

# Transfusion Committee Toolkit

*Prepared by*



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This document is provided by ORBCoN and is intended for reference purposes only.

# Development of a Toolkit for Transfusion Committees

## Purpose and Rationale

The purpose of developing a toolkit for Transfusion Committees is to provide aids to help hospitals understand the importance of these committees and facilitate the functioning of these committees in the Province of Ontario. Regulatory requirements in Transfusion Medicine require hospitals to have a Transfusion Committee in place<sup>1-3</sup>. To comply with these requirements many hospitals are putting these committees into place and are looking for guidance. Hospitals that already have a Transfusion Committee in place are looking for ways to utilize the committee to ensure it is achieving the goal of improving blood utilization across the organization.

The four main roles identified for Transfusion Committees are<sup>4</sup>:

- to minimize inappropriate use of blood
- reduce product loss due to outdating and wastage
- monitor transfusion transmitted infections
- monitor adverse reactions associated with blood

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 networks are based on existing CBS geographic service areas. Three sites, one in each region, will provide a leadership and sponsorship role for regional activities:

<b>ORBCoN Region</b>	<b>Host organization</b>	<b>Project Sponsor</b>
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	Nancy Heddle

Guidance and direction for the development of projects for ORBCoN is provided in consultation with members of the following bodies:

- Blood Programs Coordinating Office
- Ontario Blood Advisory Committee
- Regional Advisory / Steering committees from the three regions

Through regional discussions and networking, ORBCoN is able to compile examples of documents and 'tools' that existing Transfusion Committees have developed and found useful. By sharing these examples, other facilities can benefit from the work that has been already done. Overall, this will facilitate improvements in the functioning of Transfusion committees in all hospitals across the Province.

The toolkit is designed to:

- ✓ Provide Transfusion Committees with aids to ensure compliance with regulatory requirements
- ✓ Provide examples of items that can be used to help Transfusion Committees fulfill their mandate
- ✓ Improve utilization review in hospitals in Ontario
- ✓ Heighten the awareness of the function and importance of the Transfusion Committee within the hospital

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1. CSA Z902-04 Standards on blood and blood components.  
2. Canadian Society for Transfusion Medicine Standards for hospital transfusion services ver 2, Sept 2007.  
3. AABB Standards for blood banks and transfusion services. 24th edition, 2006.  
4. Saxena S, Shulman IA The Transfusion Committee: Putting Patient Safety First. AABB Press MD 2006.

## Development of a Toolkit for Transfusion Committees

What you will find in the toolkit:

- Suggestions for agendas
- Examples of Terms of Reference
- Conflict of Interest
- Guide for development of a Maximum Blood Order Schedule (MSBOS)
- Guide for performing Audits
- Informed consent memory aid 'card'
- Examples of MSBOS
- Example of guidelines for appropriate transfusion of blood components
- Examples of pocket guides for identifying adverse transfusion REACTions and the required RESPONSE

### Conclusion

This toolkit for Transfusion Committees is designed to provide support for committees in hospitals in Ontario. The objective of providing these tools is to help transfusion committees in the Province function more effectively and ultimately to improve the utilization and safe use of blood components and blood products.

## Transfusion Committee Toolkit: Agenda

Saxena and Shulman (2006) edited, "The Transfusion Committee: Putting Patient Safety First," which outlines both the importance and the components of an agenda. A summary of the section related to agendas is found below. These points can be used as a reference and as a tool when developing an agenda.

- Purpose and specific objectives clearly defined;
- Create and distribute in advance in order to provide an opportunity to add agenda items, do 'homework', prepare to present data and make decisions;
- Serves as a reminder notice to the actual meeting;
- Notifies members of meeting date, time, and location;
- Brief description of specific issues/items and identifies who is bringing them forward;
- Label each agenda item "action" or "information";
- Use to show compliance with standards; and
- Meeting handouts distributed with the advance agenda provides members the time to review the material and contribute (often achieved by email).

The sample is provided by ORBCoN and is based on the example by Saxena and Shulman (2006) in AABB. The Transfusion Committee: Putting Patient Safety First

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Saxena, S, and Shulman, IA. The Transfusion Committee: Putting Patient Safety First  
AABB Press, Bethesda Maryland. 2006 pg 132, and 135

# Transfusion Committee Toolkit: Agenda

## Sample Agenda for Transfusion Committee Meetings

### Transfusion Committee Agenda

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Room: \_\_\_\_\_

	Item	Responsibility	Documents	Action/ Information
1	Call to order	TC chair	N/A	Action
2	Terms of Reference/Approval of Minutes	TC chair	Minutes	Action
<b>Standard Reports</b>				
	<b>Standard</b>	<b>Item</b>		
3	CSA Z902-04 9.4	Storage of whole blood and blood components, function and maintenance	Refrigeration representative	Report Action
4	CSA Z902-04 11.5	Blood warmer maintenance	Biomedical engineering	Report Action
5	CSA Z902-04 4.4	Component utilization	Blood bank manager	Raw data Information
6	CSA Z902-04 4.4	Blood product wastage	Blood bank manager	Raw data Information
7	CSA Z902-04 4.4	Blood product deviations	Blood bank manager	Raw data Information
8	CSA Z902-04 4.4	Transfusion reactions	Blood bank manager	Raw data Information
9	CSA Z902-04 4.4	Blood product utilization review	Clinical service representative	Report Action
10	CSA Z902-04 4.4	Sentinel events, mistransfusions, and near misses	Blood bank medical director	Report Action
11	CSTM V2 – 09/2007 1.6	Transfusion profiles by clinical service	TC chair	Raw data Information
12	CSTM V2 – 09/2007 1.6	Blood administering assessment (non-OR)	Nursing representative	Report Action
13	CSTM V2 – 09/2007 1.6	Blood administering assessment (OR)	OR nursing representative	Report Action
14	CSA Z902-04 4.3.6.1	Policy/procedure update/approval	TC chair	Policy/ Procedure Action
<b>New Business</b>				
15	N/A	New Items	TC Chair/Members	N/A Action/Information
16	Terms of Reference	TC Meeting Schedule	TC Chair	Meeting Schedule Information
		Open	Members	N/A Action/Information

CSA = Canadian Standards Association; CSTM= Canadian Society for Transfusion Medicine; OR = operating room; TC = transfusion committee

## Terms of Reference Checklist

This document is a tool that can be used when setting up a Transfusion Committee's Terms of Reference. Many of these suggestions are part of already existing Terms of Reference throughout the Province. These are suggestions and a guide and do not ALL have to be included in all organization/hospital's Terms of Reference.

### Items that may be included:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Title                                   | <input type="checkbox"/> Type of Committee                        | <input type="checkbox"/> Hospital ID             |
| <input type="checkbox"/> Version Date                            | <input type="checkbox"/> Name of hospital                         | <input type="checkbox"/> Name of Committee       |
| <input type="checkbox"/> Mission/Purpose                         | <input type="checkbox"/> Scope                                    | <input type="checkbox"/> # of meetings per year  |
| <input type="checkbox"/> Reports to                              | <input type="checkbox"/> Quorum                                   | <input type="checkbox"/> Decision making process |
| <input type="checkbox"/> Documentation/Minutes/<br>Communication | <input type="checkbox"/> Electing a Chair<br>(who, duties, power) | <input type="checkbox"/> Duties of Secretary     |
| <input type="checkbox"/> Ex-officio members                      |   |  |

### Membership:

When choosing membership for the specific committee keep in mind that all of these may or may not be included and tailor the membership to your institutions individual needs.

- Transfusion Medicine Physician
- Medical Director of Laboratory Technology
- Charge Technologist/Transfusion Technologist
- Blood Bank Team Leader/Manager
- TM Safety Officer
- Hematologist/Oncologist
- Anaesthesiologist
- Staff Surgeons
- Obstetrician/Gynecologist
- Pediatrician
- Internal Medicine Physician
- Cardiovascular Physician
- Pathologist
- Critical Care Physician
- Renal Physician
- Respiratory Care Practitioner
- Nursing
- Dentist
- Midwife
- Emergency Medicine Physician/Nurse
- Mental Health and Long-Term Care Specialist
- LIS Specialist
- Health Records Specialist
- Professional Practice Leader
- Quality Assurance Specialist
- Chair, Department of Medicine
- Hospital Administration/Management
- Hospital VP
- Hospital Chief of Staff
- Rep from Hospital Professional (Medical) Advisory Committee
- Risk Management
- Public Relations
- Rep from Canadian Blood Services (CBS)
- Others appointed by the MAC

# Terms of Reference Checklist

## Function, duties, and powers of Transfusion Committees

### General items taken from various Terms of Reference:

#### Monitoring and Reviewing

- Monitor, review, formulate (define) blood transfusion policies, procedures, clinical practice guidelines, rules, and regulations related to safe and effective use of blood products
- Review Blood Bank Annual Reports (statistical reports on usage, turn-around times, utilization of lab services)
- Monitor and review utilization patterns of blood products (appropriateness of product usage, unexpected or anticipated changes in utilization rates, problems and issues related to the supply of blood products including outdating and wastage)
- Review use of alternatives to homologous blood, including autologous/directed donations, intra-operative red cell salvage, pre-operative erythropoietin, and plasma substitutes
- Monitor Maximum Surgical Blood Order Schedule compliance
- Review ratio of cross-matched blood to transfused units
- Review appropriateness of blood administration devices, such as filters, warmers, blood pumps, intra-operative blood salvaging equipment.
- Specifically review 1-unit transfusions and packed cells
- Monitor blood product record keeping for capability of look back and traceability
- Review the results of any look back reviews
- Develop, implement, and monitor a Blood Conservation Program
- Document and review post-transfusion infections and any serious adverse reaction to blood and blood products
- Continuing review of Krever Recommendations and implementation of them
- Review public reports related to blood transfusion
- Review Terms of Reference annually
- Review complaints

#### Education

- Serve as a resource and make recommendations to medical staff on matters related to Transfusion Medicine (e.g., new legislation, practices or programs that are expected to impact the quality or quantity of transfusions)
- Assist in patient education (risk information, consent, notification of transfusions)
- Promote continuing education in transfusion practices to medical and hospital staff
- Promote research related to Transfusion Medicine

#### Quality Assurance

- Maintain a manual of blood transfusion practices
- Develop audit criteria
- Conduct evaluations of blood transfusion practices
- Investigate unexpected variances
- Maintain records of transfusion, including accurate patient/specimen/transfusion product identification
- Assess QA programs and recommend corrective actions when indicated
- Ensure hospital and Transfusion Medicine policies and procedures conform to provincial and national standards
- Report to Medical Advisory Committee and hospital administration and make recommendations for changes in policies, procedures, and programs.

#### Liason

- Maintain a liaison with the blood product supplier (CBS)
- Assist in blood procurement efforts, when required
- Assess adequacy and safety of the blood supply
- Perform other functions associated to being part of a larger committee (e.g., medical records review and tissue audit functions)
- Serve as liaison between laboratory, nursing, and medical professionals pertaining to TM issues
- Perform other duties as prescribed by the MAC



# Terms of Reference Checklist

## Standards

From **CAN/CSA-Z902-04** Canadian Standards Association (Section 4.4):

.....

A transfusion service shall have a transfusion committee with documented terms of reference (defining, for example, its membership, scope of activity, and meeting frequency). The role of the committee shall be to provide consultative and support services with relation to transfusion practices and activities. The committee membership shall include key stakeholders, including physicians, nurses, transfusion staff, hospital administration, and other personnel as needed. It shall meet at least quarterly.

The purpose of the transfusion committee shall be to

- a. help define blood transfusion policies as appropriate to the local clinical activities;
- b. ensure that regular evaluations of blood transfusion practices are conducted;
- c. set criteria for the evaluation of ordering practices, usage (including discard of blood and blood components), administration policies, and the ability of services to meet recipient needs;
- d. recommend corrective measures, if necessary;
- e. disseminate transfusion medicine information and education;
- f. evaluate reports of adverse transfusion events and all transfusion errors within the facility, as well as relevant federal and provincial or territorial reports on adverse transfusion events; and
- g. review available alternatives to allogeneic blood transfusion and make appropriate recommendations on their use.

**Note:** *A transfusion committee may serve more than one facility, e.g., in a regional health care organization.*

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Attached are examples of Terms of Reference that may be used as a guide or template. Realizing that there are a multitude of models for transfusion committees we have provided several Terms of Reference formats for your use. Templates included are categorized by hospital type: small (1); community (4); and teaching hospitals (2).

# Terms of Reference - Sample Small Hospital

## [Hospital Name – Hospital ID#] Medical Audit, Tissue and Transfusion Committee Terms of Reference-Draft

Date Effective: April 2001

### **Purpose:**

The Medical Audit, Tissue and Transfusion Committee is a multidisciplinary Committee responsible for monitoring transfusion practice and conducting tissue audits. The committee will review best practice and utilization.

### **Functions:**

1. Review all Code 4 tissue for correlation between the pre-operative diagnosis and the pathology finding.
2. Review utilization of Laboratory services including turn around time for consultation or referral reports.
3. Perform various tissue audits as directed by Medical Advisory Committee.
4. Develop criteria and review compliance with transfusion practice of blood and blood derived therapeutic products.
5. Promote continuing education in transfusion practices for all employees, physicians and patients.
6. Audit transfusion of blood and blood components to ensure effective utilization.
7. Review all transfusion reactions, post transfusion infections and other adverse reactions. Make recommendations as appropriate.
8. Review the appropriate use of blood administration devices including filters, warmers, blood pumps and interoperative blood salvaging devices.
9. Implement recommendations brought forward from the Krever Commission.
10. Partner with the Canadian Blood Services in the effort of blood procurement.
11. Supervise the communication process between physicians and Committee members.

### **Accountability:**

The Medical Audit, Tissue and Transfusion Committee shall report to the Medical Advisory Committee through the Chief, Laboratory Medicine.

### **Membership:**

Physician - Chair  
Laboratory, Transfusion Medicine Representatives (3) - Secretary  
Chief, Laboratory Medicine  
Medical Representatives from:  
Oncology  
OB/GYN  
Surgery  
Emergency  
Anesthesiology  
Paediatrics  
Medicine  
Diagnostic Imaging  
Laboratory  
Director, Professional Practice (ad hoc)

**Note:** The physician chair will be selected from among the appointed committee members

**Meetings:** Quarterly; All members vote; Quorum is defined as 50% plus 1

Minutes shall be circulated to all members of the committee via e-mail (Outlook). A hard copy of all minutes will be forwarded to MAC and QRUM (Quality Risk & Utilization Committee). The recording of minutes shall be the responsibility of the Laboratory, Transfusion Medicine Representatives.

# Terms of Reference - Sample Community Hospital 1

## [Hospital Name – Hospital ID#] Advisory Committee on Transfusion Medicine Terms of Reference

### **Introduction:**

The Advisory Committee on Transfusion Medicine provides an ongoing objective assessment of the provision and utilization of blood and blood products in the hospital. The Committee makes recommendations on all aspects of Hemotherapy in order to promote and effect the high standards of quality patient care.

### **Administrative:**

1. The Advisory Committee on Transfusion Medicine is a subcommittee of the Medical Advisory Committee and makes recommendations to them.
2. The Chair is nominated and voted in by the Committee members.
3. The Committee meets at least quarterly and at the call of the Chair for urgent matters. For voting purposes, a quorum will consist of a simple majority of members with representation from all hospitals. Advance notice of voting will be given.
4. The Committee documents all activity.

### **Composition:**

The membership represents those departments of the Medical Staff and other interested departments and services dealing with blood usage. All individuals should be knowledgeable and experienced in one or more aspects of Transfusion Medicine Service or transfusion therapy.

1. Composition of the Committee is as follows:
  - Medical Director of Laboratories or designated General Pathologist
  - Internist/Hematologist
  - Surgeon
  - Pediatrician
  - Anesthesiologist
  - Obstetrician/Gynecologist
  - Emergency Medicine
  - Transfusion Medicine Service
  - Administration representative
  - Health Records Team Lead
  - Nurse representative
  - CBS representative
2. The Chair should not be permanently appointed. The rotation of the Chairmanship should not be less than two years and not more than four years.

### **Function:**

1. Review the annual reports of Transfusion Medicine Service with specific reference to adequacy of supply and utilization of blood components, plasma fractionation products and substitutes.
2. Show that written policies and procedures for the Transfusion Medicine Service are appropriate and reviewed on an ongoing basis.
3. Enhance quality of patient care through quality assurance activities such as:
  - Ongoing audit of Maximum Surgical Blood Ordering Schedule compliance
  - The ratio of crossmatched blood to Transfused units
  - Orders reflecting the adequacy of information on blood requisition forms, such that appropriate screening tests and crossmatching can be carried out
  - Single unit transfusion review

## Terms of Reference - Sample Community Hospital 1

- Utilization of autologous donor units
  - The appropriateness of transfused red cells, plasma and platelets
  - Revision of the Maximum Surgical Blood Ordering Schedule based on changing transfusion practices
  - Assessment of quality assurance programs such as QMPLS.
4. Develop criteria for audits.
  5. Monitor the frequency and type of any transfusion reactions reported.
  6. Re-audit previously identified problem areas.
  7. Promote continuing education in transfusion practices for interested groups of the hospital staff.
  8. Report to the Medical Advisory Committee and recommend corrective action when indicated.
  9. Deal with Krever Commission and other external reports of blood transfusion practices affecting the hospital.
  10. Serve as a resource to medical staff on the appropriate use of blood and blood components.
  11. Consider any complaints or suggestions for Transfusion Medicine Service from staff or patients.
  12. Consider and make recommendations regarding alternatives to homologous blood utilization including but not limited to, autologous/directed donations, intra-operative red cell salvage, pre-operative erythropoietin and plasma substitutes.

## Terms of Reference - Sample Community Hospital 2

### [Hospital Name – Hospital ID#]

#### Blood and Apheresis Committee

#### Terms of Reference

**Purpose:**

To identify, discuss and make recommendations to the Medical Advisory Committee concerning issues related to blood products and transfusions.

**Membership:**

- Surgical Program medical representative (ad-hoc)
- Internal Medicine Program medical representative (ad-hoc)
- Maternal/Child Program medical representative
- Anesthesia Department medical representative
- Oncology Program medical representative
- Emergency Department medical representative (ad-hoc)
- Mental Health & LTC Program Director (ad-hoc)
- Pathology Department medical representative
- Laboratory Manager
- Blood Transfusion Services Senior Technologist
- Apheresis Registered Nurse
- Transfusion Nurse Coordinator

**Chair:** Selected by Chief of Staff

**Meeting Frequency:** Quarterly, or at the call of the Chair

**Reporting Relationship:** Medical Advisory Committee

Minutes of meetings to be distributed for information purposes to the Chiefs of medical departments listed.

# Terms of Reference - Sample Community Hospital 3

## [Hospital Name – Hospital ID#]

### Blood Transfusion Committee

#### Terms of Reference

#### **Authority:**

This committee will report to the Hospital's Medical Advisory Committee via the Critical Care Council. The Transfusion Committee will meet at least quarterly.

#### **Purpose:**

The Transfusion Committee measures Transfusion Medicine Service performance, medical staff performance as pertinent to blood transfusion, evaluates each of the above and recommends improved performance if indicated, along with ways to achieve this.

#### **Objectives:**

- I. To define blood transfusion policies adapted to the local clinical activities
- II. To conduct regular evaluation of blood transfusion practices
- III. Set criteria for evaluating ordering practices usage (including discard of whole blood and blood components) administration policies, ability of services to meet recipient needs.
- IV. Recommend corrective measures if necessary
- V. Dissemination of transfusion medicine information and education
- VI. Evaluate adverse reactions and all transfusion errors
- VII. Review the annual report distributed by Health Canada on adverse reactions
- VIII. Development, monitoring and implementation of a Blood Conservation Program at [hospital name].

#### **Membership:**

##### Chair:

- Chair will be from the Department of Anesthesia
- Appointment of the Chair will be at the discretion of the Director of Transfusion Medicine
- One year term
- Prepare an annual report for the Director of Transfusion Medicine and the Critical Care Council

##### Secretary:

- To follow up on agenda items
- To set agenda with Chair and send out prior to meetings
- To ensure that minutes are kept for all meetings and distributed

The Transfusion Committee will include representatives of the Transfusion Medicine Service, Canadian Blood Services, and main clinical units with significant transfusion activity. It is recommended that physicians, nurses and administrative personnel be represented. The committee reserves the right to add membership from any other clinical department as a resource as deemed necessary.

# Terms of Reference - Sample Community Hospital 4

## [Hospital Name – Hospital ID#]

### Advisory Committee on Transfusion Medicine Services

#### Terms of Reference

#### Introduction

The Advisory Committee on Transfusion Medicine Services provides an ongoing objective assessment of the provision and utilization of blood and blood products in the hospital. The Committee makes recommendations on all aspects of Hemotherapy in order to promote and effect the high standards of quality patient care.

#### Objectives (CSA standards)

The purpose of the transfusion committee shall be to:

- a. Help define blood transfusion policies as appropriate to the local clinical activities
- b. Ensure that regular evaluations of blood transfusion practices are conducted;
- c. Set criteria for the evaluation of ordering practices, usage (including discard of blood and blood components), administration policies, and the ability of services to meet recipient needs;
- d. Recommend corrective measures, if necessary;
- e. Disseminate transfusion medicine information and education;
- f. Evaluate reports of adverse transfusion events and all transfusion errors within the facility, as well as relevant federal and provincial or territorial reports on adverse transfusion events; and
- g. Review available alternatives to allogeneic blood transfusion and make appropriate recommendations on their use.

#### Administrative

1. The Advisory Committee on the Transfusion Medicine Service is a subcommittee of the Medical Advisory Committees and makes recommendations to them.
2. The Chair is nominated and voted in by the Committee members.
3. The Committee meets at least quarterly and at the call of the Chair for urgent matters. For voting purposes, a quorum will consist of a simple majority of members with representation from all hospitals. Advance notice of voting will be given.
4. The Committee documents all activity.

#### Composition

The membership represents those departments of the Medical Staff and other interested departments and services dealing with blood usage. All individuals should be knowledgeable and experienced in one or more aspects of Transfusion Medicine Services or transfusion therapy.

1. Composition of the Committee is as follows:
  - Medical Director of Laboratories or designated General Pathologist
  - Internist/Hematologist
  - Surgeon
  - Pediatrician
  - Anesthesiologist
  - Obstetrician/Gynecologist
  - Emergency Medicine
  - Team Lead of Blood Bank
  - Administration representative
  - Health Records Team Lead
  - Nurse representative
  - CBS representative
  - Representation may include ANY main clinical units with significant transfusion activity.

The committee reserves the right to add membership from any other clinical department as a resource as deemed necessary.

## Terms of Reference - Sample Community Hospital 4

### Chair:

- Should not be permanently appointed. The rotation of the Chairmanship should not be less than two years and not more than four years.

### Secretary:

- To follow up on agenda items
- To set agenda with Chair and send out prior to meetings
- To ensure that minutes are kept for all meetings and distributed

### **Function**

- Monitor, review, formulate (define) blood transfusion policies, procedures, clinical practice guidelines, rules, and regulations related to safe and effective use of blood products
- Maintain a manual of blood transfusion practices
- Develop audit criteria
- Conduct evaluations of blood transfusion practices
- Review Blood Bank Annual Reports (statistical reports on usage, turn-around times, utilization of lab services)
- Monitor and review utilization patterns of blood products (appropriateness of product usage, unexpected or anticipated changes in utilization rates, problems and issues related to the supply of blood products including outdating and wastage)
- Investigate unexpected variances
- Review use of alternatives to homologous blood, including autologous/directed donations, intra-operative red cell salvage, pre-operative erythropoietin, and plasma substitutes
- Monitor Maximum Surgical Blood Order Schedule compliance
- Review ratio of cross-matched blood to transfused units
- Review appropriateness of blood administration devices, such as filters, warmers, blood pumps, intra-operative blood salvaging equipment.
- Specifically review 1-unit transfusions and packed cells
- Maintain records of transfusion, including accurate patient/specimen/transfusion product identification
- Monitor blood product record keeping for capability of look back and traceability
- Review the results of any look back reviews
- Assess QA programs and recommend corrective actions when indicated
- Develop, implement, and monitor a Blood Conservation Program
- Document and review post-transfusion infections and any serious adverse reaction to blood and blood products
- Serve as a resource and make recommendations to medical staff on matters related to Transfusion Medicine (e.g., new legislation, practices or programs that are expected to impact the quality or quantity of transfusions)
- Serve as liaison between laboratory, nursing, and medical professionals pertaining to TM issues
- Continuing review of Krever Recommendations and implementation of them
- Ensure hospital and Transfusion Medicine policies and procedures conform to provincial and national standards
- Report to Medical Advisory Committee and hospital administration and make recommendations for changes in policies, procedures, and programs.
- Review public reports related to blood transfusion
- Assist in patient education (risk information, consent, notification of transfusions)
- Promote continuing education in transfusion practices to medical and hospital staff
- Promote research related to Transfusion Medicine
- Maintain a liaison with the blood product supplier (CBS)
- Assist in blood procurement efforts, when required
- Assess adequacy and safety of the blood supply
- Review Terms of Reference annually
- Review complaints
- Perform other functions associated to being part of a larger committee (e.g., medical records review and tissue audit functions)
- Perform other duties as prescribed by the MAC.



# Terms of Reference - Sample Teaching Hospital 1

## [Hospital Name – Hospital ID#]

### Transfusion Committee (MAC Committee)

#### Mission

The mission of the Transfusion Committee is to promote the safe, effective, and rational use of blood products within the Corporations.

#### Membership

- a minimum of 4 representatives from each corporation of the Medical, Dental, and Midwifery Staff; at least three should be from the Departments of Anesthesia, Surgery and Critical Care;
- a minimum of one Transfusion Medicine physician, Regional Laboratory Program;
- a minimum of two Transfusion Technologists (one being from Management);
- a representative from Nursing of each hospital Corporation;
- a representative from the Professional Advisory Committee;
- the representative with risk management responsibility from each corporation;
- a representative from Administration from the each corporation;
- a representative from Canadian Blood Services
- and such other persons as may be appointed by the Medical Advisory Committee (MAC)

#### Meetings

Will be held monthly (at least nine times per calendar year) and at the call of the chair.

#### Duties and Powers

In addition to the duties and powers assigned to an MAC Standing Committee, the Transfusion Committee shall:

- monitor, review and formulate/revise rules and regulations, policies, and procedures related to the safe and effective use of blood products;
- make recommendations to Administration, Medical, Dental and Midwifery Staff and other health professional staff on matters related to Transfusion Medicine, including new legislation, practices or programs that are expected to impact the quality or quantity of transfusions;
- review utilization patterns of blood products in relation to:
  - current practice standards
  - appropriateness of product usage
  - unexpected or anticipated changes in utilization rate
  - problems and issues related to the supply of blood products
- monitor blood product record keeping for capability of look back and traceability;
- review the results of any look back reviews requested of the Transfusion Medicine service;
- document and review any serious adverse reactions to blood or blood products;
- assist in patient education regarding transfusions in regards to:
  - risk information,
  - consent
  - notification of transfusions;
- promote research related to Transfusion Medicine; and
- perform any other duties as prescribed by the MAC

## Terms of Reference - Sample Teaching Hospital 2

### [Hospital Name – Hospital ID#] Transfusion Committee

#### **Purpose:**

To provide a means for reviewing the provision and utilization of Transfusion Medicine Services at [Hospital Name].

#### **Functions:**

- a. To review the annual reports of Transfusion Medicine Services with specific reference to adequacy of supply and utilization of blood components, plasma fractionation products, and substitutes.
- b. To consider and make recommendations regarding alternatives to homologous blood utilization including, but not limited to, autologous/directed donations, intra-operative red cell salvage, peri-operative erythropoietin, and plasma substitutes.
- c. To develop and/or review internal audits of blood transfusion practice at the [Hospital name] and external reports such as, for example, from a National Blood Service, transfusion guidelines/standards, or recommendations from coroners' inquests.
- d. To monitor the frequency and type of any transfusion reactions reported.
- e. To consider any complaints or suggestions for Transfusion Medicine Services from staff or patients.

#### **Relationships:**

The Transfusion Committee is a sub-committee of the Medical Advisory Committee and makes recommendations to it. Subjects for consideration may be received from the Medical Advisory Committee, medical/technical specialists in the Blood Transfusion Laboratories, or any member of the Transfusion Committee.

#### **Membership:**

Medical representatives from Departments of:

- Anesthesia
- Medicine
- Obstetrics/Gynecology
- Pediatrics
- Surgery
- Emergency Medicine
- ICU

\*One will be designated as "Chair, Transfusion Committee"

Medical/Scientific Representatives from Blood Transfusion Laboratories:

- Head, Transfusion Medicine Services
- Technical Specialists from Transfusion Medicine Services
- Transfusion Safety Officer

\*\* One will be designated "Secretary, Transfusion Committee"

Representative from Nursing

# Conflict of Interest

## Code of Conduct and Responsibilities, National Liaison Committee, Canadian Blood Services dated October 27, 2003

### Preamble:

Members of the National Liaison Committee (NLC) shall participate in accordance with the Terms of Reference and the Code of Conduct and Responsibilities.

This document is supplemental to the NLC Terms of Reference and the Canadian Blood Services Code of Ethical Conduct. It will guide and focus the work of the committee and serve as a basis for ethical conduct in the interaction of its members with each other, staff, and the general public.

### Confidentiality:

- Members shall consider issues non-confidential unless otherwise advised.
- Members shall observe confidentiality when indicated.

### Communication:

- Summary notes – Members shall provide timely feedback on summary notes and agendas.
- Organizations – Members shall regularly communicate relevant information from the meetings of the NLC to their sponsoring organizations and likewise seek input from their organizations to share with the committee.
- Staff – Contact with CBS shall be either through the Co-chairs of the committee, Manager of Public Involvement, Executive Vice-President Operations or CEO.
- Media – Members shall not speak to the media or public on behalf of Canadian Blood Services, unless otherwise agreed to.

### Professional Responsibilities:

- Members shall familiarize themselves with Canadian Blood Services and the issues before them.
- Members shall actively participate on the committee.
- In accordance with the Conflict of Interest guidelines (see Appendix "A" attached), members shall not use their position as members of the committee for private gain.

### Behavior:

- Members shall be honest and trustworthy.
- Members shall respect others right to privacy.
- Members shall avoid harm to others.
- Members shall focus on the issues, and respectfully express both assenting and dissenting views with the understanding that all views are valued.
- Members shall speak freely, but not monopolize the dialogue.
- Members shall engage in productive inquiry that values each other's experiences.

### Conflict of Interest:

- Guidance on conflict of interest will be provided to members for review (see Appendix "A" attached).
- Members shall regularly review their activities to determine whether they create a real, potential or apparent conflict of interest.

This document is offered as an example only, in terms of the type of language and style that could be used in a document guiding committee members.

# National Liaison Committee Conflict of Interest Guidelines

## Concept:

When matters come before you at the National Liaison Committee (NLC), it is important to examine each issue from the perspective of whether or not you may have a potential conflict of interest. If you think that you may have a conflict of interest, it is important that you declare that conflict of interest at the outset of any discussion. Some conflicts of interest are relatively minor and the simple declaration on your part may be all that is required, and the Chairs can be asked to provide guidance in that regard. In these circumstances, you would be allowed to participate in the subsequent discussion and/or voting, but the other members of the NLC would have a better understanding of the perspective that you are bringing to bear.

Other conflicts of interest are more serious in nature, and the best course of action in these circumstances may be to recuse (absent) yourself from any discussion or voting on that issue. This latter situation is more likely to occur where there is a substantial direct benefit (particularly financial) to you or a group or body with a close association to you. Ultimately, your best course of action is to declare the conflict, and leave it to the Chairs to decide upon the appropriate course of action. If you are unhappy with the Chairs' determination, you may appeal to the Committee as a whole.

## Definition:

The concept is often defined as follows (but has been amended to take into account that in this case, it pertains to Canadian Blood Services (CBS) and the NLC). It is important to note that a "conflict of interest" exists if the decision could be influenced - it is not necessary that influence take place.

1. A "conflict of interest" is any situation where
  - (a) your personal interests, or
  - (b) those of a close friend, family member, business associate, corporation or partnership in which you hold a significant interest, or a person to whom you owe an obligation could influence your decisions and impair your ability to
    - (i) act in the Canadian public's best interests, or
    - (ii) represent your organization or CBS, impartially and without bias.
2. The "appearance of a conflict of interest" occurs when a reasonably well informed person properly could have a reasonable perception that you are providing advice to Canadian Blood Services that promotes your personal interests or those of a person described in paragraph 1(b). An important exception to this is when you are speaking on behalf of the group that you represent at the NLC. **This is not usually deemed a "conflict of interest"; as it is precisely the "interest" CBS wishes to hear. This interest is also usually clearly obvious on its face, but if it is not, please inform the NLC (such an example might be where a pharmaceutical manufacturer has offered to fund your group if CBS buys certain products).**

## Procedure:

1. You must immediately disclose a conflict of interest to the NLC, and it is important to make the disclosure when the conflict first becomes known. If you do not become aware of the conflict until after a transaction is concluded, nevertheless you must still make the disclosure immediately.
2. If you are in doubt about whether you are or may be in a conflict of interest, you must request the advice of the NLC Co-chairs.

This document is offered as an example only, in terms of the type of language and style that could be used in a document guiding committee members.

## National Liaison Committee Conflict of Interest Guidelines

3. Unless otherwise directed, you must immediately take steps to resolve the conflict or remove the suspicion that it exists.

### **Self Assessment:**

To determine whether you face a conflict of interest on a particular issue, it may be helpful to ask yourself the following questions:

1. Do you have any investments in a business enterprise (other than mutual funds or RRSP that are not self-directed) that could be affected, or do you have any financial interest (such as actual or potential contracts, grants, contributions, Honoraria or other sources of income) which could be benefited by the recommendation you might make?
2. Will the recommendation made be of potential benefit to a business enterprise, company or individual to which you have a close association or to which you provide advice? Do you receive any gifts, travel sponsorship, and/or hospitality of significant value from a company or person who might benefit from the recommendation made?
3. Would a business enterprise, company or individual who funds or contributes to your research activities, or who involves you as an investigator or other participant in clinical trials, stand to potentially benefit from any recommendation you might make?
4. Do you have a prior relationship with a business enterprise, company or individual involving the promotion of a product, or have you in the past published, lobbied, given expert testimony in court, or made public statements with respect to a product, company or person who might be affected by your recommendation?
5. Do you have any membership in special interest groups (not counting the interest group that you may represent at the NLC – that interest is already clear on its face) that may have an interest in the outcome of a recommendation on a particular subject?
6. Do you have access to any confidential information that might pertain to a matter under discussion?

This document is offered as an example only, in terms of the type of language and style that could be used in a document guiding committee members.

# Conflict of Interest - Model Conflict of Interest Policy

Facility Name  
Facility Address  
Policy Number

## Transfusion Committee Conflict of Interest Policy

### Policy

A requirement of membership in the Transfusion Committee (TC) is disclosure of potential conflicts of interest. The purpose of this policy is to prevent the personal and professional interests of TC members from interfering with decisions of the committee.

### Procedure

1. TC members review the TC Conflict of Interest Policy on an annual basis.
2. The TC Conflict of Interest Attestation and Disclosure Forms are signed annually. When potential conflicts of interest occur after the forms are signed, it is the responsibility of the committee member to disclose them to the chairperson. Additional attestation and disclosure forms are completed.
3. The chairperson is responsible for collecting and reviewing the attestation and disclosure forms.
4. The Conflict of Interest Attestation and Disclosure Forms are completed as follows:
  - a. Name is printed on the attestation (front page).
  - b. Each statement is reviewed carefully.
  - c. All potential types of conflicts of interest that apply are marked on the form.
  - d. Potential conflicts of interest are documented on the disclosure (back page).
    - i. Name is printed on the disclosure.
    - ii. All affiliations related to potential conflicts of interest are listed.
    - iii. The disclosure is signed and dated.
  - e. If no potential conflicts of interest apply, the member checks "I have no affiliations..."
  - f. The attestation is signed, dated, and forwarded to the chairperson for review and signature.
5. The reviewed forms are maintained with the minutes and associated documentation of the TC.
6. Generally, disclosures prevent members from TC participation only when their affiliations are relevant to a given TC issue or decision.
7. Failure to disclose potential conflicts of interest will result in the termination of TC membership.

### Attachments

Transfusion Committee Conflict of Interest Attestation and Disclosure Forms

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Saxena, S and Shulman, IA. The Transfusion Committee: Putting Patient Safety First  
AABB Press, Bethesda Maryland. 2006 pg 54-55.

# Conflict of Interest - Model Conflict of Interest Attestation and Disclosure Forms

Facility Name  
Facility Address  
Policy Number

## Transfusion Committee Conflict of Interest Attestation

It is the policy of the Transfusion Committee (TC) to avoid potential conflicts of interest involving its committee members. Therefore, the TC requires that each member attest the following statements:

I, \_\_\_\_\_ state the following:

Printed Name

1. I have read and understand the TC Conflict of Interest Policy, and I agree to its terms.
2. On the back of this form, I have disclosed all affiliations with any person or organization that I have reason to believe may affect TC decisions. The conflicts of interest they represent fall into the following category(ies) (check all that apply):
  - Financial gain
  - Academic competition
  - Personal relationships
  - Political beliefs
  - Religious/moral beliefs
  - Other (indicate)
  - I have no affiliations with persons or organizations that may cause any of the above types of conflicts of interest.
3. I understand that I am not to participate in any TC decision on issues relevant to my conflict(s) of interest checked above.
4. I understand that if I fail to disclose any conflict(s) of interest, my TC membership will be terminated.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Committee Chairperson

\_\_\_\_\_  
Date

(FRONT)

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Saxena, S and Shulman, IA. The Transfusion Committee: Putting Patient Safety First  
AABB Press, Bethesda Maryland. 2006 pg 56-57.

# Conflict of Interest - Model Conflict of Interest Attestation and Disclosure Forms

Facility Name  
Facility Address

## Transfusion Committee Conflict of Interest Disclosure

I, \_\_\_\_\_,  
Printed Name

hereby disclose the following potential conflict(s) of interest:

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\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

(BACK)

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Saxena, S and Shulman, IA. The Transfusion Committee: Putting Patient Safety First  
AABB Press, Bethesda Maryland. 2006 pg 56-57.



# Maximum Surgical Blood Order Schedule (MSBOS) – Development Tool

- 1. Purpose:** The maximum surgical blood order schedule (MSBOS) is a tool for transfusion services, surgical services and anaesthesia to predict blood utilization based on historical experience within an institution. The MSBOS is meant as a guide and should not interfere with the use of clinical judgment related to individual patient needs. A well designed MSBOS process provides flexibility to the user. The ultimate goal of using a MSBOS is to raise efficiency without compromising patient safety<sup>1</sup>
  
- 2. Scope:** The MSBOS can be applied to elective surgical procedures that carry a risk of transfusion. Mintz et al. 1976 (as cited by Penney 1982) found that a group and screen provides adequate cover for procedures that average <0.5 unit of blood transfused per patient<sup>2</sup>. For those procedures likely to require blood, the recommended blood order for a procedure should provide for the transfusion needs of 90% of patients.<sup>2</sup>
  
- 3. Methods:** Ideally, the data used to create the MSBOS is taken from the historical experience within an institution. Using institutional specific data will help reduce some of the barriers to implementation as a result of challenges to the validity of the suggested ordering schedule.  
To create a MSBOS, the following information will be required:
  - list of commonly performed elective surgical procedures
  - number of red cell units ordered by procedure
  - number of red cell units transfused by procedureAdditional optional data:
  - ordering physician
  - pre-op hctA comparison between the number of units ordered and the number of units transfused by procedure may be performed either prospectively or retrospectively. The length of time for data collection will be dependent upon the number of procedures performed. The data collection may either be defined over a specific timeframe or for a pre-determined number of procedures performed.
  - i. Retrospective study – a review of 1 – 2 years historical data, depending upon the number of surgical procedures performed.
  - ii. Prospective study – gather information related to surgical procedures comparing blood ordered vs blood on a “real time” basis
  - iii. Benchmarking - with facilities performing comparable procedures for new facilities or new procedures where historical institutional specific data is not available, data from another facility may be used in consultation with the facilities’ surgeons and anaesthetists with agreement to review site specific data and revise as necessary within a pre-determined time
  
- 4. Discussion:** Over-ordering of blood for surgical procedures raises surgical costs and removes blood from inventory thereby increasing the chance of wastage<sup>3</sup>. As mentioned in the introduction, the MSBOS is meant as a guide and does not replace the need for individual patient assessment and customization based on the patient’s condition. In fact, there are those who suggest that the MSBOS be taken a step further and customized to be not only based on the procedure, but should calculate the anticipated blood loss based on the patient’s total blood volume<sup>4</sup>. While the merits of such a system are obvious, consideration of time and resources would ultimately determine if this was feasible.

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<sup>1</sup> Atrah, HI Galea, G Urbaniak, SJ The sustained impact of a group and screen and maximum surgical blood ordering schedule policy on the transfusion practice in gynaecology and obstetrics Clin.Lab.Haem 1995,17,177-181

<sup>2</sup> Penney, GC Moores, HM Boulton, FE Development of a rational blood-ordering policy for obstetrics and gynaecology British Journal of Obstetrics and Gynaecology February 1982, Vol. 89, pp. 100 – 105

<sup>3</sup> Walczak S, Scharf J Transfusion Cost Containment for Abdominal Surgery with Neural Networks Neural Processing Letters 11:229-238, 2000

<sup>4</sup> Palmer T, Wahr J, O’Reilly M, Greenfield ML Reducing Unnecessary Cross-Matching: A patient-specific Blood Ordering System is more accurate in predicting who will receive a blood transfusion than the maximum ordering system Anesth Analg 1003;96:369-75

## Maximum Surgical Blood Order Schedule (MSBOS) – Development Tool

The successful implementation of the MSBOS is directly related to the degree of cooperation and commitment by the surgeons, Anesthetists and transfusion service medical directors. Flexibility must be carefully built into the ordering process to allow for individual clinical judgment related to exceptional cases without opening a window for physicians to order based on personal preference. For the MSBOS to be successful, the technologists in the Transfusion Medicine Service need to be empowered to provide only that which was set out in the MSBOS unless exceptional circumstances exist as confirmed by the ordering MD. Ideally, exceptions would require a consult with the transfusion medicine medical director.

5. **Monitoring:** Audits of ordering practice should be performed on a predetermined basis or when there is a change in surgical technique. Monitoring physician ordering practice related to blood products is a recommended activity to be undertaken by the hospital transfusion committee<sup>5</sup>. The MSBOS can then be revised to reflect changes in practice. If there is no “gate keeping” performed prospectively, review of ordering practice will also facilitate discussion related to compliance.
6. **Approval:**
  - Transfusion Committee
  - Medical Advisory Committee
7. **Conclusion:** Use of the MSBOS results in a reduction in workload related to inventory management and crossmatching therefore providing more time for dealing with stats, antibody investigation etc. and ultimately results in a reduction in stress level for technologists in the Transfusion Medicine Service<sup>6</sup>. Standardizing ordering practice is applicable in all institutions and it may be particularly beneficial for use in teaching facilities where preoperative ordering is often done by interns and residents unfamiliar with blood utilization related to specific procedures and who have no previous experience within the institution. Using a MSBOS in conjunction with electronic crossmatching may result in a further reduction in workload providing the Transfusion Medicine Service is able to respond to the demand in a timely manner.

Two examples of MSBOS included

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<sup>5</sup> CSA, Z902-04 Standards for Blood and Blood Components, March 2004

<sup>6</sup>Voak D, Napier JAF, Boulton FE, Cann R, Finney, RD et al. Guidelines for implementation of a maximum surgical blood order schedule. Clin.lab.Haemat 1990, 12, 321-327

## MSBOS - Example from Credit Valley Hospital

The following guidelines represent the standard Blood Bank orders for the most common procedures requiring blood transfusion. Procedures not listed below have a low likelihood for blood transfusion. The attending surgeon has the option of completing orders for a particular patient when blood needs are very likely.

**NOTE: G & R SERUM** stands for "GROUP and RESERVE SERUM" and includes a BLOOD GROUP, antibody screen, and a storage of serum for crossmatch later if needed.

Informed written consent is required and is the responsibility of the surgeon.

	Procedure	G&R Serum	Cross Match (units)
<b>Cardiothoracic</b>	<i>Arterial Bypass Procedures</i>		
	Aortic bifurcation		4
	Aortic-femoral & ileo femoral		4
	Aortic (abdominal) aneurysm		4
	Femoral popliteal	X	
	Lobectomy, pneumonectomy		2
<b>General Surgery</b>	Abdomino-perineal resection		2
	Colon/rectum resection	X	
	Common bile duct exploration	X	
	Gastrectomy		2
	Liver resection		4
	Splenectomy	X	
	Vagotomy & pyloroplasty	X	
<b>Gynecology</b>	Hysterectomy- Vaginal or Abdominal (TAH)	X	
	Laparotomy	X	
	Vaginal Repair	X	
	C-Section	X	
<b>ENT</b>	Head & Neck surgery (Major)		2
	Mastoidectomy	X	
<b>Orthopedic Surgery</b>	Amputation	X	
	Hip Replacement		2
	Spinal Decompression	X	
	Spinal Instrumentation	X	
<b>Plas.Surg</b>	Head or Neck Surgery	X	
	Mammoplasty	X	
<b>Urology Surgery</b>	Cystectomy		4
	Ileal conduit	X	
	Nephrectomy - radical		2
	Nephrectomy - simple	X	
	Nephrolithotomy (Anatropic)		4
	Prostatectomy - TURP	X	
	Prostatectomy - Retropubic		2
	Retroperitoneal lymph node dissection (Radical)		2

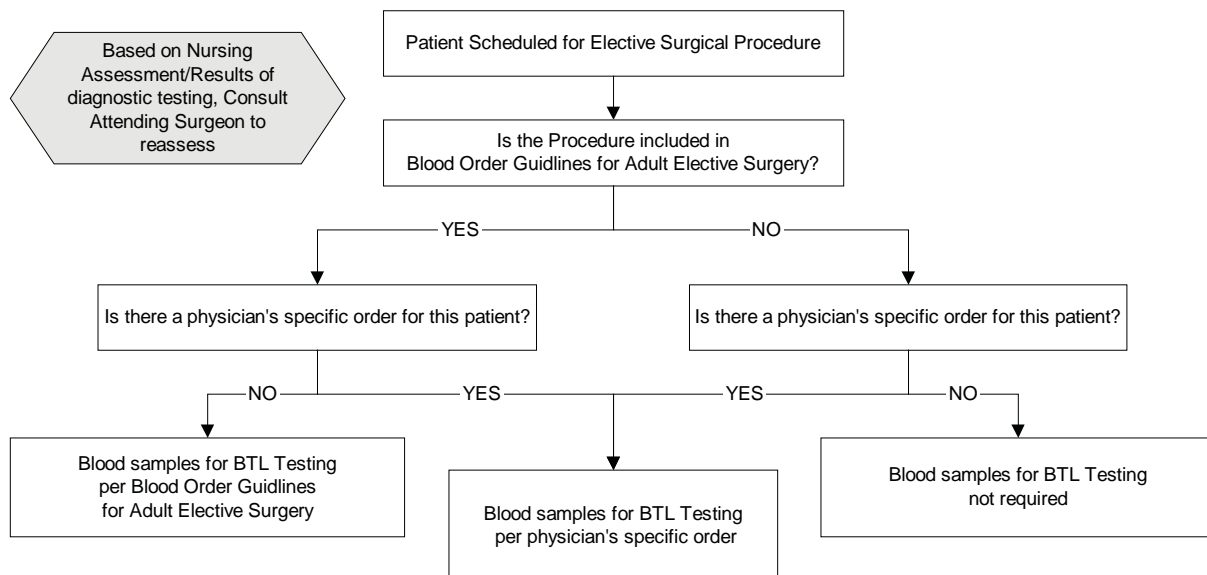
## Blood Order Guidelines (BOG) for Adult Elective Surgery

(Previously known as the "London Teaching Hospitals Standardized Orders for Elective Surgical Procedures")

The Divisions of Surgery and the Transfusion Committee have reviewed blood transfusion frequency and approved the following Blood Order Guidelines for Adult Elective Surgery. They may also serve as a point of reference for urgent/emergency surgical procedures. If a surgical procedure is not listed on the BOG, a blood sample for group and reserve/crossmatch will not be obtained without a physician's request. A Physician's specific order for a patient will always take precedent over the BOG.

A Medical Directive for Pre-procedural Diagnostic Investigations provides London Health Sciences Centre Preadmission Clinic and Day Surgery Unit Nurses with direction for obtaining blood samples for group and reserve/crossmatch for adult elective surgery patients. Similar steps are followed at St. Joseph's Health Care. The following decision tree outlines the process.

### DECISION TREE FOR OBTAINING BLOOD SAMPLES FOR GROUP AND RESERVE/CROSSMATCH (BTL TESTING) FOR ADULT ELECTIVE SURGERY



Printing and distribution of the entire BOG or specific subset is encouraged and the responsibility of each surgical division. Pre-printed pocket cards are not available.

The BOG will be reviewed and updated as appropriate on an annual basis. Recommendations can be forwarded to Kathleen Eckert, Transfusion Safety Officer Room D1 236 VC, ext. 55303. The compiled recommendations will be reviewed and circulated in December each year for implementation in January.

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>CARDIAC SURGERY</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Cross-match (Units)</b>	<b>Procedure</b>
		2	Atrial or ventricular septal defects
		2	Bentall Procedure
X			Coronary Angioplasty
		2	Coronary artery bypass
		4	Coronary artery bypass - REDO
		4	Heart Transplant
	X		Laser Lead Extraction
X			Pacemaker Insertion/Wire removal
	X		Pericardectomy
X			Sternal Wire Removal
		2	Thoracotomy
		2	Valve repair/replacement

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>DENTISTRY</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Cross-match (Units)</b>	<b>Procedure</b>
		2	Maxillectomy
X			All other procedures



**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>GENERAL SURGERY</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Crossmatch (Units)</b>	<b>Procedure</b>
		2	Abdominal perineal resection
X			Appendectomy
X			Artificial bowel sphincter implant
X			Auxillary Node Dissection
	X		Bowel reconstitution after Hartman's
X			Closure of Colostomy/Ileostomy
		2	Esophagectomy
X			Exploration of common bile duct
		2	Gastrectomy, gastroplasty
X			Gastrostomy
		2	Hartman's Procedure
	X		Hemicolectomy
X			Hemorrhoidectomy
X			Hernia repair (inguinal, femoral, incisional, ventral)
X			Insertion Laparoscopic CAPD/Tenkoff Catheter
	X		Laparoscopic Bowel Resection
X			Laparoscopic Cholecystectomy
	X		Laparotomy
	X		Left colectomy, anterior resection
		2	Liver resection
		6	Liver transplant
X			Lymph node biopsy
X			Modified radical mastectomy
X			Open Cholecystectomy
		2	Porto-caval shunt
	X		Resection of Transverse Colon
X			Resection Rectopexy
X			Reversal of Hartmanns
X			Right colectomy
		2	Splenectomy
	X		Subtotal Colectomy
X			Thyroidectomy, para-thyroidectomy
		2	Total colectomy
	X		Vagotomy & pylorplasty
X			Varicose vein stripping
		2	Whipple resection

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>GYNECOLOGY &amp; OBSTETRICS</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Cross-match (Units)</b>	<b>Procedure</b>
	X		Bladder repair, abdominal
	X		Bladder repair, vaginal
X			D & C, conization of cervix
X			Endometrial Ablations
	X		Hysterectomy
Grp/Rh for Rhlg Injection			Incomplete D&C
	X		Labour & delivery, cesarian section
X			Laparoscopy
	X		Laparotomy
		4	Pelvic exentoration
		2	Placenta Previa
	X		Radical Vulvectomy
	X		Salpingo-ophorectomy
	X		Transvaginal Tapings
X			Tubal Ligation
X			Tuboplasty
		2	Tumor Debulking, Staging Laparotomy





**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>NEUROSURGERY</b>			
None	G& R Serum	Cross- match (Units)	Procedure
	X		Acoustic Neuroma/Craniotomy
	X		Artificial Disc Surgery
	X		Brain Biopsy
	X		Burr hole+/- needle biopsy
	X		Carotid endarterectomy
X			Carpal Tunnel release
X			Cervical Discectomy or Laminectomy
	X		Cervical Discectomy or Laminectomy with <u>fusion/instrumentation</u>
	X		Cranioplasty
	X		Craniotomy - AVM
	X		Craniotomy - tumor, aneurysm
	X		Endoscopic Ventriculoscopy
	X		Hypophysectomy
X			LP Shunt
X			Lumbar Discectomy or Laminectomy
	X		Lumbar Discectomy or Laminectomy with <u>fusion/instrumentation</u>
X			Ommaya Reservoir Insertion
	X		Transphenoidal removal of a pituitary tumor
	X		Ventriculo-peritoneal bypass/shunt
			<b>Neuroradiology Procedures</b>
X			Aneurysm Coiling
X			Carotid Artery Stenting
X			Embolization
X			Petrossal Venous Sampling



**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>OPHTHALMOLOGY</b>			
<b>None</b>	<b>G&amp; R Serum</b>	<b>Cross- match (Units)</b>	<b>Procedure</b>
X			All Procedures

LOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY



ORTHOPEDIC SURGERY			
None	G& R Serum	Cross-match (Units)	Procedure
X			Acromioplasty / Rotator cuff procedure
	X		Amputation
X			Arthroscopy (Shoulder, Knee)
X			Arthroscopy Hip
		2	Bone tumor resection
X			Cervical Discectomy or Laminectomy
	X		Femoral Osteotomy
X			High Tibial Osteotomy
	X		Laparotomy, anterior discotomy, charite III disc replacement
X			Lumbar Discectomy or Laminectomy
	X		Lumbar Discectomy or Laminectomy with <b>fusion/instrumentation</b>
X			Meniscectomy
	X		ORIF Tibial Plateau with bone graft
X			Patellectomy
	X		Primary Total Hip Joint Replacement
	X		Primary Total Knee Joint Replacement
		2	Revision Hip / Bilateral Hip Joint Replacement
	X		Revision Knee / Bilateral Knee Joint Replacement
		4	Scoliosis surgery
	X		Shoulder Arthroplasty

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>OTOLARYNGOLOGY</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Cross-match (Units)</b>	<b>Procedure</b>
	X		Acoustic Neuroma/Craniotomy
		4	Head & neck major surgery
	X		Parotidectomy
X			Tracheostomy
X			All other otolaryngology procedures

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>PLASTIC SURGERY</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Cross-match (Units)</b>	<b>Procedure</b>
X			Axillary Lymph Node Dissections
X			Breast Augmentation
	X		Breast Reconstruction
X			Inguinal Lymph Node Dissections
X			Nerve / Tendon Repair
		4	Radical Neck Dissection
X			Skin/ Bone graft
		2	Tram/Latissimus dorsi flap

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>THORACIC SURGERY</b>			
None	G & R Serum	Cross- match (Units)	Procedure
X			Bronchoscopy / Upper endoscopy
		2	Decortication
		2	Esophagectomy
		2	Esophagectomy / Gastrectomy
	X		Laparoscopic / Open hiatus hernia Repair
		2	Lobectomy
		2	Lung Decortication
	X		Mediastinoscopy
	X		Pleuroscopy / Talc Poudrage
		2	Pneumonectomy
	X		R.A.V.E. (Robotic Assisted Removal of Lung Lesion)
		2	Sternotomy / resection tumor
		2	Thoracotomy
	X		VATS Apical Bullectomy
	X		VATS Lung Biopsy
	X		VATS Pulmonary Wedge Resection

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>UROLOGY SURGERY</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Cross-match (Units)</b>	<b>Procedure</b>
X			Cryo Ablation Prostate
		2	Cystectomy, Ileal Conduit
X			Cystoscopy & retrograde
	X		Cystoscopy, TUR Bladder
	X		Kidney Transplant Donor
	X		Kidney Transplant Recipient
X			Laparoscopic Pyeloplasty
	X		Nephrectomy - laparoscopic
		2	Nephrectomy - partial
		2	Nephrectomy - radical
	X		Nephrectomy - simple
X			Nephrolithotripsy
X			Orchidectomy
	X		Percutaneous Nephrolithotripsy
X			Prostate Needle Biopsy
		2	Prostatectomy - retropubic
	X		Pyeloplasty
		2	Retroperitoneal Node Dissection
	X		Transurethral Prostatectomy - TUP
	X		Ureteral reimplantation
	X		Urethroplasty, urethrotomy

**BLOOD ORDER GUIDELINES (BOG)  
FOR ADULT ELECTIVE SURGERY**



<b>VASCULAR SURGERY</b>			
<b>None</b>	<b>G &amp; R Serum</b>	<b>Cross-match (Units)</b>	<b>Procedure</b>
		4	Abdominal Aortic Aneurysm
	X		Amputation - Above/Below Knee
X			Amputation - Toes/Foot
		2	Aortic Bifurcation graft
		2	Aorto-femoral & ilio-femoral bypass
		2	Bilateral Renal Artery Bypass
	X		Carotid Endarterectomy
X			Dialysis Access / AV Fistula / Gortex Graft
	X		Embolectomy
		2	Endovascular Abdominal Aortic Aneurysm Repair
	X		Femoral popliteal bypass
	X		Repair popliteal artery
		4	Thoracic Aneurysm Repair



# Audit Protocol

The audit process is the tool to help management gain an understanding of the current situation and identify opportunities for making improvements. The definition of audit is: the inspection and examination of a process or quality system to ensure compliance with requirements.

## **CSTM Requirements**

**CSTM 8.1** - Each Transfusion Committee shall establish an internal audit program to ensure quality of all processes and procedures. Internal audits shall be performed at least annually by qualified personnel who are not directly responsible for the audited activities. Audit observations shall be documented. The Laboratory Manager shall regularly review its compliance with department policies and procedures and correct any deficiencies which are found to exist.

## **OLA Requirements**

**II.D.7** Internal audits should be conducted at intervals defined in the quality management system (suggest once per year) to verify that operations continue to comply with the quality management system, both managerial and technical.

**II.D.7.1** The process and procedures for internal audits should be defined and documented. Each of the main elements in the quality management system should be included.

**II.D.7.2** Personnel should not audit their own work.

**II.D.7.3** Internal audit results should be submitted to laboratory management for review.

**II.D.7.4** When deficiencies and opportunities for improvement are noted from internal audit, the laboratory should undertake appropriate corrective or preventative actions, which should be documented and carried out within an agreed time.

## **Policy:**

### **General Information**

A. Performance of self-assessments enables management and staff to ensure that all employees comply with policies and standard operating procedures and take proactive steps to correct any items that are identified as non-compliant.

B. Transfusion audits provide a review of policies and practices to ensure safe and appropriate transfusions and are based on measurable, predetermined performance criteria. Transfusion Medicine Services should investigate an adequate sampling of cases (eg. 10%) in order to accurately identify any trends. Internal audits will help assess the facility's performance and effectiveness in:

- Blood ordering practices for all blood and blood components.
- Minimizing wastage of blood components.
- Distribution, handling, use and administration of blood components.
- Evaluating all confirmed transfusion reactions.
- Meeting patients' transfusion needs.

C. Self-assessments should be performed and related documentation retained in accordance with your facility's document retention policy.

### **Policies and Procedures to be Audited**

D. The Laboratory Manager or designate should annually select the policy or procedure on which self-audits are to be performed in the Transfusion Service.

# Audit Protocol

E. The Laboratory Manager or designate should identify specific areas that are required to perform annual self-audits and select the policies or procedures on which the audits are to be performed. The Laboratory Manager may select additional policies/procedures on which to perform self-audits.

## Self-Audit Plan

F. Each year, the Transfusion Committee delegate is required to conduct an annual self-assessment and should submit a plan for performing the assessment during the next calendar year. The plan should include a list of the policy directives to be audited, including those selected by the director or designate, and the schedule for completion of the self-assessment.

## Performing Self-Audits

G. Each Laboratory Manager or designate for Transfusion Medicine Service required to conduct self-audits, should be responsible for the overall completion of required audits including; reviewing, overseeing completion of audit reports and ensuring that all necessary corrective action is taken. This also includes assigning staff to perform the audit. Staff assigned should not be directly responsible for implementation of the policy directive being audited.

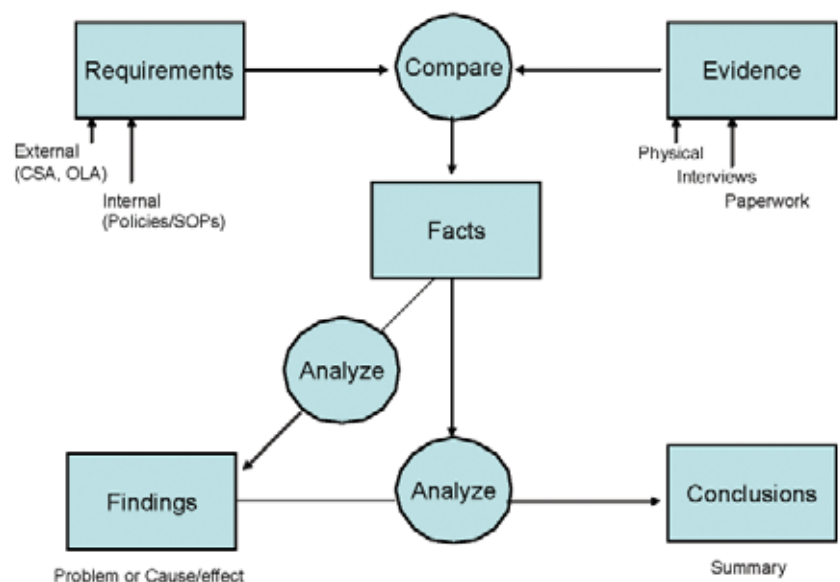
H. Self-audits should address compliance with each factor listed on the Primary Audit Checklist for each policy or procedure, if one has not been developed, and the pertinent elements of the policy or procedure. The audit also should address compliance with the pertinent elements of the operating procedures involved in the policy or procedure. Detailed work papers (e.g., results of any tests performed or interview notes) shall be maintained which identify how the audit was performed and how the findings of the audit were reached.


I. At the conclusion of the self-audit, a report should be submitted to the Laboratory Manager, or designate, with copies to the Medical Director and the Transfusion Committee delegate.

The report should include the following:

1. Identification of the policy, operating procedures, and/or blood component audited;
2. A summary of how the audit was performed. This should include which documents were reviewed and what was observed;
3. A summary of the findings of the audit. This should include identifying the results of any sampling or other audit work performed and where there is and is not compliance;
4. Recommendations for corrective action to be taken for each finding of non-compliance and suggestions to improve operations;
5. A description of the corrective action taken or that will be taken for each finding of non-compliance, including expected compliance dates.

Figure 1 Audit model





## INFORMED CONSENT TO TRANSFUSION

It is the physician's responsibility to ensure the patient gives their informed consent before receiving a blood product. This must be documented in some form in the patient chart. The patient must be given the opportunity to ask questions about their transfusion.

Physicians	Transfusionists
<input checked="" type="checkbox"/> Explain the benefits <input checked="" type="checkbox"/> Explain the risks* <input checked="" type="checkbox"/> Explain alternatives to blood transfusions  *That the patient understands	<input checked="" type="checkbox"/> How the transfusion will be given <input checked="" type="checkbox"/> How long it will take <input checked="" type="checkbox"/> What will be monitored during the transfusion <input checked="" type="checkbox"/> What to expect after the transfusion <input checked="" type="checkbox"/> What symptoms to look for during and after the transfusion

**Alternatives presently available are:**

<ul style="list-style-type: none"> <li>■ Autologous Donations</li> <li>■ Iron Therapies</li> <li>■ Erythropoietin</li> </ul>	<ul style="list-style-type: none"> <li>■ Antifibrinolytics</li> <li>■ Surgical techniques to minimize blood loss</li> <li>■ Directed Donations (from parent to minor child only)</li> </ul>
--	---

\* See reverse of this card for Evaluated Risks

Symptoms of Reaction	Managing Acute Transfusion Reactions
Fever (>1°C from baseline) Chills, Rigors, Shivering, Shakes Dyspnea (Shortness Of Breath) Rash, Hives, Itchiness, Swelling Anxiety/Agitation General malaise or irritability Hypotension/Shock/Nausea/Vomiting Pain (Head, chest/back)	<ol style="list-style-type: none"> <li>1. <b>STOP TRANSFUSION IMMEDIATELY.</b> Maintain IV access</li> <li>2. Contact attending physician</li> <li>3. Check vital signs every 15 minutes</li> <li>4. Verify all labels, forms and the patient's identification band for clerical discrepancies.</li> <li>5. Contact transfusion service</li> <li>6. Perform blood cultures if sepsis is suspected</li> <li>7. Return blood product and administration set to blood bank (if requested)</li> </ol>

Version 1 2008-03-03 Note: references for this information can be found at [www.transfusionontario.org](http://www.transfusionontario.org)

MAJOR EVALUATED RISKS OF BLOOD TRANSFUSION	
INFECTIOUS COMPLICATIONS	RESIDUAL RISK OF INFECTION / UNIT
Human Immunodeficiency virus (HIV)	1 in 7,800,000
Human T-Cell Lymphotropic virus (HTLV)	1 in 3,000,000
Hepatitis C virus (HCV)	1 in 2,300,000
Hepatitis B virus (HBV)	1 in 153,000
West Nile Virus (WNV)	1 in 1,000,000
Malaria	1 in 4,000,000
Bacterial Contamination of Red Blood Cell Unit	1 in 100,000 (Symptomatic) 1 in 500,000 (Death)
Bacterial Contamination of Platelet Concentrates	Per pool of 5 donor units*: 1 in 10,000 (Symptomatic) 1 in 40,000 (Death)
NON-INFECTIOUS COMPLICATIONS	FREQUENCY OF MILD TO FATAL CONSEQUENCES
Acute Hemolytic Reaction	1 in 40,000 per transfusion episode
Anaphylaxis	1 in 40,000 units
Transfusion Related Lung Injury (TRALI)	1 in 5000 units
Delayed Hemolytic Reaction	1 in 7000 units
Transfusion related circulatory overload (TACO)	1 in 700 per transfusion episode
Febrile Non-Hemolytic Reaction	1 in 300 units(RBC) 1 in 10 (Platelet Pool*)
Allergic Reaction	1 in 100 patients

\*Evaluated Risk of Buffy Coat Platelet (4 units) not available at time of printing

## Sunnybrook Transfusion Guidelines Adult Patient

Sunnybrook TRANSFUSION GUIDELINES Adult Patient



TRANSFUSION MEDICINE COMMITTEE June/2007

### Risks of transfusion

1 in 10	Febrile Non Hemolytic reaction to platelets (per plt pool)
1 in 100	Minor Allergic reaction
1 in 300	Febrile Non Hemolytic reaction to red cells
1 in 700	Circulatory Overload
1 in 5000	Transfusion Related Acute Lung Injury (TRALI)
1 in 7000	Delayed Hemolytic reaction
1 in 10,000	Bacterial Sepsis to platelets (per plt pool)
1 in 40,000	Death from Bacterial Sepsis (per plt pool)
1 in 40,000	Acute Hemolytic reaction due to ABO-incompatibility error
1 in 40,000	Severe Allergic reaction
1 in 153,000	Hepatitis B Virus (HBV) transmission
1 in 100,000	Bacterial Sepsis to red cells
1 in 1,000,000	Death from Bacterial Sepsis (from red cells)
1 in 1,000,000	West Nile Virus
1 in 2,300,000	Hepatitis C Virus (HCV) transmission
1 in 4,300,000	Human T-Cell Leukemia Virus (HTLV) transmission
1 in 7,800,000	HIV transmission

FOR ALL COMPONENTS TRANSFUSE SLOWLY (50mL/hr) FOR 1<sup>ST</sup> 15 MINUTES WHERE POSSIBLE

### RED BLOOD CELLS BLEEDING PATIENT

Clinical Setting	RECOMMENDATION
Low risk patient	Maintain hemoglobin >70 g/L and <100g/L during active bleeding
Impaired pulmonary function Increased oxygen consumption Anesthesia Atherosclerosis	Maintain hemoglobin 80-100 g/L during active bleeding
Acute MI Unstable angina	Maintain hemoglobin >100 g/L during active bleeding

### RED BLOOD CELLS NON-BLEEDING PATIENT

Infusion time: 30 min - 4 hrs max **ADULT DOSE = 1 unit RBC**

Transfuse during daytime hours whenever possible

TRANSFUSE 1 UNIT THEN RE-ASSESS PATIENT AND HEMOGLOBIN LEVEL PRIOR TO NEXT UNIT

- Assess patient's symptoms (fatigue, shortness of breath, tachycardia, dizziness) in addition to patient's hemoglobin level prior to ordering a transfusion and consider expected duration of anemia
- DO NOT transfuse based solely on hemoglobin level
- Expected increase in hemoglobin level per unit is 10g/L in average size non-bleeding adult
- Use the same criteria for transfusion of predonated autologous units

HEMOGLOBIN	UNITS	RECOMMENDATION
< 60 g/L	1-2 units RBC	Transfusion highly recommended Young patients with low risk of ischemic cardiovascular disease may tolerate greater degrees of anemia
< 70 g/L	1 unit RBC	Likely appropriate
70-100 g/L	1 unit RBC	Likely to be appropriate if there are signs or symptoms of impaired tissue oxygen delivery
>100 g/L	none	Likely inappropriate. Document indication in patient's chart and consult blood bank

Sunnybrook TRANSFUSION GUIDELINES Adult Patient



TRANSFUSION MEDICINE COMMITTEE June/2007

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## Sunnybrook Transfusion Guidelines Adult Patient

Sunnybrook TRANSFUSION GUIDELINES Adult Patient



TRANSFUSION MEDICINE COMMITTEE June/2007

FOR ALL COMPONENTS TRANSFUSE SLOWLY (50mL/hr) FOR 1ST 15 MINUTES WHERE POSSIBLE

### PLATELETS Infusion time: 30 - 60 min (max 4 hrs)

Clinical Setting	Platelet Count	RECOMMENDATION
• ITP - Immune thrombocytopenia	<10	Transfuse platelets only with serious bleeding
• Non-immune Thrombocytopenia	<10	1 platelet pool
• Thrombocytopenia and fever >38.5°C or coagulopathy	<20	1 platelet pool
• Vaginal delivery	<20	1 platelet pool
• Procedures not associated with significant blood loss	<50	Transfuse platelets only with serious bleeding significant blood loss
• Significant Bleeding • Major surgery • Pre invasive procedure associated with blood loss	<50	1 platelet pool (immediately before procedure)
• Peri-neurosurgery • Head trauma • Post-op CV Surgery with significant bleeding	<100	1 platelet pool
• Platelet dysfunction (e.g. ASA, post cardiopulmonary bypass, antiplatelet agents) and marked bleeding	Any	1 platelet pool

### Plasma Infusion time: 30 min - 2 hrs (max 4 hrs)

Clinical Setting	Lab Value	RECOMMENDATION
• Warfarin reversal pre emergency surgery life threatening bleeding	INR>1.5	Plasma 3-4 units (10-15 mL/kg) (immediately prior to surgery) Vitamin K 10 mg IV
without active bleeding	INR>4	Vitamin K 1-2 mg po (sc and im not recommended; use iv formulation po)
• Significant bleeding • Liver disease coagulopathy and pre invasive procedure	INR>1.5	Plasma 3-4 units
• Microvascular bleeding • Massive transfusion	Unable to wait for results	Plasma 3-4 units

### CRYO Infusion time: <30 min (max 4 hours)

• Microvascular bleeding	Fibrinogen <0.8-1.0 g/L	CRYO 8-12 units (1 unit/10kg) (order in multiples of 4 units; i.e. 8,12,16 units)
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Sunnybrook TRANSFUSION GUIDELINES Adult Patient



TRANSFUSION MEDICINE COMMITTEE June/2007

FOR ALL COMPONENTS TRANSFUSE SLOWLY (50mL/hr) FOR 1ST 15 MINUTES WHERE POSSIBLE

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# Sunnybrook Health Sciences Centre - REACT

## Suspected Transfusion Reaction Follow-up at the bedside

 		Actions & Suggested Treatment/Investigations 1. STOP transfusion 2. Maintain IV access with saline at 50cc/hr using new IV set 3. Check vital signs 4. Re check name and HFN of patient with product label 5. Notify patient's physician 6. Notify blood bank			
Suspected Transfusion Reaction Signs & Symptoms	Call Blood Bank and Send	'Possible' Etiology	Timing of Symptoms		
<b>Fever</b> ( $\geq 38^\circ$ and $\uparrow$ of at least $1^\circ\text{C}$ from baseline) and/or <b>Chills/Rigors</b>	$38^\circ$ to $< 39^\circ$ and <b>No</b> other symptoms - Reaction Slip only - <b>No</b> testing required	FNHTR (febrile non hemolytic transfusion reaction)	During or up to 4 hours post transfusion	- <b>Consult with patient's physician</b> - Antipyretic and proceed cautiously if product still viable - Premed with antipyretic only after 2 episodes	
	$< 39^\circ$ and other symptoms (ie rigors, hypotension) OR $\geq 39^\circ$ - 1 Pink top tube + signed pink sheet - Offending unit(s) and reaction slip - Blood culture from patient (micro) - Urinalysis (biochem)	Bacterial Contamination or AHTR (acute hemolytic transfusion reaction)	Usually within first 15 minutes but may be later	- <b>DO NOT RESTART</b> - Antipyretic - If bacterial contamination suspected start antibiotics immediately - Demerol (MD order) for shaking chills (rigors) - If <b>PLASMA HEMOLYSIS</b> reported by Blood Bank send: INR, PTT, CBC, electrolytes, creatinine, bilirubin, LDH and fibrinogen to biochemistry - Monitor for hypotension, renal failure and DIC (oozing) - For additional assistance contact Blood Bank MD on call	
<b>Urticaria</b> (hives) or Rash	$< 2/3$ body and <b>No</b> other symptoms - Reaction Slip only	Minor Allergic	During transfusion; up to 3 hours from start	- <b>Consult with patient's physician</b> - Antihistamine and proceed cautiously if product still viable - Premed with antihistamine only after 2 episodes	
	$\geq 2/3$ body and <b>NO</b> other symptoms - <b>No</b> testing required	Severe Allergic		- <b>DO NOT RESTART - Antihistamine</b> - Premedication with antihistamine with/without corticosteroid, plasma depletion may be required for future transfusions	
	With other symptoms (ie dyspnea, hypotension) - 1 Pink top tube + signed pink sheet - Offending unit(s) and reaction slip - <b>C XRay</b>	Anaphylaxis	Usually early in transfusion	- <b>DO NOT RESTART</b> - Epinephrine (MD order) - Requires washed blood until investigation complete - Send haptoglobin to immunology - Send anti-IgA testing to Blood Bank - For additional assistance contact Blood Bank MD on call	
<b>Dyspnea</b> (SOB, $\downarrow$ O <sub>2</sub> , Sats) OR <b>Hypotension</b>	- 1 Pink top tube + signed pink sheet - Offending unit(s) and reaction slip - <b>C Xray</b> - Urinalysis (biochem)	Circulatory Overload	Within several hours of transfusion	- <b>DO NOT RESTART</b> - Diuretics, O <sub>2</sub> , High Fowler's position - Slow transfusion rate for subsequent transfusions (1 mL/kg/hr maximum 4 hours/bag) and diuretics	
		TRALI (transfusion related acute lung injury)	Within 6 hours of transfusion	- <b>DO NOT RESTART</b> - Assess CXRay for pulmonary infiltrates - O <sub>2</sub> , possible intubation and ventilation, vasopressors - If bacterial contamination suspected start antibiotics immediately - If <b>PLASMA HEMOLYSIS</b> reported by Blood Bank (bloodwork as above) - For additional assistance contact Blood Bank MD on call	
		AHTR Bacterial Contamination Transfusion-Related Hypotension	Usually within first 15 minutes but may be later		

November 2006

References 1. Popovsky MA, ed. Transfusion Reactions, 2nd Edition. Bethesda, MD: AABB Press, 2001. 2. Mintz PD, ed. Transfusion Therapy: Clinical Principles and Practices, Bethesda, MD: AABB Press, 1999. 3. Baldwin, PD. Febrile Nonhemolytic Transfusion Reactions. Clinical Journal of Oncology Nursing, Vol 6, Num 3, 171-172, 174, May/June 2002. 4. Patterson, BJ, et al (2000) Effect of premedication guidelines and leukoreduction on the rate of FNH platelet transfusion reactions. Transfusion Medicine, 10, 199-206

# Sunnybrook Health Sciences Centre - RESPONSE

## Suspected Transfusion Reaction Follow-up for Laboratory Personnel



### RESPONSE

Suspected Transfusion Reaction SYMPTOMS REPORTED	Request from Ward	Blood Bank Investigation	Notification	Further Investigations/Procedures (Physician, BB Manager, Medical Director or TSN generated)	'Possible' Etiology	
<b>Fever</b> ( $\geq 38^\circ$ and $\uparrow$ of at least $1^\circ$ C from baseline) and/or <b>Chills/Rigors</b>	1. $38^\circ$ to $< 39^\circ$ and <b>No</b> other symptoms	Reaction documentation only	<b>None</b>	Notification next a.m. <b>only</b>	<b>None</b>	<b>FNHTR</b> (Febrile Non Hemolytic Transfusion Reaction)
	2. $< 39^\circ$ and any other symptoms (ie chills or rigors, hypotension...)	EDTA specimen + Blood Bank Requisition Offending unit(s) and Reaction documentation	<b>Required</b>	Inform RN/MD that Blood Bank MD on call available if additional assistance required	<ul style="list-style-type: none"> <li><b>STOP</b> transfusion</li> <li>Check patient's status</li> <li>If bacterial sepsis suspected recommend antibiotics be started</li> </ul>	<b>BACTERIAL CONTAMINATION</b>
	3. $\geq 39^\circ$	<b>Blood culture from patient</b> (be sent to microbiology) Urinalysis (to biochemistry)	Specimens for Microbiology culture (unit(s)+segment)	Notify Blood Bank Manager	<ul style="list-style-type: none"> <li>If <b>PLASMA HEMOLYSIS</b>:</li> <li>Notify ward</li> <li>Request INR, PTT, CBC, electrolytes, creatinine, bilirubin, LDH and fibrinogen be drawn</li> </ul>	or <b>AHTR</b> (Acute Hemolytic Transfusion Reaction)
<b>Urticaria</b> (hives) or <b>Rash</b>	4. $< 2/3$ body and <b>No</b> other symptoms	Reaction documentation only	<b>None</b>	Notification next a.m. <b>only</b>	<b>None</b>	<b>Minor Allergic</b>
	5. $\geq 2/3$ body and <b>No</b> other symptoms	Reaction documentation only	<b>None</b>	Notification next a.m. <b>only</b>	<ul style="list-style-type: none"> <li><b>STOP</b> transfusion</li> <li>Suggest premedication with antihistamine with/without corticosteroids in future</li> <li>If further components required, plasma depleted RBC/Pt indicated</li> </ul>	<b>Severe Allergic</b>
	6. <b>With other symptoms</b> (dyspnea/airway obstruction, respiratory problems, SOB, $\downarrow$ O <sub>2</sub> Sat, hypotension)	EDTA specimen + Blood Bank Requisition Offending unit(s) and Reaction documentation <b>Chest X-Ray</b>	Hold offending unit(s) until investigation concluded	Inform RN/MD that Blood Bank MD on call available if additional assistance required Notify Blood Bank Manager	<ul style="list-style-type: none"> <li><b>STOP</b> transfusion</li> <li>Check patient status</li> <li>Request Haptoglobin be sent to immunology</li> <li>Request anti-IgA testing</li> <li>Washed cells till investigation concluded</li> </ul>	<b>Anaphylaxis</b>
<b>Dyspnea</b> or <b>Hypotension</b>	7. <b>Dyspnea</b> (respiratory problems, SOB, $\downarrow$ O <sub>2</sub> Sat) or <b>Hypotension</b> (shock or $\geq 30$ mmHg drop in systolic BP)	EDTA specimen + Blood Bank Requisition Offending unit(s) and Reaction documentation <b>Chest X-ray</b> Urinalysis (to biochemistry)	Specimens for Microbiology culture (unit(s)+segment) if hypotension reported	Inform RN/MD that Blood Bank MD on call available if additional assistance required Notify Blood Bank Manager	<ul style="list-style-type: none"> <li><b>STOP</b> transfusion</li> <li>Check patient status</li> <li>If Chest X-Ray infiltrates, request TRALI w/u</li> <li>If <b>PLASMA HEMOLYSIS</b></li> <li>Notify ward</li> <li>Request INR, PTT, CBC, electrolytes, creatinine, bilirubin, LDH and fibrinogen be drawn</li> </ul>	<b>Circulatory Overload</b> <b>Transfusion-Related Hypotension</b> <b>TRALI</b> (Transfusion Related Acute Lung Injury) <b>AHTR</b> <b>BACTERIAL CONTAMINATION</b>

**NOTE:** Scenario 1 & 4 do not require any blood bank testing (the majority of reactions reported) - Store offending unit(s) if returned by ward - In certain scenarios patient blood cultures, Chest X-Ray, and urinalysis should be requested from ward to assist in Blood Bank's investigation of transfusion reaction **BP= Blood Pressure - systolic/diastolic eg 110/80, SOB = Shortness of Breath, O<sub>2</sub> Sat = oxygen saturation**

July 2006

## Acknowledgements

We wish to acknowledge those who contributed to the development of this toolkit for Transfusion Committees. We would like to also thank the many hospitals that were willing to share their documents as examples to be included in this package.

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The Ottawa Hospital  
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