowing donations from men who have sex with men have on the safety of blood transfusions?	B H		
		359	Why are gay men barred from blood donation (stupid 12-month rules notwithstanding)?	H		
		370	Why can't homosexuals donate blood?	B H		
		627	Why is there a ban on gay men donating blood if they practice safe sex?	B		
		628	How come homosexuals can't donate blood even though they get tested for STDs and HIV at least 3 times a year?	B		
		650	Why deny donations from homosexual men? It seems antiquated.	R B H		
		472	I used to give blood, but recently, as I was born abroad, I have found I am having difficulty giving. Why?	B H		
		659	If I have sex in Africa but with my girlfriend that I travelled there with why do you need to know this?	B		
		348	Years ago my offer of blood donation was refused on the grounds of having lived abroad in Africa. Why was this and is this still a general rule?	B		
B&C1	Does blood transfusion increase the incidence of necrotising entercolitis*in preterm infants and how can we prevent this? *Necrotising entercolitis is a serious illness in which tissues in the intestine (gut) become inflamed and start to die. This can lead to a very dangerous infection.	46	Does blood transfusion lead to necrotising enterocolitis in preterm babies?	B H	1. Keir AK, Wilkinson D, Andersen C, Stark MJ. Washed versus unwashed red blood cells for transfusion for the prevention of morbidity and mortality in preterm infants.Cochrane Database of Systematic Reviews. 2016(-1):CD011484-CD. 2. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. Adverse effects of red blood cell transfusions in neonates: a systematic review and meta-analysis. Transfusion. 2016 Nov;56(11):2773-2780. doi: 10.1111/trf.13785 3. Keir AK, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. A systematic review and meta-analysis of risks of red cell transfusion for neonatal morbidities or mortality. Vox Sanguinis. 2015;109((Suppl. 1)):31-2. 4. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. Adverse effects of RBC transfusions in neonates: a systematic review and meta-analysis. Abstracts of the HAA 2015 Annual Scientific Meeting. 2015:196-7.	N
		156	Among preterm infants who require a packed red cell transfusion (P), does withholding milk feeds around the time of infusion (before, during and after) (I), compared with feeding as usual (C), reduce the risk of developing necrotising enterocolitis (O)?	B H		
		45	What harm is blood transfusion associated with in preterm and low birth weight babies?	B H		
		535	Does blood transfusion increase the incidence of NEC in preterm infants and by what mechanism? How can we prevent this?	B H		
B&C2	How can the immediate side effects of receiving a blood	270	What detrimental effects are caused my transfusing blood products in a surgical bleed?	R H	1. Li SL, Ye Y, Yuan XH. Association between allogeneic or autologous blood transfusion and survival in patients after radical prostatectomy: a systematic review and meta-analysis. Plos One. 2017;12(-1):e0171081-e. 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13.	N
		606	What compl;cations occur from massive transfusion in children from trauma?	H		

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	transfusion be reduced?	722	Skin preparation with alcohol versus alcohol followed by any antiseptic for preventing bacteraemia or contamination of blood for transfusion. Implications for research: It is common for people who are critically ill to become coagulopathic, and many of these will require insertion of a central venous catheter (CVC). The question of whether prophylactic plasma transfusion is indicated remains unanswered. An adequately-powered trial which is able to recruit sufficient number of participants to address this is required. The ongoing trials that are due to be completed by February 2018 will be unable to answer the primary questions of this review because the studies are too small. To detect a doubling in the number of participants with major bleeding from 1% to 2% would require a two-arm study with over 4600 participants; the three ongoing studies are only planning to recruit 355 participants in total.	Question not derived from the survey but from another source.	3. Thongprayoon C, Cheungpasitporn W, Gillaspie EA, Greason KL, Kashani KB. Association of blood transfusion with acute kidney injury after transcatheter aortic valve replacement: A meta-analysis. World Journal of Nephrology. 2016;5(-5):482-8. 4. Mainou M, Alahdab F, Tobian AA, Asi N, Mohammed K, Murad MH, et al. Reducing the risk of transfusion-transmitted cytomegalovirus infection: a systematic review and meta-analysis. Transfusion. 2016. 5. Kim JL, Park JH, Han SB, Cho IY, Jang KM. Allogeneic blood transfusion is a significant risk factor for surgical-site infection following total hip and knee arthroplasty: a meta-analysis. The Journal of Arthroplasty. 2016. 6. Keir AK, Wilkinson D, Andersen C, Stark MJ. Washed versus unwashed red blood cells for transfusion for the prevention of morbidity and mortality in preterm infants. The Cochrane Database of Systematic Reviews. 2016(-1):CD011484-CD. 7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68. 8. Harnan S, Ren S, Gomersall T, Everson-Hock ES, Sutton A, Dhanasiri S, et al. Association between transfusion status and overall survival in patients with myelodysplastic syndromes: a systematic literature review and meta-analysis. Acta Haematologica. 2016;136(-1):23-42. 9. Cata JP, Lasala J, Pratt G, Feng L, Shah JB. Association between perioperative blood transfusions and clinical outcomes in patients undergoing bladder cancer surgery: a systematic review and meta-analysis study. Journal of Blood Transfusion. 2016;2016:9876394-. 10. Sarai M, Tejani AM. Loop diuretics for patients receiving blood transfusions. Cochrane Database of Systematic Reviews. 2015(2):CD010138-CD. 11. Muller MC, van Stein D, Binnekade JM, van Rhenen DJ, VlaarAp. Low-risk transfusion-related acute lung injury donor strategies and the impact on the onset of transfusion-related acute lung injury: a meta-analysis. Transfusion. 2015;55(1):164-75. 12. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, NolanJ, et al. Blood transfusion after percutaneous coronary intervention and risk of subsequent adverse outcomes: a systematic review and meta-analysis. JACC: Cardiovascular Interventions. 2015;8(3):436-46. 13. Kopolovic I, Ostro J, Tsubota H, Lin Y, Cserti-Gazdewich CM, Messner HA, et al. A systematic review of transfusion-associated graft-versus-host disease. Blood. 2015;126(-3):406-14. 14. Keir AK, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. A systematic review and meta-analysis of risks of red cell transfusion for neonatal morbidities or mortality. Vox Sanguinis. 2015;109(Suppl. 1)):31-2. 15. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Sheheta N, et al. Adverse effects of RBC transfusions in neonates: a systematic review and meta-analysis. Abstracts of the HAA 2015 Annual Scientific Meeting. 2015:196-7. 16. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.	
		267	What is the mortality rate following major blood transfusion	H		
		116	What is the true risk to life (attributable mortality) of a red cell transfusion?	H		
		633	When undergoing a transfusion what risks can occur?	NK		
		175	What is the current safety of blood transfusion for recipients?	H		
B&C4	How can any negative long term effects of blood transfusion be prevented?	9	What future harm does a transfusion cause	P B H		N
		185	Harm caused by blood transfusion	R B H		
		150	What proportion of frequent platelet recipients develop HLA or specific antibodies?	H		
		217	What are the effects of blood transfusion on the immune system, infection rates, cancer recurrence etc?	B H		
		536	What are the long-term consequences of blood product transfusion?	B H		
		604	Long term risks	B		
		653	What are the long term risks of receiving a blood transfusion?	B H		
		537	Are any patients at particular risk of long-term complications when receiving blood transfusion?	B H		
		582	What is the long term effect on health of blood transfusion	B H		
		248	What is the relationship between blood transfusion and poorer outcome in the era of leukocyte-depleted blood?	H		
		3	Are there any dangers associated with Blood Transfusion?	P		
		35	With multiple transfusions how do the risks of complications increase with each additional unit transfused	H		
		239	Is there any long term follow up for patients who have received the wrong unit of blood?	P B R H		
		260	what are the long term problems after blood transfusion	H		
		224	Can we produce more evidence regarding risks and benefits of blood transfusion in different clinical scenarios.	H		
		208	Risk of transfusion	H		
		230	what are the risks of blood transfusions	H		
		307	How does a blood transfusion impact on the recipient's future health. Are there any negative outcomes that we know of?	P B		
		321	What about as yet unknown risks?	R B H		
		510	What can be done to decrease the number of reactions in multitransfused patients?	P R		
		292	Are all transfusions safe to have?	R B H		
		425	Benefits and risks from treatment with blood transfusion	H		
		519	What is the effect of blood product transfusion on immunity?	H		
		58	Are breast cancer surgeons aware of the potential immunosuppressive effects of blood transfusion (or tissue trauma)	R B H		
B&C 8	What is the psychological impact of blood transfusion on the patient?	140	Transfusion recipients feelings about the transfusion and its effect on them	P R B H	1. Brunskill SJ, Millette SL, Shokoohi A, Pulford EC, Doree C, Murphy MF, et al. Red blood cell transfusion for people undergoing hip fracture surgery. Cochrane Database of Systematic Reviews. 2015.	N
		707	Regular long-term red blood cell transfusions for managing chronic chest complications in sickle cell disease. Implications for research: There is a need for RCTs looking at the effect of long-term transfusion therapy on pulmonary hypertension and chronic sickle lung disease. The most likely starting point for any series of trials will be the effect of transfusion on existing pulmonary hypertension. The effect of transfusion on disease incidence and mortality would require trials with longer-term follow-on, making them more costly and conceptually more difficult. The definition of chronic sickle lung disease include is not agreed by consensus and this is a stumbling block for further studies in this area. New trials could consider using a combination of objective and subjective outcome measures. Effectiveness could be measured objectively, for example, through echocardiogram or pulmonary function testing, or subjectively by measuring symptoms such as chest pain on a standardised scale. Such trials might provide useful information on the rate of deterioration in chronic chest complications. Given the chronic nature of the condition, trials could consider measuring pre-intervention 'severity' using an extended baseline 'steady state' period. It should be remembered that transfusions may reduce symptoms such as breathlessness by increasing the haemoglobin level rather than having any beneficial effect per se on the chronic chest complication. Future RCTs in this area should have clear protocols for the aims of transfusion (such as a target haemoglobin level, or target sickle haemoglobin percentage) and how the long-term transfusion programme is to be carried out, for example, by simple or exchange transfusion. Possible transfusion complications are a key concern, and it would be important to collect information on the complications arising from long-term transfusion therapy in trial participants	Question not derived from the survey but from another source.		
		747	Blood transfusions for treating acute chest syndrome in people with sickle cell disease.Implications for research: We found only one very small randomised controlled trial; this is not enough to make any reliable conclusion to support the use of blood transfusion. This review highlights the need of further high quality research to provide reliable evidence for the effectiveness of these interventions for the relief of the symptoms of ACS in people with sickle cell disease.	Question not derived from the survey but from another source.		
		155	What is the psychological impact on a patient, of a blood transfusion?	R B H		
		441	Are the improvements in blood pressure after tansfusion related to simple mchanges in blood volumen or the nitric oxide scavenging effects of hamoglobin in stored blood increasing resting vascular tone and improving blood pressure by this mechanism? i.e. increasing after load as well as pre-load?	H		
		105	Does transfusion reduce length of stay after hip & knee replacement surgery?	B H		
		17	Did you feel better after your transfusion for anaemia? If so how quickly?	P R H		
		187	What are the early symptomatic benefits of blood transfusion after hip fracture?	R B H		

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		194	Does receipt of a whole blood transfusion confer any cell mediated immunity on the recipient?	H		
		363	Does the body attempt a rejection process after transfusion?	Jehovah's Witness		
		462	What is the patient's perception on going through blood transfusion?	R H		
B&C 9	What characteristics identify patients who would benefit from a blood transfusion?	247	What is the benefit of blood transfusion in patients with evidence of poor oxygen delivery/ organ dysfunction?	H	1. Hunt H; Stanworth S; Curry N; Woolley T; Cooper C; Ukoumunne O; Zhelev Z; Hyde C. Thromboelastography (TEG) and rotational thromboelastometry (ROTEM) for trauma-induced coagulopathy in adult trauma patients with bleeding. Cochrane Database of Systematic Reviews. 2015;(2):CD010438	N
		394	How well does donated blood carry oxygen in particular for patients with respiratory disease?	R B H		
		340	what is the reason for blood transfusion?	R H		
		521	What should be the criteria for transfusion?	B H		
		382	Will it benefit my patient in the best possible way	R B H		
		343	blood products given to a lot of patients who should possibly not be given one-need robust data to decide	R B H		
		430	Does transfusion improve patient's outcome?	B H		
		534	What clinical markers should we use to show that patients have benefited from blood transfusion (particularly in preterm neonates)?	R H		
DtTr1	How can health professionals be discouraged from using blood inappropriately?	143	Explore the level of knowledge and understanding of prescribing and administrating blood transfusions by healthcare professionals.	H	1. Hibbs SP, Nielsen ND, Brunskill S, Doree C, Yazer MH, Kaufman RM, et al. The impact of electronic decision support on transfusion practice: a systematic review. Transfusion Medicine Reviews. 2015;29(1):14-23.	N
		252	What systems can we put in place to limit unnecessary use of blood and blood products on the ICU?	B H		
		210	How can we improve knowledge of and reduce incidence of TRALI	R B H		
		123	What can be done to make it easier to give blood in the bleeding patient (i.e. not 1:1:1) [ratio question]	H		
		686	NICE GUIDELINE RESEARCH KEY RECOMMENDATION:Electronic decision support: [Guideline Dev Gp fully assessed all evidence to Jan 2015 = "inconclusive and of very low quality"]. What is the clinical and cost effectiveness of an electronic decision support system compared with current practice in reducing inappropriate blood transfusions, overall rates of blood transfusion and mortality?	Question not derived from the survey but from another source.		
		59	Red cell transfusion: dose, frequency, end points, outcome, home vs. hospital, efficacy in patients with chronic malignant haematologic diseases	H		
		15	Transfusion is a quick fix, but is it always the best fix?	H		
		757	A bigger push on hospitals etc on " Why use 2 when 1 will do" . Lets get out profesiso	H		
		451	Ensuring that all hospital staff realise that blood transfusion is akin to transplantation and not be blase about administering it	R B H		
		365	How can Hospitals reduce the requirements for Blood Transfusions	R B H		
		293	How can the risks and complications associated with blood transfusions be more clearly understood by the wider medical community?	NK		
		47	How can we improve the hospitals clinicians that blood is a limited resource, I feel they should be encouraged to be donors.	B H		
		62	How do we encourage staff to use blood only when necessary	H		
		439	How do we unify blood transfusion practices across disciplines (.e.g. cardiac surgery vs. general ICU)?	R B H		
		264	Should blood and blood product transfusion in trauma be better applied in NHS hospitals? Is current guidance actually being followed?	H		
		484	To save time and resources (for both patients and health care professionals) is it possible to reduce the amount of blood products that are prescribed?	B H		
		531	What measures could prevent blood transfusions?	H		
		8	Why do clinical staff seemingly ignore SOPs and improvise a procedure and end up getting it wrong - move to A7?	B		
		538	Who should decide that a patient should receive a blood transfusion?	R B H		
		186	How decision to transfuse is made	R B H		
		280	How can health care professionals in general be better informed about alternatives to blood transfusion?	NK		
		223	How can we ensure that evidence based best practice regarding optimising pre-op haemoglobin is implemented	H		
		182	What factors are the most important to ward clinical staff (consultants & junior doctors) in deciding when to initiate blood transfusion	H		
		246	How do we promote transfusion triggers and make doctors keep to it!	R B H		
		70	Should doctors have mandatory updates on blood transfusion, no matter what their seniority?	B H		
		243	What factors influence the usage demand for donated blood products & can waste be reduced?	B		
		221	What should determine the need to transfuse?	H		
		583	When is blood transfusion absolutely indicated and when can it be avoided	R B H		
		273	When should I transfuse patients?	H		
		142	Would it be beneficial to transfuse blood based on an ideal body weight rather than everyone receiving a similar amount?	H		
DtTr3	How can patients, relatives and carers be empowered to have greater say about their choices in relation to blood transfusion and it's alternatives?	21	Could alternatives be further explained to patients prior to transfusion route?	B H	1. NICE Guideline Recommendations: Patient information 43. Provide verbal and written information to patients who may have or who have had a transfusion, and their family members or carers (as appropriate), explaining: • the reason for the transfusion • the risks and benefits • the transfusion process • any transfusion needs specific to them • any alternatives that are available, and how they might reduce their need for a transfusion • that they are no longer eligible to donate blood • that they are encouraged to ask questions. 44. Document discussions in the patient's notes. 45. Provide the patient and their GP with copies of the discharge summary or other written communication that explains: • the details of any transfusions they had • the reasons for the transfusion • any adverse events • that they are no longer eligible to donate blood. 46. For guidance on communication and patient-centred care for adults, see the NICE guideline on patient experience in adult NHS services	Y
		424	How can the world of medicine become more open minded with patients who do no desire a blood transfusion as treatment	H		
		277	Should people about to undergo transfusion be counselled about their future ability to donate blood?	P B H		
		331	How do we improve public perception that having a blood transfusion is not the "answer to everything"	H		
		599	How could we empower patients to improve anaemia?	R H		
		469	Once a decision is made, why are Jehovah's Witnesses put under pressure to change their minds?	NK		
		290	Why are there so many different blood products. How do I know which is right for me?	R B H		
		476	Why was I put under pressure by hospital staff to change my decision to avoid blood and its derivatives?	NK		
		569	Where blood products are refused are there still clinicians who consider this an affront to their superior knowledge?	NK		
		568	Is it automatically assumed that the traditional use of blood products is the only option, or is it standard practise to advise patients of alternatives?	NK		
		758	Transfusion Avoidance	R B H		
		291	Do I really need a transfusion?	R B H		
		468	How can I be sure that my wishes regarding the avoidance of blood transfusion will be respected?	NK		
		22	How can patients be empowered to ensure they get only appropriate transfusion?	H		
		460	How much information is given to patients so that they can make an individual choice whether to have blood or alternatives?	NK		
		305	To avoid a blood transfusion how can I build up my red blood cell count	B		
		600	How could we empower patients to avoid unnecessary transfusion?	R H		
		428	We need more of an awareness of the alternatives to blood transfusion. It should not always be the first thing thought of when a patient presents with a low Hb. Lets think about optimising with oral iron/IV iron/ Health Promotion on diet and be strict on a cut off point if the patient is asymptomatic. Are all patients being told that they cannot be a blood donor once they have become a receiver? Perhaps this may give cause for the patient to think further about receiving in cases where they are asymptomatic and other forms are optimisation may be as effective for them?	H		
		354	What information is available to tell people if the alternatives to a blood transfusion?	R B H		

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DtTr6	How can patients with anaemia be identified and treated in a timely manner so that the need for transfusion ius avoided?	174	Are patients being screened and treated for anaemia before surgery to prevent the need for blood transfusion?	H	1. Potter LJ, Doleman B, Moppett IK. A systematic review of pre-operative anaemia and blood transfusion in patients with fractured hips. Anaesthesia. 2015;70(4):483-500. 2. Ng O, Keeler BD, Mishra A, Simpson A, Neal K, Brookes MJ, et al. Iron therapy for pre-operative anaemia. Cochrane Database of Systematic Reviews. 2015(-12):CD011588-CD. 3. Hogan M, Klein AA, Richards T. The impact of anaemia and intravenous iron replacement therapy on outcomes in cardiac surgery. European Journal of Cardio-Thoracic Surgery. 2015;47(2):218-26. 4. Chan AW, de Gara CJ. An evidence-based approach to red blood cell transfusions in asymptomatically anaemic patients. Annals of the Royal College of Surgeons of England. 2015;97(-8):556-62. 5. Borstlap WA, Stellingwerf ME, Moolla Z, Musters GD, Buskens CJ, Tanis PJ, et al. Iron therapy for the treatment of preoperative anaemia in patients with colorectal carcinoma: a systematic review. Colorectal Disease. 2015;17(-12):1044-54. ***Other Types:*** 1. Bonovas S, Fiorino G, Allocca M, Lytras T, Tsantes A, Peyrin-Biroulet L, et al. Intravenous versus oral iron for the treatment of anemia in inflammatory bowel disease: a systematic review and meta-analysis of randomized controlled trials. Medicine. 2016;95(-2):e2308-e. 2. Tay HS, Soiza RL. Systematic review and meta-analysis: what is the evidence for oral iron supplementation in treating anaemia in elderly people? Drugs & Aging. 2015;32(2):149-58.	N
		244	How to promote early identification of patients who are anaemic who are going to need a transfusion and treat it to avoid them needing a transfusion	R B H		
		16	Does a transfusion to correct anaemia lead to the true cause of the anaemia beingh missed?	H		
		486	How do Blood Transfusion experts penetrate into the Commissioners and GPs in order to fully employ Patient Blood Management which I believe should start in the community?	B H		
		77	How important is anaemia during pregnancy, what are the clinical consequences, how should oral iron be used (including prevention)?	B R H		
		180	How should anaemia be managed before elective surgery to reduce the risk of transfusion	P B R H		
		281	How can GPs be more engaged in the pre-operative process to ensure that blood counts are optimised before admission to hospital?	NK		
		159	Are hospital patients more or less likely to develop delirium with a lower haemoglobin	B H		
		396	Why do general doctors in hospital and GP surgeries understand so few facts about donor blood and the treatment of anaemia?	R B H		
DtTr8	Do patients and their relatives and/or carers receive enough information to help them understand about blood transfusion?	306	Are patients given enough information about the potential side effects ?	P B H	1. NICE Guideline Recommendations: Patient information 43. Provide verbal and written information to patients who may have or who have had a transfusion, and their family members or carers (as appropriate), explaining: • the reason for the transfusion • the risks and benefits • the transfusion process • any transfusion needs specific to them • any alternatives that are available, and how they might reduce their need for a transfusion • that they are no longer eligible to donate blood • that they are encouraged to ask questions. 44. Document discussions in the patient's notes. 45. Provide the patient and their GP with copies of the discharge summary or other written communication that explains: • the details of any transfusions they had • the reasons for the transfusion • any adverse events • that they are no longer eligible to donate blood. 46. For guidance on communication and patient-centred care for adults, see the NICE guideline on patient experience in adult NHS services	Y
		4	Are there any requirements or preparations I need to do before receiving a blood transfusion?	P		
		91	Did you understand the information provided to you before you were given a Blood Transfusion?	H		
		456	do patients receive enough information about blood transfusion	B H		
		297	How can I be sure the transfusion is safe.	P		
		133	How can we reassure the public that the transfusion is virus free	H		
		327	How certain are you that patients understand the risks of blood transfusions?	R B H		
		328	How certain are you that patients understand the risks of blood transfusions?	R B H		
		383	How do I explain side effects	R B H		
		302	How do I know that my transfusion blood is free from any health conditions that could be detrimental to me	R B		
		97	How do we best inform/consent patients for blood transfusion	H		
		52	How effective is the consent process for patients? Do recipients of blood products really understand the risks and benefits?	R B H		
		25	How much chance is there of getting illness through transfused blood	P		
		42	How well are the risks associated with blood transfusion conveyed to potential recipients?	R H		
		393	How well recipient of transfusion know the adverse reactions?	P B H		
		458	if I have a blood transfusion am I likely to stay in hospital longer	B H		
		148	If I needed an operation how much blood would I need?	B		
		457	if I have a blood transfusion is my cancer more likely to reoccur	B H		
		1	If I have a blood transfusion, can I be sure that I won't catch any viruses from it?	B		
		350	In non urgent transfusions is it possible to discuss with the recipient if requested the moral/ethical/religious implications of accepting someone else's blood into their body?	P		
		2	Is it possible that my body will reject or react badly to blood from a transfusion?	B		
		193	Is receipt of a blood transfusion protective against allergic disorders?	H		
		303	What are the dangers from a blood transfusion	B		
		418	What are the implications of receiving blood...like a leaflet to read	P		
		320	What are the known risks?	R B H		
		169	How do I know I have had a blood transfusion?	B		
		266	I don't think anyone is actually informed about what they received, how much and why.	R B H		
		595	Why do we not give relatives a simple comprehensive information leaflet when their relative is having a transfusion	H		
DtTr10	How do you decide at what haemoglobin level [trigger/threshold] a patient requires a blood transfusion?	164	How do you decide at what level (Hb) a patient needs a blood transfusion?	P R H	1. NICE Guideline Recommendations: 13. Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not: • have major haemorrhage or • have acute coronary syndrome or • need regular blood transfusions for chronic anaemia. 14. When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 16. Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia. 2. Desborough MJ, Colman KS, Prick BW, Duvekot JJ, Sweeney C, Odutayo A, et al. Effect of restrictive versus liberal red cell transfusion strategies on haemostasis: systematic review and meta-analysis. Thrombosis and Haemostasis. 2017. 3. Van Remoortel H, De Buck E, Dieltjens T, Pauwels NS, Compernolle V, Vandekerckhove P. Methodologic quality assessment of red blood cell transfusion guidelines and the evidence base of more restrictive transfusion thresholds. Transfusion. 2016;56(-2):472-80. 4. Carson JL, Stanworth SJ, Roubinian N, Fergusson DA, Triulzi D, Doree C, et al. Transfusion thresholds and other strategies for guiding allogeneic red blood cell transfusion. The Cochrane Database of Systematic Reviews. 2016(-10):CD002042-CD. 5. Shah A, Stanworth SJ, McKechnie S. Evidence and triggers for the transfusion of blood and blood products. Anaesthesia. 2015;70(Suppl 1):10-9, e3. 6. Kumar A, Mhaskar R, Grossman BJ, Kaufman RM, Tobian AA, Kleinman S, et al. Platelet transfusion: a systematic review of the clinical evidence. Transfusion. 2015;55(-5):1116-27. 7. Holst LB, Petersen MW, Haase N, Perner A, Wetterslev J. Restrictive versus liberal transfusion strategy for red blood cell transfusion: systematic review of randomised trials with meta-analysis and trial sequential analysis. BMJ. 2015;350:h1354-h.	Y
		334	How low can the haemoglobin be before transfusion needed?	H		
		104	How low can the haemoglobin be in an iron deficient patient before a transfusion is needed?	B H		
		132	Is the ideal haemoglobin target known for individual blood transfusion indications?	H		
		392	The threshold for transfusing a patient has been lowered to 70gm/dl. Why is that?	B H		
		258	Transfusion triggers?	H		
		368	What is considered to be the lowest HB to determine the need for transfusion?	B H		
		200	What is the ideal transfusion trigger?	B H		
		14	What is the lowest acceptable haemoglobin level at which transfusion is not beneficial to recovery?	R B H		
		329	What is the lowest transfusion threshold that is safe in stable patients?	H		
		475	What is the optimum threshold for transfusion in various patient groups	B H		
		96	What is the transfusion trigger	H		
		219	Is there a "correct" universal trigger for transfusion?	H		
		749	Transfusion thresholds and other strategies for guiding allogeneic red blood cell transfusion. Implications for research: Further randomized trials should not be aimed at addressing the safety of RBC transfusion policies within the range of haemoglobin thresholds tested in the trials identified in this review or in unselected groups of patients across broad clinical settings. Rather, additional trials should be targeted to address specific research questions, where the strength of evidence-based recommendations has significant uncertainty, as highlighted in this review. Subsets of patients where there is currently no adequately powered randomized controlled trial data to inform optimal RBC transfusion treatment include those with acute cardiovascular disease, neurological disorders including (traumatic) brain injury, and haematological and other malignancies. Outcomes of importance in trials would be mortality, but also functional and bleeding endpoints, specifically in transfusion-dependent participants with cancer and haemological malignancies. We believe that in these clinical groups, the clinical goals and pathophysiology preclude generalisation from the completed studies included in this review. Trials are also needed to evaluate lower haemoglobin concentrations such as 6.0 g/dL, especially in countries with suboptimal blood safety and inadequate blood supply. Further research is needed to identify methods to measure oxygen delivery to vital organs directly. All trials should be large enough to measure the impact of lower thresholds on clinical outcomes and should apply consistent definitions for all clinical outcomes, such as myocardial infarction and ischaemic heart disease.	Question not derived from the survey but from another source.		
		234	Compliance with a transfusion trigger	B H		
		165	Despite a low Hb and experiencing the side effects of this is a blood transfusion still not given?	P R H		

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		39	Does a higher clinical cut off for transfusion improve quality of life during recovery?	B H		
		335	What should be the level at which we transfuse blood products has this been researched.	B H		
		226	What are the causes of bad effects of transfusion that mean it is better to run Hb of 70 than transfuse to normal?	H		
		218	What are the risks/benefits of a restrictive transfusion strategy & what is the optimal target Hb?	B H		
		316	What level of Haemoglobin should trigger a blood transfusion in the non-major haemorrhage setting?	H		
		40	What is the optimum Haemoglobin level to transfuse a patient to	B H		
		120	When should a patient be prescribed a blood transfusion (i.e., at what haemoglobin level) when not actively bleeding?	R H		
		483	Can we explain the question around why giving blood to someone who's haem is above 7 helps reduce the need for inotropic support? should be do it , risks and benefits of each approach	H		
		482	Use of blood and other blood products in managing an active GI bleed in ICU, i.e. how much and what ratio to give	H		
		344	When should you transfuse in anaemia?	H		
		318	what are the optimum transfusion goals for the elderly (Co morbidities)	H		
DtTr10a	At what haemoglobin level [blood count] should patients in a perioperative* setting receivce a blood transfusion? *Perioperative means occuring or performed at or around the time of a transfusion.	517	Are liberal or restrictive transfusion practices in the peri-operative setting associated with benefit or harm?	H	1. NICE Guideline Recommendations: 13. Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not: • have major haemorrhage or • have acute coronary syndrome or • need regular blood transfusions for chronic anaemia. 14. When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 g/litre and a haemoglobin concentration target of 70–90 g/litre after transfusion. 16. Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia. Other refs: 1. Bennett S, Baker LK, Martel G, Shorr R, Pawlik TM, Tinmouth A, et al. The impact of perioperative red blood cell transfusions in patients undergoing liver resection: a systematic review. Hpb : the Official Journal of the International Hepato Pancreato Biliary Association. 2017. 2. Bagwe S, Chung LK, Lagman C, Voth BL, Barnette NE, Elhajjmoussa L, et al. Blood transfusion indications in neurosurgical patients: a systematic review. Clinical Neurology and Neurosurgery. 2017;155:83-9. 3. Hovaguimian F, Myles PS. Restrictive versus liberal transfusion strategy in the perioperative and acute care setting. A context-specific systematic review and meta-analysis of randomized controlled trials. Anesthesiology. 2016. 4. Teng Z, Zhu Y, Liu Y, Wei G, Wang S, Du S, et al. Restrictive blood transfusion strategies and associated infection in orthopedic patients: a meta-analysis of 8 randomized controlled trials. Scientific Reports. 2015;5:13421-. 5. Potter LJ, Doleman B, Moppett IK. A systematic review of pre-operative anaemia and blood transfusion in patients with fractured hips. Anaesthesia. 2015;70(4):483-500. 6. Patel NN, Avlonitis VS, Jones HE, Reeves BC, Sterne JA, Murphy GJ. Indications for red blood cell transfusion in cardiac surgery: a systematic review and meta-analysis. The Lancet Haematology. 2015;2(-12):e543-53. 7. Fominskiy E, Putzu A, Monaco F, Scandroglio AM, Karaskov A, Galas FR, et al. Liberal transfusion strategy improves survival in perioperative but not in critically ill patients. A meta-analysis of randomised trials. British Journal of Anaesthesia. 2015;115(-4):511-9. 8. Brunskill SJ, Millette SL, Shokoohi A, Pulford EC, Doree C, Murphy MF, et al. Red blood cell transfusion for people undergoing hip fracture surgery. Cochrane Database of Systematic Reviews. 2015.	Y
		709	Preoperative blood transfusions for sickle cell disease. Implications for research: Although information from a well-designed prospective randomised controlled trial of preoperative blood transfusion in people with SCD is ideal in order to make recommendations for the optimal use of this therapy, there are significant challenges in conducting randomised trials in people with haemoglobinopathies. In the Howard trial, out of 342 people screened only 70 were recruited with reasons for exclusion being decisions by treating clinicians, transfusion within the previous three months, refusal of consent, logistical reasons, low haemoglobin concentration, acute chest syndrome and orthopaedic surgery (Howard 2013). Issues that were not addressed in the included trials includes managing those with low risk surgery, efficacy of a regime of several top-up transfusions over four to six weeks in lieu of exchange transfusions, and the management of people with HBSC or HbSR+ disease.	Question not derived from the survey but from another source.		
		402	Can we agree on transfusion algorithms in the preoperative setting (evidence based, point of care tests used)?	H		
		131	Based on clinical trials of patient outcomes, blood transfusion in critical care is now much more conservative than in the past, have similar trials taken place for blood transfusion in other situations such as surgery or on medical wards?	H		
		613	In major joint replacement cases, what Hb % is the trigger point for PRBC transfusion?	B H		
		189	Does immediate postoperative (Hb) measurement after hip fracture improve patient outcome compared to standard postoperative (Hb) measurement?	R B H		
		135	Transfusion thresholds for post operative patients HDU/ward	H		
		717	Red blood cell transfusion for people undergoing hip fracture surgery. Implications for research: Further research would be justified to evaluate transfusion thresholds in the immediate perioperative period: both preoperatively and including the first 24 hours post operation. In particular, such research would need to consider people who were symptomatic or haemodynamically unstable who were excluded from most of these trials. In clinical practice, this presentation in a frail older person with a hip fracture, often with a degree of cognitive impairment, and frequently with one or more vascular risk factors in addition to age, may pose a clinical dilemma for the surgeon, anaesthetist and physician. The effects of the transfusion itself need to be separated from the possible effects of increased monitoring and medical input, and a description of the wider management protocol and service would be useful in new trials. Future trials should more clearly report on causes of fracture (e.g. fragility or trauma), should consider including a measure for cognitive impairment (e.g. delirium) and should consider standardised assessments of health-related quality of life, adapted for use in an elderly population, or validated for completion by the participant's relative or carer. In addition, new research is needed to manage better anaemia identified preoperatively, including appropriate use of iron as part of the broader initiatives of patient blood management (Goodnough 2014).	Question not derived from the survey but from another source.		
DtTr10b	At what haemoglobin level [blood count] should a non-surgical, general medical patient receivce a blood transfusion?	263	At what haemoglobin level should blood transfusion be considered for critical care patients.	R B H	1. NICE Guideline Recommendations: 13. Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not: • have major haemorrhage or • have acute coronary syndrome or • need regular blood transfusions for chronic anaemia. 14. When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 g/litre and a haemoglobin concentration target of 70–90 g/litre after transfusion. 16. Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia. Other refs: 1. Odutayo A, Desborough MJ, Trivella M, Stanley AJ, Doree C, Collins GS, et al. Restrictive versus liberal blood transfusion for gastrointestinal bleeding: a systematic review and meta-analysis of randomised controlled trials. The Lancet Gastroenterology & Hepatology. 2017;2(-5):354-60. 2. Estcourt LJ, Malouf R, Trivella M, Fergusson DA, Hopewell S, Murphy MF. Restrictive versus liberal red blood cell transfusion strategies for people with haematological malignancies treated with intensive chemotherapy or radiotherapy, or both, with or without haematopoietic stem cell support. The Cochrane Database of Systematic Reviews. 2017(-1):CD011305-CD. 3. Dupuis C, Sonneville R, Adrie C, Gros A, Darmon M, Bouadma L, et al. Impact of transfusion on patients with sepsis admitted in intensive care unit: a systematic review and meta-analysis. Annals of Intensive Care. 2017;7(-1):5-.	Y
		443	At what Hb threshold should post-partum women be transfused to improve maternal recovery?	B H		
		384	Transfusion threshold in different situations and context. e.g. TRICC/other trials guide us but for what length of duration in ICU stay does these trials apply? Surely situation at day 20 is very different that day 2.	B H		
		134	Transfusion thresholds for general intensive care patients with and without acute coronary syndromes	H		
		336	Restrictive policies for medical patients for both blood and platelets	H		
		233	transfusion trigger in the critically ill	B H		
		487	what is the correct Hb to transfuse in the postnatal period given that maternal physiology is so different from standard adults	H		
		126	What is the optimal blood transfusion threshold for patients at different stages in the evolution of critical illness?	R B H		
		250	What is the best threshold for blood transfusion on the ICU?	B H		

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		124	What is the optimum level ([hb]) to transfuse red cells in the severely ill patient	H	4. Veigas PV, Callum J, Rizoli S, Nascimento B, da Luz LT. A systematic review on the rotational thrombelastometry (ROTEM(R)) values for the diagnosis of coagulopathy, prediction and guidance of blood transfusion and prediction of mortality in trauma patients. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2016;24(-1):114-. 5. Prescott LS, Taylor JS, Lopez-Olivo MAMMF, VonVille HM, Lairson DR, Bodurka DC. How low should we go: a systematic review and meta-analysis of the impact of restrictive red blood cell transfusion strategies in oncology. Cancer Treatment Reviews. 2016;46:1-8. 6. Keir A, Pal S, Trivella M, Lieberman L, Callum J, Shehata N, et al. Adverse effects of red blood cell transfusions in neonates: a systematic review and meta-analysis. Transfusion. 2016. 7. Estcourt LJ, Ingram C, Doree C, Trivella M, Stanworth SJ. Use of platelet transfusions prior to lumbar punctures or epidural anaesthesia for the prevention of complications in people with thrombocytopenia. The Cochrane Database of Systematic Reviews. 2016(-5):CD011980-CD. 8. Christou G, Iyengar A, Shorr R, Tinmouth A, Saidenberg E, Maze D, et al. Optimal transfusion practices after allogeneic hematopoietic cell transplantation: a systematic scoping review of evidence from randomized controlled trials. Transfusion. 2016. 9. Boutin A, Chasse M, Shemilt M, Lauzier F, Moore L, Zarychanski R, et al. Red blood cell transfusion in patients with traumatic brain injury: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016;30(-1):15-24. 10. McQuilten ZK, Crighton G, Brunskill S, Morrison JK, Richter T, Waters N, Murphy MF, Wood EM. Optimal Dose, Timing and Ratio of Blood Products in Massive Transfusion: Results from a Systematic Review. Transfusion Medicine Reviews. 2017. 11. Gu Y, Estcourt LJ, Doree C, Hopewell S, Vyas P. Comparison of a restrictive versus liberal red cell transfusion policy for patients with myelodysplasia, aplastic anaemia, and other congenital bone marrow failure disorders. Cochrane Database of Systematic Reviews. 2015(-10):CD011577-CD. 12. Estcourt LJ, Stanworth SJ, Doree C, Hopewell S, Trivella M, Murphy MF. Comparison of different platelet count thresholds to guide administration of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-11):CD010983-CD. 13. Estcourt LJ, Stanworth S, Doree C, Trivella M, Hopewell S, Blanco P, et al. Different doses of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-10):CD010984-CD. 14. Estcourt LJ, Desborough M, Hopewell S, Doree C, Stanworth SJ. Comparison of different platelet transfusion thresholds prior to insertion of central lines in patients with thrombocytopenia. Cochrane Database of Systematic Reviews. 2015(-12):CD011771-CD. 15. English SW, Chasse M, Turgeon AF, Tinmouth A, Boutin A, Pagliarello G, et al. Red blood cell transfusion and mortality effect in aneurysmal subarachnoid hemorrhage: a systematic review and meta-analysis protocol. Systems Review. 2015;4(-1):41-. 16. Crighton GL, Estcourt LJ, Wood EM, Trivella M, Doree C, Stanworth S. A therapeutic-only versus prophylactic platelet transfusion strategy for preventing bleeding in patients with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-9):CD010981-CD. 17. Chan AW, de Gara CJ. An evidence-based approach to red blood cell transfusions in asymptomatically anaemic patients. Annals of the Royal College of Surgeons of England. 2015;97(-8):556-62.	
DtTr10c	At what haemoglobin level [blood count] should patients with heart disease (including coronary artery disease, heart attacks or angina) receivce a blood transfusion?	220	Does ischemic heart disease impact on transfusion trigger?	B H	1. NICE Guideline Recommendation: 15. Consider a red blood cell transfusion threshold of 80 g/litre and a haemoglobin concentration target of 80–100 g/litre after transfusion for patients with acute coronary syndrome. 2. Wang Y, Shi X, Wen M, Chen Y, Zhang Q. Restrictive versus liberal blood transfusion in patients with coronary artery disease: a meta-analysis. Current Medical Research and Opinion. 2017:1-17. 3. Ripolles Melchor J, Casans Frances R, Espinosa A, Martinez Hurtado E, Navarro Perez R, Abad Gurumeta A, et al. Restrictive versus liberal transfusion strategy for red blood cell transfusion in critically ill patients and in patients with acute coronary syndrome: a systematic review, meta-analysis and trial sequential analysis. Minerva Anestesiologica. 2016;82(-5):582-98. 4. Docherty AB, O'Donnell R, Brunskill S, Trivella M, Doree C, Holst L, et al. Effect of restrictive versus liberal transfusion strategies on outcomes in patients with cardiovascular disease in a non-cardiac surgery setting: systematic review and meta-analysis. BMJ. 2016;352:i1351-i. 5. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, Nolan J, et al. Blood transfusion after percutaneous coronary intervention and risk of subsequent adverse outcomes: a systematic review and meta-analysis. JACC: Cardiovascular Interventions. 2015;8(3):436-46. 6. Chatterjee S, Wetterslev J, Sharma A, Lichstein E, Mukherjee D. Association of blood transfusion with increased mortality in myocardial infarction: a meta-analysis and diversity-adjusted study sequential analysis. JAMA Internal Medicine. 2013;173(2):132-9.	Y
		158	Do patients with ischemic heart disease need a higher trigger for transfusion	B H		
		114	what is the optimal transfusion for patients with unstable coronary artery disease	H		
		113	What is the optimal transfusion threshold in patients with stable coronary artery disease and intercurrent illness	H		
		685	NICE GUIDELINE RESEARCH KEY RECOMMENDATION: Red blood cell transfusion & cardiovascular disease: What is the clinical and cost effectiveness of restrictive compared with liberal red blood cell thresholds and targets for patients with chronic cardiovascular disease?	Question not derived from the survey but from another source.		
		518	What is the relation between different Hb target levels and myocardial performance in patients with heart disease?	H		
		590	does the transfusion trigger for those with IHD but no active ischaemia need further clarification	B H		
DtTr10d	At what haemoglobin level [blood count] should a patient who has experienced an acute neurological event (e.g. a stroke or brain injury) receivce a blood transfusion?	136	Transfusion thresholds for patients with acute brain injury	H		
DtTr10e	At what haemoglobin level [blood count] should a patient who has experienced major trauma (e.g. a car accident) receivce a blood transfusion?	There was no individual survey question generated on this topic.				
DtTr10f	At what haemoglobin level [blood count] should a patient with cancer receivce a blood transfusion?	There was no individual survey question generated on this topic.				
DtTr10g	At what haemoglobin level [blood count] should a patient who has experienced a haematological (blood or bone marrow) disorder receivce a blood transfusion?	713	Comparison of a restrictive versus liberal red cell transfusion policy for patients with myelodysplasia aplastic anaemia and other congenital bone marrow failure disorders. Implications for research: As the incidence of MDS rises with an ageing population, many of whom are unable to tolerate curative therapy, further clinical trials with robust methodology are now required to develop the optimal transfusion strategy for such people.	Question not derived from the survey but from another source.		
		78	Patients with cancer/haematological malignancies/leukaemia/MDS, and production failure, what are the optimal red cell transfusion strategies	B H		
		106	Does transfusion to a haemoglobin >100 or >110 or >120 improve the quality of life of MDS patients?	B H		
		51	Red cell transfusion thresholds in the management of patients with AML	H		
		82	What is the optimal red cell transfusion threshold for patients with acute leukaemia receiving intensive treatment?	R B H		
DtTr12a	What is the optimal type and combination of blood products [red blood cells, platelets, frozen plasma] for adult patients* with a major haemorrhage that	55	Are major haemorrhage protocols optimised for different age groups e.g. elderly?	H	1. Yu F, Zhong T, Wu G. [Efficacy of high versus low plasma: red blood cell ratio resuscitation in patients with severe trauma requiring massive blood transfusion: a meta-analysis]. Nan Fang Yi Ke Da Xue Xue Bao = Journal of Southern Medical University. 2017;37(-1):119-23. 2. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or rotational thromboelastometry (ROTEM) to monitor haemostatic treatment in bleeding patients: a systematic review with meta-analysis and trial sequential analysis. Anaesthesia. 2017. Apr;72(4):519-531. doi: 10.1111/anae.13765 3. Cannon JW, Khan MA, Raja AS, Cohen MJ, Como JJ, Cotton BA, et al. Damage control resuscitation in patients with severe traumatic hemorrhage: a practice management guideline from the Eastern Association for the Surgery of Trauma. The Journal of Trauma and Acute Care Surgery. 2017;82(-3):605-17.	N
		68	How can we clarify and improve the guidance on massive haemorrhage?	B H		
		54	In major haemorrhage settings for example trauma, is there any information how older or younger patients respond to generic major haemorrhage protocols?	H		
		640	Improved protocols for massive haemorrhages in the critical care unit	B H		

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	a major haemorrhage that requires a transfusion of 4 or more units of blood]? * Aged over 16 years old.	314	Wider knowledge of best way to manage brisk haemorrhage i.e. ratio of blood:FFP:platelets	P R B H	4. Fahrendorff M, Oliveri RS, Johansson PI. The use of viscoelastic haemostatic assays in goal-directing treatment with allogeneic blood products - a systematic review and meta-analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2017;25(-1):39-.	
		453	What is the ideal blood:ffp:platelets ratio during major haemorrhage in the operating theatre	B H	5. Deppe AC, Weber C, Zimmermann J, Kuhn EW, Slottosch I, Liakopoulos OJ, et al. Point-of-care thromboelastography/thromboelastometry-based coagulation management in cardiac surgery: a meta-analysis of 8332 patients. The Journal of Surgical Research. 2016;203(-2):424-33.	
		98	what is the best ratio of blood products during massive haemorrhage	H	6. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or thromboelastometry (ROTEM) to monitor haemostatic treatment versus usual care in adults or children with bleeding. The Cochrane Database of Systematic Reviews. 2016(-8):CD007871-CD.	
		498	What are the ideal ratios of a major haemorrhage policy e.g. RBC:FFP: platelets: cryo. Which strategies & techniques result in improved patient outcomes?	H	7. Jones AR, Frazier SK. Association of blood component ratio with clinical outcomes in patients after trauma and massive transfusion: a systematic review. Advanced Emergency Nursing Journal. 2016;38(-2):157-68.	
		56	In major trauma bleeding, there is evidence of early platelet dysfunction and the PROPPR study gave upfront platelets, however not all trauma units have readily available stocks of platelets. Are there alternatives to platelet transfusion e.g. fibrinogen replacement that might compensate for this?	H	8. Jiang LB, Zhang M, Jiang SY, Ma YF. Early goal-directed resuscitation for patients with severe sepsis and septic shock: a meta-analysis and trial sequential analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2016;24(-1):23-. 9. Boutin A, Chasse M, Shemilt M, Lauzier F, Moore L, Zarychanski R, et al. Red blood cell transfusion in patients with traumatic brain injury: a systematic review and meta-analysis. Transfusion Medicine Reviews. 2016;30(-1):15-24. 10. McQuilten ZK, Crighton G, Engelbrecht S, Gotmaker R, Brunskill SJ, Murphy MF, et al. Transfusion interventions in critical bleeding requiring massive transfusion: a systematic review. Transfusion Medicine Reviews. 2015;29(-2):127-37. 11. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.	
		115	how should we arrange blood product transfusion in major haemorrhage, and can near-patient testing help?	H		
		121	What is the optimal 'formulation' of blood (i.e., combination of packed red blood cells, platelets, fresh frozen plasma, whole blood) for patients prescribed a massive transfusion (e.g., more than four units of blood)?	R H		
		205	Role of whole blood in managing trauma haemorrhage	B H		
		283	Can more be done to promote better blood loss management?	NK		
		319	should we have whole blood available for major haemorrhage	H		
		373	Why haven't we adopted the military usage of using blood products: not RBC but more platelets & WC?	B H		
		459	How much thought is put into the option of using alternatives to blood in an emergency situation?	NK		
		465	Is blood transfusion still the best treatment for sudden blood loss due to cardiac cath lab complications?	H		
		118	How can over transfusion be prevented for patients with traumatic haemorrhage?	R B H		
		463	Is blood transfusion still the best treatment for sudden haemorrhage due to cardiac cath lab complications?	H		
		499	What are ideal products for trauma haemorrhage Rhesus in the prehospital environment? Saline, FFP alone, RBC & FFP or RBC & lyoplas or fibrinogen concentrate/ cryo?	H		
DtTr12b	What is the optimal type and combination of blood products [red blood cells, platelets, frozen plasma] for paediatric patients* with a major haemorrhage that requires a transfusion of 4 or more units of blood]? * Aged less than 16 years old.	605	What ratio should we transfuse children in trauma, massive haemorrhage?	H	No available SR evidence	X
DtTr12c	What is the optimal type and combination of blood products [red blood cells, platelets, frozen plasma] for obstetric patients with a major haemorrhage that requires [a transfusion of 4 or more units of blood]?	108	Is one unit blood transfusion policy appropriate within 24 hours of major postpartum haemorrhage?	H	1. Levy JH, Grottke O, Fries D, Kozek-Langenecker S. Therapeutic plasma transfusion in bleeding patients: a systematic review. Anesthesia and Analgesia. 2017;124(-4):1268-76. 2. Wikkelso, Aj. The role of fibrinogen and haemostatic assessment in postpartum haemorrhage. Danish Medical Journal. 2015;61(4):pii: B5055-pii: B.	N
		107	When should FFP be given during major obstetric haemorrhage?	H		
DtTr13	What is the optimal blood transfusion dose [number of units] [in any situation] for maximum patient benefit?	347	Is it better to give a little blood, i.e. 1 unit at a time to top a patient up in the BMT process rather than say a 3 unit transfusion to last a longer time.	B H	1. NICE Guideline Recommendations: 17. Consider single-unit red blood cell transfusions for adults (or equivalent volumes calculated based on body weight for children or adults with low body weight) who do not have active bleeding. 18. After each single-unit red blood cell transfusion (or equivalent volumes calculated based on body weight for children or adults with low body weight), clinically reassess and check haemoglobin levels, and give further transfusions if needed. 1. Torres ME, Rodriguez JN, Ramos JL, Gomez FA. Transfusion in palliative cancer patients: a review of the literature. Journal of Palliative Medicine. 2014;17(1):88-104	Y
		310	Why do blood transfusions always include two units and not just one?	P		
		117	How much blood can one transfuse in an acute setting?	H		
DtTr14	When and how should prophylactic* platelets be given to reduce procedural bleeding complications in patients with low platelets? *Prophylactic platelets are given to prevent bleeding.	119	How can platelets be used efficiently to prevent peri-procedural bleeding in patients with thrombocytopenia	R B H	1. NICE Guideline Recommendations: Platelet: Thresholds and Targets i) Patients with thrombocytopenia who are bleeding 19. Offer platelet transfusions to patients with thrombocytopenia who have clinically significant bleeding (World Health Organization [WHO] grade 2) and a platelet count below 30×109 per litre. 20. Use higher platelet thresholds (up to a maximum of 100×109 per litre) for patients with thrombocytopenia and either of the following: • severe bleeding (WHO grades 3 and 4) • bleeding in critical sites, such as the central nervous system (including eyes). ii) Patients who are not bleeding or having invasive procedures or surgery 21. Offer prophylactic platelet transfusions to patients with a platelet count below 10×109 per litre who are not bleeding or having invasive procedures or surgery, and who do not have any of the following conditions: • chronic bone marrow failure • autoimmune thrombocytopenia • heparin-induced thrombocytopenia • thrombotic thrombocytopenic purpura. iii) Patients who are having invasive procedures or surgery 22. Consider prophylactic platelet transfusions to raise the platelet count above 50x109 per litre in patients who are having invasive procedures or surgery. 23. Consider a higher threshold (for example 50–75×109 per litre) for patients with a high risk of bleeding who are having invasive procedures or surgery, after taking into account: • the specific procedure the patient is having • the cause of the thrombocytopenia • whether the patient's platelet count is falling • any coexisting causes of abnormal haemostasis. 24. Consider prophylactic platelet transfusions to raise the platelet count above 100×109 per litre in patients having surgery in critical sites, such as the central nervous system (including the posterior segment of the eyes). iv) When prophylactic platelet transfusions are not indicated 25. Do not routinely offer prophylactic platelet transfusions to patients with any of the following: • chronic bone marrow failure • autoimmune thrombocytopenia • heparin-induced thrombocytopenia • thrombotic thrombocytopenic purpura. 26. Do not offer prophylactic platelet transfusions to patients having procedures with a low risk of bleeding, such as adults having central venous cannulation or any patients having bone marrow aspiration and trephine biopsy. Platelet: doses 27. Do not routinely transfuse more than a single dose of platelets.	Y
		714	Different doses of prophylactic platelet transfusion for preventing bleeding in people with ha Implications for research: Assessment of bleeding in future trials - One of the difficulties within this review was the variability between studies in assessing and grading bleeding. The WHO classification of bleeding, although widely used, has never been validated, and therefore the assumption that all WHO grade 2 bleeding is clinically significant has been brought into question. For future studies, an agreed international consensus on assessing and grading bleeding would greatly enhance the ability to compare platelet transfusion trials. This would need to be validated and to take into account the impact bleeding has upon the patient from both a medical perspective and with regard to their quality of life. The Biomedical Excellence for Safer Transfusion (BEST) Collaborative is currently developing a standardised bleeding assessment form. It is acknowledged that blinding in platelet transfusion trials is difficult. However, whenever possible, the bleeding assessor should be blinded to the intervention.ematological disorders after myelosuppressive chemotherapy or stem cell transplantation.	Question not derived from the survey but from another source.		
		711	A therapeutic-only versus prophylactic platelet transfusion strategy for preventing bleeding in patients with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Implications for research: One of the main constraints in performing the meta-analysis in this review was the different time periods in which trials reported bleeding. Implications for future research include standardised consensus time periods for reporting outcomes of interest such as bleeding. Further research is needed to identify the subgroups of patients for which it may be safe to adopt a therapeutic-only platelet transfusion policy, in particular patients receiving autologous HSCT. Whether the conditioning regimens, indication for HSCT, and number of viable CD34 positive cells in the autologous HSCT have any impact on duration of thrombocytopenia and bleeding rates. Another cohort of haematology patients who currently receive regular platelet transfusions include people with myelodysplasia, and an ongoing trial will be able to add further evidence in this area. Other areas of interest are the differences in leukaemia patients receiving different intensities of chemotherapy, that is induction chemotherapy versus consolidation chemotherapy. Double-blind, placebo-controlled RCTs are not feasible to compare a therapeutic-only versus prophylactic platelet transfusion policy because clinicians will be unblinded when they see the participants' platelet counts rise after receiving a prophylactic platelet transfusion and not rise after receiving a placebo. There is also a safety issue for participants. There is a risk that participants may receive placebo rather than a platelet transfusion when they have severe or life-threatening bleeding. However, blinding assessors of bleeding to the intervention is feasible if they do not see any of the participants' blood results.	Question not derived from the survey but from another source.		

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		719	Comparison of different platelet count thresholds to guide administration of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Conclusions on the non-inferiority of a platelet count threshold of 10 x 109/L compared to 20 x 109/L or 30 x 109/L have been based on underpowered studies leading to imprecise estimates for the outcomes within this review. In the Rebulla 1997 study (255 participants), the power calculations were based on the assumption that the rate of WHO Grade 2 or above bleeding was 30%, but the actual rate in this study was 20%. To detect a 50% increase in the rate of bleeding (that is from 20% to 30%) with 90% power would require 392 participants per arm of the study, and to detect a 25% increase in the rate of bleeding (that is from 20% to 25%) with 80% power would require 1098 participants per arm of the study. The combined results from all three studies would not be sufficiently powered to detect a 50% increase in the rate of bleeding in the standard platelet transfusion threshold (10 x 109/L) arm, if we assumed the rate of bleeding was 20% in all three studies. No RCTs have compared a lower platelet count threshold (5 x 109/L) versus standard platelet transfusion threshold (10 x 109/L); different platelet count thresholds (5 x 109/L, 20 x 109/L, 30 x 109/L, or 50 x 109/L) that did not include a comparison against the standard platelet transfusion threshold (10 x 109/L); or alternative thresholds to guide prophylactic platelet transfusions (for example platelet mass, immature platelet fraction, absolute immature platelet number) in people with haematological malignancies. Additional evidence is required from new RCTs to determine the most appropriate platelet transfusion threshold to guide prophylactic platelet transfusions. Assessment of bleeding in future trials: One of the difficulties within this review was the variability between studies in assessing and grading bleeding. The WHO classification of bleeding, although widely used, has never been validated, and therefore the assumption that all Grade 2 bleeding is clinically significant has been brought into question. For future studies, an international consensus on assessing and grading bleeding would greatly enhance the ability to compare platelet transfusion trials. This would need to be validated and to take into account the impact that bleeding has upon the patient from both a medical perspective and with regard to quality of life. It is acknowledged that blinding in platelet transfusion trials is difficult. However, whenever possible, the bleeding assessor should be blinded to the intervention.	Question not derived from the survey but from another source.	28. Only consider giving more than a single dose of platelets in a transfusion for patients with severe thrombocytopenia and bleeding in a critical site, such as the central nervous system (including eyes). 29. Reassess the patient's clinical condition and check their platelet count after each platelet transfusion, and give further doses if needed. 2. Estcourt LJ, Ingram C, Doree C, Trivella M, Stanworth SJ. Use of platelet transfusions prior to lumbar punctures or epidural anaesthesia for the prevention of complications in people with thrombocytopenia. The Cochrane Database of Systematic Reviews. 2016(-5):CD011980-CD. 3. Desborough M, Hadjinicolaou AV, Chaimani A, Trivella M, Vyas P, Doree C, et al. Alternative agents to prophylactic platelet transfusion for preventing bleeding in people with thrombocytopenia due to chronic bone marrow failure: a meta-analysis and systematic review. The Cochrane Database of Systematic Reviews. 2016(-10):CD012055-CD. 4. Desborough M, Estcourt LJ, Doree C, Trivella M, Hopewell S, Stanworth SJ, et al. Alternatives, and adjuncts, to prophylactic platelet transfusion for people with haematological malignancies undergoing intensive chemotherapy or stem cell transplantation. The Cochrane Database of Systematic Reviews. 2016(-8):CD010982-CD. 5. Kumar A, Mhaskar R, Grossman BJ, Kaufman RM, Tobian AA, Kleinman S, et al. Platelet transfusion: a systematic review of the clinical evidence. Transfusion. 2015;55(-5):1116-27. 6. Estcourt LJ, Stanworth SJ, Doree C, Hopewell S, Trivella M, Murphy MF. Comparison of different platelet count thresholds to guide administration of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-11):CD010983-CD. 7. Estcourt LJ, Stanworth S, Doree C, Trivella M, Hopewell S, Blanco P, et al. Different doses of prophylactic platelet transfusion for preventing bleeding in people with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-10):CD010984-CD. 8. Estcourt LJ, Desborough M, Hopewell S, Doree C, Stanworth SJ. Comparison of different platelet transfusion thresholds prior to insertion of central lines in patients with thrombocytopenia. Cochrane Database of Systematic Reviews. 2015(-12):CD011771-CD. 9. Crighton GL, Estcourt LJ, Wood EM, Trivella M, Doree C, Stanworth S. A therapeutic-only versus prophylactic platelet transfusion strategy for preventing bleeding in patients with haematological disorders after myelosuppressive chemotherapy or stem cell transplantation. Cochrane Database of Systematic Reviews. 2015(-9):CD010981-CD.	
		704	Use of platelet transfusions prior to lumbar punctures or epidural anaesthesia for the prevention of complications in people with thrombocytopenia. Implications for research: It is unlikely that any future randomised controlled trials will be performed with a primary outcome of major bleeding because the event is rare. To detect a doubling in the number of participants with major bleeding from 0.1% to 0.2% would require a study with more than 47,000 participants. A summary of the best available evidence from non-randomised studies is required, the last systematic search of the non-randomised literature was performed before 2010.	Question not derived from the survey but from another source.		
		743	Alternative agents to prophylactic platelet transfusion for preventing bleeding in people with thrombocytopenia due to chronic bone marrow failure: a meta-analysis and systematic review. Implications for research: Our search strategy has identified four further trials of TPO mimetics (eltrombopag) with 837 participants, which are presently underway for people with bone marrow failure. In order to demonstrate a fall in bleeding events from 26 in 100 to 16 in 100 participants (as seen in the eltrombopag data), a study would need to recruit 514 participants (80% power, 5% significance) and it is likely that the publication of additional data from ongoing trials will answer this question. There are no adequate randomised controlled trials assessing artificial platelet substitutes, platelet-poor plasma, rFVIIa, rFXIII, interleukin 6, interleukin 11, fibrinogen concentrate, DDAVP or antifibrinolytics for people with bone marrow failure and this remains a potential area for future research.	Question not derived from the survey but from another source.		
		706	Alternatives and adjuncts to prophylactic platelet transfusion for people with haematological malignancies undergoing intensive chemotherapy or stem cell transplantation. Implications for research: Our search strategy identified five further trials of TPO mimetics (eltrombopag) that are presently underway for participants undergoing intensive chemotherapy and one further trial of AMG531 (romiplostim) that was completed but the results have not yet been reported. The problems with reporting outcomes of the trials in this systematic review make it difficult to interpret the value of additional trials of TPO mimetics and without further data, a recommendation cannot be made. To detect a decrease in the proportion of participants with clinically significant bleeding from 12 in 100 to 6 in 100 would require a trial containing at least 708 participants (80% power, 5% significance). Detection of a decrease from 43 in 100 to 22 in 100 would require a trial containing at least 150 participants (80% power, 5% significance). The search identified no trials of other alternative agents such as artificial platelets, fibrinogen concentrate, rFVIIa or DDAVP and further research will be necessary to determine whether these agents have a role in preventing bleeding for people with thrombocytopenia undergoing intensive chemotherapy.	Question not derived from the survey but from another source.		
		718	Comparison of different platelet transfusion thresholds prior to insertion of central lines in patients with thrombocytopenia. Implications for research: The ongoing trial that compares two different platelet count thresholds and is due to be completed in December 2017 will be unable to answer the primary questions of this review because the study is too small. To detect a doubling in the number of participants with major bleeding from 1% to 2% would require a study with over 4600 participants; the ongoing study is only planning to recruit 165 participants. No trials have been identified that compared no platelet transfusions versus a prespecified platelet count threshold. Further randomised controlled clinical trials are now required, in order to develop the optimal transfusion strategy for patients who are thrombocytopenic and require a central line insertion.	Question not derived from the survey but from another source.		
DtTr15	How can the blood transfusion process be delivered more safely in hospitals?	589	How can we educate healthcare professionals to adopt best practice in RBC transfusion	B H	No available up-to-date evience.	N
		69	Is the training given to junior doctors on transfusion enough?	B H		
		94	JUNIOR DOCTORS. How consistent is their training in Transfusion Avoidance June 2015 and use of Alternatives?	Jehovah's Witness		
		641	Nursing and medical team to have a better and in depth understanding of the side effects of blood transfusions and be aware of common haematology medical problems which can interfere with blood donation/transfusion.	B H		
		502	Shouldn't NMS put more money in to researching and training surgeons in blood conservation techniques?	NK		
		477	Why can't medical staff give advice on non-blood products?	NK		
		440	Why is there such a disconnect between knowledge and practice regarding transfusion requirements in clinical medicine? i.e. Are medical students taught the indications and evidence for transfusion?	H		
		49	How do we improve the sharing of knowledge in transfusion science to juniors staff	B H		
		389	Why is blood transfusion training not a nationally required core mandatory training subject	H		
		330	How do we safeguard unnecessary transfusion?	H		
		11	Why can't experienced nursing staff prescribe blood?	R B H		
		259	Do you reassess after giving each unit?	H		
		416	Is ever a 1 or 2 pint transfusion valid since this amount can be donated by an individual?	NK		
DTtR18	Are drugs a cost effective alternative to blood transfusion for the management of anaemia?	10	What alternatives provide the best outcome	P B H	1. NICE Guideline Recommendations 1-5: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin	Y
		450	Minimising the use of donated blood and blood products, without compromising patient safety	R B H	1. Do not offer erythropoietin to reduce the need for blood transfusion in patients having surgery, unless: • the patient has anaemia and meets the criteria for blood transfusion, but declines it because of religious beliefs or other reasons or • the appropriate blood type is not available because of the patient's red cell antibodies. 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence) • are diagnosed with functional iron deficiency	
		74	Alternatives to transfusion in children	R B H		
		75	What are the alternatives to receiving a blood transfusion?	R B		
		500	Why are alternatives to transfusions not more widely offered.	NK		
		371	What strategies exist to avoid transfusion in chronic anaemia?	B H		
		403	How can we minimize blood transfusions?	H		

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		184	Alternatives to blood transfusion	H	• are diagnosed with iron-deficiency anaemia, and the interval between the diagnosis of anaemia and surgery is predicted to be too short for oral iron to be effective.
		339	what happens when an individual cannot receive transfusion due to reaction	P H	4. For guidance on managing anaemia in patients with chronic kidney disease, see the NICE guideline on anaemia management in chronic kidney disease.
		294	When considering transfusion alternatives, how can more money be put into researching these alternatives and sharing the knowledge of these alternatives?	NK	5. For guidance on managing blood transfusions for people with acute upper gastrointestinal bleeding, see section 1.2 in the NICE guideline on acute upper gastrointestinal bleeding.
		337	Alternative strategies	H	NICE Guideline Recommendations 6-9: Alternatives to blood transfusion for patients having surgery: Cell salvage and tranexamic acid
		227	What are the alternatives to blood transfusion	R	6. Offer tranexamic acid to adults undergoing surgery who are expected to have at least moderate blood loss (greater than 500 ml)
		236	What are all the alternatives to transfusion?	H	7. Consider tranexamic acid for children undergoing surgery who are expected to have at least moderate blood loss (greater than 10% blood volume).
		237	If an alternative is appropriate, how efficient is this compared to transfusion?	H	8. Do not routinely use cell salvage without tranexamic acid.
		241	Alternative options for blood products to treat patients needing transfusion	B R H	9. Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery).
		286	What further can be done to mitigate the need for a transfusion	NK	
		695	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: It may also be helpful to explore reasons why improved anaemia may lead to better outcomes; that is, whether ESAs allow better compliance with chemotherapy.	Question not derived from the survey but from another source.	2. Li C, Gong Y, Dong L, Xie B, Dai Z. Is prophylactic tranexamic acid administration effective and safe for postpartum hemorrhage prevention? A systematic review and meta-analysis. Medicine. 2017;96(-1):e5653-e. 3. Ray S, Ray A. Non-surgical interventions for treating heavy menstrual bleeding (menorrhagia) in women with bleeding disorders. The Cochrane Database of Systematic Reviews. 2016(-11):CD010338-CD. 4. Prutsky G, Domecq JP, Salazar CA, Accinelli R. Antifibrinolytic therapy to reduce haemoptysis from any cause. The Cochrane Database of Systematic Reviews. 2016(-11):CD008711-CD.
		693	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: More evidence is needed to assess the impact of Hb normalisation on utility. If clinical studies of normalisation are conducted it would also be valuable for HRQoL outcomes to be measured, preferably using the EQ-5D or another universal HRQoL questionnaire, so that incremental QALYs resulting from normalising from a higher Hb level can be modelled directly rather than by using the surrogate of Hb level.	Question not derived from the survey but from another source.	5. Jiang M, Chen P, Gao Q. Systematic review and network meta-analysis of upper gastrointestinal hemorrhage interventions. Cellular Physiology and Biochemistry : International Journal of Experimental Cellular Physiology, Biochemistry, and Pharmacology. 2016;39(-6):2477-91. 6. Roberts I, Shakur H, Ker K, Coats T, collaborators C-T. Antifibrinolytic drugs for acute traumatic injury. Cochrane Database of Systematic Reviews. 2015;5:CD004896-CD. 7. Marti-Carvajal AJ, Sola I. Antifibrinolytic amino acids for upper gastrointestinal bleeding in people with acute or chronic liver disease. Cochrane Database of Systematic Reviews. 2015(-6):CD006007-CD. 8. Alam A, Choi S. Prophylactic use of tranexamic acid for postpartum bleeding outcomes: a systematic review and meta-analysis of randomized controlled trials. Transfusion Medicine Reviews. 2015;29(-4):231-41.
		751	Early versus delayed erythropoietin for the anaemia of end-stage kidney disease. Implications for research: This Cochrane Review has highlighted a need for well-designed, high-quality RCTs to assess the benefits and harms of early versus delayed erythropoietin for the anaemia of end-stage kidney disease. The potential study should include main clinical outcomes (patients-oriented outcomes) such as all-cause mortality, cardiovascular mortality, quality of life, adverse events and cardiovascular events according to their occurrence during study follow-up. The study should be reported according to the Consolidated standards of reporting trials (CONSORT) statement for improving the quality of reporting of efficacy and to get better reports of harms in clinical research (Ioannidis 2004; Moher 2010; Turner 2012). Future studies should be planned according to the recommendations of Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT) (Chan 2013a; Chan 2013b) and the Foundation of Patient-Centered Outcomes Research (Gabriel 2012; PCORI 2012). Future studies should be conducted by independent researchers and reported according to the Consolidated Standards of Reporting Trials (CONSORT) guidelines (Ioannidis 2004; Moher 2010) and using the Foundation of Patient-Centered Outcomes Research recommendations (Gabriel 2012; PCORI 2012).	Question not derived from the survey but from another source.	
		750	Recombinant human erythropoietin versus placebo or no treatment for the anaemia of chronic kidney disease in people not requiring dialysis. Implications for research: A future RCT to look specifically at whether rHuEPO can delay or hasten RRT in patients with chronic kidney failure is required. Nephrology is a low volume specialty and multicentre studies are therefore necessary to recruit sufficient numbers to achieve acceptable statistical power. Further RCTs should be designed to be large enough and of long enough duration to address this question adequately. These studies could also examine the proposition that a patient with a higher haemoglobin is in better health and better able to cope with the commencement of dialysis when it is eventually necessary. Hospitalisation duration for initiation of dialysis, hospitalisation rates and mortality for the first three months of RRT should provide further relatively hard end-points. Considering the demonstrable effectiveness of rHuEPO in improving haemoglobin it may be impossible to blind health care providers effectively in such a study.	Question not derived from the survey but from another source.	
		689	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: If ESAs are thought to have a major potential for improving cancer care, large RCTs meeting current methodological and reporting standards with adequate follow-up are needed to evaluate ESAs as administered in line with current marketing authorisations (including licence criteria for Hb levels)	Question not derived from the survey but from another source.	
		690	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: There is a need for improved estimates of the impact of ESAs on tumour response and mortality; if these estimates are neutral or slightly beneficial it is plausible that ESAs could be cost-effective.	Question not derived from the survey but from another source.	
		691	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: There should be assessment of the frequency of the key potential AEs related to ESA administration.	Question not derived from the survey but from another source.	
		692	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: More data are needed to assess the impact of ESAs on HRQoL. Such studies should include the effect of ESAs on the EQ-5D.	Question not derived from the survey but from another source.	
		694	The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia: In addition to new trials it may be valuable to revisit the Cochrane IPD meta-analysis7 and select studies that better fit 'licensed recommendations' with respect to Hb criteria and dose administered.	Question not derived from the survey but from another source.	
		667	What are best regimes for managing immediate peri-operative anaemia in various common conditions e.g. emergency laparotomy, hip fracture, distal femur fracture (could include Hb transfusion trigger or other agents e.g. tranexamic acid)	H	
		287	What cheaper alternatives are their to blood transfusion	NK	
		304	What are alternative options to a transfusion	B	
		125	What alternatives are there to blood transfusions	H	
		646	Are we doing enough with patient blood management?	B H	
DTtR18a	Are drugs an effective alternative to blood transfusion for the prevention of bleeding in patients undergoing surgery?	660	IS IT TIME for a risk-adjusted, retrospective trial comparing "bloodless" and transfusion strategies in the UK?	NK	1. Ray S, Ray A. Non-surgical interventions for treating heavy menstrual bleeding (menorrhagia) in women with bleeding disorders. The Cochrane Database of Systematic Reviews. 2016(-11):CD010338-CD. 2. Desborough MJ, Oakland KA, Landoni G, Crivellari M, Doree C, Estcourt LJ, et al. Desmopressin for treatment of platelet dysfunction and reversal of antiplatelet agents: a systematic review and meta-analysis of randomised controlled trials. Journal of Thrombosis & Haemostasis. 2016. 3. Desborough M, Hadjinicolaou AV, Chaimani A, Trivella M, Vyas P, Doree C, et al. Alternative agents to prophylactic platelet transfusion for preventing bleeding in people with thrombocytopenia due to chronic bone marrow failure: a meta-analysis and systematic review. The Cochrane Database of Systematic Reviews. 2016(-10):CD012055-CD. 4. Desborough M, Estcourt LJ, Doree C, Trivella M, Hopewell S, Stanworth SJ, et al. Alternatives, and adjuncts, to prophylactic platelet transfusion for people with haematological malignancies undergoing intensive chemotherapy or stem cell transplantation. The Cochrane Database of Systematic Reviews. 2016(-8):CD010982-CD. 5. Karanth L, Barua A, Kanagasabai S, Nair S. Desmopressin acetate (DDAVP) for preventing and treating acute bleeds during pregnancy in women with congenital bleeding disorders. Cochrane Database of Systematic Reviews. 2015(-9):CD009824-CD. 1. Hahn D, Esezobor CI, Elserafy N, Webster AC, Hodson EM. Short-acting erythropoiesis-stimulating agents for anaemia in predialysis patients. The Cochrane Database of Systematic Reviews. 2017(-1):CD011690-CD. 2. Zhao Y, Jiang C, Peng H, Feng B, Li Y, Weng X. The effectiveness and safety of preoperative use of erythropoietin in patients scheduled for total hip or knee arthroplasty: a systematic review and meta-analysis of randomized controlled trials. Medicine. 2016;95(-27):e4122-e. 3. Zhang H, Zhang P, Zhang Y, Yan J, Dong P, Wang Y, et al. Effects of erythropoiesis-stimulating agents on heart failure patients with anemia: a meta-analysis. Postepy W Kardiologii Interwencyjnej = Advances in Interventional Cardiology. 2016;12(-3):247-53. 4. Voorn VM, van der Hout A, So-Osman C, Vliet Vlieland TP, Nelissen RG, van den Akker-van Marle ME, et al. Erythropoietin to reduce allogeneic red blood cell transfusion in patients undergoing total hip or knee arthroplasty. Vox Sanguinis. 2016. 5. Park S, Fenaux P, Greenberg P, Mehta B, Callaghan F, Kim C, et al. Efficacy and safety of darbepoetin alpha in patients with myelodysplastic syndromes: a systematic review and meta-analysis. British Journal of Haematology. 2016. 6. Mhaskar R, Wao H, Miladinovic B, Kumar A, Djulbegovic B. The role of iron in the management of chemotherapy-induced anemia in cancer patients receiving erythropoiesis-stimulating agents. The Cochrane Database of Systematic Reviews. 2016(-2):CD009624-CD. 7. Kang J, Park J, Lee JM, Park JJ, Choi DJ. The effects of erythropoiesis stimulating therapy for anemia in chronic heart failure: a meta-analysis of randomized clinical trials. International Journal of Cardiology. 2016;218:12-22. 8. French CJ, Glassford NJ, Gantner D, Higgins AM, Cooper DJ, Nichol A, et al. Erythropoiesis-stimulating agents in critically ill trauma patients: a systematic review and meta-analysis. Annals of Surgery.January 2017, p 54–62 9. Crathorne L, Huxley N, Haasova M, Snowsill T, Jones-Hughes T, Hoyle M, et al. The effectiveness and cost-effectiveness of erythropoiesis-stimulating agents (epoetin and darbepoetin) for treating cancer treatment-induced anaemia (including review of technology appraisal no.
		661	Trials at Johns Hopkins, Baltimore, Englewood,NJ in USA and in Brussels,Belgium indicate that there are similar or better outcomes with equivalent lower costs in the bloodless care group. If this is correct research should be undertaken in the UK	NK	
		172	Are drugs that are known to reduce blood loss and transfusion such as aprotinin and tranexamic acid being used appropriately in all suitable patients	H	
		206	Novel haemostatic agents either given topically or intravenously to arrest haemorrhage	B H	
		435	Optimisation of surgical patients using alternative techniques to avoid blood transfusion - in particular safe low levels of Hb	B H	
		31	Can drugs, such as desmopressin or tranexamic acid, be used instead of fresh frozen plasmaor platelets to prevent bleeding for people undergoing invasive procedures?	H	
		729	Effectiveness of tranexamic acid in reducing blood loss during cytoreductive surgery for advanced ovarian cancer. Implications for research: There is a need for an adequately sized, placebo-controlled trial with a well-defined protocol for blood transfusion and a protocol for evaluating tranexamic acid-related adverse events to shed more light on the effectiveness of tranexamic acid given perioperatively to reduce blood loss during cytoreductive surgery for advanced ovarian cancer.	Question not derived from the survey but from another source.	
		188	What are the risks and benefits of tranexamic acid when trying to avoid blood transfusion for hip fracture surgery?	R B H	

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		726	Fibrin sealants for the prevention of postoperative pancreatic fistula following pancreatic surgery. Implications for research: Further trials with low risk of bias and sufficient sample size are necessary to assess various fibrin sealants (e.g. glue, patch) for preventing postoperative pancreatic fistula. Future trials should report the rate and the grade of the postoperative pancreatic fistula according to the definition of the International Study Group on Pancreatic Fistula (Bassi 2005). Future randomized trials should use adequate methods of randomization and allocation concealment. Future trials need to employ blinding of participants and outcome assessors.	Question not derived from the survey but from another source.	1442): a systematic review and economic model. Health Technology Assessment (Winchester, England). 2016;20(-13):1-588. 10. Collister D, Komenda P, Hiebert B, Gunasekara R, Xu Y, Eng F, et al. The effect of erythropoietin-stimulating agents on health-related quality of life in anemia of chronic kidney disease: a systematic review and meta-analysis. Annals of Internal Medicine.2016; 164(7):472-478. doi: 10.7326/M15-1839 11. Christou G, Iyengar A, Shorr R, Tinmouth A, Saidenberg E, Maze D, et al. Optimal transfusion practices after allogeneic hematopoietic cell transplantation: a systematic scoping review of evidence from randomized controlled trials. Transfusion. 2016. 12. Xin H, Ge YZ, Wu R, Yin Q, Zhou LH, Shen JW, et al. Effect of high-dose erythropoietin on graft function after kidney transplantation: A meta-analysis of randomized controlled trials. Biomedicine & Pharmacotherapy. 2015;69:29-33. 13. Wilhelm-Leen ER, Winkelmayer WC. Mortality risk of darbepoetin alfa versus epoetin alfa in patients with CKD: systematic review and meta-analysis. American Journal of Kidney Diseases. 2015;66(-1):69-74. 14. White N, Bayliss S, Moore D. Systematic review of interventions for minimizing perioperative blood transfusion for surgery for craniosynostosis. Journal of Craniofacial Surgery. 2015;26(1):26-36. 15. Wang H, Zhang L, Jin Y. A meta-analysis of the protective effect of recombinant human erythropoietin (rhEPO) for neurodevelopment in preterm infants. Cell Biochemistry & Biophysics. 2015;71(2):795-802. 16. Vlachopanos G, Kassimatis TI, Agrafiotis A. Perioperative administration of high-dose recombinant human erythropoietin for delayed graft function prevention in kidney transplantation: a meta-analysis. Transplant International. 2015;28(3):330-40. 17. Potter LJ,Doleman B, Moppett IK. A systematic review of pre-operative anaemia and blood transfusion in patients with fractured hips. Anaesthesia. 2015;70(4):483-500. 18. Markova V, Norgaard A, Jorgensen KJ, Langhoff-Roos J. Treatment for women with postpartum iron deficiency anaemia. Cochrane Database of Systematic Reviews. 2015(-8):CD010861-CD. 19. Lopez E, Beuchee A, Truffert P, Pouvreau N, Patkai J, Baud O, et al. [Recombinant human erythropoietin in neonates: guidelines for clinical practice from the French Society of Neonatology]. [French]. Archives de Pediatrie. 2015;22(-10):1092-7. 20. Lindquist DE, Cruz JL, Brown JN. Use of erythropoiesis-stimulating agents in the treatment of anemia in patients with systolic heart failure. Journal of Cardiovascular Pharmacology & Therapeutics. 2015;20(1):59-65. 21. Hogan M, Klein AA, Richards T. The impact of anaemia and intravenous iron replacement therapy on outcomes in cardiac surgery. European Journal of Cardio-Thoracic Surgery. 2015;47(2):218-26. 22. Ferguson T, Xu Y, Gunasekara R, Lerner B, Macdonald K, Rigatto C, et al. The cost effectiveness of erythropoietin-stimulating agents for treating anemia in patients on dialysis: a systematic review. American Journal of Nephrology. 2015;41(2):89-97. 23. Coronado DJ, Marti-Carvajal AJ, Ariza Garcia A, Rodelo Ceballos J, Yomayusa Gonzalez N, Paez-Canro C, et al. Early versus delayed erythropoietin for the anaemia of end-stage kidney disease. Cochrane Database of Systematic Reviews. 2015(-12):CD011122-CD. 24. Li SL, Ye Y, Yuan XH. Association between allogeneic or autologous blood transfusion and survival in patients after radical prostatectomy: a systematic review and meta-analysis. Plos One. 2017;12(-1):e0171081-e.
		79	The role and optimal use of alternatives like desmopressin/tranexamic acid to cover invasive procedures in sick patients	B H	2. Pawaskar A, Salunke AA, Kekatpure A, Chen Y, Nambi GI, Tan J, et al. Do autologous blood transfusion systems reduce allogeneic blood transfusion in total knee arthroplasty? Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016.
		181	What is the evidence for systematic targeted preoperative haemoglobin optimisation reducing the rate of preoperative blood transfusion	H	3. Pan JK, Hong KH, Xie H, Luo MH, Guo D, Liu J. The efficacy and safety of autologous blood transfusion drainage in patients undergoing total knee arthroplasty: a meta-analysis of 16 randomized controlled trials. Bmc Musculoskeletal Disorders. 2016;17(-1):452-. 4. Hong KH, Pan JK, Yang WY, Luo MH, Xu SC, Liu J. Comparison between autologous blood transfusion drainage and closed-suction drainage/no drainage in total knee arthroplasty: a meta-analysis. Bmc Musculoskeletal Disorders. 2016;17(-1):142-. 5. White N, Bayliss S, Moore D. Systematic review of interventions for minimizing perioperative blood transfusion for surgery for craniosynostosis. Journal of Craniofacial Surgery. 2015;26(1):26-36.
		255	Effectiveness of various methods of improving Hb preoperatively.	H	
		444	What are the best methods of preventing/ reducing haemorrhage during myomectomy?	B H	. Bajwa MS, Tudur-Smith C, Shaw RJ, Schache AG. Fibrin sealants in soft-tissue surgery of the head and neck: a systematic review and meta-analysis of randomised controlled trials. Clinical Otolaryngology : Official Journal of Ent-Uk ; Official Journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery. 2017.
		748	Antifibrinolytic agents for reducing blood loss in scoliosis surgery in children. Implications for research: Evidence demonstrating reduced blood loss and less requirement for transfusion is based on very limited numbers of participants and is susceptible to publication bias. Therefore, larger studies are required to increase the robustness of our findings. Future studies should assess head-to-head comparisons of different antifibrinolytic drugs to identify any differences in effectiveness or safety. Studies should also enrol more patients with secondary scoliosis and should report results separately for this population. Optimal dosing regimens have not been established; studies employing different regimens for the same agent will help to clarify this question. Although challenging, we also recommend that the long-term safety of antifibrinolytic drugs in children should be evaluated in view of safety concerns with some antifibrinolytic drugs when used in adults.	Question not derived from the survey but from another source.	2. Weniger M, D'Haese JG, Crispin A, Angele MK, Werner J, Hartwig W. Autologous but not fibrin sealant patches for stump coverage reduce clinically relevant pancreatic fistula in distal pancreatectomy: a systematic review and meta-analysis. World Journal of Surgery. 2016. 3. Wang Z, Xiao L, Guo H, Zhao G, Ma J. The efficiency and safety of fibrin sealant for reducing blood loss in primary total hip arthroplasty: a systematic review and meta-analysis. International Journal of Surgery (London, England). 2016;37:50-7. 4. Li J, Li HB, Zhao XC, Qin L, Jiang XQ, Zhang ZH. A systematic review and meta-analysis of the topical administration of fibrin sealant in total hip and knee arthroplasty. International Journal of Surgery (London, England). 2016. 5. Kayaalp C, Ertugrul I, Tolan K, Sumer F. Fibrin sealant use in pilonidal sinus: systematic review. World Journal of Gastrointestinal Surgery. 2016;8(-3):266-73. 6. 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Yang TQ, Geng XL, Ding MC, Yang MX, Zhang Q. The efficacy of fibrin sealant in knee surgery: A meta-analysis. Orthopaedics & traumatology, surgery & research. 2015;101(-3):331-9. 11. Li ZJ, Fu X, Tian P, Liu WX, Li YM, Zheng YF, et al. Fibrin sealant before wound closure in total knee arthroplasty reduced blood loss: a meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy. 2015;23(-7):2019-25. 12. Lee KT, Mun GH. Fibrin sealants and quilting suture for prevention of seroma formation following latissimus dorsi muscle harvest: a systematic review and meta-analysis. Aesthetic Plastic Surgery. 2015;39(-3):399-409. 13. Weldrick C, Bashar K, O'Sullivan TA, Gillis E, Clarke Moloney M, Tang TY, et al. A comparison of fibrin sealant versus standard closure in the reduction of postoperative morbidity after groin dissection: A systematic review and meta-analysis. European Journal of Surgical Oncology. 2014;40(11):1391-8. 14. Wang H, Shan L, Zeng H, Sun M, Hua Y, Cai Z. 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DTtR18b	What are the best drug alternatives to blood transfusion to reduce the need and prevent bleeding in no-surgical patients?	733	Antifibrinolytic amino acids for upper gastrointestinal bleeding in people with acute or chronic liver disease. Implications for research: This updated Cochrane review has identified the need for well-designed, adequately powered randomised clinical trials to assess the benefits and harms of antifibrinolytic amino acids in people with upper gastrointestinal bleeding due to acute or chronic liver disease. According to Brown 2006, questions such as the following could be answered using randomised clinical trials. What regimen is most effective: single or combined? When can intravenous antifibrinolytic regimens be switched to oral administration? The randomised clinical trials should include participant-relevant clinical outcomes such as mortality, failure to control bleeding, and adverse events. Potential trials should be planned according to SPIRIT (Standard Protocol Items: Recommendations for Interventional Trials) statement (Chan 2013a; Chan 2013b). The trials should be reported according to the CONSORT (CONsolidated Standards Of Reporting Trials) statement (Moher 2010), which helps in improving the quality of reporting of benefits and harms in clinical research (Ioannidis 2004; Moher 2010). Trials should include participant-centred outcomes such as mortality, re-bleeding, and serious and non-serious adverse events as recommended by the Patient-Centered Outcomes Research Institute (P-CORI) statement (Selby 2013; Frank 2014; Selby 2014).	Question not derived from the survey but from another source.	1. Zhang P, Liang Y, Chen P, Fang Y, He J, Wang J. Combined application versus topical and intravenous application of tranexamic acid following primary total hip arthroplasty: a meta-analysis. Bmc Musculoskeletal Disorders. 2017;18(-1):90-. 2. Xie J, Hu Q, Huang Q, Ma J, Lei Y, Pei F. Comparison of intravenous versus topical tranexamic acid in primary total hip and knee arthroplasty: an updated meta-analysis. Thrombosis Research. 2017;153:28-36. 3. Wu Y, Yang T, Zeng Y, Si H, Li C, Shen B. Tranexamic acid reduces blood loss and transfusion requirements in primary simultaneous bilateral total knee arthroplasty: a meta-analysis of randomized controlled trials. Blood Coagulation & Fibrinolysis : an International Journal in Haemostasis and Thrombosis. 2017. 4. Watterson C, Beacher N. Preventing perioperative bleeding in patients with inherited bleeding disorders. Evidence-Based Dentistry. 2017;18(-1):28-9. 5. Topsoee MF, Settnes A, Ottesen B, Bergholt T. A systematic review and meta-analysis of the effect of prophylactic tranexamic acid treatment in major benign uterine surgery. International Journal of Gynaecology and Obstetrics: the Official Organ of the International Federation of Gynaecology and Obstetrics. 2017;136(-2):120-7. 6. Takagi H, Ando T, Umemoto T. Seizures associated with tranexamic acid for cardiac surgery: a meta-analysis of randomized and non-randomized studies. The Journal of Cardiovascular Surgery. 2017 Aug;58(4):633-641 7. Mi B, Liu G, Zhou W, Lv H, Liu Y, Zha K, et al. Intra-articular versus intravenous tranexamic acid application in total knee arthroplasty: a meta-analysis of randomized controlled trials. Archives of Orthopaedic and Trauma Surgery. 2017 Jul;137(7):997-1009. 8. Mi B, Liu G, Lv H, Liu Y, Zha K, Wu Q, et al. Is combined use of intravenous and intraarticular tranexamic acid superior to intravenous or intraarticular tranexamic acid alone in total knee arthroplasty? A meta-analysis of randomized controlled trials. Journal of Orthopaedic Surgery and Research. 2017 Apr 18;12(1):61. doi: 10.1186/s13018-017-0559-2. 9. Meena S, Benazzo F, Dwivedi S, Ghiara M. Topical versus intravenous tranexamic acid in total knee arthroplasty. Journal of Orthopaedic Surgery (Hong Kong).2017 Jan;25(1):2309499016684300. doi: 10.1177/2309499016684300. 10. Liu X, Liu J, Sun G. A comparison of combined intravenous and topical administration of tranexamic acid with Intravenous tranexamic acid alone for blood loss reduction after total hip arthroplasty: a meta-analysis. International Journal of Surgery (London, England). 2017. May;41:34-43. doi: 10.1016/j.ijsu.2017.03.031. Epub 2017 Mar 21. 11. Li JF, Li H, Zhao H, Wang J, Liu S, Song Y, et al. Combined use of intravenous and topical versus intravenous tranexamic acid in primary total knee and hip arthroplasty: a meta-analysis of randomised controlled trials. Journal of Orthopaedic Surgery and Research. 2017;12(-1):22.
		732	Tranexamic acid for preventing postpartum haemorrhage. Implications for research: Further research is needed to examine the effects of TA on maternal mortality, severe morbidity and thromboembolic events. Studies assessing TA for preventing PPH in high-risk women with placenta praevia, placental abruption, uterine rupture and other conditions causing PPH are important. Comparison of different doses of TA as well as prophylactic use of TA without prophylactic uterotonics is necessary, using large, well-designed trials.	Question not derived from the survey but from another source.	12. Li C, Gong Y, Dong L, Xie B, Dai Z. Is prophylactic tranexamic acid administration effective and safe for postpartum hemorrhage prevention? A systematic review and meta-analysis. Medicine. 2017;96(-1):e5653-e. 13. Chen TP, Chen YM, Jiao JB, Wang YF, Qian LG, Guo Z, et al. Comparison of the effectiveness and safety of topical versus intravenous tranexamic acid in primary total knee arthroplasty: a meta-analysis of randomized controlled trials. Journal of Orthopaedic Surgery and Research. 2017;12(1):11.
		752	Antifibrinolytic drugs for acute traumatic injury. Implications for research: The knowledge that TXA safely reduces the risk of death from traumatic bleeding raises the possibility that it might also be effective in other situations where bleeding can be life threatening or disabling and further research is warranted to explore this potential. Randomised trials involving patients with isolated traumatic brain injury (TBI) that assess both mortality and disability outcomes are required before TXA can be recommended for use in these patients. The ongoing NCT01402882 trial with a planned sample size of 10,000 patients with TBI and the planned trial of prehospital TXA in TBI (NCT01990768), will contribute to resolving the uncertainty about the effects of TXA in this group.	Question not derived from the survey but from another source.	14. Cannon JW, Khan MA, Raja AS, Cohen MJ, Como JJ, Cotton BA, et al. Damage control resuscitation in patients with severe traumatic hemorrhage: a practice management guideline from the Eastern Association for the Surgery of Trauma. The Journal of Trauma and Acute Care Surgery. 2017;82(3):605-17. 15. Zhang XQ, Ni J, Ge WH. Combined use of intravenous and topical versus intravenous tranexamic acid in primary total joint arthroplasty: a meta-analysis of randomized controlled trials. International Journal of Surgery (London, England). 2016. 16. Zhang P, Liang Y, Chen P, Fang Y, He J, Wang J. Intravenous versus topical tranexamic acid in primary total hip replacement: a meta-analysis. Medicine. 2016;95(-50):e5573-e. 17. Yuan ZF, Yin H, Ma WP, Xing DL. The combined effect of administration of intravenous and topical tranexamic acid on blood loss and transfusion rate in total knee arthroplasty: Combined tranexamic acid for TKA. Bone & Joint Research. 2016;5(-8):353-61. 18. Yuan QM, Zhao ZH, Xu BS. Efficacy and safety of tranexamic acid in reducing blood loss in scoliosis surgery: a systematic review and meta-analysis. European Spine Journal. 2016. 19. Winter SF, Santaguida C, Wong J, Fehlings MG. Systemic and topical use of tranexamic acid in spinal surgery: a systematic review. Global Spine Journal. 2016;6(-3):284-95. 20. Weng K, Zhang X, Bi Q, Zhao C. The effectiveness and safety of tranexamic acid in bilateral total knee arthroplasty: A meta-analysis. Medicine. 2016;95(-39):e4960-e. 21. Wang S, Gao X, An Y. Topical versus intravenous tranexamic acid in total knee arthroplasty: a meta-analysis of randomized controlled trials. International Orthopaedics. 2016. 22. Sun X, Dong Q, Zhang YG. Intravenous versus topical tranexamic acid in primary total hip replacement: a systemic review and meta-analysis. International Journal of Surgery (London, England). 2016. 23. Simonazzi G, Bisulli M, Saccone G, Moro E, Marshall A, Berghella V. Tranexamic acid for preventing postpartum blood loss after cesarean delivery: a systematic review and meta-analysis of randomized controlled trials. Acta Obstetricia et Gynecologica Scandinavica. 2016;95(-

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		727	Antifibrinolytics (lysine analogues) for the prevention of bleeding in people with haematological disorders. Implications for research: The only evidence available is for adults with acute leukaemia receiving chemotherapy. We await the results of the two ongoing trials that are expected to recruit 916 participants in total by 2020. These studies are recruiting adults with a mixture of haematological malignancies. There is currently no evidence for the use of antifibrinolytics in children with haematological disorders who are thrombocytopenic and usually require treatment with platelet transfusions and there are no ongoing studies that include children.	Question not derived from the survey but from another source.	1):28-37. 24. Shin YS, Yoon JR, Lee HN, Park SH, Lee DH. Intravenous versus topical tranexamic acid administration in primary total knee arthroplasty: a meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016. 25. 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Alternative agents to prophylactic platelet transfusion for preventing bleeding in people with thrombocytopenia due to chronic bone marrow failure: a meta-analysis and systematic review. The Cochrane Database of Systematic Reviews. 2016(-10):CD012055-CD. 47. de Vasconcellos SJ, de Santana Santos T, Reinheimer DM, Faria ESAL, de Melo MF, Martins-Filho PR. Topical application of tranexamic acid in anticoagulated patients undergoing minor oral surgery: a systematic review and meta-analysis of randomized clinical trials. Journal of Cranio-Maxillo-Facial Surgery : Official Publication of the European Association for Cranio-Maxillo-Facial Surgery. 2016. 48. Chen Y, Chen Z, Cui S, Li Z, Yuan Z. Topical versus systemic tranexamic acid after total knee and hip arthroplasty: a meta-analysis of randomized controlled trials. Medicine. 2016;95(.41):e4656-e. 49. Chen X, Zhu X, Yang S, Lin W, Wang L. Tranexamic acid treatment decreases hidden blood loss in total knee arthroplasty. American Journal of Therapeutics. 2016;23(-6):e1397-e405. 50. Chen S, Wu K, Kong G, Feng W, Deng Z, Wang H. The efficacy of topical tranexamic acid in total hip arthroplasty: a meta-analysis. Bmc Musculoskeletal Disorders. 2016;17(-1):81-.	
DtTr19	What is the optimal combination of drug alternatives and clinical procedures to enable surgery without the use of allogeneic blood?	300	Would non blood surgery not be of greater benefit to the public?	NK	NICE Guideline Recommendations 1-5: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin 1. Do not offer erythropoietin to reduce the need for blood transfusion in patients having surgery, unless: • the patient has anaemia and meets the criteria for blood transfusion, but declines it because of religious beliefs or other reasons or • the appropriate blood type is not available because of the patient's red cell antibodies. 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence)	Y
		284	Why is bloodless surgery see in a negative light?	NK		
		501	Would not blood conservation and bloodless surgery be the aim for all surgeons wanting to give their patients the best possible outcome?	NK		
		253	Does improving Hb preoperatively improve outcomes?	H		
		415	Why use donated blood for pre-arranged elective surgery when safe alternatives are available?	NK		
DtTr21	Which patients groups would benefit most from artificial blood* products? *Artifical blood ois a product made to act as a substitute for red blood cells wiothj the sole purpose of transporting oxygen and carbon dioxide throughout the body.	753	Trial of synthetic RBC substitutes vs PRC	H	No SR evidence available	N
		447	where is the development of artifcial blood and blood products?	R B H		
		584	Are there substances that can be used to avoid blood transfusion	R B H		
		593	Is there research going on into artificial blood replacement? Not just ectoplasm but whole blood or RBC?	B H		
		609	Has there been any successful research in the production of a laboratory manufactured blood replacement ?	B H		
		533	Can other products replace blood?	H		
		511	What is the progress on the current research into manufactured red cells?	P R		
		512	What is the future for factory produced red cells?	B H		
		461	How accessible are blood transfusion alternatives?	NK		
		324	How close are we to 'artificial' blood components so we don't have to rely on donors anymore	R B H		
		473	How can alternatives to blood transfusions be made more freely available?	NK		
		474	How do we develop artificial blood products?	B H		
		491	Are there any synthetic alternatives so that one does not have to donate?	P B H		
		431	Do you see any promise of a safe artificial oxygen carrying agent to replace RBC transfusion soon?	Jehovah's Witness		
		432	Is there a likely hood of modified Haemoglobin products come into UK practice in the near future?	NK		
		357	Is there an alternative to human blood products	R B H		
		360	Why are we not investing more in blood substitutes?	H		
		285	Are there government funded projects to promote bloodless alternatives?	NK		
		282	Will viable blood substitutes be available in the near future?	NK		
		262	Are non-blood oxygen carrying fluids a viable option?	H		
		231	Can we use synthetic agents to carry oxygen in the blood until the body is able to manufacture its own red cells and therefore avoid the need for interhuman transfusion	H		
		86	Have you considered alternatives to blood ?	NK		
		88	With the advancement of science has there been true research into alternative's) to blood , considering the hidden implications associated with blood?	NK		
		13	What are developments in artificial blood currently?	R B H		
DtTr22	Is frozen plasma effective for the prevention of bleeding in patients undergoing invasive procedures or surgery and if so what dose is required?	712	Fresh frozen plasma for cardiovascular surgery. Implications for research: Further adequately powered studies of FFP are required to assess whether larger reductions in prothrombin time translate into clinical benefits, including mortality reduction. These studies should carefully consider the most appropriate schedule and dose for administration of FFP. There is clinical interest in the role of alternative comparable pro-haemostatic agents (for instance, prothrombin complex concentrate), but clinical trials need to be undertaken to evaluate any prophylactic role. There is insufficient evidence to inform any positive therapeutic role of FFP, which is an important gap in the research agenda (Desborough 2012).	Question not derived from the survey but from another source.	1. NICE Guideline Recommendations: Fresh frozen plasma: thresholds and targets 30. Only consider fresh frozen plasma transfusion for patients with clinically significant bleeding but without major haemorrhage if they have abnormal coagulation test results (for example, prothrombin time ratio or activated partial thromboplastin time ratio above 1.5). 31. Do not offer fresh frozen plasma transfusions to correct abnormal coagulation in patients who: • are not bleeding (unless they are having invasive procedures or surgery with a risk of clinically significant bleeding) • need reversal of a vitamin K antagonist. 32. Consider prophylactic fresh frozen plasma transfusions for patients with abnormal coagulation who are having invasive procedures or surgery with a risk of clinically significant bleeding.	Y
		157	Among preterm infants with abnormal coagulation in the first few days following birth (P), does the administration of fresh frozen plasma (or cryoprecipitate) (O), compared with not administering fresh frozen plasma (or cryoprecipitate) ©, reduce the risk of intraventricular haemorrhage and poor neurodevelopmental outcomes (O)?	B H	Fresh frozen plasma: doses 33. Reassess the patient's clinical condition and repeat the coagulation tests after fresh frozen plasma transfusion to ensure that they are getting an adequate dose, and give further doses if needed.	
		688	KEY NICE GUIDELINE RESEARCH RECOMMENDATION: FFP: What dose of fresh frozen plasma is most clinically effective at preventing bleeding in patients with abnormal haemostasis who are having invasive procedures or surgery?	Question not derived from the survey but from another source.	2. Levy JH, Grottke O, Fries D, Kozek-Langenecker S. Therapeutic plasma transfusion in bleeding patients: a systematic review. Anesthesia and Analgesia. 2017;124(-4):1268-76. 3. Marietta M, Franchini M, Bindi ML, Picardi F, Ruggeri M, De Silvestro G. Is solvent/detergent plasma better than standard fresh-frozen plasma? A systematic review and an expert consensus document. Blood Transfusion [Trasfusione Del Sangue] 2016:1-9. 4. Hall DP, Estcourt LJ, Doree C, Hopewell S, Trivella M, Walsh TS. Plasma transfusions prior to insertion of central lines for people with abnormal coagulation. The Cochrane Database of Systematic Reviews. 2016(-9):CD011756-CD. 5. Chai-Adisaksopha C, Hillis C, Siegal DM, Movilla R, Heddle N, Iorio A, et al. Prothrombin complex concentrates versus fresh frozen plasma for warfarin reversal. A systematic review and meta-analysis. Thrombosis and Haemostasis. 2016;116(-4).	
		721	Plasma transfusions prior to insertion of central lines for people with abnormal coagulation. Implications for research: It is common for people who are critically ill to become coagulopathic, and many of these will require insertion of a central venous catheter (CVC). The question of whether prophylactic plasma transfusion is indicated remains unanswered. An adequately-powered trial which is able to recruit sufficient number of participants to address this is required. The ongoing trials that are due to be completed by February 2018 will be unable to answer the primary questions of this review because the studies are too small. To detect a doubling in the number of participants with major bleeding from 1% to 2% would require a two-arm study with over 4600 participants; the three ongoing studies are only planning to recruit 355 participants in total.	Question not derived from the survey but from another source.	6. Shah A, Stanworth SJ, McKechnie S. Evidence and triggers for the transfusion of blood and blood products. Anaesthesia. 2015;70(Suppl 1):10-9, e3. 7. Desborough M, Sandu R, Brunskill SJ, Doree C, Trivella M, Montedori A, et al. Fresh frozen plasma for cardiovascular surgery. Cochrane Database of Systematic Reviews. 2015(-7):CD007614-CD. 1. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or rotational thromboelastometry (ROTEM) to monitor haemostatic treatment in bleeding patients: a systematic review with meta-analysis and trial sequential analysis. Anaesthesia. 2017. 2. Fahrendorff M, Oliveri RS, Johansson PI. The use of viscoelastic haemostatic assays in goal-directing treatment with allogeneic blood products - a systematic review and meta-analysis. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2017;25(-1):39-. 3. Wikkelso A, Wetterslev J, Moller AM, Afshari A. Thromboelastography (TEG) or thromboelastometry (ROTEM) to monitor haemostatic treatment versus usual care in adults or children with bleeding. The Cochrane Database of Systematic Reviews. 2016(-8):CD007871-CD. 4. Veigas PV, Callum J, Rizoli S, Nascimento B, da Luz LT. A systematic review on the rotational thromboelastometry (ROTEM(R)) values for the diagnosis of coagulopathy, prediction and guidance of blood transfusion and prediction of mortality in trauma patients. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2016;24(-1):114-.	
		103	What is the best treatment for coagulopathy - FFP or PCC?	H	5. Jensen NH, Stensballe J, Afshari A. Comparing efficacy and safety of fibrinogen concentrate to cryoprecipitate in bleeding patients: a systematic review. Acta Anaesthesiologica Scandinavica. 2016.	

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		34	Could transfusion of plasma be minimised by using a more appropriate testing algorithm in the laboratory?	H	6. Whiting P, Al M, Westwood M, Ramos IC, Ryder S, Armstrong N, et al. Viscoelastic point-of-care testing to assist with the diagnosis, management and monitoring of haemostasis: a systematic review and cost-effectiveness analysis. Health Technology Assessment (Winchester, England). 2015;19(-58):1-228. 7. Hunt H, Stanworth S, Curry N, Woolley T, Cooper C, UkoumunneO, et al. Thromboelastography (TEG) and rotational thromboelastometry (ROTEM) for trauma-induced coagulopathy in adult trauma patients with bleeding. Cochrane Database of Systematic Reviews. 2015(2):CD010438-CD. 8. Balvers K, Wirtz MR, van Dieren S, Goslings JC, Juffermans NP. Risk factors for trauma-induced coagulopathy and transfusion-associated multiple organ failure in severely injured trauma patients. Frontiers in Medicine. 2015.	
DtTr24	Does the use of oral or intravenous iron for patients with iron deficiency anaemia reduce the need for some transfusions?	728	The role of iron in the management of chemotherapy-induced anaemia in cancer patients receiving erythropoiesis-stimulating agents. Implications for research: Since the included RCTs had shorter follow-up duration (up to 20 weeks), the long-term effects of iron supplementation are unknown. Nonetheless, further studies are required to define the optimal dosage of iron. Future trials with a longer follow-up and various re-dosing regimens are also required to determine the risk of adverse events and the impact of iron supplementation on mortality as well as the optimal re-dosing schedule after the patients received the initial cumulative iron supplementation.	Question not derived from the survey but from another source.	Nice Guideline Recommendations: Alternatives to blood transfusion for patients having surgery: Oral iron, IV iron and erythropoietin 2. Offer oral iron before and after surgery to patients with iron-deficiency anaemia. 3. Consider intravenous iron before or after surgery for patients who: • have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment (see the NICE guideline on medicines adherence) • are diagnosed with functional iron deficiency • are diagnosed with iron-deficiency anaemia, and the interval between the diagnosis of anaemia and surgery is predicted to be too short for oral iron to be effective. 4. For guidance on managing anaemia in patients with chronic kidney disease, see the NICE guideline on anaemia management in chronic kidney disease. 5. For guidance on managing blood transfusions for people with acute upper gastrointestinal bleeding, see section 1.2 in the NICE guideline on acute upper gastrointestinal bleeding. 1. Aksan A, Isik H, Radeke HH, Dignass A, Stein J. 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Avni T, Amir B, Alon G, Hefziba G, Leonard L, Anat GG. The safety of intravenous iron preparations: systematic review and meta-analysis. Mayo Clinic Proceedings. 2015;90(1):12-23.	Y
		38	Does use of pre-op/pre-procedure iv iron in iron deficient patients improve clinic outcomes and reduce peri-operative blood product use?	H		
		36	Is their good evidence for the use of iron to reduce risk of needing a transfusion in the setting of a normal ferritin level	H		
		723	Oral or parenteral iron supplementation to reduce deferral iron deficiency and/or anaemia in blood donors.	Question not derived from the survey but from another source.		
		90	Would controlling the HB status with alternatives such as iron prevent the need for some blood transfusions?	B		
		130	Does intravenous iron reduce the need for blood transfusion post op?	H		
		225	Does avoiding peri-operative transfusion improve outcomes?	H		
		253	Does improving Hb preoperatively improve outcomes?	H		
		345	Would you try iron therapy first?	H		
		666	what is best regime for managing pre-op anaemia for elective surgical patients (where there is time to give iron)	Question not derived from the survey but from another source.		
		735	Treatment for women with postpartum iron deficiency anaemia. Implications for research: After 40 years of research and 22 included studies on the subject, we are still not able to make a clear statement on how we should treat the clinical consequences of postpartum iron deficiency anaemia. The reasons for this are trial quality, the chosen interventions, the chosen outcomes and the many different study designs. Researchers tend to evaluate efficacy trough Hb values. The correlation between Hb levels and anaemia symptoms in postpartum women has not yet been clarified. We strongly encourage authors to choose clinically relevant outcomes, using validated measuring tools. Researchers should distinguish between anaemia symptoms and adverse effects of treatment to evaluate the overall clinical effect. Also, researchers should choose clinically relevant time points during follow-up. Studies should report on survival and severe morbidity in all study participants. Trials should be designed following the CONSORT Consolidated Standards of Reporting Trials) guidelines in order to minimise sources of bias. We encourage future researchers to conduct more randomised controlled trials on the treatment for postpartum iron deficiency anaemia focusing on interventions such as oral iron and IV iron treatment, comparing these with each other or placebo. Multicentre trials with large populations are encouraged. Due to the risk of irreversible adverse effects to mother and child, RBC transfusion studies should be reserved for bleeding or severe anaemia, and care should be taken to monitor all adverse effects, including allo-immunisation. Also, it is of great importance to investigate the long-term effects of any treatment on both mother and child.	Question not derived from the survey but from another source.		
		278	Should we use more iron/epo therapy in ICU, rather than transfusions?	B H		
		170	If a healthy woman refuses to have a blood transfusion (recommended after childbirth because of hb7 for e.g.), how long, on average, would it take for her hb to recover to a normal level by taking an iron supplement?	B H		
		739	Iron therapy for pre-operative anaemia. Implications for research: Higher quality studies are required to determine the efficacy of iron therapy for the treatment of pre-operative anaemia. Ideally these should be adequately powered large multi-centre trials across the surgical specialities. They should include only anaemic patients and assess for iron deficiency. Outcome measurements should include some measure of quality of life, post-operative complications, morbidity and mortality in addition to the haematological parameters and frequency of allogeneic blood transfusion reported in current studies. It will be important in the design of any future studies to also include strict transfusion guidelines and definitions of iron deficiency.	Question not derived from the survey but from another source.		
DtTr27	In patients with an acquired bleeding disorder what are the best drug alternatives* to blood transfusion to prevent or treat bleeding?	741	Recombinant factor VIIa concentrate versus plasma-derived concentrates for treating acute bleeding episodes in people with haemophilia and inhibitors. Implications for research: There is need for further well-designed, adequately-powered randomised controlled trials to assess the relative benefits and risks of using rFVIIa compared to human plasma-derived concentrates in people with haemophilia with inhibitors. It is advisable that researchers in the field define commonly agreed objective outcome measures in order to enable easier pooling of their results thus increasing the power of comparisons. To the same, scope reporting concordant and discordant pairs in cross-over trials would be recommended. Both tasks are difficult to pursue, but very relevant and should be sought in view of the high societal costs of treating people with haemophilia with inhibitors.	Question not derived from the survey but from another source.	1. National Guideline Recommendations: Prothrombin complex concentrate: thresholds and targets 39. Offer immediate prothrombin complex concentrate transfusions for the emergency reversal of warfarin anticoagulation in patients with either: • severe bleeding or • head injury with suspected intracerebral haemorrhage. 40. For guidance on reversing anticoagulation treatment in people who have a stroke and a primary intracerebral haemorrhage, see recommendation 1.4.2.8 in the NICE guideline on the initial diagnosis and management of stroke. 41. Consider immediate prothrombin complex concentrate transfusions to reverse warfarin anticoagulation in patients having emergency surgery, depending on the level of anticoagulation and the bleeding risk. 42. Monitor the international normalised ratio (INR) to confirm that warfarin anticoagulation has been adequately reversed, and consider further prothrombin complex concentrate.	Y
		183	How may factor concentrates be optimally used to avoid administration of large volumes of FFP when attempting to prevent (or treat) bleeding in patients with a coagulopathy?	H	2. Zeng L, Choonara I, Zhang L, Li Y, Shi J. Effectiveness of prothrombin complex concentrate (PCC) in neonates and infants with bleeding or risk of bleeding: a systematic review and meta-analysis. European Journal of Pediatrics. 2017. 3. Iorio A, Krishnan S, Myren KJ, Lethagen S, McCormick N, Yermakov S, et al. Indirect comparisons of efficacy and weekly factor consumption during continuous prophylaxis with recombinant factor VIII Fc fusion protein and conventional recombinant factor VIII products. Haemophilia : the Official Journal of the World Federation of Hemophilia. 2017. 4. Tone KJ, James TE, Fergusson DA, Tinmouth A, Tay J, Avey MT, et al. Acquired factor XIII inhibitor in hospitalized and perioperative patients: a systematic review of case reports and case series. Transfusion Medicine Reviews. 2016.	
		173	Are factor and fibrinogen concentrates safer than blood products to treat coagulapathies?	H		
		66	How can we use clotting factors to reduce the need for donor blood?	NK		

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		736	Prothrombin complex concentrate for reversal of vitamin K antagonist treatment in bleeding and non-bleeding patients. Implications for research: Further trials are urgently needed, and great emphasis must be placed on attempts to reduce bias and increase power to show differences in patient-relevant clinical outcomes (i.e. mortality).	Question not derived from the survey but from another source.	5. Pocoski J, Li N, Ayyagari R, Church N, Maas Enriquez M, Xiang Q, et al. Matching-adjusted indirect comparisons of efficacy of BAY 81-8973 vs two recombinant factor VIII for the prophylactic treatment of severe hemophilia A. Journal of Blood Medicine 7:129-37, 2016. 2016. 6. Mingot-Castellano ME, Alvarez-Roman MT, Lopez-Fernandez MF, Roca CA, Hirnyk MI, Jimenez-Yuste V, et al. Spanish consensus guidelines on prophylaxis with bypassing agents for surgery in patients with haemophilia and inhibitors. European Journal of Haematology. 2016;96(-5):461-74. 7. 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Chai-Adisaksopha C, Hillis C, Siegal DM, Movilla R, Heddle N, Iorio A, et al. Prothrombin complex concentrates versus fresh frozen plasma for warfarin reversal. A systematic review and meta-analysis. Thrombosis and Haemostasis. 2016 Oct 28;116(5):879-890 14. Xi M, Blanchette V, Blatny J, Collins P, Dunn A, Fischer K, et al. Pharmacokinetic characteristics of factor VIII and IX concentrates – a systematic review. Journal of Thrombosis and Haemostasis. 2015;13(Suppl. 2)):357-. 15. Wikkelso, Aj. The role of fibrinogen and haemostatic assessment in postpartum haemorrhage. Danish Medical Journal. 2015;61(4):pii: B5055-pii: B. 16. Ranucci M, Jeppsson A, Baryshnikova E. Pre-operative fibrinogen supplementation in cardiac surgery patients: an evaluation of different trigger values. Acta Anaesthesiologica Scandinavica. 2015;59(-4):427-33. 17. McQuilten ZK, Crighton G, Engelbrecht S, Gotmaker R, Brunskill SJ, Murphy MF, et al. 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Prothrombin complex concentrate for reversal of vitamin K antagonist treatment in bleeding and non-bleeding patients. Cochrane Database of Systematic Reviews. 2015(-7):CD010555-CD. 22. Azevedo M, Nigro Neto C, Santos Silva CG, Lobo da Rocha P, Iosto HH. Use of lyophilized fibrinogen concentrate in cardiac surgery: a systematic review. Heart Lung & Vessels. 2015;7(1):47-53.	
DtTr28	How cost effective is cell salvage* for the avoidance of transfusion of donor blood during major surgery?	67	How can we use cell salvage to reduce the need for donor blood?	H	NICE Guideline Recommendations: Alternatives to blood transfusion for patients having surgery: Cell salvage and tranexamic acid 8. Do not routinely use cell salvage without tranexamic acid. 9. Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery). Other refs: 1. Liu JM, Fu BQ, Chen WZ, Chen JW, Huang SH, Liu ZL. Cell salvage used in scoliosis surgery: is it really effective? World Neurosurgery. 2017. May;101:568-576 2. Xie JW, Xu B, Kang PD, Zhou ZK, Shen B, Yang J, et al. [The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a meta-analysis]. Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]. 2016;54(-2):108-13. 3. Xie H, Pan JK, Hong KH, Guo D, Fang J, Yang WY, et al. Postoperative autotransfusion drain after total hip arthroplasty: a meta-analysis of randomized controlled trials. Scientific Reports. 2016 Jul 1;6:27461. doi: 10.1038/srep27461 4. Stone N, Sardana V, Missiuna P. Indications and outcomes of cell saver in adolescent scoliosis correction surgery: a systematic review. Spine. 2017 Mar 15;42(6):E363-E370. doi: 10.1097/BRS.0000000000001780. 5. Pawaskar A, Salunke AA, Kekatpure A, Chen Y, Nambi GI, Tan J, et al. Do autologous blood transfusion systems reduce allogeneic blood transfusion in total knee arthroplasty? Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016. 6. Pan JK, Hong KH, Xie H, Luo MH, Guo D, Liu J. The efficacy and safety of autologous blood transfusion drainage in patients undergoing total knee arthroplasty: a meta-analysis of 16 randomized controlled trials. Bmc Musculoskeletal Disorders. 2016;17(-1):452-. 7. Meybohm P, Choorapoikayil S, Wessels A, Herrmann E, Zacharowski K, Spahn DR. Washed cell salvage in surgical patients: a review and meta-analysis of prospective randomized trials under PRISMA. Medicine. 2016;95(-31):e4490-e. 8. Hong KH, Pan JK, Yang WY, Luo MH, Xu SC, Liu J. Comparison between autologous blood transfusion drainage and closed-suction drainage/no drainage in total knee arthroplasty: a meta-analysis. Bmc Musculoskeletal Disorders. 2016;17(-1):142-. 9. Barile L, Fominskiy E, Di Tomasso N, Alpizar Castro LE, Landoni G, De Luca M, et al. Acute normovolemic hemodilution reduces allogeneic red blood cell transfusion in cardiac surgery: a systematic review and meta-analysis of randomized trials. Anesthesia and Analgesia. 2017 Mar;124(3):743-752. 10. Zhou X, Zhang C, Wang Y, Yu L, Yan M. Preoperative acute normovolemic hemodilution for minimizing allogeneic blood transfusion: a meta-analysis. Anesthesia & Analgesia. 2015;121(-6):1443-55. 11. Xie J, Feng X, Ma J, Kang P, Shen B, Yang J, et al. Is postoperative cell salvage necessary in total hip or knee replacement? A meta-analysis of randomized controlled trials. International Journal Of Surgery. 2015;21:135-44. 12. White N, Bayliss S, Moore D. Systematic review of interventions for minimizing perioperative blood transfusion for surgery for craniosynostosis. Journal of Craniofacial Surgery. 2015;26(1):26-36. 13. Li J, Sun SL, Tian JH, Yang K, Liu R, Li J. Cell salvage in emergency trauma surgery. Cochrane Database of Systematic Reviews. 2015(1):CD007379-CD. 14. Al-Khabori M, Al-Riyami A, Siddiqi S, Al-Sabti H. Cell salvage during cardiac surgery may decrease red blood cell transfusion: a systematic review and meta-analysis. Haematologica. 2015;100((S1)):138-9.	Y
		703	Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the wider economic costs and benefits of alternative autologous techniques?	Question not derived from the survey but from another source.		
		76	Are we using Autologous blood systems efficiently?	703		
		80	Allogeneic blood is a precious and life saving resource. but need to be used wisely and only in situations where it is unavoidable. There are many situations where 'cell salvage' can be used to minimise the use of allogeneic blood but is not currently in wide practice. How can we ensure that this 'recycling' of spilt blood is encouraged.	H	
		177	Is there a risk of disseminating micrometastases when reinfusing cell saved blood	H	
		190	Can the use of cell salvage be expanded?	H	
		209	Why the current cell savers are not efficient enough to avoid blood transfusion	B H	
		245	How do we promote cell salvage so it is routine	R B H	
		279	How can cell salvage be better resourced within hospitals? (Money and trained staff)	NK	
		445	How can cell salvage machines be adapted for low income countries? (e.g. simplified, battery back-up, works in high temperatures))	B	
		454	How can we make cell salvage better for major haemorrhage situations	B H	
		687	Post-operative cell salvage: For patients having cardiac surgery with a significant risk of post-operative blood loss, is post-operative cell salvage and reinfusion clinically and cost effective in reducing red blood cell use and improving clinical outcomes, compared with existing practice	Question not derived from the survey but from another source.	
		700	Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: Are combinations of autologous blood transfusion techniques feasible, effective and cost-effective?	Question not derived from the survey but from another source.	
		506	Could the volume of blood collected with cell salvage machines be improved so that it would be worth using this tool for more operations?	P R B H	
		514	Can more research be done into cell saver technology as standard rather than relying on donation	P H	
		702	Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the long term effects of transfusion on survival and the long-term effects of the serious hazards of transfusion on survival, health status and health related quality of life?	Question not derived from the survey but from another source.	
		612	Cell Saver technique, is it proven method of reducing bank blood transfusions ?	B H	
		696	Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: What are the benefits clinically and as regards patient preferences of avoiding allogeneic blood transfusion by giving autologous transfusion instead?	Question not derived from the survey but from another source.	
		697	Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: (as addendum to the research recommendation) Do these benefits vary by procedure, timing and technique of cell salvage?	Question not derived from the survey but from another source.	
		698	Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion:	Question not derived from the survey but from another source.	
		745	Cell salvage in emergency trauma surgery. Implications for research: We identified only one study that met the inclusion criteria for this review. In the future, multicentre, methodologically rigorous trials are needed to assess the relative efficacy, safety and cost-effectiveness of cell salvage in different surgical procedures.	Question not derived from the survey but from another source.	
		699	Cell salvage and alternative methods of minimising perioperative allogeneic blood transfusion: Is acute normovolaemic haemodilution more effective and cost-effective than cell salvage?	Question not derived from the survey but from another source.	
DtTr29	How should mpatients who refuse blood transfusion be managed?	464	What alternatives can be used to replace blood transfusion in Jehovah's witness patients who have sudden blood loss due to cardiac cath lab complications?	H	1. Han SB, Kim HJ, Kim TK, In Y, Oh KJ, Koh IJ, et al. Computer navigation is effective in reducing blood loss but has no effect on transfusion requirement following primary total knee arthroplasty: a meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy : Official Journal of the Esska. 2016.	N
		455	how useful are coagulation factors without blood transfusion for Jehovah's witnesses	B H		
		87	What alternatives do you offer to people who do not wish to have a blood transfusion?	NK		
		637	Is it now time for retrospective controlled trials to be undertaken in the UK comparing patients who have refused blood transfusion in comparison with those in matching capacities who were transfused?	Jehovah's Witness		
		466	What alternatives to blood transfusion are best to treat sudden blood loss, in Jehovah's Witness patients, due to cardiac cath lab complications?	H		
		652	What safe alternatives are available for patients who do not want to receive blood transfusions	H		
		654	What safe alternatives exist for patients who do not want, or cannot receive, blood transfusions?	B H		
		756	Benefits from non-blood transfusion-alternative treatment	H		
A1	What is the best administrative process for hospital blood transfusion to keep patients safe and minimises delay?	23	How can modern technology e.g. apps for patients/healthcare professionals improve the transfusion process ?	H	1. NICE Guideline Recommendation: Electronic patient identification 12. Consider using a system that electronically identifies patients to improve the safety and efficiency of the blood transfusion process. 2. Sellen KM, Jovanovic A, Perrier L, Chignell M. Systematic review of electronic remote blood issue. Vox Sanguinis. 2015;109(-1):35-43. 3. Manning N, Heddle NM, Arnold D, Crowther MA, Siegal D. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion: a systematic review. Journal of Thrombosis and Haemostasis. 2015;13((Suppl. 2)):974-5. 4. Manning M, Heddle N, Arnold D, Crowther MA, Siegal DM. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion; a systematic review. Blood. 2015. 5. Hibbs SP, Nielsen ND, Brunskill S, Doree C, Yazer MH, Kaufman RM, et al. The impact of electronic decision support on transfusion practice: a systematic review. Transfusion Medicine Reviews. 2015;29(1):14-23	Y
		434	Why do you have to replicate all the info about blood transfusions on two separate forms that repeat the same information	R B H		
		232	Can we rationalise the requesting process to reduce delays in urgent situations	H		
		332	Is it possible to design a "reminder" for staff regarding component times for transfusion that is easy to access and carry?	H		

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		271	How can we be sure there are no errors in blood product delivery?	P B H	5. Hibbs SP, Nielsen ND, Brunskill S, Doree C, Yazer MH, Kaufman RM, et al. The impact of electronic decision support on transfusion practice: a systematic review. Transfusion Medicine Reviews. 2015;29(1):14-23. 6. Coustasse A, Cunningham B, Deslich S, Willson E, Meadows P. Benefits and barriers of implementation and utilization of Radio-Frequency Identification (RFID) systems in transfusion medicine. Perspectives in Health Information Management. 2015;12((Fall)):1d-d.	
		7	How can the experience of blood transfusion for mothers during/after labour be improved?	NK		
		141	Is there a more efficient way of networking to support optimal use of blood bank supplies than our existing methods	P R B H		
		240	How to maintain safety for recipients of blood and blood products	B H		
		274	Why do we (West Yorkshire) need a second patient checker when areas in Scotland don't	P R B H		
		351	Is the procedure for prescription through to administration of a transfusion standardised across all NHS trusts?	P		
		372	How can we reduce lengthy stays in hospital due to transfusion?	B H		
		375	How do we ensure patient safety individually and collectively in blood transfusion ?	H		
		379	How safe is it for a patient to have a transfusion in their own home rather than travel to the hospital?	B H		
		421	why does each trust have a different transfusion record	B H		
		594	Why is there not a universal procedure when administering prescribed blood products, documentation often differs in other health boards.	H		
		596	How can patients receiving a transfusion experience a higher rate of safety?	R B		
		622	Avoid transfusion errors	P R H		
		645	Do the control measures designed to ensure 'safe blood' have an evidence base or are some based on assumption of risk?	R B H		
		256	Are there any strategies to reduce the development of Abs in Tx dependent patients?	R B H		
		436	Improving safety of community transfusions (with aim to reduce acute hospital bed use)	B H		
		489	How can we improve communication between hospitals for patients needing special requirements?	P B H		
		275	Why don't patient ID wristbands have barcodes/ matrix to be scanned instead of second checker	P R B H		
		298	What checks are made to ensure a patient receives the right type and amount of blood?	NK		
		446	Why can we not have a way of using patient barcodes to link to the computer system, to reduce risk of mis-labelling?	R B H		
		509	Why can't transfusions be given evenings and weekends (in all hospitals) for patients on long term transfusion regimes?	P R		
A2	How can the wastage of donor blood be minimised?	254	How can we reduce the lag time between request and availability of blood for transfusion?	H	No up-to-date SR evidence	N
		64	What is the basis for the 30 minute rule?	B H		
		63	How ethical is it to collect blood that will be destroyed e.g. from AB+ve females	B H		
		222	How can we reduce blood wastage by improving transport / administration whilst ensuring ready access to blood when required	H		
		649	How much blood donated is "wasted" by disposal?	B		
		677	How might this percentage (i.e. wastage/redundancy) be reduced?	B		
		355	Why are giving sets not flushed with 0.9% sodium chloride on completion of transfusion	B H		
		573	Why is blood thrown out in the giving set?	P		
		110	Can I be sure my donation will not be wasted?	B H		
		26	Are too many donations rejected unnecessarily?	B H		
		161	What happens to unused donations?	B H		
		238	What happens to blood that is not used after donation?	P B H		
		325	Percentage of donations that are transfused	B H		
		352	What percentage, if any, of all blood donated for transfusion gets wasted?	P		
		361	Does all the blood donated at donor sessions get used?	R B H		
		356	When a child needs blood ,why is a whole bag used .why is there so much wasted.	B H		
		492	Is all collected blood used usefully or is there wastage?	R B		
		665	Is all the donated blood used	H		
		676	What percentage of blood donations are found to be unusable because of contamination?	B		
		570	how do I know how my blood is being used?	R B		
		581	What percentage of donated blood gets used?	B		
		65	How many units have been wasted due to 30 minute rule violations? If this information is not captured, why not?	B H		
		508	How much blood is wasted by the health services and we're is that most common	B H		
		556	What percentage of blood is actually used per year?	R B		
		591	How many units are 'wasted' in hospitals (e.g. poor storage)?	B H		
		626	How much blood/blood products is wasted by hospitals which have blood on standby for surgical procedures?	P H		
A7	What training is required for the safe administration of blood products?	471	Why is it up to the nurses to give blood transfusions?	B H	1. NICE Guideline Recommendation: Monitoring for acute reactions 10. Monitor the patient's condition and vital signs before, during and after blood transfusions, to detect acute transfusion reactions that may need immediate investigation and treatment. 11. Observe patients who are having or have had a blood transfusion in a suitable environment with staff who are able to monitor and manage acute reactions. 2. Kopolovic I, Ostro J, Tsubota H, Lin Y, Cserti-Gazdewich CM, Messner HA, et al. A systematic review of transfusion-associated graft-versus-host disease. Blood. 2015;126(-3):406-14.	Y
		342	Who is to order blood transfusion DR or NURSE and what observation to be checked on the recipient	R H		
		470	Why can't we have specific blood transfusion specialist, who are there to set up infusions and stay for the duration?	B H		
		388	Why are some staff allowed to undertake transfusion practices i.e. collecting blood when they have no proven competency?	H		
		408	Do you think it's a waste of a registered nurses working day to pick up the units of blood from the lab as the wrong unit has been given at bedside in the past?	B H		
		755	Best way to diagnose transfusion reactions - to refute or confirm early so that we can get on with these. [BT Guideline: 7 Monitoring for Acute BT Reactions - 7.4 Evidence statements. "Clinical: No clinical evidence was identified for this review. Economic: No relevant economic evaluations were identified."]	B R H		
S1	When should whole blood transfusion be given? Whole blood transfusion means that thew blood unit undergoes minimal processing and all the components of blood (red cells, white cells, plasma and platelets) are transfused.	160	What are the indications for fresh whole blood transfusion	B R H	No available SR evidence	N
S2	What guidelines should there be on the approriate withdrawal of transfusion from palliative patients	338	Is there any guidelines on when to withdrawal transfusion from palliative patients	P H	1. Torres ME, Rodriguez JN, Ramos JL, Gomez FA. Transfusion in palliative cancer patients: a review of the literature. Journal of Palliative Medicine. 2014;17(1):88-104	N
S3	What are the benefits of cold stored platelets versus platelets stored at the standard temperature of 22 degrees celsius for the management of acute bleeding?	207	[What are the] benefits of cold stored platelets for the management of acute bleeding?	B H	No available SR evidence	N

All questions received by the PSP

S4	How frequently should the blood count be checked in patients at high risk of bleeding or with recent bleeding?	122	How frequently should blood levels (i.e., hemoglobin) be checked in patients at high risk of bleeding (or with recent bleeding) (i.e., is the benefit of checking blood levels more frequently outweigh the risks)?	R H	1. Manning N, Heddle NM, Arnold D, Crowther MA, Siegal D. Interventions to reduce blood loss from laboratory testing in critically ill patients and impact on transfusion: a systematic review. Journal of Thrombosis and Haemostasis. 2015;13((Suppl. 2)):974-5.	N
		END				