PURPOSE:

1. To administer blood, blood components and/or derivatives during hemodialysis.
2. To provide information on safe storage and administration of blood, blood components and/or derivatives.
3. To provide information for early recognition and prompt treatment of transfusion reactions.

POLICY:

1. Registered Nurses and Licensed Practical Nurse in Dialysis may administer blood products during treatment as ordered by the physician.
2. Ensure most current Canadian Blood Services Policy and Facility Policy for administration of blood products reviewed.

EQUIPMENT:

- Request for Blood Components form # 006171
- Request for Release of: Blood/Blood products #F160-INV-03
- Blood Product as ordered with attached Compatibility Tag and Record of Transfusion (ROT)
- Blood administration set & filter (Baxter Y-Type Blood Solution Set)
- 0.9% Normal saline solution (500 mL)
- Infusion pump
- Patient chart
- Gloves
- Cumulative Blood Product Record Form (CBPR # 29178) addressograph with patient name

KEY POINTS:

- Standard for Canadian Blood services Winnipeg Centre.
- Refer to your hospital/facility requisition
- Refer to individual hospital’s Parenteral Administration Set Reference Guide.
- Volume according to individual hospital policy used to prime administration set and tubing prior to transfusion.
PROCEDURE:

1. Ensure the physician has obtained informed consent for transfusion.

2. Ensure the physician has written orders for transfusion.

3. Forward the completed Request for Blood Components Document #F160-INV-03 to the Blood Bank.

4. Retrieve unit of blood from Blood Bank.

5. Establish and/or assess patency of direct venous access for administration of blood products.

6. Perform hand hygiene.

7. Prepare for transfusion:
   a. Prime Y-Type blood administration set with 0.9% NaCl.
   b. Load the infusion pump with the administration set.
   c. Take baseline vital signs (VS): BP, T, P, RR no greater than 30 min prior to start of transfusion. Ask patient if he/she has received blood products in the past and if has had any reactions.

KEY POINTS:

- Check with own hospital/facility policy for frequency of transfusion consent. With all MRP dialysis patients, consent for transfusion is included in Consent for Treatment form. (Valid for one year only).

- As recommended by Canadian Blood Services (CBS), physician’s order should include:
  - The amount and type of blood, blood components and/or derivatives to be transfused/infused.
  - Any special transfusion/infusion requirements (i.e. irradiation, washing, CMV negative products etc.)
  - Date, time and duration of transfusion/infusion.
  - Use of pressure infusion devices
  - Use of blood warmers
  - Pre/ Post-medications

- Transfusion of blood product must be initiated within 30 minutes of removal from Blood Bank
  - Site specific approved processes may differ, eg. SCDU.

- Blood components that have been outside of a temperature controlled environment for more than 30 minutes must be discarded.

- If antibodies present, form #CM077 must be completed and returned to the blood bank.

- Each dialysis unit will retrieve the unit of blood per their hospital/facility policy.

- When priming, ensure filter is completely wet and drip chamber is 1/3 to 1/2 full prior to infusion.

- Use only 0.9% NaCl. All blood and blood products must be administered through a blood filter.

- Exceptions: Albumin and IVIG uses vented tubing that comes with the product. Pentaspan uses regular IV tubing.

- Medication shall not be added to the administration set or directly to the blood component or derivative.

- Record on CBPR and Hemodialysis Treatment Record.

- Ensure patient has received appropriate education as per CBS guidelines.
PROCEDURE:

8. Perform 2-person check to verify the correct patient and correct product.

The correct patient is verified by:

a) one person reading the following out loud from the:

1) Compatibility tag AND
2) Patient arm band OR Photo ID in the dialysis chart.
   i. Spelling of the patient’s last and first names.
   ii. Patient’s PHIN or unique identifier.
3) Ask the patient to state or spell his/her name to verify the information on the arm band/photo id.

b) second person confirms the identical information is on:
   i. Physician’s order sheet AND
   ii. Admission Face or Summary Sheet AND
   iii. The Record of Transfusion (ROT)

The correct product is verified by:

a) One person reading the following out loud from the:

1) Compatibility tag (attached to the blood bag)
   i. ABO blood group
   ii. Rh blood group (if applicable)
   iii. Donor unit number
   iv. Compatibility status
   v. Cross match and component expiratory dates

b) Second person confirms the identical information is on the:

   i. Blood Product Bag
   ii. REPEAT for the Record of Transfusion (ROT)

9. Inspect the blood for abnormalities. Gently rotate the blood product bag from side-to-side several times.

   • If clots, clumps or discoloration present, notify Blood Bank and return the product.
   • Order another unit of blood. If none available notify physician.

10. Perform hand hygiene and put on Gloves.

KEY POINTS:

- Persons authorized to perform 2-person check will vary according to hospital policy. Please check with hospital policy/guidelines.
- Patient verification to be done at the bedside in the presence of the patient immediately before the transfusion is established.
- In the absence of a patient arm band the patient ID must be completed using Photo ID in the patient dialysis chart (see MRP guidelines 60.40.07).
- Medical Record Number (MRN) is used only when PHIN is not available.
- Report any discrepancies to Blood Bank and Canadian Blood Services and notify physician. The physician must decide whether or not to proceed with transfusion despite the discrepancies.
  - The shelf life of red blood cell preparation is dependent on anticoagulant nutrient used, manipulation of the unit including washing or irradiation.
  - Return any outdated red cell preparation to the Blood Bank and inform Blood Bank personnel.
  - If your hospital has pneumatic tube system, do NOT return products through the tube.
PROCEDURE:

11. Administer any pre transfusion medications.

12. Attach blood unit to the second Y spike of the administration tubing and connect tubing to the medication access port of the venous blood line.

13. For red blood cell concentrate, each unit may contain anywhere from 250 mL to 400 mL. When calculating fluid volume for ultrafiltration goal, count 350 mL per unit.

14. Establish infusion rate at 50 mL/hr for first 15 minutes and initiate the infusion. (The nurse must stay with the patient for the first 15 minutes of transfusion.)

15. Observe for any adverse reaction.
   - If reaction, stop transfusion immediately and refer to Transfusion Reaction Procedure per your hospital policy and procedures.

16. After 15 minutes, repeat VS. If there are no signs of reaction and patient is tolerating well, increase infusion rate as per physician’s order. Infusion rate should take into account the number of units to be infused to allow completion of all units during the treatment.
   - Continue to monitor BP, T, P & RR every 30 minutes or as clinically indicated while blood is infusing.

17. Upon completion of blood transfusion, flush line with 0.9% NS until clear and record post VS including BP, T, P & RR on the CBPR and Hemodialysis treatment record.

18. Remove the Compatibility tag from the blood product bag and discard in the confidential waste

19. Discard empty blood product bag and tubing as per hospital policy.

KEY POINTS:

- Medications should not be given at the same time as blood transfusions. It is recommended that if IV iron is due to be given, hold it until the next treatment. Required medications such as antibiotic therapy should be given at the end of treatment with blood transfusion given at the maximum rate in order to leave time for the drug administration.

- It is recommended that the blood product administration set be attached to the extracorporeal circuit post dialyzer because plasma, proteins, high red cell concentration and platelets in the blood will initiate clot formation in the dialyzer.

- NOTE: With blood administration set, filter must be completely wet and drip chamber 1/3 to 1/2 full prior to initiating the transfusion.

- CBS recommends initiation rate of 1 mL/min approximately 50 mL/hr for the first 15 minutes to observe for reaction. Majority of reactions occur during the first 30 mL of blood administration.

- Signs or symptoms such as chills, chest pain, back pain, dyspnea, rash, or urticaria may indicate reaction.

- In hemodialysis, the use of central vein catheters or fistulas will allow high infusion rates. The ultrafiltration rate during treatment eliminates any chance of fluid overload.

- Each unit must be infused within 4 hours of issue from the blood bank.

- Flushing of the line is to ensure all product has been transfused.

- Blood administration set must be changed after 4 consecutive units; or >4 hours elapsed; or if more than 30 minutes elapse between the infusion of units.

- This procedure may vary with each dialysis unit; please refer to your hospital policy.

- Ensure discarded bag and administration set will not leak (i.e. close all clamps, cap ports, tie tubing).
**PROCEDURE:**

20. Give the patient/family the completed wallet card: 
   *Patient Notification Record Administration of Blood/Blood products* (or other hospital/facility approved notification form)

21. Sign the bottom of the CBPR that the patient has received the patient notification.

22. If patient is a transplant candidate, ensure orders are obtained to draw antibody blood work 14-18 days post-transfusion. (60.30.03 *HLA Antibody Testing Routine and Post Transfusion Protocol*).

**KEY POINTS:**

- *Manitoba Transfusion Medicine: Best Practice Guidelines* state that a process must be in place in each facility/RHA to provide a written notification, to each patient who has received a transfusion/infusion of blood, blood components and/or derivatives.

**DOCUMENTATION:**

Hemodialysis Treatment Record

Integrated Progress Notes

Record of Transfusion (ROT)

Cumulative Blood Product Record (CBPR)
   a. date and time transfusion established
   b. *pre-transfusion actions complete*
   c. type of product
   d. blood group and Rh of donor unit
   e. donor unit number (may use the stickers on the blood bag)
   f. initial vital signs and that the vital signs may be seen on the Hemodialysis treatment sheet
   g. assessments number
   h. interventions during transfusion
   i. Two Nurse signatures
   j. Signature that the patient notification wallet card given to the patient

The CBPR is a mandatory form for all Regional Health Authorities.

If original transfusion order is in the “in patient” chart, the original CBPR form should be filed in hospital chart and a copy placed in the renal chart.

Although it may be hospital policy to give the patient the white copy of CBPR, if the transfusion order originated in dialysis chart, retain the original and place in chart. Provide patient with a photocopy or transcribe information as per hospital policy.

**REFERENCES:**

Provincial Blood Programs, Carol Renner, Director