HEALTH SERVICES

NURSING PROCEDURE

TITLE
ADMINISTRATION OF A BLOOD TRANSFUSION DURING A HEMODIALYSIS TREATMENT
A. Prior to Obtaining Blood
B. Obtaining Blood
C. Preparation to Commence Blood Product
D. Commencing Blood Product
E. Transfusion Reaction (Actual or Suspected)
F. Following Transfusion

CATEGORY: RN – Special Nursing Procedure
LPN – Advanced Practice

PURPOSE

- To provide the registered nurse/licensed practical nurse with a safe aseptic method of administering a blood transfusion to a patient during a hemodialysis treatment.
- Record of transfusion.
- Report and management of adverse reactions.

NURSING ALERT:

- This procedure is only to be followed when patient is receiving a hemodialysis treatment.
- This is not a needleless procedure but a SESD (Safety Engineered Sharps Device) procedure.

EQUIPMENT

1. Documents:
   - Informed consent
     - Consent for Administration of Blood/Blood Components and/or Plasma Protein Products/Refusal/Withdrawal of Consent – Appendix A
   - Blood Bank Report (white, 8.5 x 11 sheet, computer generated, on chart) – Appendix B
   - Transfusion Record Tag (two part tag that comes with blood product – pink on front, white on back) – Appendix C
   - Blood bag label (white, glued to blood bag) – Appendix D

Approved: April 6, 2016
• Typenex Red Arm Band – Appendix E
• Client information
  o CEAC 0235 Blood Transfusion Information, Inpatient – Appendix F
  o CEAC 0689 Transfusion of Blood or Blood Products, Outpatient – Appendix G
• RQHR Patient Transfusion Notification Form – Appendix H
• Canadian Blood Services Chart Appendix – Appendix I
• Checklist for Transfusion – Appendix J
• Saskatchewan Hospitals Transfusion Adverse Event Report Form – Appendix K

2. Dialysis Machine
3. Vacutainer luer lok device
4. Hypodermic safety 20G x 1” sharp needle
5. 2 mauve top blood tubes
6. Patient’s name labels with DOB/MRN
7. Blood administration set (gravity)
8. Alcohol swabs
9. Personal protective equipment (PPE)
10. Blood or blood product
11. Sharps container
12. Dialysis run sheet

PROCEDURE

A. Prior to Obtaining Blood

1. Verify physician’s order.

2. Check chart for completed Consent/Refusal for Administration of Blood/Blood Component and/or Plasma Protein Products (Appendix A).

NURSING ALERT:

• Informed consent must be obtained by physician as per Health Canada Blood Regulations (refer to reverse side of consent form for products requiring consent).
• If consent not completed, notify physician to obtain one of the following:
  o Informed consent, or
  o Physician’s order that states “OK to proceed with transfusion without signed consent.”

3. Ask patient about previous transfusions and reactions if applicable.
NURSING ALERT:

- Prior to obtaining blood product, VERIFY CROSSMATCH EXPIRY DATE utilizing Transfusion Report
  - Red Blood Cells (RBC) crossmatch may be used for up to 14 days provided client has not been pregnant or transfused within last 3 months.
  - For clients previously transfused or pregnant, crossmatch may be used for up to 4 days (96 hours).
  - Platelets and plasma require group and screen, once per hospital stay.
- If blood products cannot be infused immediately, return blood product to Transfusion Department within 30 mins of lab sign out. DO NOT store in unit's refrigerator.
- Ensure Notification of Administration of Blood and/or Blood Products (Appendix H) is obtained from lab and signed by client prior to discharge.

4. Crossmatch patient if required. Fill out the blood transfusion requisition form with the following:

- Date of order and Ordering Physician
- Product required and amount
- Date and time the product is required
- Patient’s addressograph
- Patient’s diagnosis
- History of previous transfusion
- Place Typenex number sticker on requisition
- Write phone number for transfusions to call when blood product is ready under other information on blood transfusion requisition

NOTE: If needing to transfuse PRBC during current hemodialysis treatment, write STAT with the date, under date and time required section of the blood transfusion requisition form.

4.1 Stamp up red arm band with patient’s addressograph and place Typenex number sticker on arm band and place arm band on patient

NURSING ALERT:

- Strict aseptic technique and universal precautions must be followed.
- This is NOT a needleless procedure.

4.2 Don appropriate PPE.

4.3 Decrease blood flow rate on the dialysis machine to 100 mL/min and allow for blood flow of 100 mL/min to run for 1 minute.
NOTE: Failure to decrease blood flow and allow for blood flow of 100 mL/min to run for 1 minute prior to obtaining blood sample can cause damage to blood cells being collected, therefore possibly affecting the blood sample results.

4.4 Obtain patient’s requisition and name labels; ensure both have patient’s current information.

4.5 Identify patient using two identifiers.

4.6 Connect the 20G x 1” sharp safety needle to vacutainer luer-lok device.

4.7 Swab arterial port on arterial blood line with alcohol swab.

4.8 Remove cap from needle.

4.9 Cannulate arterial port of blood line with needle at a 90 degree angle from blood line.

4.10 Insert vacutainer blood tube into vacutainer luer lok device and allow to fill.

4.11 Repeat for second vacutainer blood tube.

4.12 Dispose of vacutainer device and needle in sharps container.

4.13 Place patient’s name sticker and Typenex number on vacutainer blood tubes.

4.14 Record collection time on each patient name label(s) attached to the blood tube(s).

4.15 Confirm patient’s information on requisition and name label(s).

4.16 Record required information, collecting time, date and your initials on the addressographed requisition.

4.17 Send to Transfusions with Service Aide for processing.

4.18 Place additional Typenex numbers on physician order and run sheet. Discard any remaining Typenex number.

B. Obtaining Blood

1. Verify availability of products by checking Blood Bank/Transfusion Report (see Appendix B) or by phoning Transfusions.

2. Ensure pre-medication (if ordered) is administered and signed for prior to obtaining blood.

NOTE: If there is no Blood Bank Report, Appendix B, on chart, call Transfusions Department and they will print one immediately. It is not necessary to have Donor Unit # on Transfusion Report.
HEALTH SERVICES

CODE  A.5

3. Write requested blood product and Typenex number, if applicable (see Appendix E), on a piece of paper stamped with client’s addressograph.

4. Present stamped paper to lab staff in Transfusion Department.
   
   NOTE: Any RQHR employee, e.g. service aide, unit secretary, when delegated by the RN/LPN, can access blood or blood products from the Transfusion Department. Volunteers are not regarded as employees of the RQHR.
   
   A blood receipt check is performed with lab personnel. Check Transfusion Record Tag against blood bag lab el for blood type, unit # and Typenex #. Any discrepancies are to be resolved before leaving the lab.
   
   It is not necessary to have Donor Unit # on the Blood Bank Report.

5. Sign the transfusion record in the lab upon receipt of the blood product.

6. Obtain a Notification of Transfusion Form (Appendix H) from laboratory if this is first transfusion unit client has received on current admission.

7. Place Notification of Transfusion Form with discharge instructions. Ensure client signs and receives canary copy prior to discharge.

C. Preparation to Commence Blood Product

1. Inspect blood product for bubbles, clots, abnormal colour or clouding and port integrity.
   
   NOTE: If a problem is noted, call Transfusions Department.

NURSING ALERT:

- All blood products must be CHECKED AT BEDSIDE BY TWO INDIVIDUALS from following designations:
  - Registered nurse (RN)
  - Registered psychiatric nurse (RPN)
  - Licensed practical nurse (LPN)
  - Nurse practitioner (NP)
  - Medical doctor (MD)
  - Perfusionist
  - Nursing student – under supervision of instructor, RN/RPN/LPN
- A grad nurse (GN), Advanced Care Paramedic, or competent trained adult (for home infusion) may check blood only if checking with an RN/RPN/LPN. (See Policy 4.2.4 – Administration of Blood Products, in RQHR Policy Manual)

2. Check expiry date of blood product to be administered (Appendix D).

Approved: April 6, 2016
3. Verify at bedside by two individuals, referring to RQHR policy 0612, the following:
   - Client’s name, hospital identification number (HIN/MRN#), Typenex # if applicable and date of birth on client identification band.
   - Verbal validation by client/family if possible.
   - ABO Group and Rh of client found only on Transfusion Record Tag and Blood Bank Report, not contained on blood bag itself.
   - ABO Group, Rh of Donor and Donor unit # found on blood bag label and Transfusion Record Tag.

   **NOTE:** The ABO Group and Rh of donor is usually same as client’s ABO Group and Rh.  
   **IF THERE IS ANY CONCERN, CALL TRANSFUSIONS DEPARTMENT.**

   **NOTE:** The donor unit number will only appear on Blood Bank Report if client has been crossmatched – it does not appear if clients have had a type and screening done.

   Blood Bag Label does not have client’s name and HIN on it.

4. Sign Transfusion Record Tag (both individuals).

5. Detach top pink portion of Transfusion Record Tag and affix to client chart adhesive tab.  
   **White back portion of Transfusion Record Tag MUST remain attached to blood bag throughout entire transfusion process.**

   **NURSING ALERT:**
   - The verification check procedure must be done in full. Failure to verify both the client’s and the blood unit’s ABO, Rh, and donor unit #is the major cause of hemolytic transfusion reactions.
   - In the event of a crisis situation for uncrossmatched units of blood, the clients ID bracelet shall be checked to verify name, and HIN/MRN # against the uncrossmatched units of blood.
   - When hanging multiple units of blood, restart the vital signs and decrease rates as per protocol.
   - A separate administration set should be used for different blood products.

D. Commencing Blood Product

1. Don appropriate PPE.

2. Obtain baseline vital signs.

3. Prime blood administration set with N/S, ensuring fluid levels remain above filter at all times and hang on IV pole of dialysis machine.
HEALTH SERVICES

CODE A.5

NURSING ALERT:
- With each unit of blood restart vital signs and decreased rate as per protocol.
- A separate administration set should be used for different blood products

4. Connect blood product to N/S primed blood administration set.

5. Attach blood administration set securely to arterial administration port of dialysis blood line.

   **NOTE: New Fenwal® bags:**
   1. Using both hands, separate port protector with bevelled edge.
   2. Insert spike firmly, using ¼ turn clockwise twists, until septum has been pierced.
      *DO NOT overspike bag or tubing will stick in bag.*

6. Add volume of blood to patients' target weight loss.

7. Open roller clamp on blood administration set.

8. Open clamp on arterial administration port of dialysis blood line.

NURSING ALERT:
- Severe transfusion reactions commonly occur within first 15 minutes of exposure to blood and blood products.
- Common transfusion reactions are due to:
  a. Blood group incompatibility
  b. Bacterial contamination
  c. Client allergy
  d. Physiological reactions i.e. febrile
- Transportation of client should not occur during first 15 minutes of transfusion, except in emergency situation.
- After 15 minutes of exposure to blood product, if client stable, may transport by RN, RPN, NP, LPN, MD and Paramedic.

9. Adjust the roller clamp on the blood administration set to 12gtts/min. Infuse blood at this rate for 15 minutes. After 15 minutes adjust the blood infusion rate to administer remaining blood bag volume, in no less than 15 minutes.

10. Document increase in rate.

   **NOTE: Physicians must be notified if client is febrile.**
11. Check patient’s vital signs (T, HR, BP, R, SpO2) and assess for transfusion reaction after 15 mins and document on hemodialysis run sheet.

   **NOTE:** A UNIT OF PACKED CELLS MUST BE INFUSED OVER AT LEAST 30 MINUTES DURING A HEMODIALYSIS TREATMENT.

   All blood and blood products should be administered within 4 hrs.

   If at 4 hours transfusion is not complete, discontinue infusion and see discard instructions as per Section F.

   Filtered tubing should be changed every 4 hours (starting from when blood begins to infuse in patient) or 4 units of blood, whichever occurs first, or if occluded.

12. Document blood transfusion administration on hemodialysis run sheet. Including following:
   - date and time of commencement
   - unit number and type of blood product
   - vital signs
   - signature with designation or initials

   **NOTE:** If a patient is receiving more than one unit of blood, hemoperfusion personnel may obtained the next unit from transfusion just prior to absorption of the preceding unit. Commence the second unit immediately following the first unit. Remember vital signs must be checked prior to each unit and every 15 minutes.

13. Close arterial clamp on blood line when transfusion is complete.


15. Document completion of blood transfusion on Hemodialysis run sheet. Including following:
   - volume transfused
   - client’s reaction to transfusion
   - time completed
   - signature with designation or initials

16. Continue patient dialysis for 30 minutes after blood transfusion completed.

**NURSING ALERT:**
- Failure to dialyze for 30 minutes post blood transfusion could cause hyperkalemia.
17. Document on Physicians orders, MAR and hemodialysis run sheet that transfusion was given.

18. Provide patient with outpatient instructions.

   NOTE: If patient is an inpatient Notification of Transfusion Form needs to be filled out once only during length of stay. Does not matter how many times a transfusion has been given during hospital stay.

E. Transfusion Reaction (Actual or Suspected)

**NURSING ALERT:**

The following are common signs of a transfusion reaction:

Early (first 1-2 hours):
- Increase pulse
- Hives or itching/allergic reaction
- Temperature elevation
- Hypo or hypertension
- Chills
- Dyspnea/hypoxemia

Later symptoms of severe reaction (up to 6 hours):
- Bleeding from mucous membranes
- Back pain

1. STOP TRANSFUSION IMMEDIATELY if a transfusion reaction is suspected and leave unit of blood and blood administration set intact until further instruction.

2. Clamp arterial clamp on dialysis machine to ensure no further blood/blood product is administered.

3. Obtain vital signs (T, HR, BP, R, SpO2) and document.

4. Apply supplemental oxygen if required.

5. Re-check client identification and blood product.

6. Notify physician and Transfusion Department for further instruction.

7. Return residual blood product(s) and tubing in plastic bag (clamped and capped) to transfusion department if discontinued.

8. Complete Saskatchewan Hospitals Transfusion Adverse Event Report Form (Appendix K) whenever client experiences a blood reaction or suspected reaction and document on health.
F. Following Transfusion

1. Flush with N/S to clear remaining blood cells.

   **NOTE:** Flush tubing with N/S between consecutive units of blood.

2. Discontinue blood administration infusion set. Remove spike using ¼ turn counter clockwise and discard tubing in approved sharps container.

3. Retain empty blood bag and white Transfusion Record Tag in designated area in container in dirty service room for 12 hours post transfusion.

   **NOTE:** Plug open port of blood bag with sample tubing attached to bag (see Appendix D) to prevent any remaining blood from leaking out.

   Place each empty blood bag in SEPARATE securely sealed plastic bag.

4. Remove white Transfusion Record Tag from blood bag after 12 hours and send to Transfusion Department through interoffice mail or send with the Service Aid during routine blood run.

5. Discard empty blood bag after 12 hours into appropriate container.

6. Document completion of infusion and volume transfused on appropriate forms.

7. Provide CEAC 0689 upon discharge to outpatients or patients discharged within 6 hours post transfusion.

**NURSING ALERT:**

- Failure to dialyze for 30 minutes post blood transfusion could cause hyperkalemia.
REFERENCES

Administration of a Blood Transfusion During a Hemodialysis Treatment (February 2013). *Health Services Nursing Procedure: Code A.5* by Anna Marie Funke (CNE) & Rhiannon Thomas (CNE).


Revised by: Rhonda Hannah CNE & Rhiannon Thomas, CRN
Date: May 28, 2015

Revised by: Rhonda Hannah CNE & Rhiannon Thomas, CRN
Date: March 2016

Approved by RQHR Procedure Committee:
Date:

![APPROVED](image)

**Keyword(s):** Neph, Hemo, Renal
# CONSENT/REFUSAL FOR ADMINISTRATION OF BLOOD/BLOOD COMPONENTS AND/OR PLASMA PROTEIN PRODUCTS

**CLIENT OR SUBSTITUTE DECISION MAKER**

| I, ________________________GIVE CONSENT for administration of blood products to_______________________ | (Print name of client or decision maker) |
| I have been advised of the nature, consequences, benefits, and material risks associated with the administration of blood products and have been advised of any reasonable alternatives that may be available for my (or the client’s) condition. I have been informed of the consequences of refusing the administration of blood products. I have had the opportunity to seek clarification and have had my questions answered. | (Print name of client) |

Signed:  __________________________________________  Date:  ______________________________  

(SIGNATURE OF CLIENT OR SUBSTITUTE DECISION MAKER)  (DD/MM/YYYY)

Telephone Permission Date:  _______________  Relationship to Client:  _______________

Date:  __________________________________________  Witness:  ________________________  

(Competent Adult)

**REFUSAL OF BLOOD OR BLOOD PRODUCTS**

| I DO NOT consent to the administration of blood or blood products to myself or_______________________ | (NAME OF CLIENT) |

Signed:  _______________________________________________  Date:  ______________________________  

(SIGNATURE OF CLIENT OR SUBSTITUTE DECISION MAKER)  (DD/MM/YYYY)

**PHYSICIAN / AUTHORIZED NURSE PRACTITIONER (NP)**

The risks of administration of blood/blood components and/or plasma protein products (blood products) have been explained to the client or substitute decision maker. The nature, consequences, benefits, material risks, and the reasonable alternatives, including the consequence(s) of refusing the administration of blood products has been discussed with the client or substitute decision maker. 

- INFORMATION PAMPHLET GIVEN TO CLIENT

This consent will remain valid per course of treatment up to 1 year or upon hospitalization discharge.

(Print name of physician / authorized NP)  (SIGNATURE OF PHYSICIAN / AUTHORIZED NP)

**PHYSICIAN FOR USE IN EMERGENCY SITUATIONS WHERE CAPACITY CANNOT BE DETERMINED AND INFORMED CONSENT CAN NOT BE OBTAINED (TRANSFUSION OF FULLY CROSSMATCHED DONOR RED BLOOD CELLS AND OTHER BLOOD PRODUCTS).**

I certify that any delay in administering this transfusion will seriously endanger the health or life of the patient.

(SIGNATURE OF PHYSICIAN OR PHYSICIAN DESIGNATE)  (DD/MM/YYYY)

**USE OF UNCROSSMATCHED DONOR RED CELLS**

I am aware the risk of transfusion of uncrossmatched donor red blood cells is greater than the risk of fully crossmatched donor red blood cells. It is my clinical judgment, the risk of awaiting fully crossmatched donor red blood cells is greater than the risk of administering uncrossmatched donor red blood cells.

Physician Signature:  ________________________  Date:  ________________________

(STARS EVENT Number:  ____________________________)  

CALL RGH TRANSFUSIONS (306)766-4474 AND FAX FORM TO (306)766-4004 WHEN UNCROSSMATCHED RBCs required.
**Duration of Consent:**
For the purposes of transfusion medicine in Saskatchewan, the duration of consent is for either one admission or, if a patient suffers from a chronic condition, for one course of treatment within 12 months, so long as the patient’s condition or medical knowledge in general about the condition has not significantly changed. (Approved by the Senior Medical Officer Committee on May 11, 2011.)

**List of products for which the Blood Products Consent form is required:**
Some Products must have approval by Transfusion Physician on Call

<table>
<thead>
<tr>
<th>Require Blood Products Consent</th>
<th>Do not require Blood Products Consent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Blood Cells, Leukocyte Reduced (LR), including washed and irradiated RBC</td>
<td></td>
</tr>
<tr>
<td>Platelets, including apheresis and buffy coat-derived platelets (Pooled Platelets LR)</td>
<td></td>
</tr>
<tr>
<td>Plasma components, including Apheresis Fresh Frozen Plasma, Frozen Plasma, Cryosupernatant Plasma, Cryoprecipitate, Solvent Detergent (S/D) Plasma</td>
<td></td>
</tr>
<tr>
<td>Albumin</td>
<td></td>
</tr>
<tr>
<td>Hyperimmune Globulins: Anti-D IG (WinRho SDF), Anti-VZIG, Anti-HBIG, IMIG, Anti-CMV IG, Hepatitis A Immune Globulin</td>
<td></td>
</tr>
<tr>
<td>Immune Globulins, including intravenous (IVIG) and subcutaneous formulations</td>
<td></td>
</tr>
<tr>
<td>C1-Esterase Inhibitor</td>
<td></td>
</tr>
<tr>
<td>Prothrombin Complex Concentrates (octaplex, Beriplex)</td>
<td></td>
</tr>
<tr>
<td>Factor Concentrates: Anti-Inhibitor Coagulant Complex (FEIBA NF) Antithrombin FVII Special Access FVIII/vWF (Humate-P, wilate) FIX FXI Special Access FXIII Special Access Fibrinogen Special Access Protein C Special Access</td>
<td>Factor Concentrates: rFVIIa (NiaStase RT) rFVIII (Advate, Helixate FS, Kogenate FS, Xyntha) rFIX (BeneFIX)</td>
</tr>
<tr>
<td>Fibrin Sealants: Tisseel Evicel Artiss</td>
<td></td>
</tr>
</tbody>
</table>

For new or other products not listed, please contact Transfusions Department at 306-766-4474.
BLOOD BANK REPORT

REGINA QU'APPELLE HEALTH REGION
1440 14th Avenue - Laboratory
Regina, SK S4P 0W5
(306) 766-4915  FAX (306) 766-4772

Name: TEST, BBANK
Location: LIS-TESTING SYSTEM
Room#: 
DOB: 05/MY/55  Age: 59 Sex: F
Adm. Date: 29/AU/14  Surg. Date:
Order ID#: L2290000
Date/Time Ordered: 29/AU/14 11:10
Copy to:

BLOOD BANK

Blood Type: A POS
Previous Transfusion:

TEST RESULTS
RGH OR Tuesday, September 2, 2014 @ 1045

Test results:
- Group & Screen :
- Blood Grp & Rh : A POS  29/AU/14 11:14
- Antibody Screen : NEG  29/AU/14 11:14
@29/08/14 11:14 by SEG:
Patient qualifies for the electronic crossmatch, red cell units will
be selected at time of issue.

Approved: April 6, 2016
SAMPLE BLOOD BAG WITH LABEL

Visit www.transfusionmedicine.ca for more information.

Canadian Blood Services
It's in you to give

Code: A.5
Revised: July 2014
Approved: April 6, 2016
APPENDIX 4

Typenex Number

TYPENEX RED ARMBAND/STICKER

Code: A.5
Revised: July 2014

Approved: April 6, 2016
Typenex Number:

- MRN / HIN # is assigned only upon admission to hospital system. If clients have their cross match done as an outpatient, the Typenex # is a unique number that maintains continuity of identification from time of collection.

- For outpatients and clients transferred between RQHR facilities the Typenex # will be displayed as a number on the red armband (see previous page).

- **TYPENEX #’s WILL NOT APPEAR FOR EVERY CLIENT.**
  - If the client is cross matched while they are an inpatient, they will not have a Typenex red armband.
  - If the client may be transferred to another facility, ask the lab to put a Typenex red armband on the client at the time of cross match.

  The red armband must not be removed. If the red armband is removed for any reason, the client must be re-cross matched.
What happens if I need a blood product?

If your doctor recommends a blood transfusion you are asked to give consent. It is very important that you understand what you are agreeing to. If you have any questions, concerns, or need clarification, ask your doctor.

The laboratory staff draw a blood sample and carefully select and prepare the blood product that your doctor requested. Tests are done to ensure the transfusion matches your blood.

What happens during a blood transfusion?

A needle is inserted into a vein in your hand (or arm) and connected to a sterile plastic tubing which is attached to the blood product. During the transfusion, your temperature and pulse are checked and you are carefully watched by your nurse. The transfusion may take from 30 minutes to several hours depending on the blood product you are receiving.

Are there any alternatives to a blood transfusion?

If you require surgery, your surgeon, and family doctor work together to ensure you are as healthy as possible. The healthier you are going into surgery, the less likely it is that you will need a blood transfusion.

There are several options available for you to consider, however they may not be suitable for you. Your doctor discusses these with you prior to the transfusion.

Important:
Speak to your doctor to ensure that you understand why you need a blood transfusion and its risks.

Canada’s blood supply is one of the safest in the world!!

Blood transfusions are an important part of health care. Receiving blood in Canada is very safe and there is a low risk of complications. This pamphlet addresses some of the most frequently asked questions about blood and blood product transfusions. It is for informational purposes only. Each person is unique and your circumstances will be discussed with your doctor.
What is normally in blood?

Blood contains red blood cells, white blood cells, and platelets suspended in a liquid called plasma. Red blood cells contain “hemoglobin” which carries oxygen to all tissues of the body. White blood cells fight infection. Platelets are involved in the prevention of bleeding. Plasma is necessary for blood clotting.

What is a blood transfusion?

Donated blood is separated into components - including red blood cells, platelets, and plasma - after the white blood cells have been removed. These may be given to a person separately or together. The procedure of giving blood to a person through a vein is called a blood transfusion.

Where does blood come from in Canada?

Approximately every minute someone in Canada needs blood. In most provinces, Canadian Blood Services is responsible for blood collection and testing. Canadian blood donors give their blood free of charge so this need is covered. If you or someone in your family would like to donate blood, contact Canadian Blood Services at 1-888-2DONATE (1-888-236-283).

Why do I need to be transfused?

Generally a blood transfusion is given to replace a part of the blood that is low due to bleeding, illness, or medical treatment such as chemotherapy. Red blood cells are given to correct anemia (low hemoglobin level). Platelets or plasma are given to prevent or stop bleeding.

What are the risks of blood transfusion?

Receiving blood and blood products in Canada is very safe. Problems with transfusion complications are rare.

Although all blood is fully tested, there is a very small chance that the donor may have been infected. Risks of infection in Canada are*:

- HIV: 1 in 7.8 million
- Hepatitis C: 1 in 2.3 million
- Hepatitis B: 1 in 153,000
- West Nile Virus: 1 in 1 million

* bloody easy 3 A Guide to Transfusion Medicine, 2011 edition

What are the risks of blood transfusion? (continued)

The risk of experiencing a serious adverse event is much lower than the risk of being killed in a fatal automobile accident, which is 1 in 11,000.

More commonly, you may experience complications such as fever, chill, or hives. Most people do not react to a blood product, but if you do, notify your nurse right away.

Each person is unique, and your doctor helps you decide whether the risks of not being transfused are greater than the risk of a transfusion. In your case, the risks of not having a transfusion are:
Transfusion of Blood or Blood Products
Outpatient Instructions

Although rare, the following symptoms can be a result of your transfusion:

- temperature greater than 38.5°C (101.0°F)
- chills (shaking)
- headache, backache
- rash, hives, itching
- nausea, vomiting
- difficulty breathing, shortness of breath
- dark or bloody urine.

If you experience any of these symptoms, go to the nearest Emergency Department.
The Emergency Department will notify the Transfusions Laboratory.

CEAC 0689
December 2011
Notification of Administration of Blood and/or Blood Products

Name: ____________________________

MRN: ____________________________

During your stay in the Regina Qu’Appelle Health Region you were given a human blood product.

If you have any questions regarding this product please contact your physician.

Discharge/Transfer

[Signature of person or substitute decision maker]  [Date (mm/dd/yyyy)]

(Health Care Professional providing discharge or transfer documentation)

White - Health Records  Canary - Patient
See also: Circular of Information- Canadian Blood Services
(Can be found on the Intranet under Lab Services Manual)

Use filters on recommendation of Lab upon issuing blood products.

All solutions are compatible with Normal Saline EXCEPT Immune Globulin.

All blood is leukocyte reduced by filtration.

NOTE: All blood products infusion must be started within 30 minutes of issue and completed within 4 hours. All infusion rates should be prescribed by the physician.

Specialized blood products (i.e.: CMV negative/irradiated products) are available upon request for approved patients.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>SEE PROCEDURE</th>
<th>ROUTE</th>
<th>DEFINITION</th>
<th>SPEED OF TRANSFUSION</th>
<th>APPROX. VOLUME PER UNIT</th>
<th>FILTER/TUBING SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Blood Cells</td>
<td>B.1</td>
<td>By pump or gravity.</td>
<td>Red Cells with the plasma reduced. All packed cells produced are leukoreduced to remove most white cells.</td>
<td>Slowly for first 15 minutes then as fast as tolerated but in less than 4 hours. If washed, check modified expiration time.</td>
<td>290 +/- 50 mL</td>
<td>Standard blood filter. Tubing changed after 4 units or 24 hours or if occluded.</td>
</tr>
<tr>
<td>Frozen Plasma (FP)</td>
<td>B.1</td>
<td>By pump or gravity.</td>
<td>Plasma is the clear part of the blood separated by centrifugation. FP replaces MOST of the clotting factors and has volume expansion and has oncotic properties. Frozen within 24 hours of collection.</td>
<td>Infuse as rapidly as tolerated. Product is stored frozen and requires 30 minutes to thaw.</td>
<td>250 +/- 50 mL</td>
<td>Standard blood filter.</td>
</tr>
<tr>
<td>Cryoprecipitate</td>
<td>B.1</td>
<td>By pump or push or gravity.</td>
<td>Prepared from slowly thawed FP. The plasma is separated from the cryoprecipitate and then the cryoprecipitate is refrozen.</td>
<td>Infused as rapidly as tolerated. Product is stored frozen and requires 20-30 minutes to prepare.</td>
<td>Each unit contains 5-15 mL of plasma. A pool of 6 units contains approx. 70-100 mLs.</td>
<td>Standard blood filter.</td>
</tr>
<tr>
<td>Antihemolytic factor (AHF)</td>
<td>B.1</td>
<td>By pump or push or gravity.</td>
<td>Prepared from slowly thawed FP. The plasma is separated from the cryoprecipitate and then the cryoprecipitate is refrozen.</td>
<td>Infused as rapidly as tolerated. Product is stored frozen and requires 20-30 minutes to prepare.</td>
<td>Each unit contains 5-15 mL of plasma. A pool of 6 units contains approx. 70-100 mLs.</td>
<td>Standard blood filter.</td>
</tr>
<tr>
<td>Platelets</td>
<td>B.1 or B.1.1 if pushed</td>
<td>By pump or push or gravity.</td>
<td>Platelets aggregate and prevent bleeding in injured blood vessel walls. Usually obtained by plasmapheresis as a single donor platelet.</td>
<td>Infused as rapidly as tolerated.</td>
<td>Usual adult dose is 250 +/- 50 mL. Ordered in &quot;adult doses&quot; Recommended pediatric dose is 10mL/kg</td>
<td>Standard blood filter. No micro-aggregate filter. Needs a fresh administration set for each dose. NICU needs a specific filter supplied by lab.</td>
</tr>
</tbody>
</table>

Code: A.5
Revised: July 2014

Approved: April 6, 2016
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>SEE PROCEDURE</th>
<th>ROUTE</th>
<th>DEFINITION</th>
<th>SPEED OF TRANSFUSION</th>
<th>APPROX. VOLUME PER UNIT</th>
<th>FILTER/TUBING SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor Concentrates (Factor VIII, VIIa, IX, Humate P, etc.)</td>
<td>B.1.1</td>
<td>As per Manufacturer’s directions.</td>
<td>Replacement of missing coagulation factors</td>
<td>As per Manufacturer’s directions. <strong>Must be approved by Haematologist</strong></td>
<td>Dependent on product</td>
<td>Filtered during preparation</td>
</tr>
<tr>
<td>Immune Globulin (IgG)</td>
<td>I.6</td>
<td>By pump or gravity.</td>
<td>Human Immune Globulin prepared from plasma and used to treat hypogammaglobulinemia, ITP, and other conditions.</td>
<td>See Nursing Procedure I.6. <strong>Must be approved by Haematologist</strong></td>
<td>Various sizes and concentrations depending on availability.</td>
<td>Infused with <strong>D5W</strong>. Filter not required except for Gammagard IVigG</td>
</tr>
<tr>
<td>Rh Immunoglobulin (WinRho)</td>
<td>I.6</td>
<td>By pump or gravity.</td>
<td>Pooled gamma globulin contains antibody to Rh (D) antigen.</td>
<td>300 ug given ASAP.</td>
<td></td>
<td>IV or IM injection. Return to Lab if particles observed.</td>
</tr>
<tr>
<td>Albumin</td>
<td>B.1.2</td>
<td>By pump or gravity.</td>
<td>Human Albumin is used to replace protein and maintain oncotic pressure.</td>
<td>As quickly as tolerated.</td>
<td>Supplied in 5% and 25% concentrations in various volumes.</td>
<td>Vented tubing. Filter is not required.</td>
</tr>
<tr>
<td>Prothrombin Complex Concentrate (Octaplex/Beriplex)</td>
<td>P.26</td>
<td></td>
<td>For emergency reversal of warfarin in intracranial bleed or emergency pre-operative procedures</td>
<td>See Nursing Procedure P. 26 for administration rates.</td>
<td>500 IU in 20mL. Usually given in 40mL doses</td>
<td>IV administration. Should be colorless to slightly blue. Do not use if cloudy or discoloured. No filter required.</td>
</tr>
</tbody>
</table>
**CHECKLIST for TRANSFUSION**

- **Have you performed a visual inspection of the product?**
  Blood products shall be inspected for abnormal appearance and obvious abnormalities. *Product should not be used if expiration date is expired.* Some signs of a failed inspection are a red cell mass that looks purple; visible clots; plasma looks murky, purple, brown or red. If a problem is noted, return product to the transfusion department immediately.

- **Have you recorded baseline vitals?**
  The Canadian Society for Transfusion Medicine Standards states that before, during and after transfusion, recipient vital signs shall be monitored and documented. The recipient must be monitored by qualified personnel for suspected adverse reactions during and after transfusion.

- **Is normal saline the IV fluid being used with the blood product?**
  Normal saline is most compatible solution to use with all blood products.

- **Was the armband affixed to the client?**
  If the armband is removed for any reason, the client will have to be re-cross matched.

- **At the bedside, did 2 appropriate designates as per nursing procedure check the blood unit label, blood bank report and cross match tag for:**
  - Name and date of birth
  - MRN and / or Typenex #
  - Client ABO and Rh
  - Unit ABO and Rh
  - Unit number
  This must be done in full. Failure to do this is the major cause of transfusion accidents and death.

- **At the bedside, was the information on the cross match tag verified with the client’s armband?**
  This is the last opportunity to confirm the client’s ID number on the tag with the client’s ID number on the armband. Remember clerical errors are the major cause of haemolytic transfusion reactions and death.

- **Was the top pink copy of the cross match tag affixed to the transfusion report in the client’s chart?**

- **Was the time documented on chart when blood product transfusion was initiated?**
  Do not leave unused blood lying at room temperature for more than 30 minutes. Return to the Lab for safe keeping and proper storage. Do not store in nursing unit refrigerator. A unit of blood should not take more than 4 hours to transfuse. Blood left hanging for more than 4 hours should be discontinued. **NEVER add any medication to the blood product for any reason!!**
Appendix K

Saskatchewan Hospitals Transfusion
Adverse Event Report Form

Patient Demographics
- Patient last name: First name:
- PHN:
- Date of Birth: (dd/mm/yyyy)
- Hospital Number:
- Sex: [ ] Male [ ] Female [ ] Unknown

Facility Name: Phone Number:

Diagnosis:

Indication for Transfusion:

Category: [ ] Hematology/BMT [ ] Oncology [ ] Medical [ ] Surgical [ ] Obstetrics/Gyn/Perinatal [ ] Trauma [ ] Neonatal/Peds

1. Patient and Blood Component/Product Unique Identifier Verification (Clinical Check)
- Is the information IDENTICAL on all the following: [ ] Patient ID band [ ] Issue documentation [ ] Blood component/product label? [ ] YES [ ] NO
- IF NO, contact TMS/Lab IMMEDIATELY. Another patient may be at risk.
- Date/Time TMS/Lab notified: [ ] Person Contacted:

2. Clinical History (Check all that apply)
- Pre-existing fever
- History or evidence of circulatory overload
- Immune-compromised (specify): [ ]
- Transfused under GENERAL anesthesia
- Transfused under REGIONAL anesthesia
- Transfusion pre-medication (specify):
- Patient currently prescribed: [ ] ACE inhibitor
- [ ] Diuretic
- [ ] Antibiotic(s)
- History of transfusion: [ ] No [ ] Unknown
- [ ] Yes (within 3 months) [ ] Yes (> 3 months)
- History of pregnancies/miscarriages: [ ] No [ ] Unknown
- [ ] Yes (within 3 months) [ ] Yes (> 3 months)

3. Location, Date, and Time of Transfusion Reaction
- Ward/Service: [ ] ICU [ ] ER [ ] Medical ward [ ] Surgical ward [ ] OR/Post anesthesia unit [ ] OB/Gyn [ ] Culpatient [ ] Chronic Care
- Date (dd/mm/yyyy): [ ] Time Transfusion Started: [ ] Time Reaction Occurred: [ ] Time Transfusion Stopped: [ ] Time Transfusion Restored (if applicable): [ ] Only upon medical direction:

4. Clinical Signs and Symptoms
- Pre-transfusion Temp: [ ] °C (highest) [ ] BP:
- Post-transfusion Temp: [ ] °C (highest) [ ] BP:
- Pulse: [ ] Respiratory Rate:
- Pulse: [ ] Respiratory Rate:

Clinical Signs and Symptoms: Check all that apply.
- [ ] Urticaria ( Rash )
- [ ] Pruritus ( itching )
- [ ] Headache
- [ ] Fever (oral temperature ≥38°C AND ≥1°C rise above baseline temp)
- [ ] Chills (sensation of cold)
- [ ] Rigors ( involuntary shaking )
- [ ] Flushing
- [ ] Skin rash other than urticaria
- [ ] Restlessness/Anxiety
- [ ] Nausea/Vomiting
- [ ] Other relevant clinical information:

5. Blood Component/Product(s) and Equipment Information (Attach sheet with additional information if needed.)

<table>
<thead>
<tr>
<th>Blood Component/Product Type</th>
<th>Unit or Lot Number</th>
<th>Volume Transfused (ml or # of vials)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Filters or Equipment Used</th>
<th>[ ] Standard blood filter</th>
<th>[ ] Other blood filter</th>
<th>[ ] IV pump</th>
<th>[ ] Blood warmer</th>
<th>[ ] Rapid infusion device</th>
</tr>
</thead>
</table>

| Details:                  |                          |                        |             |                 |                         |

6. Measures and Notifications

Treatment Measures Taken (Check all that apply)
- [ ] Antipruritics
- [ ] Diuretics → Effective
- [ ] Analgesic
- [ ] Antibiotics
- [ ] Supplemental O2
- [ ] Ventilation → Duration:
- [ ] Blood samples taken

Other:

Notifications:
- Physicians (name): Date/Time:
- TMS/Lab (name): Date/Time:

<table>
<thead>
<tr>
<th>Reported By: (signature)</th>
<th>Name (ent):</th>
<th>Designation</th>
<th>Date/Time:</th>
</tr>
</thead>
</table>
**Saskatchewan Hospitals Transfusion Adverse Event Report Form**

**Laboratory to complete this page**

Facility Name: ________________  Patient (last name, first name): ________________

Phone Number: PHN: ________________  Patient Date of Birth: ________________

**Transfusion Medicine Service / Laboratory Use Only**

Lab order number if applicable

Reports should be faxed to SHR 306-655-0987 or RQHR 306-766-4382

### 1. Results of Investigation and Pathologist Conclusion

<table>
<thead>
<tr>
<th>History of Previous Transfusion Reactions</th>
<th>Type of previous reaction:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ None</td>
<td>☐ Yes (within 3 months)</td>
</tr>
<tr>
<td>☐ Unknown</td>
<td>☐ Yes (&gt; 3 months)</td>
</tr>
</tbody>
</table>

**Relevant Lab Results and Additional Clinical Information**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Pre-transfusion Result</th>
<th>Post-transfusion Result</th>
<th>Examination</th>
<th>Pre-transfusion Result</th>
<th>Post-transfusion result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABO/Rh typing</td>
<td>Blood culture sent:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical check</td>
<td>c patient</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hematology check</td>
<td>c product</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Medical Director Conclusion:**

- Incident: ☐ Patient identification  ☐ Product related  ☐ Equipment related  ☐ Other(specify):
- No transfusion reaction: ☐ FNH  ☐ Minor allergic  ☐ Severe allergic/anaphylactic/anaphylactoid  ☐ Anaphylactic shock
- IVIG headache  ☐ Aseptic meningitis (IVIG related)
- Incompatible Transfusion: ☐ Intentional  ☐ Unintentional  ☐ ABO System Anti-  ☐ Other System Anti-
- Acute hemolytic reaction: ☐ Delayed hemolytic reaction  Cause:
- Delayed serological transfusion reaction: Specify new elocentbody(ies) within 28 days of transfusion: Anti-
- TACO  ☐ TAD  ☐ Hypotensive reaction  ☐ PTP  ☐ LA-GVHD
- Bacterial contamination: ☐ Positive culture product  Organism (specify):
- ☐ Positive culture recipient  Organism (specify):
- ☐ TRALI  ☐ Possible TRALI → Risk factors:
  - CBS TRALI criteria met (1+2+3+4)
  - CBS TRALI form sent  Date:
  - 1 ☐ Hypoxemia (defined as any of) ☐ SpO2 < 90% on Room Air  or ☐ PaO2 < 60 mm Hg on Room Air or ☐ PaO2/FiO2 < 300
  - 2 ☐ Transfusion within 5 hours of TRALI  ☐ New Chest X-Ray findings of bilateral infiltrates  ☐ No evidence of circulatory overload

- ☐ Unknown  ☐ Other (specify):

**Relationship, Severity, and Outcome**

- Relationship of reaction to transfusion: ☐ Definite  ☐ Probable  ☐ Possible  ☐ Doubtful  ☐ Ruled out  ☐ Not determined
- Severity (Grade): ☐ 1 (non-severe)  ☐ 2 (severe)  ☐ 3 (life-threatening)  ☐ 4 (death)  ☐ Not determined
- Outcome: ☐ Minor or no sequelae  ☐ Major or long-term sequelae  ☐ Death  ☐ Not determined
- Relationship to death: ☐ Definite  ☐ Probable  ☐ Possible  ☐ Doubtful  ☐ Ruled out  ☐ Not determined

### 2. Pathologist Comments and Recommendations

**Transfusion Service/Medical Director or Pathologist (or Designate):**

Signature: __________________________ Name (print): __________________________ Date: __________________________

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Code: A.5  
Revised: July 2014

Approval date: April 6, 2016

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