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# CARING FOR PATIENTS WHO REFUSE BLOOD

A guide to good practice for the surgical management of Jehovah's Witnesses and other patients who decline transfusion

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# A. Introduction

It is estimated that there are approximately 8 million Jehovah's Witnesses worldwide, with 140,000 currently resident in the UK. Jehovah's Witnesses have refused allogenic blood transfusion and primary components (red cells, white cells, platelets and plasma) on religious grounds since 1945 and this has presented challenges for surgeons and related healthcare staff in providing care to this group.

Further to Jehovah's Witnesses, a growing number of patients are choosing to decline blood transfusions, many of whom do so for reasons other than religious faith. Fears about the safety of blood transfusion as well as the scarcity of donors and changing patient expectations are leading some patients to withhold consent for blood transfusion when requesting surgery.

This refusal can bring into conflict clinicians' ethical duties to preserve both the life and the wellbeing of patients, as well as respect their right to make autonomous decisions about what happens to their body.

# B. What can I learn from this guide?

This document provides guidance on the surgical management of Jehovah's Witnesses and other patients who withhold consent to blood transfusion. It takes into account and expands on the principles set out in *Good Surgical Practice* (RCS, 2014), *Consent: Supported Decision-Making – A Guide to Good Practice* (RCS, 2016) as well as guidance from the GMC and NICE, to enable surgeons and their teams to provide high-quality care to Jehovah's Witness and other patients who refuse blood transfusion while respecting their right to make autonomous decisions about treatment.

It offers information on the current requirements for patient communication and supported decision-making and practical advice to support surgeons in complying with their legal, ethical and regulatory obligations.

Although this guide has been developed primarily for surgeons, most of its recommendations are applicable to other medical specialties.

# C. The position of Jehovah's Witnesses on blood transfusion

Jehovah's Witnesses appreciate high-quality surgical and medical care. They value life and want to do whatever is reasonable and compatible with their beliefs to prolong it. Patients who are Jehovah's Witnesses are typically well informed both doctrinally and regarding their right to determine their own treatment.

## C.1. REFUSAL OF BLOOD TRANSFUSION

Although not opposed to surgery or medicine, Jehovah's Witnesses decline allogenic blood transfusion for reasons of religious faith. This is a deeply held core value and any non-consensual transfusion is regarded as a gross physical violation.

Jehovah's Witnesses resolutely decline the transfusion of whole blood and primary blood components (red cells, white cells, plasma and platelets) and the use of any sample of their blood for cross-matching.

Autologous pre-donation (pre-deposit) is not acceptable to patients who are Jehovah's Witnesses.

## C.2. TREATMENTS THAT ARE AREAS OF PERSONAL DECISION FOR EACH PATIENT

Although the refusal of allogenic blood transfusion is a fundamental tenet of the religious beliefs of Jehovah's Witnesses, a number of related treatments are matters of personal decision for them as individual patients. In view of the range of individual decision-making it is essential to discuss with each patient:

- Which, if any, derivatives of the primary blood components are acceptable to the individual patient.

These derivatives include:

- Albumin
- Coagulation factors
- Globulins, including immunoglobulins
- Haemoglobin
- Interferons
- Interleukins
- Wound healing factors (eg von Willebrand factor)
- Whether or not they would accept any procedures involving their own blood and, if so, which methods for handling this blood would be acceptable to the patient. Such procedures include:
  - all forms of intraoperative blood salvage (cell saver)
  - acute normovolaemic haemodilution
  - postoperative blood salvage (eg wound drains)
  - haemodialysis
  - cardiopulmonary bypass.
- The patient's position regarding organ transplantation including: solid organs, bone, tissue, and stem cell transplantation.

## C.3. JEHOVAH'S WITNESS HOSPITAL LIAISON COMMITTEES (HLCS)

Jehovah's Witnesses maintain a network of Hospital Liaison Committees that are available at any time to assist with the management of patients, either at the request of the patient or (with patient consent) on behalf of the treating team (Hospital Information Services: 020 8906 2211; hid.gb@jw.org). These maintain lists of clinicians with considerable experience and these can be shared on request on a case-by-case basis.

# D. Ethical considerations and consent

## D.1. DOCTORS' RIGHT TO REFUSE TO TREAT PATIENTS WHO DECLINE BLOOD TRANSFUSION

The limits placed on surgeons' ability to care for patients who refuse blood can cause dilemmas for surgeons. Surgeons are used to acting under a duty to promote the physical wellbeing of patients; however, this can come into conflict with patients' rights to make decisions regarding their healthcare.

Surgeons are duty-bound to respect patients' religious freedoms and can feel uncomfortable refusing to treat patients because of restrictions stemming from a religious belief for fear of accusation of discrimination. The emotional impact on surgeons from this type of restriction on their practice must also be recognised, as the loss of a patient who they had the means and ability to save can be very distressing.

Surgeons have the right to choose not to treat patients if they feel that the restrictions placed on them by the refusal of blood products are contrary to their values as a doctor.

If a surgeon is not prepared to treat a patient who refuses blood they must refer them to a doctor who is suitably qualified and prepared to take on the patient knowing the circumstances of this refusal of blood.

This referral and its justification on medical grounds should be recorded in the patient's notes along with the referral letter to assuage accusations of discrimination on religious grounds.

For further information regarding doctors' right not to treat patients who refuse blood, see *Personal Beliefs and Medical Practice* (GMC, 2013).

## D.2. PRINCIPLES OF CONSENT/SUPPORTED DECISION-MAKING

Consent refers to a patient's autonomous agreement for a health professional to provide care, and it must be confirmed in writing. For consent to be valid, it must be:

- Given by a person with the capacity to make the decision in question
- Given voluntarily
- Based on appropriate information (informed) and understood.

If one or more of these factors is missing, the patient is not considered to have given permission to proceed to treatment.

All patients in the UK with mental capacity have the absolute legal and ethical right to refuse treatment or any aspect of treatment. To administer blood against a patient's wishes may be unlawful and could lead to criminal and/or civil proceedings.

The right of an adult patient to withhold consent to treatment, even when doing so would be potentially fatal, has been established in legal precedent. It is also the case for pregnant women choosing to refuse treatment even if it might lead to harm for their unborn child.

Surgeons should listen to patients and respect their views about their health. The options for treatment should be discussed in relation to the patient's own values and wishes. Working in partnership with patients requires learning their views and expectations regarding their treatment and working together to inform patients of their options for achieving the best outcome for them as individuals.

Patients should be made aware of their right to refuse or to give consent to treatment at any time and assumptions must not be made about the patients' awareness of their right to make treatment decisions.

Patients should be asked explicitly whether any refusal of treatment extends to situations where loss of life or limb without these treatments is likely. The patient's decision should be recorded and placed in the patient's notes.

Each patient should be treated as an individual and the specific extent of a patient's refusal of blood should be identified, recorded (see Appendix D for a checklist to record the refusal of blood and blood products), and the risks of refusing each treatment should be explained clearly to the patient.

When supporting a patient to reach a decision about treatment, surgeons must be satisfied that the patient gave or withheld consent to treatment themselves, without coercion or unwelcome influence from other persons. Although patients may value the aid of a friend, family member or other supporter to provide comfort through their decision-making process, it is important to ensure that any decision represents the patient's own views and is not unduly influenced by the wishes of another person.

At the end of the consent discussion the surgeon should review with the patient the potential implications of any choices that could be contrary to their wellbeing. This should include any risks and benefits associated with such choices. This review should not, however, be intended to influence the patient to take a course of action that is not in keeping with their values and wishes (see *Consent: Supported Decision-Making – A Guide to Good Practice* (RCS, 2016) for further discussion and guidance on consent issues).

### D.2.1. EMERGENCY PATIENTS

Patients in medical emergencies, such as patients who are admitted to hospital unconscious, will regularly require decisions about their care to be made urgently or immediate action to be taken to preserve life or limb. In these cases it will often be inappropriate to delay treatment or transfusion of blood where clinically indicated to try to facilitate the patient's autonomous decisions. In such cases healthcare staff should act in the patient's best interest and attempt to communicate with them to keep them informed wherever possible.

The majority of Jehovah's Witnesses carry on their person a signed and witnessed advance-decision card to express their wishes in emergencies. The card explicitly refuses blood and primary blood components (red cells, white cells, plasma [FFP] and platelets), as well as refusing autologous pre-donation of blood (Appendix B).

Surgeons and other healthcare staff must respect the wishes of patients expressed in an advance-decision document that is correctly signed and witnessed unless the doctor has good reason to believe that the patient has changed their wishes since signing the document.

If a patient is unable to give an informed, rational opinion, and when an applicable advance directive does not exist, the clinical judgement of a doctor should take precedence over the opinion of relatives or associates. Such relatives or associates may be invited to produce evidence of the patient's Jehovah's Witness status in the form of an applicable advance-decision document.

In the case of emergency patients identified as Jehovah's Witnesses but without documentation, every effort should be made to avoid the use of blood and blood products in the perioperative period. However, in serious or life-threatening situations the use of blood and blood products should be based on the judgement of the clinician responsible for the patient. GMC guidance on patients who refuse treatment affirms this stating that: 'In an emergency, you can provide treatment that is immediately necessary to save life or prevent deterioration in health without consent' (*Personal Beliefs and Medical Practice*, paragraph 27 [GMC, 2013]).

Any blood or blood product transfusion given in an emergency situation where the patient has not been able to give consent for this owing to temporary incapacity should be recorded in the patient notes along with the reason it was administered. All surgeons must observe their duty of candour and inform the patient of any use of blood or its derivatives following surgery. (For more information on disclosure of information, please refer to *Duty of Candour, Guidance for Surgeons and Employers* [RCS, 2016]).

### D.2.2. CHILDREN

Children in need of blood transfusion who either individually or by proxy through a parent or guardian refuse the transfusion of blood products present particularly complex management issues and legal requirements.

Children aged 16 or 17 can give legally valid consent for medical treatment whereas children under this age can give consent if they are deemed to have a sufficient level of competency to understand the issues involved (frequently referred to as 'Gillick Competence' after a landmark legal case establishing this principle). However, the courts tend to be willing to overrule the refusal of specific procedures by children. This willingness to overrule has been the outcome of the majority of cases relating to the refusal of blood.

In England and Wales surgical teams can make a Specific Issue Order (SIO) under section 8 of the Children Act 1989 to provide legal sanction for a specific action, such as the administration of blood, without removing all parental authority. The order should be limited to the specific medical condition requiring treatment, and the parents must be kept informed at each stage of the application. Advice and assistance in obtaining this action should be sought from a medical social worker.

If there is insufficient time to obtain an SIO from a court owing to the clinical urgency of providing blood products to stop a child from deteriorating, blood should be given only where absolutely necessary to prevent severe detriment to the child's health. An SIO should be sought as soon as is possible.

If a child needs blood in an emergency, despite the surgeon's best efforts to contain haemorrhage, it should be given. The surgeon who stands by and allows a 'minor' patient to die in circumstances where blood might have avoided death may be vulnerable to criminal prosecution.

Surgeons have a legal and ethical responsibility to ensure the wellbeing of the child under their care and this must always be their first consideration; however, every effort must be made to respect the beliefs of the family and avoid the use of blood or blood products wherever possible. (See *Consent: Supported Decision-Making – A Guide to Good Practice* [RCS, 2016] for further discussion and guidance on consent issues surrounding children.)

Regulatory guidance underpinning these principles is provided in *Personal Beliefs and Medical Practice* (GMC, 2013).

## E. Bloodless surgery: key clinical considerations

### E1. PRE-ADMISSION/ PREOPERATIVE CONSIDERATIONS

#### E1.1. Pre-admission assessment and planning

During the pre-admission phase of treatment, surgeons should:

- Assess the patient for personal or family history of unexpected bleeding or clotting issues following medical or dental procedures.
- Avoid any medication that can increase blood loss, including NSAIDs, aspirin and vitamin K antagonists.
- Ensure that the consultant anaesthetist, haematologist and transfusion practitioner are included in the MDT when planning bloodless interventions.
- Recognise adjustment of risk between different procedures if done without recourse to blood or primary blood products and ensure that the adjusted risks are explained in consent discussions. Options for surgery may have their relative risks significantly altered when blood products are not available.
- Consider strategies for reducing blood loss during surgery and inform the surgical team of any strategies selected. Where necessary get advice from colleagues with relevant experience.
- Establish a plan for emergency management of haemorrhage and damage control strategies for reducing risk to life and limb of the patient. Inform all relevant team members and any external departments that may be required if emergency occurs.
- Establish and record which, if any, fractions of blood components are acceptable to the patient and the extent of any refusal, particularly in situations where the withholding of blood is likely to lead to loss of life or limb.

#### E1.2. Preoperative/pre-admission blood tests

Surgeons should minimise the number and size of blood samples drawn for preoperative testing, and use paediatric tubes for the collection of blood samples.

The following essential blood samples should be sent for analysis and the results should be recorded and attached to the patient's notes:

- Full blood count (FBC) and reticulocyte count
- B12 and folate
- Iron studies
- Clotting screen and fibrinogen
- Urea and electrolytes (U&Es), liver function tests (LFTs) and a bone profile
- Group and screen
- Other tests as clinically indicated.

#### E1.3. Pre-admission patient optimisation

Prior to undergoing surgery without blood transfusion, optimisation of patients' hemoglobin and general health can improve their prognosis. When preparing a patient for bloodless surgery, surgeons should:

- Consider pre-hospital optimisation of the patient prior to surgery where possible and indicated. This should include: cardiorespiratory optimisation, dietary supplementation, weight management, smoking and alcohol abstinence, and haemoglobin optimisation. Medical teams should be involved where relevant.
- Establish baseline haemoglobin (Hb) levels and consider use of recombinant erythropoietin (EPO) several weeks prior to surgery to increase oxygen-carrying capacity of patient's blood. Patients must have Hb <13g/dL (Hb ≤12g/dL for female patients) and be at risk of significant blood loss during their procedure to be eligible for its use. EPO has been shown to increase erythrocyte production in bone marrow by up to seven times the normal level.
- EPO is ineffective in patients with iron, B12 or folate deficiency. Patients with a ferritin level <100 ng/ml should be given IV iron.

- When initiating EPO, the first dose should be given three weeks before surgery and the last dose on the day of surgery. If a sufficient response is seen after the second or third dose then subsequent doses should be omitted.
- EPO should not be used for patients with a baseline Hb >13g/dL owing to increased risk of postoperative thrombotic events (eg deep vein thrombosis or pulmonary embolism). EPO must not be used/must be stopped if a patient's Hb >15g/dL.
- Caution is advised in using EPO in patients who are: pregnant or lactating, older patients (>70yrs) or are suffering from chronic liver failure, hypertension, raised platelets, epilepsy or malignancy.
- EPO is in general contraindicated in patients who are suffering from uncontrolled hypertension, arterial diseases, recent MI or CVA (within the past month), unstable angina or have a history of thrombosis.
- Ferritin levels are likely to fall in patients receiving EPO and, as such, levels should be closely monitored prior to during and following treatment and replacement used where deficiency occurs.

### E.2. Intraoperative considerations – blood conservation strategies

When delivering surgery without access to blood products, it is essential that all available and reasonable steps are taken to minimise blood loss.

As pre-hospital optimisation of Hb may not be feasible for emergency patients, emphasis on blood conservation is essential for this group.

During the intraoperative phase of treatment, surgeons should:

- Consider operative approaches or techniques that can minimise the loss of blood, such as laparoscopic rather than open surgery, interventional radiology, staged procedures for complex operations and the use of vasoconstrictors, tourniquet and clamps to stem blood flow where appropriate.
- Where appropriate, consider the use of deliberate controlled hypotension and/or deliberate controlled hypothermia.

- Where appropriate and acceptable to the patient consider the use of intraoperative autologous procedures such as cell salvage and acute normovolaemic haemodilution. Consider the use of coagulation stimulants such as tranexamic acid, recombinant clotting factors (eg VIIa, VIII, IX) and desmopressin where appropriate.
- Consider the use of haemostatic aids, diathermy, harmonic scalpels and radiofrequency ablation to reduce blood loss.
- Ensure minimum intraoperative blood samples are taken and use paediatric tubes for sample collection.
- Consider use of regional anaesthesia with the consultant anaesthetist.

### E.3. Postoperative considerations

Careful postoperative monitoring of patients is essential following bloodless surgical interventions to reduce the risks associated with postoperative haemorrhage, sepsis and anaemia.

During the postoperative phase of treatment surgeons should:

- Carefully monitor and minimise blood loss postoperatively.
- Monitor and avoid sepsis.
- Ensure that the minimum number and volume of blood samples are taken. Ensure that nursing and medical staff are aware of the patient's refusal of blood to ensure that extra monitoring is recognised as essential.
- Consider postoperative EPO and/or Iron/B12 replacements.
- Where appropriate and acceptable to the patient, consider the use of postoperative blood salvage from drains (cell saver).

See section G below for list of further reading on the various aspects relating to the provision of bloodless surgery and the key regulatory, legal and guidance documents relating to patients who refuse blood transfusion.

## F. List of abbreviations

MI	Myocardial infarction
CVA	Cerebrovascular accident
HB	Haemoglobin
ESA(s)	Erythropoiesis-stimulating agent(s)
EPO	Erythropoietin (recombinant)
HLS	Hospital Liaison Committee (Jehovah's Witness liaison group)
FBC	Full blood count
LFT(s)	Liver function test(s)
U&Es	Urea and electrolytes
MDT	Multi-disciplinary team
NSAID	Non-steroidal anti-inflammatory drug
SIO	Specific issue order

# G. References and further reading

## KEY GUIDANCE, LEGAL AND REGULATORY DOCUMENTS

### Guidance

*Good Surgical Practice* (RCS, 2014)

*Duty of Candour, Guidance for Surgeons and Employers* (RCS, 2015)

*Consent: Supported Decision-Making – A Guide to Good Practice* (RCS, 2016)

*Management of Anesthesia for Jehovah's Witnesses 2nd Edition* (Association of Anesthetists of GB and Ireland, 2005)

*Practice Guidelines for Perioperative Blood Management: An Updated Report by the American Society of Anesthesiologists Task Force on Perioperative Blood Management, Anesthesiology* (American Society of Anesthesiologists, 2015)

### Regulation

*Good Medical Practice* (GMC, 2013)

*Consent: Patients and Doctors Making Decisions Together* (GMC, 2008)

*Personal Beliefs and Medical Practice* (GMC, 2013)

*0–18 years: Guidance for All Doctors* (GMC, 2007)

*Confidentiality* (GMC, 2009)

*Blood Transfusion [NG24]* (NICE, 2015)

## LEGISLATION

### Statute

Mental Capacity Act 2005

European Convention on Human Rights 1950

### Case Law

Montgomery (Appellant) v Lanarkshire Health Board (Respondent) [2015] UKSC 11 On appeal from [2013] CSIH 3. (Material risk, disclosure of information)

Gillick v West Norfolk and Wisbech AHA [1986] AC 112. (Children and young people's competence to consent to treatment)

Re B [2002] 2 All ER 449; Re C (Adult, refusal of treatment) [1994] 1 All ER 819. (Adult, refusal of medical treatment)

St George's Healthcare NHS Trust v S; R v Collins and others, ex parte S [1998] 3 All ER 673. (The right of a competent pregnant woman to refuse treatment even if that refusal may result in harm to her or her unborn child)

Re T (Adult) [1992] 4 All ER 649. (The effect of coercion/pressure on patient consent)

## JOURNAL ARTICLES AND WEBSITES

### Minimising blood sampling

McEvoy MT, Shander A. Anemia, bleeding, and blood transfusion in the intensive care unit: causes, risks, costs, and new strategies. *Am J Crit Care* 2013; **22**: eS1–eS14.

Ranasinghe T, Freeman WD. 'ICU vampirism' – time for judicious blood draws in critically ill patients. [letter] doi: 10.1111/bjh.12613.

Branco BC, Inaba K, Doughty R, Brooks J, Barmparas G, Shulman I, Nelson J, Demetriades D. The increasing burden of phlebotomy in the development of anaemia and need for blood transfusion amongst trauma patients. *Injury* 2012; **43**: 78–83.

Timmouth AT, McIntyre LA, Fowler RA. Blood conservation strategies to reduce the need for red blood cell transfusion in critically ill patients. *CMAJ* 2008; **178**: 49–57.

### IV Iron

Rineau E, Chaudet A, Chassier C, Bizot P, Lasocki S. Implementing a blood management protocol during the entire perioperative period allows a reduction in transfusion rate in major orthopedic surgery: a before-after study. *Transfusion* 2016; **56**: 673–681.

Froessler B, Palm P, Weber I, Hodyl NA, Singh R, Murphy EM. The important role for intravenous iron in perioperative patient blood management in major abdominal surgery. *Ann Surg* 2016; **264**: 41–46.

Kotzé A, Harris A, Baker C, Iqbal T, Lavies N, Richards T, Ryan K, Taylor C, Thomas D. British Committee for Standards in Haematology Guidelines on the identification and management of pre-operative anaemia. doi: 10.1111/bjh.13623.

Beris P, Munoz M, Garcia-Erce JA, Thomas D, Maniatis A, Van der Linden P. Perioperative anaemia management: consensus statement on the role of intravenous iron. *Br J Anaesth* 2008; **100**: 599–604.

Munoz M, Breymann C, Garcia-Erce JA, Gomez-Ramirez S, Comin J, Bisbe E. Efficacy and safety of intravenous iron therapy as an alternative/adjunct to allogeneic blood transfusion. *Vox Sang* 2008; **94**: 172–83.

### Erythropoiesis-stimulating agents (ESAs) to correct perioperative anaemia

Muñoz M, Gómez-Ramírez S, Kozek-Langenecker S. Pre-operative haematological assessment in patients scheduled for major surgery. *Anaesthesia* 2016; **71**: 19–28.

Posluszny JA, Napolitano LM. How do we treat life-threatening anemia in a Jehovah's Witness patient? *Transfusion* 2014; **54**: 3,026–3,034.

Goodnough LT, Maniatis A, Earnshaw P et al. Detection, evaluation, and management of perioperative anaemia in the elective orthopaedic surgical patient: NATA guidelines. *Br J Anaesth* 2011; **106**: 13–22.

Kotzé A, Carter LA, Scally AJ. Effect of a patient blood management programme on preoperative anaemia, transfusion rate, and outcome after primary hip or knee arthroplasty: a quality improvement cycle. *BJA* 2012; **108**: 943–52.

Weltert L, D'Alessandro S, Nardella S et al. Preoperative very short-term, high-dose erythropoietin administration diminishes blood transfusion rate in off-pump coronary artery bypass: a randomized blind controlled study. *J Thorac Cardiovasc Surg* 2010; **139**: 621–6.

### Controlled hypotension

Morrison CA, Carrick MM, Norman MA, Scott BG, Welsh FJ, Tsai P, Liscum KR, Wall MJ Jr, Mattox KL. Hypotensive resuscitation strategy reduces transfusion requirements and severe postoperative coagulopathy in trauma patients with hemorrhagic shock: preliminary results of a randomized controlled trial. *J Trauma* 2011; **70**: 652–63.

Paul JE, Ling E, Lalonde C, Thabane L. Deliberate hypotension in orthopedic surgery reduces blood loss and transfusion requirements: a meta-analysis of randomized controlled trials. *Can J Anaesth* 2007; **54**: 799–810.

## Clotting factors

Tanaka KA, Esper S, Bolliger D. Perioperative factor concentrate therapy. *BJA* 2013; **111(S1)**: 135–149.

Rahe-Meyer N, Solomon C, Hanke A, Schmidt DS, Knoerzer D, Hochleitner G, Sørensen B, Hagl C, Pichlmaier M. Effects of fibrinogen concentrate as first-line therapy during major aortic replacement surgery: a randomized, placebo-controlled trial. *Anesthesiology* 2013; **118**: 40–50.

Robblee JA, Wilkes PR, Dickie SJ, Rubens FD, Bormanis J. Bleeding in a Jehovah's Witness patient undergoing a redo aortic valve replacement controlled with cryoprecipitate and a prothrombin complex concentrate. *Can J Anaesth* 2012; **59**: 299–303.

## Pharmacological agents

Henry DA, Carless PA, Moxley AJ et al. Anti-fibrinolytic use for minimising perioperative allogeneic blood transfusion. *Cochrane Database Syst Rev* 2007; **4**: CD001886.

Ker K, Edwards P, Perel P et al. Effect of tranexamic acid on surgical bleeding: systematic review and cumulative meta-analysis. *BMJ* 2012; **344**: e3,054.

Ker K, Prieto-Merrino D, Roberts I. Systematic review, meta-analysis and meta-regression of the effect of tranexamic acid on surgical blood loss. *Br J Surg* 2013; **100**: 1,271–9.

Ker K, Roberts I. Tranexamic acid for surgical bleeding. *BMJ* 2014; **349**: g4,934.

Marshall AL, Goodarzi K, Kuter DJ. Romiplostim in the management of the thrombocytopenic surgical patient. *Transfusion* 2015; **55**: 2,505–2,510.

Ker K, Beecher D, Roberts I. Topical application of tranexamic acid for the reduction of bleeding (Review). *Cochrane Database of Systematic Reviews* 2013; **7**: CD010562.

Hunt BJ. The current place of tranexamic acid in the management of bleeding. *Anaesth* 2015; **70** (Suppl 1): 50–53.

Royston D. The current place of aprotinin in the management of bleeding. *Anaesth* 2015; **70** (Suppl 1): 46–49.

## Surgical adhesives/tissue sealants

Rousou JA. Use of fibrin sealants in cardiovascular surgery: a systematic review. *J Card Surg* 2013; **28**: 238–47.

NHSBT Better Blood Transfusion Network. Topical surgical sealants factsheet [www.transfusionguidelines.org](http://www.transfusionguidelines.org)

## Blood salvage

Ashworth A, Klein AA. Cell salvage as part of a blood conservation strategy in anaesthesia. *Br J Anaesth* 2010; **105**: 401–16.

Casati V, D'Angelo A, Barbato L, Turolla D, Villa F, Grasso MA, Porta A, Guerra F. Perioperative management of four anaemic female Jehovah's Witnesses undergoing urgent complex cardiac surgery doi: 10.1093/bja/aem170.

## Haemodilution

Monk TG. Acute normovolemic hemodilution. *Anesthesiol Clin North America* 2005; **23**: 271–81.

Shander A, Rijhwani TS. Acute normovolemic hemodilution. *Transfusion* 2004; **22** (Suppl 2): 26S–34.

Dunseth C, Collins L, Reddy S, Schlueter AJ. Use of a simple, inexpensive device for collection of blood during acute normovolaemic haemodilution in a Jehovah's Witness patient. doi: 10.1111/vox12350.

## General

Thomas D, Thompson J, Ridler B. All Blood Counts – A manual for blood conservation and patient blood management. tfm Publishing Ltd 2016 ISBN: 978-1-903378-95-3.

Habler O Focussed Update: Perioperative management of Jehovah's Witness patients in relation to their refusal of allogeneic blood transfusion [www.nataonline.com](http://www.nataonline.com)

Gohel MS, Bulbulia RA, Poskitt KR, Whyman MR. Avoiding blood transfusion in surgical patients (including Jehovah's Witnesses). *Ann R Coll Engl* 2011; **93**: 429–431.

Milligan LJ, Bellamy MC. Anaesthesia and critical care of Jehovah's Witnesses. *Continuing Education in Anaesthesia Critical Care & Pain* 2004; **4**: 35–39.

## WEBSITES AND RESOURCES

London Regional Transfusion Committee – Care pathways for the management of adult patients refusing blood (including Jehovah's Witnesses patients)

[www.transfusionguidelines.org/document-library/documents/care-pathways-for-the-management-of-adult-patients-refusing-blood-including-jehovah-s-witness-patients/download-file/rtc-lo\\_2012\\_05\\_jw\\_policy.pdf](http://www.transfusionguidelines.org/document-library/documents/care-pathways-for-the-management-of-adult-patients-refusing-blood-including-jehovah-s-witness-patients/download-file/rtc-lo_2012_05_jw_policy.pdf)

Better Blood Transfusion Toolkit – Pre-op Assessment for Jehovah's Witnesses –

[www.transfusionguidelines.org.uk/index.aspx?Publication=BBT&Section=22&page\\_id=1352](http://www.transfusionguidelines.org.uk/index.aspx?Publication=BBT&Section=22&page_id=1352)

Joint United Kingdom (UK) Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee (JPAC), Jehovah's Witnesses and blood transfusion, [www.transfusionguidelines.org/transfusion-handbook/12-management-of-patients-who-do-not-accept-transfusion/12-2-jehovah-s-witnesses-and-blood-transfusion](http://www.transfusionguidelines.org/transfusion-handbook/12-management-of-patients-who-do-not-accept-transfusion/12-2-jehovah-s-witnesses-and-blood-transfusion) accessed on (04 October 2016)

# H. Appendices

## List of Appendices

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## APPENDIX A

### GENERAL CONSENT FORM EXCLUDING BLOOD TRANSFUSION

Trust or Authority \_\_\_\_\_ Patient's Surname \_\_\_\_\_

Hospital \_\_\_\_\_ Other Name (s) \_\_\_\_\_

Unit Number \_\_\_\_\_ Date of Birth \_\_\_\_\_ Male  Female

DOCTOR — Please See Overleaf (this part to be completed by Registered Medical Practitioner)

TYPE OF OPERATION INVESTIGATION OR TREATMENT \_\_\_\_\_

I confirm that I have explained the operation investigation or treatment, and such appropriate options as are available and the type of anaesthetic, if any (general/regional/sedation) proposed, to the patient in terms which in my judgement are suited to the understanding of the patient and/or to one of the parents or guardians of the patient. I further confirm that I have emphasised my clinical judgement of the potential risks to the patient and/or person who none-the-less understood and imposed the limitation of consent expressed below.

I acknowledge that this limited consent will not be over-ridden unless revoked or modified in writing.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Name of Registered Medical Practitioner \_\_\_\_\_

PATIENT /PARENT /GUARDIAN — Please See Overleaf

I am  the patient / parent/ guardian (delete as necessary)

I agree (subject to the exclusions below)  to what is proposed, which has been explained to me by the doctor named on this form,  to the use of the type of anaesthetic that I have been told about.  to the use of non-blood volume expanders; pharmaceuticals that control haemorrhage and/or stimulate the production of red blood cells.

I have told the doctor  that I am one of Jehovah's Witnesses with firm religious convictions and that I have decided resolutely to obey the Bible command "keep abstaining from ... blood" (Acts 15:28, 29). With full realisation of the implications of this position, and exercising my own choice, free from any external influence, I expressly WITHHOLD MY CONSENT to the transfusion of ALLOGENIC BLOOD OR PRIMARY BLOOD COMPONENTS (RED CELLS, WHITE CELLS, PLASMA AND PLATELETS), and to the use of any sample of my blood for cross-matching.

that this limitation of consent shall remain in force and bind all those treating me unless and until I expressly revoke it in writing.

about any additional procedures I would NOT wish to be carried out straightaway without my having the opportunity to consider them first.

about the existence of an applicable Advance Decision document that remains fully representative of my wishes.

I understand  that the procedure might not be done by the doctor who has been treating me so far.  that my express refusal of allogeneic blood or primary blood components will be regarded as absolute and will NOT be over-ridden in ANY circumstance by a purported consent of a relative or other person or body. Such refusal will be regarded as remaining in force even though I may be unconscious and/or affected by medication, stroke, or other condition rendering me incapable of expressing my wishes and consent to treatment options, and the doctor(s) treating me consider that SUCH REFUSAL MAY BE LIFE THREATENING.

that any procedure in addition to the investigation or treatment described on this form, but with the exclusion of the transfusion of allogeneic blood or primary blood components, will only be carried out if it is necessary and in my best interests and can be justified for medical reasons.

that details of my treatment, and any consequences resulting, will not be disclosed to any source without my express consent or that of my instructed agent(s), unless required by law.

Signature \_\_\_\_\_ Date \_\_\_\_\_



### Advance Decision to Refuse Specified Medical Treatment

1. I, \_\_\_\_\_ (print or type full name),  
born \_\_\_\_\_ (date) complete this document to set forth my treatment instructions in case of my incapacity. **The refusal of specified treatment(s) contained herein continues to apply to that/those treatment(s) even if those medically responsible for my welfare and/or any other persons believe that my life is at risk.**
2. I am one of Jehovah's Witnesses with firm religious convictions. With full realization of the implications of this position I direct that **NO TRANSFUSIONS OF BLOOD or primary blood components (red cells, white cells, plasma or platelets)** be administered to me in any circumstances. I also refuse to predonate my blood for later infusion.
3. No Lasting Power of Attorney nor any other document that may be in force should be taken as giving authority to disregard or override my instructions set forth herein. Family members, relatives, or friends may disagree with me, but any such disagreement does not diminish the strength or substance of my refusal of blood or other instructions.
4. Regarding end-of-life matters: [initial one of the two choices]
  - (a) \_\_\_\_\_ I do not want my life to be prolonged if, to a reasonable degree of medical certainty, my situation is hopeless.
  - (b) \_\_\_\_\_ I want my life to be prolonged as long as possible within the limits of generally accepted medical standards, even if this means that I might be kept alive on machines for years.
5. **Regarding other healthcare and welfare instructions** (such as current medications, allergies, medical problems or any other comments about my healthcare wishes):

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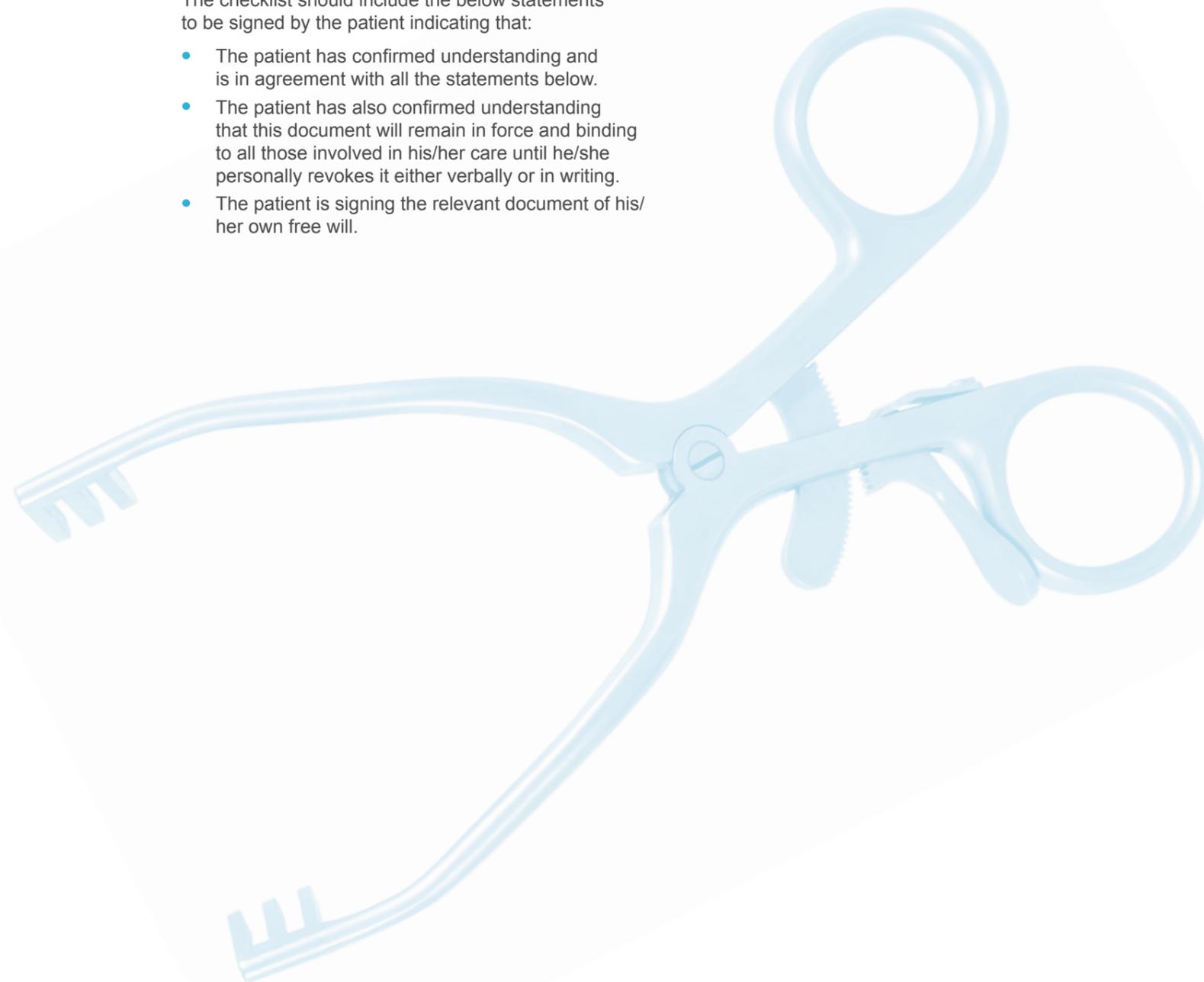
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### APPENDIX C: CHECKLIST FOR SURGICAL PATIENTS REFUSING BLOOD

This checklist should be adapted for local use in line with local protocol. Hospitals should agree the content of the checklist with the Hospital Liaison Committee and the Clinical Risk Department before adapting it for use. The checklist must be completed in full by the treating surgical team.

The checklist should include the below statements to be signed by the patient indicating that:

- The patient has confirmed understanding and is in agreement with all the statements below.
- The patient has also confirmed understanding that this document will remain in force and binding to all those involved in his/her care until he/she personally revokes it either verbally or in writing.
- The patient is signing the relevant document of his/her own free will.



## APPENDIX D: PRELIMINARY PLAN FOR SURGICAL PATIENTS REFUSING BLOOD

This plan should be adapted for local use in line with local protocol. It should be used in conjunction with the referral form for surgical patients refusing blood available in Appendix E.

	I accept (where clinically indicated)				I accept (where clinically indicated)		
	Yes	No	Not discussed		Yes	No	Not discussed
Fresh frozen plasma				*Acute Normovolaemic Haemodilution			
Red blood cells				*Intraoperative cell salvage			
Platelets				*Postoperative cell salvage			
*Cryoprecipitate				*Fibrin glues and sealants			
*Albumin				Other (specify) .....			
*Recombinant clotting factors				Other (specify) .....			
*Prothrombin complex concentrate				Other (specify) .....			
*Fibrinogen concentrate				Other (specify) .....			
<b>If required to save my life I accept (Circle desired response and initial)</b>							
Fresh Frozen Plasma				Yes .....	No .....		
Red Cells				Yes .....	No .....		
Platelets				Yes .....	No .....		

Signed

Patient .....

Consultant .....

Witness 1 .....

Witness 2 .....

\* Treatments that are recognised as a matter of individual choice for patients who are Jehovah's Witnesses (Jehovah's Witness Hospital Information Services, October 2016).

Surname:	First name:
Consultant:	Department:
MRN:	Outpatient: Yes/No
DOB:	In-patient: Yes/No
	Location:

Blood Results			
Hb		Ferritin	
WCC		B12	
Platelets		Serum folate	
APTT		Retics	
PT			
INR			
Fibrinogen			

A. Does NOT require preoperative optimisation. Yes/No

B. Requires preoperative optimisation. Yes/No

Details:

C. Requires interview to discuss component therapy. Yes/No

D. Preoperative optimisation NOT feasible. Yes/No

Appointments made for haematology clinic?	Yes/No
Location:	Date:
Appointments made for surgical clinic?	Yes/No
Location:	Date:

## APPENDIX E: REFERRAL FORM FOR SURGICAL PATIENTS REFUSING BLOOD

This form should be adapted for local use in line with local protocol. It should be used in conjunction with the preliminary plan for surgical patients refusing blood available in Appendix D.

Please send completed forms either by fax [insert fax number] or email [insert email] to the Haematology Department, [Hospital name]. All forms MUST be signed by referring clinician.

Poorly completed forms may result in delays.

<b>Surname:</b>	<b>First name:</b>
<b>Consultant:</b>	<b>Department:</b>
<b>MRN:</b>	<b>Outpatient:</b> Yes/No
<b>DOB:</b>	<b>In-patient:</b> Yes/No
	<b>Location:</b>

All sections MUST be completed (tick boxes where appropriate)

<b>Operation description</b>				
<b>Urgency</b>	<b>Emergency/ Urgent</b>		<b>Elective</b>	
<b>Operation date</b>				
<b>Estimated blood loss</b>	millilitres			
<b>Anticoagulant meds?</b>	<b>Warfarin</b>		<b>Heparin</b>	<b>Aspirin</b>
	If yes, give reason:			

Circle appropriate response:

<b>Advance-decision document available?</b>	YES	NO
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If available, ensure the document is scanned onto EPR and a copy is kept in the patient's medical records.

<b>Checklist completed and signed?</b>	YES	NO
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The checklist is an essential part of the consent process and must be completed IN FULL.

The checklist MUST be faxed with Referral Form and a copy should be kept in patient's medical records.

<b>Blood tests done?</b>	YES	NO
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If not done, when are they booked for? Ensure blood tests were sent – as set out in *Caring for Patients Who Refuse Blood* (RCS 2016). Blood results must not be older than two weeks from date of referral.

Completed by (PRINT): .....

Grade: .....

Signature: .....

