

BLOOD ASSIST

SAFE TRANSFUSION PRACTICE AT YOUR FINGERTIPS

We look at a new app from NHS Blood and Transplant that has been designed to improve safety and help with the administration of blood components.

Transfusion practice remains highly regulated and monitored within healthcare settings, but, despite this, the last 20 years of documented error reporting by the Serious Hazards of Transfusion (SHOT) UK haemovigilance scheme continues to highlight potentially fatal errors.

A key recommendation from the first annual SHOT report for 1996–97 stated that the bedside check is vital in preventing transfusion error, but in 2019 there were still three ABO-incompatible red cell transfusions due to clinical error. Whilst this number has reduced over

time, near-miss data suggest that these are just the tip of a much larger problem. These errors demonstrate the importance of appropriate patient identification throughout the transfusion process.

Develop a resource

Transfusion-associated circulatory overload (TACO) and other pulmonary complications remain the most reported cause of major morbidity and death in transfused patients. The national comparative audit of TACO performed in 2017 included 2461 inpatient and 2119 outpatient transfusions in patients over 60 years of age. Only 20.5% of inpatients were risk-assessed for TACO; fewer had



assessments between units or haemoglobin checks although 89.2% of patients had at least one risk factor for TACO in addition to age. SHOT recommends that a formal pre-transfusion risk assessment for TACO should be undertaken whenever possible.

This evidence demonstrates a need for clinical tools for staff aimed at minimising the impact of human factors on the safety of the transfusion process and NHS Blood and Transplant (NHSBT) continues to work with SHOT, the Department of Health and Social Care, and the National Blood Transfusion Committee (NBTC) to promote best practice and patient safety within transfusion.

Following work with stakeholders in 2018 the NHSBT Patient Blood Management Practitioner (PBMP) team identified clinical barriers impacting on the implementation of

safety recommendations and patient safety. The team was commissioned to develop a resource to support healthcare professionals involved in the administration of blood components and the care of patients during transfusion.

The aim was to provide an educational aide memoir resource that can be utilised universally within NHS trusts as the “go-to” reference for best practice in bedside administration of blood components. With the primary objective to improve transfusion safety, and as an education resource, it needed to be accessible, up to date and credible. It was agreed a digital resource was required to meet these aims and objectives and so Blood Assist was conceived – a smartphone application that would be available at the patient’s side at any point in the transfusion process. The hope at this stage

was that as well as individuals accessing the app on their personal phones, it could be downloaded centrally by NHS trusts and then uploaded to electronic bedside devices, where available.

The content was drafted from current national guidance from the British Society for Haematologists (BSH), recommendations from SHOT, the Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO) and consent legislation. This transfusion guidance is extensive and complex, and for staff who are not regularly involved in transfusion, it can be overwhelming and difficult to interpret in an acute clinical setting. We wanted the app to pull the key safety messages from the guidance and present them in a simple and clear format, reducing ambiguity and risk of misinterpretation.

Further development

The initial content and format of the app was discussed and agreed with clinical stakeholders, including biomedical scientists, nurses, and clinicians. The stakeholder feedback also led to the additional development of a web-based version of the app that can be accessed, or embedded, on any device to support training and education.

The content once agreed went through a quality review and validation process, then our external digital developers, HMA, began the app build. On completion, this stage was followed by a robust quality-testing process, interrogating functionality and reliability, and a series of amends and retests before the app was approved.

At this point, we engaged with two stakeholders to pilot the app clinically, assess the functionality within the clinical setting and gather crucial service-user evaluation. Calderdale and Huddersfield NHS Foundation Trust, and Mid Yorkshire Hospitals NHS Trust kindly agreed to be pilot sites for us, and this was a critical stage of the process, highlighting some technical accessibility

issues, which we were able to resolve prior to launch.

Launched

Now complete and launched in February 2021, the app is suitable for use by any healthcare professional competent in the transfusion administration process, for example nurses, operating department practitioners and midwives.

Elements of the app are also appropriate for use by support staff involved in the process, for example healthcare assistants and pre-registration staff, at the discretion of the employing organisation.

The app incorporates the following distinct sections, each one accessible from a menu page:


- Positive patient identification
- Patient consent

- TACO risk assessment
- Bedside checklist
- Compatibility of blood components
- Specific requirements
- Administration
- Transfusion reaction guidance

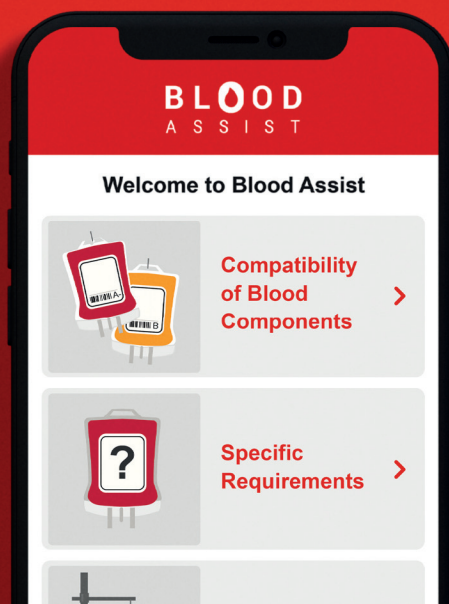


Optimal benefit from the app will be achieved by use at the bedside at the time of transfusion (or related procedures) and, therefore, we are encouraging trusts and healthcare organisations to download the app to their bedside devices. However, the app is also freely available on app stores for individual practitioners to download to personal devices.

The app complies with NHSBT's quality standards and has no associated information governance concerns, as no patient data can be submitted. It has been assessed against MHRA guidance and deemed an educational resource, NOT a medical device and it has also gone through NHSX approval.

The app is free, not-for-profit, and not associated with any commercial sponsorship or organisation. 

“We wanted the app to emphasize key safety messages in a simple and clear format”



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ACKNOWLEDGEMENTS

This resource is the culmination of the work of many, and we would like to express our thanks to all those who supported and contributed to its development: Our developer, HMA, and our pilot sites. David Melia, Director of Nursing and Quality/Deputy Chief Executive and the team at The Mid Yorkshire Hospitals NHS Trust. Dr Pnt Laloë, Consultant Anaesthetist and the team at Calderdale and Huddersfield NHS Foundation Trust. The app is available via Google Play and the Apple App Store. The web version is available at: bloodassist.co.uk