MB Guideline 7

Transfusion Reaction- Identification, Management and Reporting

When any unexpected or untoward sign or symptom occurs during or shortly after the transfusion of a blood component, a transfusion reaction must be considered as the precipitating event until proven otherwise.

1.0 Purpose

To provide best practice guidelines for nurses that align with the standards set forth by American Association of Blood Banks and the Canadian Society for Transfusion Medicine for the recognition and management of transfusion reactions.

The standards state that a process and procedure shall be in place for the transfusionist to recognize, manage and report a transfusion reaction and for the recording of relevant information in the patient's medical record.

Serious adverse events that require prompt report to transfusion service include but are not limited to:

- Immediate hemolytic reactions;
- Delayed hemolysis;
- Transfusion related acute lung injury;
- Systemic allergic reactions including anaphylactic shock;
- Bacterial sepsis;
- Other transfusion-transmissible infections;
- Transfusion Associated Graft Vs Host Disease (TA-GVHD);
- Post-transfusion purpura;
- Other serious reactions; and
- Death

2.0 Policy for Identification of Transfusion Reaction

2.1 Persons administering blood components and plasma protein products should be familiar with the common signs and symptoms of a transfusion reaction.

2.2 A thorough assessment of the patient's condition is necessary prior to the administration of blood components and plasma protein products in order to recognized new onset of signs and symptoms.

Signs & Symptoms of a Transfusion Reaction include NEW onset of:

- Temperature rise greater than 1°C
- Shortness of breath (dyspnea)
- Tachycardia
- Hypertension
- Hypotension
- Chills
- Rigors
- Rash
- Urticaria
- Pruritus
- Jaundice
- Hemoglobinuria
- Bleeding at IV site
- Pain (back, chest, bone, abdomen)

3.0 Policy for Management of Transfusion Reaction.

3.1 For all cases of suspected transfusion reaction refer to the Transfusion Reaction Algorithm. See A*ppendix 2 Transfusion Reaction Algorithm*

3.1.1 Stop the transfusion immediately.
3.1.2 Do not discard product.
3.1.3 Infuse 0.9% saline in a separate intravenous set to maintain patency as per RHA policy.
3.1.4 Assess patient's vital signs, monitor, at least every 15 minutes and document.
3.1.5 Notify physician/authorized practitioner immediately.
3.1.6 Implement therapeutic interventions as per physician/authorized prescriber.
3.1.7 Perform visual inspection of unit.
3.1.8 The label on the blood containers and records shall be examined for clerical errors in identifying the patient, blood, or blood component. **This is a 2 person check.**

3.1.9 Notify the blood bank and the physician immediately if a discrepancy is detected and do not continue the transfusion.

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

Signs and symptoms of suspected transfusion reaction for interruption or discontinuation of the transfusion.

Minor Symptoms	Major Symptoms

• Urticaria/hives
• Other skin rash
• Temperature greater than 1°C from baseline
  ○ And maximum temperature less than 39°C
  ○ And no associated MAJOR symptoms
  ○ And onset greater than 10 minutes into transfusion
	• Hypotension/ shock
	• Hypoxemia
	• Back / chest pain
	• Severe respiratory distress
	• Hemoglobinuria
	• Bleeding at IV site
	• Temperature rise ≥ to 39 °C
	• Tachycardia / arrhythmias
	• Severe allergic reaction
	• Rigors
	• Generalized flushing
	• Dyspnea
	• Jaundice
	• Hypertension
	• Hemorrhage

3.3 At any time a transfusion is discontinued prior to completion, the following shall be performed immediately. See *Appendix 3* *Transfusion Reaction Quick Reference Guide*

Transfusion Reaction Action

1. Do NOT discard product
2. Maintain IV with normal saline using a new IV set
3. Vital signs at least q15min until patient is stable
4. Contact MD/designate for medical assessment or treatment
5. Perform visual assessment of product
6. Check for clerical discrepancy
7. Notify blood bank/ lab

3.3.1 Notify the MD/Designate

3.3.2 Return the following to blood bank **STAT**:

Product and product tags

Complete Transfusion Reaction Investigation Form (CM105) and collect post transfusion sample

If additional blood components are required, complete requisition and collect new sample for crossmatch

3.3.3 Consider laboratory testing and imaging (CBC, biochemistry, coagulation, urinalysis, chest X-ray)

Consider bacterial contamination and culture patient if:

- Temperature rise more than 1°C AND greater than 39°C
- Temperature rise greater than 1°C and between 38 and 39°C with rigors, hypotension, tachycardia, dyspnea and/or shock
- Temperature rise not responding to antipyretic and/or suspicion of sepsis in absence of fever

Returning Blood to the Blood Bank

Seal the blood/blood component with a plastic clamp prior to sending it to blood bank. **Do NOT send by pneumatic system** due to risk of leakage.

Return the product to the blood bank as soon as possible-to initiate the investigation of the transfusion reaction. This may include a process whereby products from same donor are removed from circulation.

At the time a transfusion reaction investigation is initiated all in-date type and screen samples become invalid. No additional blood can be issued until a preliminary investigation and when required, a new sample is processed. If additional blood is required, call Transfusion Medicine on call.

4.0 Policy for the Reporting of Transfusion Reaction

4.1 All transfusion reactions (mild or serious) must be reported to the facility blood bank. This is accomplished with the completion and submission of the CM105.

4.2 The only incident where a CM105 is not submitted is when administering IVIG and minor symptoms are observed and resolve by slowing the infusion rate.

5.0 Documentation for the Identification, Management and Reporting of Transfusion Reaction

5.1 Details of the transfusion reaction should be documented in the health record.

5.2 Documentation of the transfusion reaction should include the CBPR, Integrated Progress Notes, (IPN) and the ROT.

6.0 Quality Control

6.1 A facility-based quality improvement system or process should be in place to:

a. Ensure that all transfusion/infusion reactions are reported immediately to the BTS Director or designate.

b. Following notification of a serious adverse event the BTS service shall conduct investigations including laboratory tests to determine the probable cause.

c. Review all confirmed reactions and outcome reports.

d. Reports shall be submitted to the appropriate authorities.

7.0 Notes/Special Consideration

See A*ppendix 2 Transfusion Reaction Algorithm.*

See *Appendix 3 Transfusion Reaction Quick Reference Guide*

Risks associated with red cell transfusion

Adverse event	Risk per unit
Mild allergic	1 in 100
Febrile non-hemolytic	1 in 300
TACO	1 in 700
TRALI	1 in 10 000
Bacterial Contamination	1 in 10 000
Anaphylactic	1 in 40 000
Acute Hemolytic	1 in 40 000
Fatal Hemolytic	1 in 1 000 000

Facility endorsement if guideline is used as Standard Operating Procedure (SOP

Approved by: _____ _____

(Senior Management) (Senior Management)

Facility effective date: _____

(Date of implementation)