Promoting safer blood transfusion practice in hospital


Summary

Results from a national comparative audit of bedside transfusion practice show that patients in the UK are at risk of misidentification and poor monitoring when undergoing a blood transfusion. A commonly identified reason for poor compliance with guidelines from the British Committee for Standards in Haematology (BCSH et al. 1999) is a lack of awareness of good transfusion practice (National Blood Service (NBS) 2005). This article discusses the implications of the audit findings for the administration of blood at the bedside and examines initiatives to support hospital staff in their efforts to improve blood transfusion safety.

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Keywords

Blood transfusion; Good transfusion practice; Patient safety; Wrong blood incidents

These keywords are based on the subject headings from the British Nursing Index. This article has been subject to double-blind review. For author and research article guidelines visit the Nursing Standard home page at www.nursing-standard.co.uk. For related articles visit our online archive and search using the keywords.
some patients were at risk of receiving blood intended for another patient or of having an undetected transfusion reaction.

Transfusion guidelines

The BCSH et al (1999) guidelines state that patients must have an identification band that includes the hospital number, surname, first name, date of birth and gender before the transfusion is started. The identification band must then be checked at the patient’s bedside against the compatibility label on the blood pack, the prescription chart and the patient’s medical notes. This is to ensure that the correct patient is identified, that the blood has been prescribed for that patient and that there is a statement of intention to transfuse in the patient’s notes. These procedures are necessary to constitute safe transfusion practice (Royal College of Nursing (RCN) 2005).

Use of documentation alone, however, is not sufficient to ensure patient safety. Staff administering blood must be sure that the final, pre-transfusion check is conducted next to the patient, and where possible ask the patient to verbally identify him or herself by stating full name and date of birth and checking the details on the unit of blood against the patient’s details on the identification band, be it a wristband or some other form of identification such as a photograph. The importance of only administering blood after this final check is satisfactory is endorsed by the National Patient Safety Agency (NPSA) in its safer practice notice Right Patient, Right Blood (NPSA 2006), which recommends that the compatibility report is no longer used as part of the checking procedure.

The 2005 audit showed that 466/8054 (6%) patients receiving a transfusion had no patient identification band or alternative form of identification, such as a separate, numbered red label wristband or photographic identification on a lanyard around the neck, before the blood transfusion was commenced. The highest rates of absent identification bands occurred in paediatric (32/119, 27%) and neonatal units (11/42, 26%). These patients are at increased risk because they are unable to confirm their identity verbally, and the Serious Hazards of Transfusion (SHOT) has demonstrated that there are more errors among these patients than in other patient groups (Stainsby et al 2005). In other clinical areas, the most common reason given by nurses as to why the patient did not have an identification band was that the patient was well known and/or that wearing an identification band was not required by day unit policy. While a patient may be well known to the nurse admitting the patient to the day unit, this may not be true for all staff who may come into contact with that patient. Major errors are known to occur in all clinical settings, including day units.

Once the audit had commenced it was decided to collect additional data on the nature of any mismatched or missing information between the wristband and the compatibility sheet, blood bag label, medical notes and the prescription sheet. The data were collected for 4,790 of the 8,054 episodes. Denominators relate to cases where items are on the wristband. Excluded are cases where either the item was not on the wristband, cases where the item or the document was not used in the hospital or the document was absent, or the patient was not wearing a wristband. Findings showed that in 92/3,552 (3%) cases a transfusion was given despite a mismatch of information between the wristband and the blood bag.

Missing data included surname, first name, date of birth and hospital identification number, and these were found to be missing from prescription sheets, medical records and blood bag labels, although in each case in only a small percentage (<3%) of patients. Mismatches in patient identification numbers occurred in 55/3047 cases. In 23 of these the mismatch was because an accident and emergency number was used in addition to the hospital identification number. A similar mismatch also occurred in some cases involving the use of the NHS number, a duplicate hospital number or a wristband (and number) issued in another trust before the patient was transferred. In addition some of the digits were transposed or missing.

Names were misspelled in 26 cases and transposition of digits in the date of birth occurred in 15 cases. In six cases the wristband was illegible – most often due to water damage. Use of addressograph labels also caused some of the errors. In one case the wrong label was put on a prescription sheet. In five cases information on the label was truncated due to misalignment in printing or the use of the wrong size labels, and in two cases folding of the label on the wristband caused a similar problem.

Patients who do not have a wristband or those whose wristband contains incomplete or inaccurate information are at risk of receiving blood intended for another patient. There are wider implications of this practice, as patients who are unconscious or unidentifiable could potentially receive medication, treatments and tests that were not intended for them. Good practice is to check the identity of the patient at the bedside (NPSA 2006). However, it is essential that the information available for conducting the identity check is complete and accurate. The
2005 audit sought to establish to what extent nurses would administer blood in the absence of patient identifiers or in the presence of mismatched identifiers. The occurrence of absent or mismatched data was low. However, about 2% (297) of audited transfusions were administered by nurses who proceeded with a transfusion when there was a mismatch between patient identifiers on the wristband and identifiers on documentation. The potential for error here lies in the assumptions that identity is correct, possibly because of a lack of appreciation of the consequences of giving the wrong blood to the wrong patient.

Five patient identifiers on a wristband and a procedure that does not allow transfusion to proceed unless they match the bag of blood, allows maximum opportunity for ensuring that the blood goes to the right patient. However, the audit findings showed that in 42/7535 (0.6%) cases blood was given to patients whose surname was absent from the wristband. In 30/7,535 (0.7%) cases the first name was missing, in 223/7,535 (3%) cases the date of birth was missing and in 35/7,535 (5%) cases the hospital identification number was missing. It is clear that some nurses are administering blood transfusions without confirming fully the patient’s identity. In the case of patients who are unable to communicate because of age, infirmity or conscious state, nurses do not have an opportunity to check identity verbally with the patient and using all written identifiers is paramount to ensuring patient safety. The risk of misidentification is increased in situations where common names or dates of birth are in use, for example, in neonatal units and communities where particular names are common, especially where unique identifiers such as hospital identification numbers are missing.

### Monitoring vital signs

The patient’s vital signs should be monitored before administering a unit of blood, 15 minutes after the start of the transfusion and on completion of the transfusion (BCSH et al 1999), to help determine if a transfusion reaction is occurring. The 2005 audit findings indicated that one third of all patients had no record of observations within the first 30 minutes of a transfusion commencing, when a severe adverse reaction is most likely to occur. A total of 13% (1,070/8,054) of all patients had no record of observations during the entire transfusion. Not adhering to the recommended observations means that changes in observations, indicating a transfusion reaction, may go undetected. The lack of observations conducted on patients who are unconscious or unable to communicate, as a result of age or mental status, is of particular concern.

### Improving practice

Against this background of potentially unsafe transfusion practice there have been a number of initiatives to assist hospital staff in their pursuit of safer transfusion practice. Following on from the audit conducted in 2003, the NBS facilitated regional workshops to explore the reasons why transfusion practice does not adhere to national guidelines. Directors of nursing, nurse educators and other clinical practice specialists gathered to compare local, regional and national results. In summary, the report from the workshops concluded that the delegates’ agreement on what constitutes good bedside transfusion practice reflects what is written in the BCSH et al (1999) guidelines.

However, many delegates preferred to use two nurses to perform checks for blood transfusion and to repeat observations more frequently than the present BCSH guidelines suggest is necessary. This seems to have arisen out of policy or custom and practice which previously dictated that two nurses would perform identity checks for the administration of medicines, and local interpretation of best practice, which has not necessarily changed in the light of these guidelines.

Delegates identified barriers to good practice, which fell into three broad areas:

- The knowledge, awareness, experience and personal integrity of the nurse.
- The systems within which they are asked to work and more complex issues such as patient behaviour.
- The employment of bank and agency nurses.

Delegates called for more standardisation of the procedure and paperwork, for clearer and more explicit national guidance that would in turn help to simplify the blood transfusion process. The NPSA, SHOT and the NBT Committee considered these deliberations in December 2004. The result was the launch of a joint initiative aimed at reducing the number of ABO incompatible transfusions by 50% over the next three to five years. Four initiatives already in use within hospitals were selected for further evaluation and possible implementation. These were bar code technology, which uses bar code readers to identify the blood and the patient, the separate, numbered ‘red-label’ transfusion wristband system, a photographic identification system for regularly transfused patients and a sustained approach to training with the aim of producing a nationally agreed set of competencies for nurses, midwives and porters handling blood. The NPSA commends these approaches (NPSA 2006).

To help hospitals communicate important transfusion practice messages, the NBS
promoted an awareness-raising campaign in 12 NHS hospitals throughout England and North Wales. Promotional material was supplied to transfusion practitioners in hospitals who took part in a five-week campaign talking to ward-based nurses on a one-to-one basis or in small groups. Good practice slogans were printed on ballpoint pens, Post-it® pads, pocket notepads and colour posters to promote the key messages. The campaign’s five distinct key messages are as follows:

- Blood is a liquid transplant.
- No wristband, no transfusion.
- Right blood, every time, all of the time.
- If you did not note it, you did not do it.
- Watch out, transfusion reactions about.

Transfusion practitioners reported a change in attitude among the ward staff as a result of the campaign. For example, the transfusion practitioner was invited and welcomed into areas that had previously shown little interest, to communicate important best practice messages.

**Conclusion**

The 2005 audit of blood transfusion practice in 270 hospitals revealed that some patients were being transfused without being adequately identified, or in the presence of mismatched identification, which could lead to patients receiving blood that is intended for someone else and therefore is a reportable transfusion error. The 2005 audit also found that, contrary to BCSH et al (1999) guidelines, some patients were being inadequately monitored during the transfusion process, which may mean that they could experience an undetected transfusion reaction. The transfusions observed as part of the audit reflect only a minor proportion of transfusions that occur in hospitals.

Despite the many initiatives to improve practice, there is still the potential for patients to be put at risk if their identity is not properly confirmed before the transfusion starts and if their vital signs are inappropriately monitored. As the SHOT scheme has repeatedly shown, failure of the bedside check of patient/blood identity is the most important error contributing to ‘wrong blood’ incidents (Stainsby et al 2005). Anecdotal evidence suggests that focused delivery of good transfusion practice messages by a transfusion practitioner raises awareness and has the potential to improve practice. However, it was not possible to audit this in the 2005 audit because neither time nor resources were available for transfusion practitioners to be able to audit and then re-audit transfusion practice at the beginning and end of the campaign.

It is essential that all hospitals have a transfusion practitioner and establish an effective hospital transfusion team to promote safe practice. Nurses should receive induction training as well as annual refresher training in the safe administration of blood. Nurses must ensure that all patients are wearing an identification band before the transfusion starts, and that this band displays the patient’s first name, surname, date of birth, gender and hospital identification number. With the exception of those patients who are unable to communicate, all patients should be asked to confirm their name before the transfusion commences. In an effort to detect a blood transfusion reaction, the patient’s blood pressure, temperature and pulse should be observed and recorded before transfusion of each unit of blood. Temperature and pulse should be repeated 15 minutes after the transfusion has started and again once the transfusion is completed. These steps will help to improve transfusion safety and minimise preventable errors NS.

**References**

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