Background and Protocol for Bedside Audit of Blood Administration

Purpose and Rationale

A web-based audit tool has been created by the Ontario Regional Blood Coordinating Network (ORBCoN) to help facilities in the Province of Ontario audit the process of blood administration.

One of the highest risks of transfusion is the risk of receiving a blood component intended for another recipient. Estimates of the frequency of transfusion of blood of the wrong (incompatible) ABO blood group is approximately 1 in 40,000.[1,2] The primary cause of these incidents is failure to follow clerical or technical procedures. Through audit, the root cause of these types of errors can be identified and corrective actions put into place.[3]

The goal of providing this audit tool for hospitals is to facilitate the practice of auditing transfusion procedures periodically to ensure compliance with current Standards [4,5] and critical steps in the process – specifically identification of the recipient, identification of the blood components given and monitoring the patient before, during and after the transfusion.

Ethics approval may be required depending on each facility's protocol for this type of activity however, within most hospitals, audits are considered part of quality assurance / quality management systems and do not require review by the Ethics Review board.

Description of the development of the audit

A working group made up of transfusion safety officers, nurses and physicians across Ontario met over a period of three months to develop a standard audit form. An online tool, developed to be used in conjunction with the standard audit form, can be used to collect the data points. Access to the online tool is via www.transfusionontario.org and data is protected through password login. Each hospital has been assigned a site administrator who is able to register staff to allow them to enter the data into the program for tracking. The site administrator has the ability to review results and print reports. Site administrators have restricted access to data only for their own site. They cannot view results from other facilities. No patient identification or health care information will be collected or recorded in the audit process.

It is recommended that audits be performed periodically. The frequency will be dependant on the volume of transfusion activity at each site. Any areas of concern or areas for improvement should be identified through the audit. Audit results should be reviewed by the Hospital Transfusion Committee. Corrective actions will be recommended, if appropriate and may include increased awareness / education or procedure / policy changes to improve patient safety.

The audit form and related references are included in the Appendices.

Audit Protocol Checklist:

Step	Responsible Party
1. Bring suggestion of performing an audit of blood administration to Hospital Transfusion Committee (HTC) for consideration / approval	Nursing or Transfusion Service HTC member
2. Determine who will perform audits, number and frequency	HTC
3. Communicate to Nurse educators and managers that audits will take place (specify wards / times as appropriate)	HTC Chairperson
4. Print off audit forms	Designated auditor(s)
5. Perform audits	Designated auditor(s)
6. Enter data from audit forms into online audit tool (Bedside Audit)	Designated auditor(s)
7. Prepare report of audit results	Site Administrator for Bloody Easy e tools
8. Present report to HTC	Nursing or Transfusion Service HTC member
9. Identify any areas requiring improvement	HTC
10. Develop corrective action	HTC
11. Make recommendation to MAC or Nursing Administration if required for approval	HTC Chairperson
12. Implement corrective action	Nursing management
13. Monitor (repeat audit) to ensure corrective action has resulted in improved practice	Designated auditor(s) and HTC
14. Revise corrective action and implement continue to monitor periodically as determined by HTC	Nursing management in collaboration with HTC

References:

1. Callum JL, Pinkerton P Bloody Easy 2 Blood Transfusions, Blood Alternatives and Transfusion Reactions – A Guide to Transfusion Medicine. 2nd ed, Sunnybrook Health Sciences Centre, Toronto ON; 2006:32
2. Dzik WH, Corwin H, Goodnough LT et al. Patient Safety and Blood Transfusion: New Solutions. Transfusion Medicine Reviews Vol 17, No 3; 2003:169-180.
3. Tinmouth A. Approaches to Blood Utilization Auditing in Technical Manual 16th edition, AABB Press, Bethesda MD; 2008:751-763
4. Standards for Hospital Transfusion Services ver 2 CSTM, Ottawa ON; 2007.
5. Blood and Blood Components CAN / CSA-Z902-10. A National Standard of Canada, Standards Council of Canada, Mississauga ON; 2010.

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The Ontario Regional Blood Coordinating Network (ORBCoN) is an initiative by the Ontario Blood Programs Coordinating Office (BPCO), of the Ontario Ministry of Health and Long-Term Care. The regional network is based in three sites, one in each region of the province and is intended to provide a leadership and a sponsorship role for regional activities related to encouraging best practices in safe blood utilization:

ORBCoN Region	**Host organization**	**Project Sponsor**
Central Ontario	Sunnybrook Health Sciences Centre, Toronto	Dr. Jeannie Callum
Northern and Eastern Ontario	The Ottawa Hospital, Ottawa	Dr. Antonio Giulivi
Southwestern Ontario	McMaster University, Hamilton	Ms. Nancy Heddle

Appendix A Standard Bedside Audit Form and cover sheet

Introduction:

Hospital policies and procedures relating to transfusion of blood components and products are created to help ensure patients receive the correct blood component as prescribed by their physician in the safest manner possible. Performing regular audits of the transfusion process can provide a useful indicator for patient safety by monitoring if policies and procedures are being followed consistently.

Blood components are an important part of patient care but are not without risk. The highest risk of severe adverse reaction relating to blood transfusion (including death) is the transfusion of an incorrect unit to the wrong patient. The patient bedside is the last point at which such an error can be prevented. Therefore, the verification checks performed on the patient's identification and the blood component labels just prior to transfusion are critical steps in the transfusion process.

5 'rights' of safe blood verification are:

1. ☑ **Right patient** (Confirm the correct identity of the recipient at the bedside)
2. ☑ **Right product** (Confirm the correct blood component / product type)
3. ☑ **Right amount** (Confirm the correct blood component / product volume / dose)
4. ☑ **Right rate** (Check the rate as ordered by the recipient's physician)
5. ☑ **Right time** (Check the transfusion is given as ordered by the recipient's physician)

Glossary of Terms

Word/Phrase	***Explanation***
CBS Label	label applied to the blood component by the blood supplier
BTL label/Tag	label applied / attached to the blood component by the blood transfusion laboratory
Laboratory request form	form sent by the ward to document the component requested for a particular patient
Patent	indicates that fluid can flow through IV tubing into patient's blood vessel
Acceptable Expiry Date	Product must not be transfused after date listed on BTL label/Tag or CBS label

General Questions:

1. Does your facility have a policy specific for blood component administration?	☐ Yes ☐ No
2. Does your facility have transfusion information to be provided to patients?	☐ Verbal ☐ Written ☐ Electronic ☐ Not Provided
3. Does your facility have a training orientation package for those that transport blood to clinical areas?	☐ Yes ☐ No

Bedside Audit Form

Bedside Audit Order

Order number: _____ * Transfusion date: _____ * Priority: ❍ Routine ❍ Urgent ❍ Stat

* Ward/Area: ❍ ER ❍ ICU ❍ OR/RR ❍ Outpatient Clinic ❍ Medical/Surgery Ward ❍ Obstetrical Unit ❍ Chronic Care/Rehab ❍ Neonatal/Pediatric

* Blood Component: ❍ RBC ❍ Platelets ❍ Plasma ❍ Cryoprecipitate

* Blood Component Unit #: _____ * Time unit left laboratory: _____

Order Confirmation Check: [See References 1-2]

* Is the physician's order documented? ❍ Yes ❍ No

If yes, * Is component type specified? ❍ Yes ❍ No

* Is the infusion rate specified? ❍ Yes ❍ No

* Is there evidence that Informed Consent was obtained? ❍ Yes ❍ No

* Was the component verified against the physician order upon receipt on patient ward? ❍ Yes ❍ No

Identification of Patient Check: [See Reference 3]

* Was the recipient information on the BTL label/tag compared to the recipient information on the Laboratory Request form? ❍ Yes ❍ No

* Were the recipient's name and one additional unique identifier on the BTL label/tag compared with the identification attached to the patient? ❍ Yes ❍ No

* Did the confirmation of the patient's identification and the BTL label/tag take place in the presence of the patient? (at the bedside) ❍ Yes ❍ No

Verification of Component: [See Reference 4]

* Was the donor unit ABO/Rh on the CBS label verified to match that on the BTL label? ❍ Yes ❍ No

* Was the donor unit number on the CBS label verified as identical to that on the BTL label? ❍ Yes ❍ No

* Was the recipient's ABO/Rh on the BTL confirmed to be compatible with the donor unit? ❍ Yes ❍ No

If no indicate reason: _____

* Was the expiry date on the blood component verified to be acceptable? ❍ Yes ❍ No

Procedure Check: [See References 5-8]

* Time infusion started: _____

* Was the IV established and patent when the blood component unit arrived at the bedside? ❍ Yes ❍ No

* Was patient advised of symptoms to watch for and report during or following transfusion? ❍ Yes ❍ No ❍ N/A

* Were pre-transfusion vital signs checked within 30 min prior to transfusion? ❍ Yes ❍ No

If not within 30 minutes, specify: ❍ 30 min – 1 hour ❍ 1 – 2 hours ❍ > 2 hours

* Were vital signs checked 15 min after start of transfusion? ❍ Yes ❍ No

* What vital signs were documented during transfusion? ❑ Temperature ❑ Blood Pressure ❑ Pulse ❑ Respiration

❑ Other (please specify): _____

Name of Auditor: _____ Initials: _____

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Appendix B References used in development of Bedside Audit Form

SECTION: Transfusion Order Confirmation:

1. Physician's orders written:

CSA Z902-10 (11.4.3) CSTM ver2 2007 (5.8.1.2)

Transfusions shall be prescribed by a physician and administered according to operating procedures.

CSA Z902-10 (11.4.4) CSTM ver2 2007 (5.8.1.2)

The rate of infusion should be specified by a physician.

2. Evidence of Informed Consent:

CSA Z902-10 (11.2.1) CSTM ver2 2007 (1.9)

There shall be an operating procedure for obtaining informed consent of the recipient prior to the transfusion of whole blood and blood components. Information given to the recipient shall include

(a) A description of the whole blood or blood component;

(b) The associated risks and benefits, including life-threatening risks; and

(c) Alternatives, if appropriate to clinical circumstances, including benefits and risks.

Note: *Policies and procedures for informed consent are usually developed and maintained by the health care facility as a whole. This Clause is intended to ensure that essential information about transfusion is included when whole blood and blood components are involved.*

SECTION: Identification of Patient Check:

Identification of Recipient:

3. **CSA Z902-10 (11.3.1) CSTM ver2 2007 (5.8.2.1)**

There shall be unequivocal identification of the recipient against the information in the written request for blood and blood components, as detailed in Items (a) to (e) in Clause 10.2.1.

CSA Z902-10 (11.3.3) CSTM ver2 2007 (5.8.2.2)

Immediately prior to transfusion, the transfusionist shall confirm and document that all information associating the whole blood or blood component with the proposed recipient has been matched and verified in the physical presence of the recipient, as defined in the operating procedures.

Note: *Information matching and verification take place in the physical presence of the recipient so that a direct comparison can be made between the request record and the available visual information (e.g., on the recipient's identification band) or verbal information (from a conscious recipient).*

SECTION: Verification of Component:

Identification of Blood Component:

4. **CSA Z902-10 (11.3.2)**

There shall be unequivocal identification of the blood component.

SECTION: Procedure Check:

5. Was the IV established and patent prior to receiving the blood?

CSTM ver2 2007 (5.8.4.2)

Venous access shall be established as per established hospital policy and procedures. Needle gauge shall be a diameter large enough to allow appropriate flow rates and avoid cell damage.

6. Was patient advised of symptoms to watch for and report during or following transfusion?

CSA Z902-10 (11.4.14) CSTM ver2 2007 (5.8.3.11)

The recipient shall be observed during the transfusion and for an appropriate time thereafter for suspected adverse events. Instructions concerning possible adverse events shall be provided to the recipient, or to a responsible caregiver, when direct medical observation or monitoring of the recipient will not be available after transfusion.

7. Pre-transfusion vital signs checked within 30 min prior to transfusion?

CSA Z902-10 (11.4.13) CSTM ver2 2007 (5.8.3.11)

Recipient vital signs shall be recorded before, during, and after transfusion.

Bloody Easy Blood Aministration (page 18)

Monitor the patient closely and document vital signs: prior to the transfusion – within previous 30 minutes.

8. Were vital signs checked 15 minutes after the start of the transfusion?

Bloody Easy 2 (page 18, 23, 27, 54)

Monitor patient for first 15 minutes and vital signs at 15 minutes. Stop transfusion if adverse reaction is suspected.

1. CSTM Standards for Hospital Transfusion Services. Ver 2, CSTM, Ottawa, Canada; 2007.
2. CAN/CSA-Z902-10 A National Standard of Canada Blood and Blood Components. Standards Council of Canada, CSA Mississauga, Canada; 2010.
3. Callum JL, Pinkerton PH, Bloody Easy 2 Blood Transfusions, Blood Alternatives and Transfusion Reactions – A Guide to Transfusion Medicine, Sunnybrook Health Sciences Centre, Toronto, Canada; ver 2: 2005.
4. Lima A, Bloody Easy Blood Administration – A Handbook for Health Professionals, Ontario Regional Blood Coordinating Network; 2010.