

Protocol

Perioperative Blood Management: an organisational and individual anaesthetist survey of practice



This protocol describes the project and provides information about its procedures. Every care was taken in its drafting, but corrections or amendments may be necessary. These will be circulated to investigators in the study. Problems relating to this study should be referred, in the first instance, to the project leads.

Study Summary

Study Title	Perioperative Blood Management: an organisational and individual anaesthetist survey of practice
Project Leads	Dr Samantha Warnakulasuriya - NIHR Data Driven Blood and Transplant Research Unit (BTRU) in Data Driven Transfusion Practice Dr Martha Belete - RAFT Chair Dr Kathleen Wolff - RAFT Vice Chair for Anaesthesia Professor Simon Stanworth - NIHR Data Driven Blood and Transplant Research Unit (BTRU) in Data Driven Transfusion Practice
Research Groups	Research and Audit Federation of Trainees (RAFT) NIHR Blood and Transplant Research Unit in Data Driven Transfusion Practice
Project Design	UK Multicentre Organisational survey of practice and individual survey of anaesthetists
Participants	Sites that provide surgical services to adult patients where anaesthetic care is required to provide these services Anaesthetists who provide care to adult patients
Inclusion criteria	As above
Exclusion criteria	Hospital sites that only provide paediatric services Anaesthetists that exclusively do paediatric anaesthesia
Time Period	January 2023 (1 month project)
Objectives	<ol style="list-style-type: none"> 1. Describe current practices for delivery of perioperative blood management services including ordering of blood components and TXA 2. Assess how hospitals evaluate and monitor their practice in regards to perioperative blood management 3. Document individual anaesthetists' beliefs and practice in perioperative blood management through responses to selected clinical case scenarios
Recruitment	Involvement of this project will be via the RAFT Trainee Research Networks across the UK
Data storage	No patient or clinician identifiable information is collected. Hospital location will only be used to determine whether there are any systematic differences in findings between different types of hospital. Data will be stored via the University College London (UCL) REDCap service which is a secure web application for managing online surveys and databases.

Background and rationale

Perioperative anaemia is associated with adverse clinical outcomes. Effective perioperative blood management (PBM) pathways for anaemia management are reported to reduce rates of blood transfusion, complications and length of hospital stay¹. As anaesthetists who frequently move between different hospitals during our training, we are well aware of variation of clinical pathways in perioperative care and use of drugs such as Tranexamic acid.

This project focuses on organisational structure and variation of practice in regards to PBM in adults (>18 years). The survey is simple to undertake, whilst allowing collaborators to increase their experience doing national projects and achieve anaesthetic curriculum goals. The survey consists of two parts:

1. an organisational survey
2. a survey of individual anaesthetists on their experience and practice during common clinical scenarios.

Although hospitals are regularly involved in national audits surrounding blood safety and administration there has not been a national survey of PBM in the UK. This is a field where practice is likely to vary depending on the set up of different hospitals and surgical services. The core standards for this survey are derived from the Centre of Perioperative Care. Guideline for the Management of Anaemia in the Perioperative Pathway, published in September 2022¹. There has not been a national survey of individual anaesthetists' beliefs and practice in PBM.

This project has been developed in partnership the NIHR Blood Transfusion Research Unit in the use of routine data to advance the practice of patient blood management. Blood components are a costly and scarce commodity, reliant on donors. Concerns about the security of supply of blood remain a major concern at present in England, as a national Amber shortage alert was recently raised, with the potential to cause cancelled operations². The World Health Organization defines Patient Blood Management (PBM) as '*a patient-focused, evidence-based and systematic approach to optimise the management of patients and transfusion of blood products for quality and effective patient care*' and recently highlighted an urgent need to implement PBM globally³. Patient and public groups, such as the James Lind Alliance, have identified research priorities in the field of PBM⁴. Blood management practices are changing rapidly in response to the latest evidence, including the adoption of restrictive transfusion thresholds and blood conservation measures⁵. To improve peri-operative care, we wish to better understand current pathways and practices. We also aim to understand how departments evaluate and monitor their practices, to help identify targets for efficient data-driven approaches to quality improvement.

Project aims

1. Describe current practices for delivery of perioperative blood management services including ordering of blood components and TXA
2. Assess how hospitals evaluate and monitor their practice in regards to perioperative blood management
3. Document individual anaesthetists' beliefs and practice in perioperative blood management through responses to selected clinical case scenarios

Inclusion Criteria

- Organisational survey: all adult surgical departments perioperative services that do elective and/or emergency procedures (ONE RESPONSE PER SITE)
- Individual anaesthetist survey: all anaesthetists who work in adult surgical and perioperative services

Exclusion Criteria

- Organisational survey:
 - Sites that exclusively deliver paediatric surgical services
 - Sites that do not delivery surgical services or have theatre complexes on site
- Individual survey: anaesthetists who exclusively cares for paediatric patients

Methods

This is a prospective multicentre survey. Local coordinators at individual sites will be required to complete one organisational survey for their main site plus separate surveys for other sites within the trust that are >1 mile away from the main site. Local coordinators will also be required to disseminate the individual anaesthetist survey amongst their colleagues. We will advise local coordinators that they need to register this project with their local audit departments

Data collection

There are two data collection forms:

1. The organisational survey: one form completed by the site lead for each site plus a separate additional form for each separate site(s) within the trust that are >1 mile away from their main site.
2. The individual anaesthetist survey: individual anaesthetists will have access to a separate survey link and QR code to the organisational survey that will be sent to site leads so that they can fill these in anonymously

The organisational survey will explore 6 main areas of perioperative blood management:

- General organisation demographics: here we ask for some very basic information about the site for which you are filling the survey. There is a question on how many electives operations occur per year at the site, here we are only looking for a rough estimate and it likely to be a number that your theatre coordinator or one of your senior anaesthetists will know.
- Uptake and use of electronic data & intraoperative documentation: here we ask simple questions about whether clinical notes are documented on paper or electronically.
- Elective anaemia referral pathways: here we ask about your site elective blood management and anaemia pathways. It would be helpful for you to access your site's departmental guidelines and you may need to talk to clinicians who work with this pathway regularly to get accurate answers.
- Intraoperative blood management & TXA: here we ask how blood products are requested and accessed. We also ask about TXA use and doses, here we want to know the most

common dose that is used or if doses are calculated based on weight. We also ask about if topical TXA is ever used intraoperatively, in which specialities and what the most common dose used.

- Intraoperative cell salvage & resource availability: here we ask about your hospital site policy and resource availability in theatre in regards to cell salvage, rapid infusers, blood fridges and point of care testing including point of care coagulation testing (e.g. ROTEM, TEG).
- Audit and feedback: here we ask about internal and external audit processes. We advise that if you are unsure of the answers that you contact your anaesthetic blood management lead and/or blood bank department at your hospital site as they usually have to do regular blood audits that you may not be aware of.

The individual anaesthetist survey is aimed to explore individuals practice and attitudes to perioperative blood management during 3 clinical scenarios which are organised into different sections/vignettes. Clinicians are only expected to answer questions for the clinical vignettes which reflect their routine clinical practice. The clinical vignettes pertain to the following types of operation:

- Elective orthopaedics
- Elective major cancer
- Elective caesarean section

Sample size

We aim to survey at least 100 hospital sites.

Statistical analysis

Both surveys will be reported using descriptive statistical analysis. Bivariate analysis may be used to analyse particular categorical data where appropriate.

Data management

No personal patient or clinician data is collected or processed. Hospital location will be collected to determine whether there are any systematic differences in findings between different types of hospital. Specific hospitals or trusts will not be linked to specific data in reports or publications. The contact details provided to the project team by registered sites will only be used for direct communication regarding the study.

Data will be collected digitally and stored on the University College London (UCL) REDCap service which is a secure web application for managing online surveys and databases.

Ethical considerations

This project is a clinical service evaluation and is not considered as research as per criteria set by the Health Research Authority (HRA). It does not involve any randomisation, intervention or changes to patients' care. No personal patient or clinician data is collected or processed. For these reasons Research Ethics Committee (REC) approval is not required. Local coordinators will need to inform your local audit department however, some may prefer to inform their R&D department or Caldicott guardian also.

References:

1. Centre of Perioperative Care (2022) Guideline for the Management of Anaemia in the Perioperative Pathway. Available at: <https://cpoc.org.uk/guidelines-resources-guidelines/anaemia-perioperative-pathway> (accessed 10/10/22)
2. British Society of Haematology (2022) Blood shortages could lead to cancelled operations. Available at: <https://b-s-h.org.uk/about-us/news/blood-shortages-could-lead-to-cancelled-operations> (accessed 26/11/22)
3. World Health Organisation (2021) The urgent need to implement patient blood management: policy brief. Available at: <https://www.who.int/publications/i/item/9789240035744> (accessed 26/11/22)
4. James Lind Alliance (2018) Blood Transfusion and Blood Donation Top 10. Available at: <https://www.jla.nihr.ac.uk/priority-setting-partnerships/blood-transfusion-and-blood-donation/top-10-priorities.htm> (accessed 26/11/22)
5. National Institute for Health and Care Excellence (2015) Blood Transfusion [NICE Guideline No. 24]. Available at: <https://www.nice.org.uk/guidance/ng24> (accessed 26/11/22)