Guideline 8

Administration of Blood, Blood Components, and Blood Products

8.1 Purpose

To provide best practice guidelines for nurses that align with the standards set forth by the American Association of Blood Banks (AABB), Accreditation Canada (AC), Transfusion Services, Canadian Standards Association (CSA), and the Canadian Society of Transfusion Medicine (CSTM) for the administration of blood, blood components, and blood products.

8.2 Policy

Each facility must have policies in place to address:

- Patient consent to transfusion and that they have been adequately educated on transfusion, including risks and benefits, and/or appropriate alternatives
- Notification of transfusion to be provided to the patient
- Administration of blood, blood components, and blood products including the use of infusion devices and ancillary equipment (example: warmers, rapid infusion device)
- The identification, evaluation, and reporting of adverse events related to the transfusion

8.3 Documentation

Please refer to Guideline 6 for additional information on documentation.

All documentation must take place on the Cumulative Blood Product Record (CBPR).

Important: (CBPR) is a *mandatory* regional health form for facility staff to complete when blood, blood components, and blood products are being transfused in an inpatient or an outpatient setting. This form must become part of the permanent patient health record and retained in the facility.

- Before administration of any blood, blood component, or blood product, the following MUST be documented on the CBPR:
    - Pre-transfusion vital signs
    - Names and designations of the two authorized providers doing the checks
    - Patient education
    - Consent (√ if yes)
    - Type of blood, blood component, or blood product being infused
    - Lot number or donation number of product
- Subsequent documentation on the CBPR includes:
    - Vital signs 15 minutes after the initiation of the transfusion and at minimum every hour for the duration of the transfusion
    - Volume transfused
    - Return RoT (√ if yes)

- Suspected transfusion reaction (√ if yes)

8.4 Materials

- Appropriate blood administration sets
  - Standard blood transfusion tubing (170-260 micron filter)
  - A standard vented IV tubing should be used for administration of products in glass bottles such as albumin and IVIG.
  - Administration sets or filter needles that accompany blood products should be used for administration of that product. If a blood product does not have accompanied tubing, refer to product monograph.
- Patent IV
  - 20-22 gauge for routine transfusions in adults
  - 16-18 gauge for rapid transfusions in adults
  - In adult patients with fragile or difficult veins, a smaller gauge may be used
  - 22-25 gauge is recommended for pediatrics
- Compatible IV solution
  - 0.9% sodium chloride (normal saline) for blood, blood products, and blood components
  - 5% Dextrose in water (D5W) for IVIG
  - Refer to individual product monograph for compatible IV solutions
- Vital signs machine
- Thermometer
- Infusion pump
- CBPR
- Transfusion reaction package (i.e. emergency supplies/anaphylaxis kit)
- New 0.9% sodium chloride bag and standard tubing must be readily available

Please refer to Guideline 10 for additional information related to *emergency infusion of blood, blood products, and blood components* including information on rapid infusion devices.

8.5 Quality Control

A facility-based quality improvement system or process should be in place to monitor compliance to the administration of blood, blood components, and/or blood products through random patient and health care record audits and/or other quality improvement mechanisms. Health Care Facilities/Service Delivery Organizations should implement a quality improvement system facilitated through the Transfusion Practice Committee to monitor compliance.

A competency program shall be established for all personnel involved in transfusions. Efficacy of this competency program shall be assessed annually or as needed.

8.6 Procedure

Action	Key Points
Pre-Transfusion	
Informed consent Ensure documentation of informed consent.	**Refer to Guideline 1 for additional details.**
Transfusion orders Ensure there is an appropriate order to transfuse that includes the correct: • First name, last name, and unique identifier for the recipient • Product name and volume/dosage required • Date and time for transfusion to take place • Rate or duration of the infusion • Modification/special requirements to blood or blood components, if any • Sequence of administration, if multiple units are ordered • Pre/post transfusion medication orders related to the transfusion	
Pre-transfusion testing Ensure there is a valid Transfusion Medicine Results Report (TMRR) in the patient's chart.	
Venous access Ensure the patient has adequate venous access for blood administration: • 20-22 G for routine transfusions • 16-18 G for rapid transfusions in adults • 22-25 G for pediatrics	**Choose the largest gauge possible when in an emergency or peri-emergency situation.**
Assemble equipment and supplies	**See section 8.4 Materials**
Patient education Ensure patient understanding of type of blood, blood component, or blood product, risks and benefits, potential adverse reactions, purpose of transfusion, alternative treatments, and the right to refuse.	**Refer to Guideline 9 for additional details.**

Transfusion	
Patient Identification One authorized provider does the first check from the TMRR to the Patient Demographic sheet. Two authorized providers read aloud letter by letter, number by number: • First and last name (letter by letter) • PHIN or unique identifier (number by number) • Blood group-ABO/Rh • Donation number From the Record of Transfusion (RoT) to the TMRR ***then*** from the RoT to blood tag and the blood bag. Two authorized providers now go to the patient's bedside for the final set of checks: Two authorized providers read aloud letter by letter and if possible have the patient verbalize the following: • First and last name (letter by letter) • PHIN or unique identifier (number by number) • Patient birthdate (optional but encouraged) Compare blood tag to the patient's arm band (if an inpatient) OR blood tag to the patient's Manitoba Health Card (or other identification card i.e. Military Card).	**Refer to Guideline 3 for additional details.** **Inpatients MUST be wearing an arm band.**
Inspection of the blood/blood product/blood component: Visually inspect for: • Cracks or leaks in the bag • Any black colour or clots • Intact ports and segments **Refer to Appendix 6 for additional details.**	**Cracks or leaks can lead to contamination of the product. Black colour can indicate bacterial contamination and therefore is not suitable to transfuse. Intact ports and segments are required for testing the product in the event of a transfusion reaction.**

Patient education Explain the transfusion process to the patient. Educate patient on the signs and symptoms of an adverse reaction and the importance of reporting any concerns without delay.	**Early identification of a transfusion reaction is important for limiting patient harm.**
Baseline patient assessment Complete a systems assessment to assess for any pre-existing symptoms the patient may have that could be mistaken for transfusion reaction (i.e. fever, rash, pain, etc.). Baseline vital signs must be completed within 30 minutes prior to initiating transfusion.	**You must be able to differentiate new symptoms of a potential transfusion reaction from pre-existing conditions. If unsure, notify the physician.**
Initiation of transfusion • Ensure patency of venous access • Prime administration set/tubing with compatible IV solution • Connect to venous access *For the first 15 minutes of the transfusion:* • Infuse product at 50 ml/hr • Transfusionist to stay at the patient's bedside to monitor for any signs or symptoms of reaction • Complete set of vital signs after the initial 15 minutes of transfusion • If no concerns after the first 15 minutes, may increase from 50ml/hr to the ordered rate	**If giving multiple units you must stay with patient for the first 15 minutes of each subsequent unit.**
Monitoring during transfusion Monitor vital signs and signs/symptoms of reaction throughout the transfusion, at minimum every 60 minutes.	**Refer to Guideline 5 for additional details.**
Post transfusion monitoring Outpatients: Post transfusion monitoring is at the discretion of the person administering the transfusion. Inpatients: Post transfusion vital signs to be taken at minimum ONE hour post transfusion.	

Post transfusion Flush IV tubing with 0.9% sodium chloride (normal saline) solutions. If giving multiple units, flush line with at least 20 ml of 0.9% sodium chloride (normal saline) between units.	

Blood Administration Set Changes

- Every 4 hours
- After 4 units
- Between different products
- More than 30 minutes have elapsed between units
- Set is occluded

8.7 Notes/Special Considerations

- Please refer to product monograph for compatibility of IV solutions with blood, blood components, and blood products.
- Rapid infusion devices shall be used only by appropriately trained staff. See Guideline 10.
- Some blood, blood components, and blood products may be administered via direct intravenous push, IM, or subcutaneously. Please refer to individual product monograph for specific administration and monitoring details.
- Blood, blood products, and blood components shall be infused within 4 hours.
- If unable to establish the blood, blood component, or blood product within one hour, it must be returned to the Blood Bank or it will be discarded.