

February 2008 Case Report Discussion: Case of Mr. XXX

1. What factors may have contributed to this event?

While every event is unique, investigation of serious error often reveals that there are multiple factors that go wrong leading up to the occurrence.¹ When reviewing incidents such as the one described in the ORBCoN newsletter Volume 2, Issue 1, February 2008, it is useful to take a systematic approach to the investigation to ensure consideration is given to all possible contributing factors. Applying this approach to the case described helps to identify the factors that contributed to this event:

i) Communication:

- verbal orders not followed up in a timely way in written form
- multiple orders received at one time

ii) Process:

- procedures contravened as a result of an emergency situation
- blood issued at the same time for different patients at different locations

iii) Training:

- failure to follow procedures requiring a final check of patient / blood product identification at the bedside

2. What do you suspect is the weakest link related to the transfusion of incompatible blood products?

Reports of mistransfusion incidents have identified that these events are most often due to failure to properly identify the appropriate patient either during specimen collection, at registration when the clerical staff are identifying the patient, or at the bedside prior to administration of the blood components / products. One published report² stated that:

- 38% of reviewed mistransfusion events were due to administration to the wrong patient
- 13% were due to phlebotomy errors.
- Laboratory errors accounted for 29% of the errors relating to mistransfusions (included testing the wrong specimen, transcription errors and issuing the wrong blood unit out to the floor)
- 15% of events involved multiple errors.

3. Based on the above, what corrective actions could be taken to prevent such an incident from occurring again?

Communication; a lack of written communication and confusing verbal communication appear to have been major contributing factors to this incident:

¹ Reason J. Human Error: Models and Management. BMJ 2000;320:768-770 (18 March)
<http://www.bmj.com/cgi/content/full/320/7237/768>

² Linden JV et al. Transfusion Errors in New York State: An analysis of ten years' experience; Transfusion 2000; 40: 1207-1213

- i. *Verbal/Written communication – each transfusion medicine laboratory shall have a policy for verbal orders.³ All orders for blood and blood products must be written⁴*
- ii. *Teamwork – it appears that there was confusion among the health care team involved as to exactly what they were being asked to do. Clear direction must be provided to staff transporting blood products. The time taken to clarify instructions can mean the difference between correct actions and a serious adverse event.*

The process for ordering, issuing blood and blood products as well as identification of recipients:

- i. *Requests for stat delivery of blood products*
 - a) *There must be a process during the issuing of blood to ensure “unequivocal identification” of the recipient⁵*
 - b) *If blood can be picked up for more than one recipient at a time a process to prevent mix-up must be in place.*
 - c) *There must be a defined process once the blood arrives in the operating room to ensure only the blood labelled for a specific patient is taken into the operating suite.*
 - d) *The process for emergency situations must be clearly defined.*
 - e) *Recipient identification procedures must be followed in the operating room and / or an emergency situation to the same extent that they are prior to any other transfusion.*

Staff orientation and training:

- i) *Orientation – All new staff should receive orientation to the policies and procedures related to blood administration that are pertinent to their practice.*
- ii) *Training – Training must be completed for new staff with the roles and responsibilities clearly defined. Training should be repeated at intervals to ensure maintenance of competence. Porters should be trained to pick up and deliver blood and blood products. RN’s should be trained on patient identification processes and the process for checking blood both for routine and emergency situations.*

Is there anything to provide ‘failsafe’ prevention of mistransfusion?

- i) *The use of technology to detect errors prior to an event occurring and force a corrective action provides hope for the reduction of mistransfusion incidents. Examples of such technologies currently available include:*
 - a) *bar-coded recipient identification bands and corresponding bar-coded blood labels allow for the use of readers to verify an identification match at the bedside*
 - b) *radio frequency chips and readers*
 - c) *‘smart’ fluid pumps*
 - d) *‘smart’ blood component refrigerators*

³ OLA Standards V.D.2 version 4; page 39 December 2007

⁴ CSA Z904-04; 10.2.1; page 43; March 2004

⁵ OLA Standards VI.1 page 47; December 2007

4. What committee(s) would review this investigation and monitor the corrective actions identified?

According to current standards⁵ a transfusion committee or its equivalent (risk management, medical advisory or pharmaceutical and therapeutics committees) should be reviewing and monitoring all adverse events related to blood transfusion that occur within the facility⁶. All adverse events should have an incident report completed and brought to the established committee to discuss the corrective actions and monitor events using performance measures / criteria. Where there is remedial training required, or new technologies implemented, audits should be performed periodically to ensure the measures taken are resulting in a decrease in the number of events occurring.

The use of Transfusion safety officers (TSO) dedicated to the conduct of transfusion care outside the lab is one strategy used to decrease the number of transfusion related errors and improve patient safety⁷. In Canada, the role of these safety officers is to support transfusion quality and safety within the facility and act as a bridge for knowledge transfer from laboratory to patient care units relating to blood components / products. TSOs are often able to investigate transfusion reactions and mistransfusion events to find the root cause and provide education / awareness training to clinical staff. The TSO should report the outcome of the investigation to the transfusion committee or its equivalent for recommendations on corrective action if required.

We cannot change the human condition, but we can change the conditions under which humans work

Reason, James – BMJ, 2000

⁵ CSA Z902-04 March 2004

OLA Standards Version 4 December 2007

⁶ CSA Z902-04; 4.4 page15; March 2004

⁷ Dzik, Walter H. et al. Patient Safety and Blood Transfusions; *Transfusion Medicine Review* 2003; 17: 169-180