

## 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 which align with the standards set forth by the American Association of Blood Banks and the Canadian Society for Transfusion Medicine for the recognition and management of transfusion reactions.

The standards state 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 requiring prompt reporting to transfusion service include but are not limited to:

- Immediate hemolytic reactions;
- Delayed hemolysis;
- Transfusion related acute lung injury (TRALI);
- 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 recognize new onset signs and symptoms.

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

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

## 3.0 Policy for Management of Transfusion Reaction

- 3.1 For all cases of suspected transfusion reaction refer to the Transfusion Reaction Algorithm. See [Appendix 2 Transfusion Reaction Algorithm](#)
- 3.1.1 Stop the transfusion immediately.
- 3.1.2 Do not discard product.
- 3.1.3 Maintain IV with 0.9% saline using a separate/new intravenous set as per RHA policy.
- 3.1.4 Contact MD/designate for medical assessment/ treatment. If this is assessed as a suspected transfusion reaction, proceed to next bullet. If this is assessed as NOT a suspected transfusion reaction, proceed with transfusion and document this in the patient's chart.
- 3.1.5 If a transfusion reaction is suspected, proceed with the prescribed treatment and continue with the algorithm.
- 3.1.6 Perform vital signs every 15 minutes or PRN until patient is stable.
- 3.1.7 Perform visual inspection of unit.
- 3.1.8 The labels on the blood products and records shall be examined for clerical errors in identifying the patient, blood, or blood component.  
**This is a 2 person (authorized health care providers) check.**
- 3.1.9 Notify the blood bank of the suspected transfusion reaction.

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

**See table below for Minor and Major symptoms of a suspected transfusion reaction. These symptoms may result in interruption or discontinuation of the transfusion.**

| Minor Symptoms  | Major Symptoms   |
|---|--|
| <ul style="list-style-type: none"> <li>• Urticaria/hives</li> <li>• Other skin rash</li> <li>• Temperature greater than 1°C from baseline</li> </ul> <p><b>AND</b></p> <ul style="list-style-type: none"> <li>○ Temperature between 38°C to 38.9°C</li> </ul> <p><b>AND</b></p> <ul style="list-style-type: none"> <li>○ No associated MAJOR symptoms</li> </ul> <p><b>AND</b></p> <ul style="list-style-type: none"> <li>○ Onset greater than 10 minutes into transfusion</li> </ul> | <ul style="list-style-type: none"> <li>• Hypertension</li> <li>• Hypoxemia</li> <li>• Severe respiratory distress</li> <li>• Temperature rise greater than 39°C</li> <li>• Hypotension/shock</li> <li>• Back/chest pain</li> <li>• Hemoglobinuria</li> <li>• Jaundice</li> <li>• Bleeding at IV site</li> <li>• Severe allergic reaction</li> <li>• Tachycardia/arrhythmias</li> </ul> |

**3.2** At any time a transfusion is discontinued prior to completion, the following shall be performed immediately. See *Appendix 3* [Transfusion Reaction Quick Reference Guide](#)

**3.2.1** Notify the MD/Designate

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

- Product and product tags (the manila tag should not be removed from the blood bag until the transfusion is complete).
- 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

## Transfusion Reaction Action

1. Stop the Transfusion
2. Do NOT discard product
3. Maintain IV with normal saline using a new IV set
4. Contact MD/designate for medical assessment or treatment. Suspect transfusion reaction?
5. If yes, proceed with prescribed treatment and continue with algorithm
6. Perform vital signs every 15 minutes until patient is stable
7. Visually assess product
8. Check for clerical discrepancy
9. Notify blood bank/ lab

### 3.2.3 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 AND rigors/chills OR hypotension/shock OR tachycardia OR severe respiratory distress
- Temperature rise not responding to antipyretic and/or suspicion of sepsis in absence of fever

## Returning Blood to the Blood Bank

Blood/ blood product 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 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.

If additional blood is required, call Transfusion Medicine Physician on call.

### 4.0 Policy for the Reporting of Transfusion Reaction

4.1 All transfusion reactions (Minor or Major) 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 resolved 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 patient's health record.

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

### 6.0 Quality Control

- 6.1 A facility-based quality improvement system or process should be in place to:
- a. Ensure all major transfusion reactions are reported immediately to the Transfusion Medical Director or designate.
  - b. Following notification of a serious adverse event, the Transfusion Medical Director or designate will conduct an investigation which may include 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 Appendix 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 100       |
| 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 1 800 000 |

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

Approved by: \_\_\_\_\_  
(Senior Management) (Senior Management)

Facility effective date: \_\_\_\_\_  
(Date of implementation)