1. **Principle**

To receive blood, blood components and plasma protein products into inventory, including the receipt of inter-hospital exchange for inventory and blood products transported with a patient.

To provide an accurate record of the receipt of blood components and plasma protein products.

1. **Scope and Related Policies**
   1. Blood components and blood products shall be transported in a manner that prevents damage or deterioration.
   2. Discontinuation of platelet agitation during transportation shall not exceed 24 hours as per the blood supplier’s recommendation.9.1
   3. All packing slips (issue vouchers) must be checked against the actual blood components and blood products received to ensure the accuracy of the information. The blood supplier (or shipping facility) should be notified of any discrepancies.
   4. After verification, all shipping documents (e.g. packing slips, inter-hospital exchange forms, etc.) shall be initialed and the date and time recorded by the person receiving the shipment. A copy of the shipping document (for plasma protein products only) is returned to the blood supplier. Hospital staff shall sign for all deliveries by the blood supplier. All shipments by air, bus or courier should have a waybill.
   5. Blood components and blood products shall be inspected for abnormal appearance and date of expiry upon receipt by the TS. Blood components and products not passing inspection shall be

quarantined until appropriate disposition is determined. The process must be documented and the shipper informed.9.1

* 1. A process shall be established to maintain traceability of all blood components and blood products from the issuing facility to the final disposition at the receiving facility.9.1 See Procedural Notes 8.4.
  2. The temperature of red cell units should ideally be 1°C to 6°C during transportation, but temperatures up to 10°C are acceptable. Products/components requiring room temperature (20-24°C) storage must be shipped at 20-24°C. Frozen products must be shipped to ensure a frozen state is maintained. See QCA.009 - Temperature Check of Blood and Blood Components. Products outside this range must not be used unless authorized by the TS Medical Director or designate. This authorization must be documented.
  3. An identifiable segment from the donor unit of all transfused red cells shall be stored at 1-6ºC for at least 7 days after transfusion.9.1

1. **Specimens – N/A**
2. **Materials**

**Supplies:** Blood shipping containers

Ice packs

Gel packs

Dry Ice

Cardboard

Packing slip(s) from the blood supplier or

Inter-hospital Transfer Form – Blood Components/ Plasma Protein Products (IM.006F) or

Inter-hospital Transfer Form – Blood Components/Products Accompanying a Patient (IM.007F1)

Tamper Evident Seal

1. **Quality Control**
   1. Optimal storage temperatures for blood products are outlined in the Circular of Information for human blood and blood components. Temperature ranges for commonly used products are9.2 :
      1. Red blood cell components: 1-6°C.
      2. Platelets: 20-24°C.
      3. Frozen plasma components: -18°C or colder.
      4. Plasma protein products: generally 1–6°C but check individual manufacturer’s insert.
   2. Specialized product requests will be labeled on the component and will indicate the requested modification on the packing slip.
      1. Irradiated: The date of irradiation and the corrected expiry date should be documented on the blood component and on the hospital TS records. Irradiated units must have a ‘radsure’ label indicating the unit has been irradiated.

Irradiated units expire 14 days from date of irradiation or the original expiry date, whichever is sooner.9.3

Note: CBS irradiates only units 14 days or less from date of collection.9.4

* + 1. Negative for anti-CMV.
    2. Antigen typed units.
* Supplier antigen typed units will have the relevant antigen typing results identified on the product label or tag attached to the unit. Hospitals are not required to re-confirm phenotype of the unit from the supplier.9.5
  1. A maximum number of components can be placed in a shipping box. Ensure to follow the appropriate packing configuration to maintain acceptable storage temperature during shipment.
  2. Frozen products are shipped on dry ice. Dry ice should remain in box to ensure no thawing has occurred during shipping.
  3. Cardboard must be placed between red cell components and the ice pack (red cells should not be in direct contact with frozen packs).
  4. Care of shipping containers:
  + Do not write directly onto the cardboard or Styrofoam boxes
  + Do not cut or tie knots in the belts around the box
  + Remove all shipping labels from the boxes to avoid confusion of destination.
  1. Security seal must be secure.

1. **Procedure**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| * 1. A white copy of the packing list (voucher) accompanies the blood supplier boxes. This packing list must be checked to ensure products have been delivered to the correct hospital and that they were shipped in a sealed container and found to be satisfactory. Count the number of boxes in the shipment to confirm that the number is correctly recorded. The person receiving the blood must sign, date and record the time received on the packing list.   Inform the shipper immediately to resolve any problems. | |  |  | | --- | --- | | ***If*** | ***Then*** | | A tamper proof security seal is not present on the shipped box(es) | contact the shipping facility (blood supplier or other hospital) immediately. Contact the TS Supervisor/Manager to determine the disposition of the products within the box(es). See Procedural Notes 8.1.3. | |
| |  |  | | --- | --- | | ***If*** | ***Then*** | | The time of transport is greater than 24 hours | * Record the length of transit time on the shipping or inter-hospital exchange voucher * The temperature of the blood components should be taken as described in QCA.009 – Temperature Check of Blood and Blood Components. See Procedural Notes 8.1 | |
| * 1. If the shipment is received from another hospital, confirm: * the box was shipped sealed * there is an inter-hospital transfer form * the products have been stored and shipped according to current standards * temperature storage records shall be available upon request | |
| * 1. Remove the plastic tamper evident seal and open the shipping box. | |
| * 1. Inspect the packaging of the product inside the shipping box. | * + 1. If the units are not packaged correctly, notify the sending hospital or blood supplier of the error and complete an incident report. |
| * + 1. Quarantine the units until the incident is reviewed. See Procedural Notes 8.1. |
| * + 1. For description of proper packaging, see IM.006 – Shipment of Blood Components/Products using Canadian Blood Services Shipping Containers Or IM.011 Shipment of Blood Components/Products using MTS Shipping Containers. |
| * + 1. Check off the appropriate box on the CBS packing slip or inter-hospital transfer form, if applicable (IM.006F or IM.007F1). |
| * 1. Unpack one shipping box at a time, beginning with fresh and frozen blood products. | |
| * 1. Remove the plastic bag from the shipping container. | |
| * 1. Inspect the contents of the bag for breakage or leaks.  |  |  | | --- | --- | | ***If*** | ***Then*** | | There is liquid in the bag, | determine whether any of the contents are broken. | | Some of the contents are broken | notify the shipping facility. |   **Note:** if contents of the broken unit(s) have contaminated other units, these units will need to be discarded also. See Reporting 7.3. | |
| * 1. If no breakage or leaks are noted, remove the blood components/products from the bag. | |
| * 1. Compare the information on the product label with the information on the packing slip. | * + 1. If the information matches, place a check mark beside the corresponding unit on the packing slip. |
| * + 1. Ensure the product is not outdated. If the unit is outdated, see Reporting 7.3. |
| * 1. For receiving plasma protein products, go to step 6.19. | |
| * 1. If there are special instructions on the packing slip, confirm that the special instructions have been followed.   For example, if the unit is irradiated, there must be an irradiation label on the unit. Place a check mark beside the applicable special instructions when the label has been confirmed. See Quality Control 5.2.1. | |
| * 1. When all units from the box have been accounted for, visually inspect each unit. See IM.003 – Visual Inspection of Blood, Blood Components and Plasma Protein Products.  |  |  | | --- | --- | | ***If*** | ***Then*** | | Visual inspection criteria are not met, | document the failure on the issue voucher or inter-hospital transfer form. | | |
| * 1. Irradiated RBC components may expire before normal outdating. See Quality Control 5.2.1. | |
| * 1. Repeat steps 6.6 to 6.15 for all other fresh and frozen products received. | |
| * 1. If there is a computer system in TS, enter the units into inventory as per established procedure. If an electronic crossmatch is used, prepare the units for ABO/Rh confirmation as per established procedure. | |
| * 1. Remove at least one segment from each red cell unit received and label the segment with a sticker from the back of the unit. If there are no stickers on the back of the unit, write the ISBT 128 donor unit number including source code, year, unit number and check character on a piece of tape or a blank label and attach the tape/label to the segment. | |
| * 1. Store the segments at 1-6°C for at least 49 days (7 weeks). See Procedural Notes 8.2. | |
| * 1. Place the products in the appropriate storage areas ensuring that the oldest products are placed in an area where they will be selected first. | |
| * 1. To receive plasma protein products: | * + 1. Compare the lot number and quantity (number of bottles/vials) received to the information on the packing slip or inter-hospital exchange form |
| * + 1. Record date and time on the issue voucher or the inter-hospital exchange form in the appropriate area (IM.006F or IM.007F1). |
| * + 1. If the products have been sent for a hemophilia or other home care patient (Factor Concentrates, Subcutaneous Ig, C1 Esterase Inhibitor): * Record the name of the patient from the issue voucher onto a label * Attach the label to a bag containing the plasma protein products |
| * + 1. Place the products for inventory in the appropriate storage area ensuring that the oldest products are placed in an area where they will be selected first for assignment to a patient. |
| * + 1. Place products for home care patients in designated storage area. |
| * 1. Close all boxes and reattach closure straps. Remove shipping label(s) from the boxes if indicated. | |
| * 1. Store the boxes in an appropriate location or return to blood supplier as per established procedure. | |

1. **Reporting**
   1. For shipments of plasma protein products from the blood supplier, return one copy of the packing slip to the blood supplier. The other copy must be retained by the facility indefinitely.
   2. For inter-hospital exchange for inventory purposes, one copy must be retained indefinitely.
      1. For blood components and/or blood products transported with patients, see Procedural Notes 8.3.
   3. If blood components or products received are not suitable for use, ensure that they are documented on discard forms or in the computer. Unusable products must be documented for lookback/ traceback purposes as received and then discarded. When received as unusable, also document on the packing slips the reason for discard. See IM.005 – Final Disposition of Blood Components and Plasma Protein Products Not Suitable for Transfusion - Manual Procedure.
      1. Inform the shipping facility of the final disposition.
2. **Procedural Notes**
   1. If the packed box appears to deviate from the required packing configuration, or if the shipment time is greater than 24 hours, the temperature of the blood products may exceed the acceptable temperature range. The temperature of each unit must be checked.
      1. If the temperature in the shipping container is suspect perform a temperature check of the products. See QCA.009 – Temperature Check of Blood and Blood Components.
      2. Platelet components should not be used if they have not been agitated for 24 hours or more.
      3. If there is no security seal on a shipment received from the blood supplier, it may be accepted if the mode of delivery was a CBS employee.
      4. If the products are required urgently, the TS Medical Director or designate must authorize their use. This authorization must be documented.
   2. Segments from red cell component units shall be retained for at least 7 days post-transfusion. AS-3 red blood cells have a shelf life of 42 days. Therefore, if a freshly drawn unit was received and was stored until the day of outdating and then transfused, the retention time of a representative sample (segment) of the unit is 42 days plus 7 days.
   3. All products transported from a facility other than the blood supplier will be recorded on IM.006F or if transported with the patient IM.007F1.
      1. If units were transfused enroute, the transfusion information should be recorded on the form (IM.007F1).
      2. If the number of products received does not equal the number of products sent, the missing products should be identified on the form.
      3. If there are units that were sent, not received and not documented as transfused, a medical record review should be done to determine if the unit(s) were transfused or discarded. Alternatively, the products should be considered “presumed” transfused. In this case, record the unaccounted for units in the Transfusion en route column as ‘transfused’.
      4. Fax completed copy of form IM.007F1 to issuing hospital.
   4. For TS that have product processed/ issued by Pharmacy a process must be in place to ensure traceability of products.
3. **References**
   1. CSTM Standards for Hospital Transfusion Services Version 4 – April 2017. Canadian Society for Transfusion Medicine, 5.7.1.8; 5.1.1.5; 5.1.1.6; 5.3.1.6
   2. Circular of Information for the use of human blood and blood components. Canadian Blood Services, [www.blood.ca](http://www.blood.ca)
   3. National Advisory Committee on Blood and Blood Products, draft Recommendations for use of Irradiated Blood Components in Canada. Available at: <http://www.canadianneonatalnetwork.org/Portal/LinkClick.aspx?fileticket=itlU1wecNPw%3D&tabid=39>
   4. Canadian Blood Services Customer Letter CL#2017-29 Important Information Regarding Changes to the Expiry Date of Irradiated Red Blood Cells. 2017-07-11
   5. Canadian Standards Association Standards for Blood and Blood Components CANZ902-15. 10.5.3
4. **Revision History**

|  |  |
| --- | --- |
| **Revision Date** | **Summary of Revision** |
| August 8, 2014 | * Revised name of manual * Changed wording from “fractionated blood products” to “plasma protein products” in section 1.0 * Revised and renumbered sections 2.0 & 6.0 & 8.0 * Added “Inter-hospital Transfer Form- Blood Components/ Plasma Protein Products” to section 4.0- *Supplies* * Revised sections 5.0 & 7.0 * Updated list of references to include most recent editions |
| August 14, 2017 | * 5.2.1 – updated expiry of irradiated RBC to comply with NAC recommendations and change to CBS policy * 5.2.3 – hospitals are not required to confirm phenotype if appears on label/tag from blood supplier * References updated |