Guideline 7

Transfusion Reaction: Identification, Management and Reporting

7.1 Purpose

- To provide guidelines to the transfusionist to recognize, manage, and report any adverse reaction to a transfusion of blood, blood component, or blood product. Early recognition and management of transfusion associated adverse reaction is critical to patient safety.
- Guidelines are in alignment with the standards set forth by the American Association of Blood Banks (AABB), Accreditation Canada (AC), Canadian Standards Association (CSA), and the Canadian Society for Transfusion Medicine (CSTM).

7.2 Policy

There shall be policies in place for recognizing, documenting, reporting, evaluating, and following up on all adverse events involving blood, blood products, and blood components.

7.3 Documentation

Documentation of any suspected transfusion reaction shall be documented in the patient's health record **and** reported on the Transfusion Reaction Investigation Form (CM105).

Documentation of any suspected adverse event shall include the signs and symptoms of transfusion reaction which include NEW ONSET:

- Temperature increase of greater than 1°C and greater than 38°C
- Shortness of breath/stridor
- Facial or tongue swelling
- Hypertension
- Hypotension
- Hypoxemia
- Chills
- Rigors
- Rash
- Urticaria
- Pruritis
- Jaundice
- Hemoglobinuria
- Bleeding at the IV site
- Pain (back, chest, bone, abdomen)
- Tachycardia
- Nausea/vomiting

7.4 Materials

In addition to all materials included in Guideline 8 (administration), additional materials required include:

- New NS 0.9% and tubing
- Caps for the tubing of the disconnected blood product
- Vacutainer, tourniquet, and EDTA sample tube to draw a post reaction sample from patient
- Transfusion Reaction Investigation form (CM105)
- Transfusion reaction kit

Materials that *may* be required:

- Additional venous access
- Blood culture supplies
- TRALI reaction requisition
- Airway management supplies
- Emergency medications
- Other supplies as ordered

7.5 Quality control

All transfusionists shall be trained in the recognition and management of adverse events. There shall be continuing education to ensure competency and an ongoing method of assessment.

A facility wide training/competency program shall be established to ensure the initial and ongoing training of staff involved in the transfusion of blood, blood products, and blood components. These shall include competencies in recognizing, managing, and documenting any adverse reaction. This may be through patient/chart audits or observational audits.

A facility wide quality improvement system/process shall be in place to ensure all major transfusion reactions are reported immediately to the Transfusion Medicine Medical Director or designate.

Following notification of a serious adverse event, the Transfusion Medical Director or designate will investigate to determine the probable cause.

Review all confirmed reactions and outcome reports.

7.6 Procedure

Action	Key Points
1. **STOP THE TRANSFUSION**. Disconnect the product from the patient but DO NOT DISCARD.	**Do not infuse any of the remaining blood product from the line into the patient. This could exacerbate the symptoms the patient is experiencing.** **The product may need to be sent back to the lab for testing.**
2. Connect the patient to a new NS 0.9% with NEW IV TUBING.	**Keep the IV patent.**
3. Assess the patient. Document vital signs every 15 minutes or more frequently if warranted. Do not leave the patient unattended. Continue until patient stabilizes.	**Patient condition can deteriorate rapidly.**
4. Notify the physician/designate for medical assessment.	**Physician/designate will make the determination regarding continuation of transfusion and will direct care.** ***If symptoms are assessed as NOT a suspected transfusion reaction, proceed with transfusion and document on the patient's chart.**
5. Perform two-person clerical check. Preferably two different personnel than who did the initial check.	**Errors can occur when identifying the patient, blood, blood product, or blood component.** **If an error has occurred, a second patient could be at risk.**
6. <u>For a transfusion reaction with MINOR symptoms:</u> • Restart the transfusion as directed by physician. • The patient must be in direct observation for the first 15 minutes after resuming the transfusion. • Transfusion must be stopped if symptoms of reaction return or worsen.	**Transfusion may be restarted ONLY within 4 hours of the original transfusion start time.**
7. **<u>For a transfusion reaction with MAJOR symptoms:</u>** • Provide care to patient as directed by the physician/authorized health provider. • Disconnect blood from patient and maintain IV with 0.9% NS.	

Do not discard blood/blood product/blood component. • Immediately notify ordering physician, Transfusion Medicine Physician, and Blood Bank/Lab if any errors are found in the clerical check.	
8. **Returning blood to the Blood bank**: • Remaining product to be returned to the Blood Bank ASAP. • Ensure all tubing remains attached. • Ensure ALL clamps are closed. • Ensure the end of the IV tubing has a cap to seal the line.	

Minor and major symptoms of a suspected transfusion reaction may result in interruption or discontinuation of the transfusion:

Minor Symptoms	**Major Symptoms**
Urticaria/hives Other skin rash Temperature greater than 1°C from baseline **AND** Temperature between 38°C to 38.9°C **AND** No associated MAJOR symptoms **AND** Onset greater than 10 minutes into transfusion	Hypertension Hypoxemia Severe respiratory distress Temperature rise greater than 39°C Hypotension/shock Back/chest pain Hemoglobinuria Jaundice Bleeding at the IV site Severe allergic reaction Tachycardia/arrhythmias

7.7 Reporting

All suspected transfusion reactions must be reported to the facility Blood Bank on the Transfusion Reaction Investigation Form (CM105). Refer to Appendix 11.

The only incident where a CM105 is **not** submitted is when administering IVIG and MINOR symptoms are observed and resolved by slowing the infusion rate.

For all suspected TRALI reactions, a TRALI investigation form must be completed and returned to Blood Bank.

7.8 Notes/Special Considerations

Most transfusion reactions occur within 1 to 30 minutes from start of transfusion.

In Summary:

Transfusion Reaction Action

- Stop the transfusion
- Do **NOT** discard product
- Maintain IV with normal saline using a new IV set
- Contact physician/designate for medical assessment or treatment. Suspect transfusion reaction?
    - If yes, proceed with prescribed treatment and continue with transfusion reaction algorithm
    - Perform vital signs every 15 minutes (or more frequently) until patient is stable
    - Visually assess product
    - Check for clerical discrepancy
    - Notify Blood Bank/lab

Returning Blood to the Blood Bank

Blood/blood product/blood component shall be returned to the Blood Bank:

- With all tubing attached
- All clamps on the tubing must be in the clamped/closed position
- The end of the tubing that was connected to the patient must have a cap attached to seal the line

Return the product to the Blood Bank *as soon as possible* to initiate the investigation of the transfusion reaction.

Refer to Transfusion Reaction Algorithm - Shared Health for resources.

Appendix 9 – Transfusion Reaction Algorithm

Appendix 10 – Transfusion Reaction Quick Reference Guide