National Comparative Audit
of Blood Transfusion

NHS
Blood and Transplant

National Comparative Audit of Bedside Transfusion Practice 2024 (Re-audit)

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Background

Ensuring the right blood is given to the right patient is a crucial aspect of transfusion practice and undertaking the correct pre-administration bedside checks in the correct way is a critical point in reducing potential errors.

NHS Trusts are required to ensure that all staff involved in the transfusion process are adequately trained and that robust policies are in place to cover all aspects of transfusion care. These policies must specifically include the pre-transfusion bedside administration checks, the care of the patient during a transfusion episode and the management and reporting of any adverse events.A patient safety alert issued by the Department of Health in 2017 highlighted that patients were being harmed, and some had died, as a result of being given incorrect blood, including ABO incompatible transfusions. Most could have been prevented if the final bedside check had been carried out correctly. This alert encouraged use of a structured bedside checklist, both to prompt all necessary checks, and to allow documentation that all steps were performed.

A series of national audits of bedside transfusion practice have been carried out since the mid-1990s with the last performed in 2011. Those audits highlighted that a small proportion of patients receiving blood were vulnerable to errors due to lack of adequate pre-transfusion identification checks and appropriate observations. Previous cycles of this audit focussed on retrospective notes-based audit to confirm whether the bedside transfusion process was being followed. On this occasion we used a prospective observational methodology to better understand the reasons for errors and identify opportunities for improvement.

Electronic blood management systems have been recommended, with an aim to improve transfusion bedside safety via barcode scanning technology. This enables an automated electronic check of the component to be transfused against the patient’s requirements in the Laboratory Information Management System (LIMS). This audit will record the use of these systems and their impact on compliance with bedside checks.

This audit will provide data and insight into current practice and highlight areas where further work is required in order to meet national standards.

Participation

127 hospitals/trusts enrolled in the audit

2918 transfusions were audited

Key findings

The audit demonstrates overall reasonably safe practice but has identified areas for improvement.

Knowledge gaps, staffing pressures, lack of equipment (such as workstations on wheels, ID band printers), environmental factors (space, layout), set-up of systems (e.g. accessibility of a checklist) and varying practice in outpatient settings were all identified as contributing to poor compliance.

The prospective observational design of this audit enabled auditors to pick up errors or omissions as they happened and to take immediate corrective steps and provide education in real-time.

Checking process

- A pre-transfusion checklist was not used in 14.1% (411/2918) of transfusions. 7.1% (12/168) of sites reported not having a checklist in place.
- 67.3% (113/168) of sites have a policy requiring a two-person check before blood administration, and of those 70.6% (72/102) specify a two-person independent check. Of 1764 two-person checks observed, 833 (47.2%) were not carried out independently. Misunderstanding about the meaning of a two-person independent check was common.
- 3.5% (137/3895) of checks were not carried out at the bedside.
- The checking process was interrupted in 7.8% (210/2690) of cases but was only recommenced from the start in 49.0% (96/196). Most interruptions could be avoided by ensuring equipment, patient and prescription are all ready before collecting units.

Positive patient ID

- 3.4% (99/2907) of patients were not wearing a form of ID, and in two thirds there was no appropriate reason for this.
- In 7.0% (241/3434) of transfusion checks, the patient was not positively identified by asking them to state their name and date of birth, and these details were not checked against the ID band in 4.1% (140/3420).

Individual bedside checks

- Compliance with most individual steps in the checking process was between 88% and 99%. A visual inspection of the unit (88.5% compliance, 3461/3910) and a check against special requirement stated on the prescription (92.6% compliance, 1444/1559) were most frequently missed.
- A two-person independent check increased the likelihood that between them, one checker would cover every step.

Electronic systems

- 36.3% (61/168) of sites have an electronic bedside system for pre-transfusion checks.
- An electronic device was used in 25.0% (728/2913) of transfusion checks observed.
- Where an electronic device was used, there was lower percentage compliance with all steps of the staff checks, including those (positively identifying the patient, check of details against ID band, ensuring component matches prescription, visual inspection of unit) that the device cannot check.

Patient observations

- A complete set of observations was not recorded pre-transfusion in 6.2% (178/2885) of cases, during transfusion (within 30 minutes of starting) in 11.7% (337/2878) and post-transfusion in 12.4% (354/2850).

Training

- 94.8% (4426/4670) of staff performing bedside checks had completed transfusion training within the last 3 years, but 39 reported having no training and 205 (4.4%) were unsure.

Standards and Results

Audit Standard	Audit Findings
1. A patient having a blood transfusion is wearing an identification band (or risk assessed equivalent).	96.6% (2808/2907)
2. The patient's identification contains the patient's last name, first name, date of birth and unique patient identification number.	97.2% (2729/2808)
3. The patient's identity is checked prior to transfusion by asking the patient to state their full name and date of birth and checking these against the form of identification (such as wristband).	ID stated: 93% (3193/3434), ID Checked: 95.9% (3280/3420)
4. The identity details on the identification are checked with the compatibility label attached to the blood component and the prescription/authorisation.	Compatibility label: 99.1% (3870/3906), Prescription/authorisation: 97.9% (3824/3907)
5. The blood component compatibility label and prescription/authorisation are checked to ensure that the type of blood component authorised is the same as the type of component received.	98.4% (3846/3907)
6. The component pack label and written authorisation are checked to ensure that any additional requirements have been met	92.6% (1444/1559)
7. The unique component donation number and the blood group on the component pack label are checked and confirmed to be the same as on the laboratory-generated label attached to the blood component.	Donation no: 98.4% (3832/3894), Blood Group: 97.2% (3793/3901)
8. The component blood group is checked and confirmed to be appropriate for the patient blood group.	96.5% (3774/3912)
9. The expiry date of the component is checked and confirmed to be within date and time.	98.2% (3832/3903)

Audit Standard	Audit Findings
10. The component pack is visually inspected for signs of leakage, damaged packing or other defects.	88.5% (3461/3910)
11. The final administration checks are conducted next to the patient's bedside and undertaken by the healthcare professional who is going to administer the component.	At bedside: 96.5% (3758/3895), Final checker administers: 96.9% (2790/2879)
12. On successful completion of checks, the transfusion should be started immediately.	97.2% (2811/2893)
13. If the checking process is interrupted, the entire process must be restarted.	49% (96/196)
14. Pulse, blood pressure, temperature and respiratory rate are measured before a unit of blood is transfused.	93.8% (2707/2885)
15. Pulse, blood pressure, temperature and respiratory rate are measured at 15 minutes after the transfusion starts.	At 15 mins: 43% (1238/2878), Within 30 mins: 88.3% (2541/2878)
16. Pulse, blood pressure, temperature and respiratory rate are measured at the end of each transfused unit.	87.6% (2496/2850)
17. Blood components must only be administered by a trained, competency assessed Healthcare professional.	Trained: 99.1% (4426/4465), Competency Assessed: 90% (4036/4484)

Recommendations

Hospital transfusion teams should review their training on bedside transfusion practice to ensure:

- This is in line with Trust policy (e.g. with regard to two-person independent checking, or number of staff required when using an electronic device)
- This emphasises the reasons why checks are required, not just how to perform them
- Refresher sessions/ bite-sized reminders of key points are available in between the main 2 or 3 year mandatory training cycle

Ensure a pre-transfusion checklist is available in a format facilitating easy use at the bedside

When electronic bedside systems to support pre-transfusion checks are introduced, transfusion teams should ensure:

- The systems are configured and equipment available so they can be used at the bedside
- Training emphasises the continued importance of human checks, particularly those that the machine cannot perform (positive patient ID and check against wristband/ check against prescription/ visual inspection of unit)
- They continue to review how the devices are used in practice and identify any workarounds which can erode the safety benefits

If site audit has identified a cultural or systemic issue with ID bands (e.g. not being used in a particular setting, with no risk-assessed alternative) this should be escalated through hospital safety governance, as this represents a risk extending beyond transfusion.

Empower patients to view the ID check as a positive step to ensure their safety, and to ask for this if it has not been performed – this may be particularly applicable in regularly-transfused patients in an outpatient setting, where there is a risk of complacency.

Consider whether prompts can be built into the transfusion pathway, for example to ensure that equipment and patient are ready prior to collecting blood, and observations are taken. Electronic systems and integrated care plans may have a role in this.

Disseminate local audit findings via a top-down (nursing governance) and bottom-up (ward nurses in charge, staff huddles) approach, to ensure key messages reach the individuals performing these tasks day-to-day. This should include settings not involved in the original data collection.

List of resources

SHOT Safe transfusion checklist

https://www.shotuk.org/wp-content/uploads/myimages/Safe-Transfusion-Practice-Transfusion-Checklist-July-2020.pdf

SHOT Using information technology for safe transfusion

https://www.shotuk.org/wp-content/uploads/myimages/SHOT_Using-Information-Technology-for-Safe-Transfusion-1.pdf