2022 Annual SHOT Report – Supplementary information

Chapter 9: Incorrect Blood Component Transfused (IBCT)

Additional case studies and analysis not included in the main 2022 Annual SHOT Report.

ABO-incompatible case studies

Case 9.6: Communication failure and lack of positive patient identification leads to an ABOi transfusion

A female patient in her 50s with pneumonia and respiratory failure received an ABOi red cell transfusion. The patient was blood group O D-positive and was given B D-negative red cells during a routine transfusion. Nurse 1, caring for this patient, was about to go on their break and asked nurse 2 to arrange for the porter to collect a unit of red cells for this patient. This was carried out, but nurse 2 requested the unit for their own patient in error. Both nurses checked the unit number on the blood component, blood group and expiry date on the red cell unit but did this outside of the patient's room. They did not check the patient's ID band. Nurse 1's familiarity with the index patient resulted in an assumption that they knew the patient without having to check their identity, unaware of the errors that had already occurred. Earlier, nurse 1 had removed the patient's ID band as it was making it difficult to remove one of the patient's IV cannulas. They intended to re-apply a new ID band but forgot to do so.

The pre-transfusion checks were not carried out at the patient's bedside and the missing ID band was not noticed. Staff involved in this error were up to date with their transfusion training and competency-assessments. During the COVID-19 pandemic many pre-transfusion checks were completed outside of the patients' room, but this practice continued despite neither patient having COVID-19. The hospital was implementing a new checklist which may have prompted correct pre-administration checks including a check for an ID band. Since the incident, the department has implemented the use of two ID bands for each patient, one on the wrist and the other on the opposing ankle.

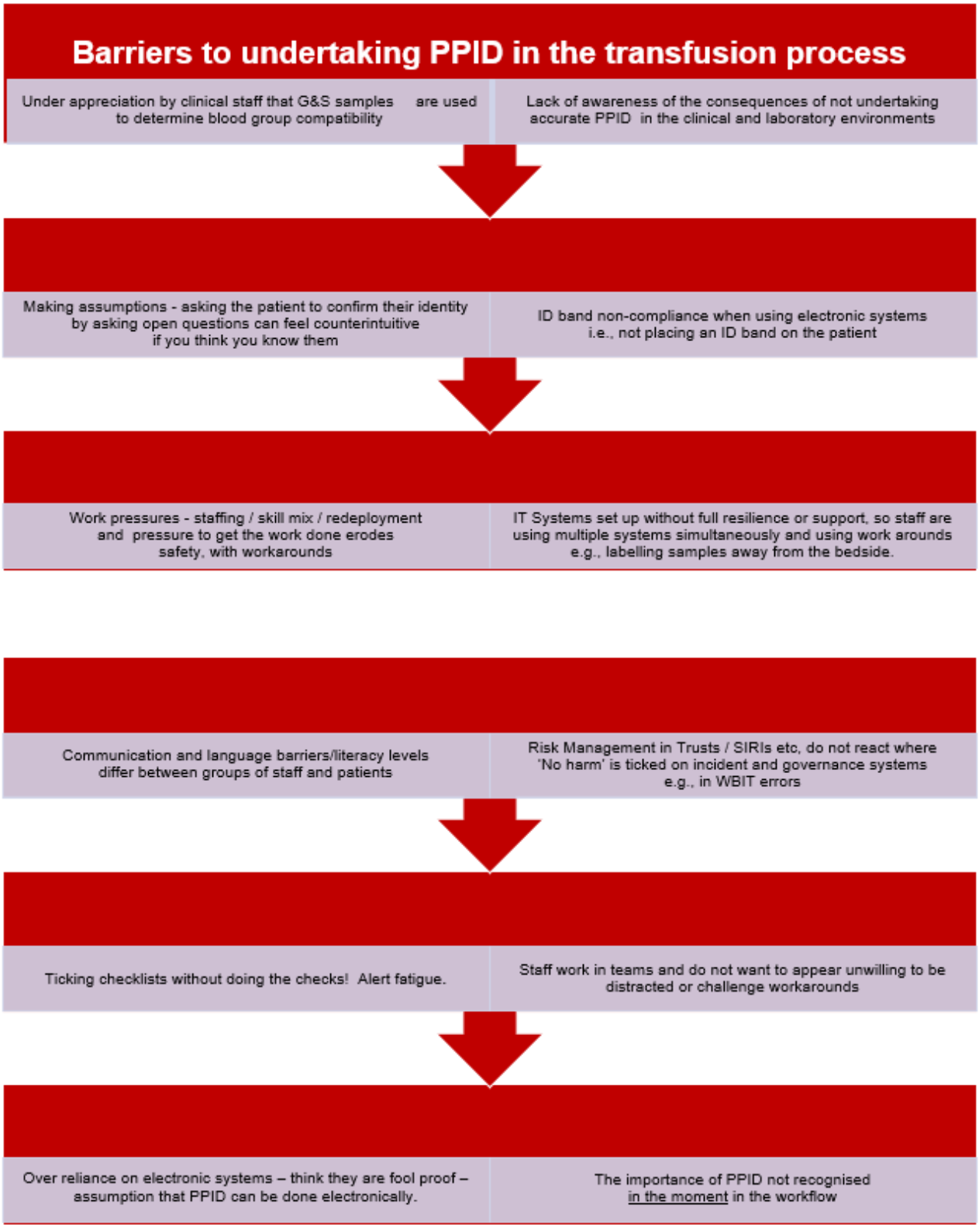
Case 9.7: A WBIT error leads to ABOi transfusion in 2016

In 2022 a male patient in his 70s was admitted to the emergency department with acute kidney injury, diabetes, and cardiac problems. A pre-transfusion sample was sent for crossmatching and showed an ABO/D grouping discrepancy from historical bloods taken in 2016. During a lookback at the patient's clinical records, it appeared that the patient had received two units of group B D-positive red cells during an urgent transfusion on a general ward during the previous admission. There was no indication of a transfusion reaction, and blood results showed no signs of haemolysis. The patient was confirmed to be group A D-positive.

The two-sample rule was not in place at this organisation in 2016 and was introduced 2 years later in 2018. Therefore, only one sample was required for testing prior to issuing of ABO/D group specific components, but the original sample appears to have been taken from a different patient (WBIT). Given that 6 years had elapsed since the original sample was taken, it was decided that there was no value in an investigation into this incident.

Errors continue to occur in the patient ID process as there are often barriers to undertaking safe patient identification. To improve patient safety, these barriers should be identified to allow appropriate preventative and corrective actions to occur. Figure 9.13 contains examples of such barriers.

Figure 9.13: Challenges reported by staff for undertaking PPID in the transfusion process



Clinical IBCT-WCT events n=44

There were 4 wrong component transfusions where the primary error occurred at the request stage, 2 of these involved patients who had received HSCT.

There were 3 pre-transfusion sample errors, 2 of which resulted in wrong patient transfusions. One WBIT where a baby needed red cells and maternal blood was required for a crossmatch, but the doctor labelled the sample tube with the wrong mum's details. In the other case, another patient's blood sample was tested in error. There was 1 WBIT reported which had resulted in an historical ABOi transfusion in 2016 (Case 9.7 above).

There was 1 prescription error which led to a WCT. In this case, the advanced nurse practitioner had authorised the prescription for red cells, but the associate physician requested platelets instead of red cells without checking the patient's results.

Illustrative clinical WCT cases

Case 9.8: Omission of pre-administration checks leads to a wrong patient transfusion

Patient 1 and Patient 2, in adjacent rooms, were under the care of a regular agency nurse. Red cells were prescribed and crossmatched for Patient 1 (a male in his 70s) who was group A D-positive. The agency nurse did not have access to the electronic administration system which would have allowed them to collect the red cell units for transfusion. Another ward nurse collected the red cells (same blood group) on their behalf and on return scanned a pre-printed ID band which was in the patient's clinical notes. The red cell unit was then handed to the agency nurse to administer. The blood component had been scanned away from the patient's bedside.

The agency nurse, who was not trained to administer blood transfusions, took the unit to Patient 2 (a female in her 80s) in error and the other nurse did not go to the patient's bedside with them to complete pre-administration checks. Pre-transfusion observations and bedside checks against the blood unit, prescription and patient were not completed and the transfusion was started.

Patient 2 needed assistance to use the bathroom and at this point the ward nurse noticed the error and stopped the transfusion. By now 176mL had been administered to the wrong patient. Both patients had the same blood group and the patient who had been given the transfusion incorrectly suffered no adverse effects.

The investigation showed that agency nurses were involved in the transfusion process despite this not being local policy. They were often involved due to staffing shortages and busy workloads. Apparently, it was found that additional ID bands were being printed and kept in all patients' notes. This enabled barcode scanning of blood components away from the patient's bedside.

Case 9.9: Lack of clear communication leading to incorrect component transfused

A male in his 70s with neutropenic sepsis and lymphoma had been prescribed platelets. The patient had also been prescribed red cells but they were not to be transfused unless there was a drop in the patient's Hb from 69g/L. The nurse contacted the porter and asked them to 'collect a blood unit from blood bank'. The porter went to the laboratory refrigerator and collected a unit of red cells. Upon arrival of the component on the ward, the red cells were handed over to the nurse. The blood component and patient details were checked by two registered nurses. Although the details checked were all correct, staff failed to recognise that the blood component being

transfused was red cells and not the platelet unit that was meant to be given. The error was discovered 15 minutes into the transfusion when the nurse was about to check the patient's first set of observations. The transfusion was discontinued immediately, and the patient was reviewed by the medical team. The patient was stable throughout and no complications occurred 24-48 hours post transfusion. The patient then received their platelet transfusion.

When communicating with the porter the nurse used the generic term 'blood', and the porter collected red cells instead of platelets. The patient had multiple completed prescriptions which was identified as a contributory factor in this incident. The ward was extremely busy at the time and there were multiple distractions during the checking process.

Illustrative clinical SRNM cases

Case 9.10: Lack of consideration of pregnancy and Hodgkin lymphoma on transfusion requirements

A female in her 20s who was pregnant and had very recently been diagnosed with Hodgkin lymphoma attended the haematology/oncology clinic for transfusion of red cells as she had an Hb result of 86g/L. Two units of red cells were requested and were issued by the laboratory. The staff nurse later contacted the laboratory to report a possible transfusion reaction during administration of the first red cell unit. When the BMS was taking these details, the nurse happened to mention that the patient was pregnant. No information had been given on the request form, pregnancy 'yes' was not circled. The two units issued were not CMV-negative. The second unit was recalled. This patient should have also received irradiated blood components.

Case 9.11: Lack of consideration of pregnancy on transfusion requirements

A female in her 30s was pregnant at 36/40 weeks gestation. She had been admitted due to experiencing reduced fetal movements, hypertension and a Hb of 82g/L. The transfusion laboratory received a request for four units of red cells. The transfusion request did not specify the transfusion requirements namely 'CMV-negative units required' or that the patient was pregnant. The midwife informed the BMS that the red cells were for standby and would only be transfused post delivery, if required.

The following day it was identified that the red cells were required to treat the patient's anaemia, not to cover for any blood loss relating to a caesarean section. One of these red cell units had been transfused to the patient at this point. As the patient was pregnant, she should have received CMV-negative units for all routine transfusions prior to delivery.

Laboratory ABO-incompatible fresh frozen plasma (FFP)

Case 9.12: Component selection error causes group A patient to be transfused group O FFP during an emergency – many human factors contributed

During a major haemorrhage protocol activation, group O FFP was defrosted for a patient with an unknown blood group. The patient was subsequently found to be group A. The error was discovered after defrosting, and the emergency department were contacted to see if they could wait for suitable FFP to be defrosted. The consultant indicated that patient was in a life-threatening situation, urgently required FFP and was unable to wait another 20 minutes for the correct group FFP to be defrosted. During the investigation it was identified that the BMS was fatigued due to covering several shifts in a period of short staffing and had a lapse in concentration. They were also working under pressure due to IT failures earlier that day. A further corrective action was the creation of an allocated drawer with 4 group AB high-titre negative FFP, for ease of use during emergencies. The patient required admission to the intensive care unit and subsequently died. A review by the patient safety team concluded that the transfusion did not contribute to the patient's death.

ABO-compatibility for plasma components is different to that of red cells and group O FFP MUST only be given to group O recipients. Group AB is haemolysin free and may be used if the patient's group is unknown but is in short supply and should only be used for non-AB recipients if absolutely essential. Guidance on plasma blood group selection following ABO-incompatible haematopoietic stem cell transplants is available in the 2018 BSH guidelines on the spectrum of FFP and cryoprecipitate products. A fact sheet for FFP from NHSBT is available and can be accessed at this link: fresh-frozen-plasma-factsheet-april-2021-v5.pdf (windows.net).

Although staffing and IT factors were acknowledged during the investigation, there were no corrective or preventative actions documented to address these things. Where systemic factors are highlighted, these should be addressed to prevent future errors occurring.

Illustrative laboratory WCT cases

Case 9.13: Incorrect ABO group issued via electronic issue in error for a liver transplant patient

A group A male patient in his 30s underwent a liver transplant from a group O donor. The LIMS was not updated with the appropriate flag to reflect the transplant and the requirement of group O red cells and exclusion from electronic issue, with only a note of the liver transplant added to the notepad section. Six units of group A red cells were transfused during theatre, and 5 days post transplant a further unit of group A red cells was released via remote issue. The investigation stated the SOP was not clear on when the flag should be added.

Case 9.14: Incorrect D-positive platelets issued to a child post HSCT with preventative actions for other transplant patients

A young D-positive child received a D-negative HSCT but was issued D-positive platelets in error. Preventative action in this organisation was to create new LIMS flags for transplant groups with this new alert being added to all patients who had received a transplant in last 4 years.

Case 9.15: Incorrect ABO platelets issued following HSCT with contributory human factors

A group O D-positive male in his 30s received an A D-positive HSCT but was issued with group O platelets in error. There were LIMS alerts in place, but the reporter stated that there were limitations associated with management of platelets in transplant patients. The laboratory relied on BMS staff being familiar with these limitations when selecting appropriate platelets. Multitasking of multiple crossmatches and platelet requests and rushing to complete work prior to the end of their shift also contributed to this error. Workload management has been discussed with the transfusion laboratory team, and the limitations within the LIMS have been escalated on the local risk register.