



Document History:

Title: Inter-facility Shipping of blood, blood Components and plasma protein Products (derivatives)

Site(s): ALL DSM TM Sites

Document #:	160-INV-18	Version #:	06
Section:	Transfusion Quality Manual for blood banks	Subsection:	INV Module

Approved by:	<u>Dr. Charles Musuka</u>	Written By:	<u>TM Discipline Team</u>
Signature:			
Date:	<u>18-MAR-2016</u>	Date:	<u>MAR-2011</u>

#	Details of Revisions:	Approval:	Date:
1	New document	A. Kabani	31-MAR-2011
2	<ul style="list-style-type: none"> 1.1 added bullets to clarify when blood may be transferred without a patient. 6.1 and 6.2 added 	C Musuka	23-FEB-2012
3	<ul style="list-style-type: none"> 2.5 removed as no longer applicable as per CBS customer letter #2012-05 2.1, 4.5,4.10,4.11 and 4.16 added "for Trace Line sites packing slip" 1.1 added approval of "TM medical director or designate/TM physician on call" to 3rd bullet 4.6 added applicable Trace Line procedures 4.0 in table removed Pentaspan/Voluven 4.0 Note added to ensure facility can receive product requested 4.7.3.2 removed Pentaspan/Voluven 4.1 Note revised to customer letter # 2012-05 	C Musuka	22-OCT-2012
4	Addition of Procedural Note 6.3 and 6.4	C Musuka	31-JAN-2014
5	Revision of Note under table in 4.4	C Musuka	04-AUG-2015
6	<ul style="list-style-type: none"> Updated throughout with change to "plasma protein products" 1.1 3rd bullet revised and new 4th bullet New scopes 2.5 to 2.10 3.0 added Shipping container tracking form 4.0 revised throughout with new packing configuration and including data loggers 4.0 and 4.5 new notes 	C Musuka	18-MAR-2016

Inter-facility Shipping of blood, blood Components and plasma protein Products (derivatives)

1.0 Principle

- 1.1** To provide a uniform process for shipping and tracking blood, blood components and plasma protein products (derivatives) that may or may not accompany a patient.
- blood, blood components, stock emergency red cells and plasma protein products (derivatives) ordered from a DSM Trace Line testing site and/or DSM Trace Line hub may be distributed by established routes to the non-Trace Line sites they service.
 - Uncrossmatched blood may be transferred to another DSM facility blood bank with approval of the transfusion medicine medical director or designate/TM physician on call.
 - Thawed plasma may be transferred to another DSM facility blood bank with approval of the Transfusion medicine medical director or designate/TM physician on call.
 - plasma protein products (derivatives) may transferred to another DSM facility blood banks to ensure product does not expiry
- 1.2** To ensure that the blood, blood components and derivatives are maintained at the appropriate prescribed temperature range during shipping

2.0 Scope and Related Policies

- 2.1** Each shipment of blood, blood components, and plasma protein products (derivatives) shall be accompanied by a shipping document
- INV Form- Inter-facility blood, blood component and derivative transfer (if from a non-Trace Line facility)
 - packing slip (if from a Trace Line facility)
- 2.2** All blood, blood components and plasma protein products (derivatives) shall be visually inspected immediately before packing for shipping. This inspection must be documented.
- 2.3** Acceptable conditions for the blood, blood components and plasma protein products (derivatives) shall be maintained during shipping:
- blood and thawed plasma with a required storage temperature of 1°C to 6°C shall be shipped in a manner that will ensure maintenance of a temperature in the range of 1°C to 10°C.
 - plasma protein products (derivatives) with a required storage temperature of 2°C to 8°C shall be shipped in a manner that will ensure maintenance of a temperature in the range of 2°C to 10°C.
- 2.4** blood components or plasma protein products (derivatives) required to be stored at 20°C to 24°C shall be shipped at 20°C to 24°C.
- Platelet agitation may be discontinued for up to 24 hours during shipping.
- 2.5** Red cells shipped from DSM Trace Line testing site and/or DSM Trace Line hub site to non-Trace Line facility shall have data logger enclosed
- This includes stock emergency red cells and patient specific crossmatched units

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2.0 Scope and Related Policies cont'd

- 2.6** Red cells requested to be sent with patient being transported by ambulance/Life Flight/Stars from one facility to another facility **do not** require a data logger to be enclosed
- 2.7** Red cells to be returned to DSM Trace Line testing site and/or DSM Trace Line hub site shall have data logger enclosed. This includes:
- Patient specific crossmatched units no longer required for patient
 - Stock emergency red cells returned prior to expiry following receipt of replacement units
- 2.8.** When a facility has red cells to be returned; the DSM Trace Line testing site and/or DSM Trace Line hub site where the units are being returned must provide the programmed data logger
- DSM Trace Line testing site and/or DSM Trace Line hub site may send programmed data logger when required or maintain programmed loggers at site they service
- 2.9** For sites with emergency stock product for home program patients
- Rotate stock when regular dose is received
 - If product is within 60 days of expiry contact Home Program to determine if product can be sent to another facility
- 2.10** Paramedics in rural Manitoba are not authorized to perform blood transfusions in the ambulance
- blood products can only be sent with patient being transported by ambulance if a clinical staff member trained in blood product administration is accompanying the patient

3.0 Materials

CBS shipping containers (inner Styrofoam with a heavy outer cardboard box)

- J-82 (regular blood box). Dimensions 11.5"wx12.5"hx11.5"d
- E-38 (large shipping box traditionally used for shipping platelets with 4 " foam plug)

Plastic bag

Gel pack(s) in sealable bags (dimensions 10.5" w X 9.5"h)

- Room temperature for platelets
- 2°C to 6°C for Red blood Cells and thawed plasma

Hard walled ice packs(s) in sealable bags (dimensions at least 8" w X 8" h) - frozen

Corrugated cardboard insert(s), dimensions at least 8" w X 8"h

packing material (e.g. crumpled paper, bubble wrap)

Address label

Waybill (when applicable)

Security seals

Appropriate blood bank log

Patient report (when applicable)

packing slip (Trace Line sites)

INV Form-Inter-facility blood, blood Components and derivatives transfer

INV Form- Instruction for Completion of Inter-facility blood, blood Components and derivative transfer

Record of Transfusion (ROT) - Only with "Trace Line" LIS issued units

INV Form-Patient Care Team Instructions

blood, blood Component or plasma protein product (derivative) to be shipped

Shipping Container Tracking Form F160-QCFORM-38

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4.0 Procedure

Note: Prior to shipping product, ensure receiving Hospital is able to receive product requested. Refer to activity report form (most current updated report available from DSM Quality department).

Note: If requested to ship product with a patient being transported by ambulance/Life Flight/Stars; a clinical staff member trained in blood product administration must accompany the patient

- Paramedics in rural Manitoba are not authorized to perform blood transfusions in the ambulance
- blood products cannot be sent with a patient if only a paramedic is accompanying the patient

4.1 Ensure that blood, blood component or plasma protein product (derivative) being shipped will be transported at room temperature inside the transport vehicle. (such as being transported in the cab of the vehicle with the driver).

Note: If unable to ship red blood cells inside the transport vehicle at room temperature refer to CBS customer letter # 2012-05 (View at www.blood.ca in the "Hospitals" section) in regards to appropriate shipping and packing protocol dependent if shipping container will be exposed to temperatures below 0°C for extended periods of time.

4.2 Determine which blood, blood components or plasma protein products (derivatives) are to be shipped and what type of shipping container to be used.

4.3 Inspect the shipping container and ensure:

- The inner container is clean and free of breaks
- The security seals and buckles are in good condition
- The outer container is free of breaks
- There are no conflicting address labels on the outer container

4.4 Prepare the shipping container according to the criteria in the following table.

Note: Maximum number of blood, blood components to be packaged in one shipping container:

- Red cell units: 10
- Adult doses of platelets: 6
- plasma (thawed): 10 units

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**4.0 Procedure cont'd...
For Transportation inside Transport Vehicle at Room Temperature**

blood Product	Type of Pack	Placement of Pack(s) and Cardboard inserts	Pack Storage Temperature Before Using
Red blood cells, thawed plasma – up to 10 units	Ice pack (frozen) Gel pack (2°C to 6°C)	<p>One ice pack: Place upright, at one end of the shipping container.</p> <p>Cardboard: Place 2 inserts next to each ice pack as needed *If the ice pack storage is colder than -20 ± 3°C, ensure that there are 4 cardboards inserts between the ice pack and the blood or blood components</p> <p>One gel pack: Place gel pack beside the red cells/thawed plasma on other side of the shipping container</p> <p><i>Note: Fill any empty space between gel pack and end of the shipping container with packing material</i></p> <p>Data Logger: Place between the red cells units and secured with elastic</p>	<p>Ice Pak: * -20 ± 3°C for at least 24 hours</p> <p>Gel pack: 2°C to 6°C for at least 24 hours</p>
Platelets (1 to 4)	Gel pack (room temp)	Three packs: Place two flat, at bottom of container, and one on top of units, then 4" foam plug	22 ± 2°C for at least 24 hours
Platelets (5 to 6 units)	Gel pack (Room temp)	Two gel packs: Place one flat at bottom of container, and one on top of units, then 4" foam plug	22 ± 2°C for at least 24 hours
plasma protein products (derivatives) • requiring refrigeration	Ice pack (frozen)	<p>One ice pack: Place upright at end of the shipping container.</p> <p>Cardboard: Place 2 inserts next to the ice pack *If the ice pack storage is colder than -20 ± 3°C, ensure that there are 4 cardboards inserts between the ice pack and the blood or blood components</p> <p><i>Note: Fill any empty space with packing material</i></p>	<p>Ice Pak: * -20 ± 3°C for at least 24 hours *</p>
plasma protein products (derivatives) ` • not requiring refrigeration	none required	<i>Note: Fill any space with packing material</i>	Not applicable

Note: CBS packing protocols allow for greater than 10 units of blood to be packed in a box. DSM protocols only allow up to 10 units.

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4.0 Procedure Cont'd...

4.5 For each shipping container prepare the following

- For non-Trace Line sites-INV Form- Inter-facility blood, blood Component and derivative transfer
- For Trace Line sites- packing slip
- Obtain the name of the destination facility and the identity of the transport personnel, if the shipment accompanies a patient.

Note: *blood products cannot be sent with a patient if only a paramedic is accompanying the patient*

- *Paramedics in rural Manitoba are not authorized to perform blood transfusions in the ambulance*

4.6 Remove from storage and issue blood, blood components or plasma protein products (derivatives) before packaging.

- For non- Trace Line sites-refer to INV Procedure- Issuing blood, blood Components and derivatives and ensure documentation of return is completed in appropriate lab log
- For Trace Line sites ensure product is issued from Trace Line- Refer to TL Procedures- Issuing of blood, blood Components in Trace Line to Patients: Within a Facility/To an External Facility/Home Program patient and Issue in Trace Line: i) Stock Emergency blood to Satellite Location/External Facility ii) Stock derivatives to an External Facility
- Place units in plastic bag along with Record of Transfusion (ROT) if applicable

4.7 Prepare shipping container box

4.7.1 For packing Red cells, thawed plasma - when transporting inside a transport vehicle at room temperature

- Use one ice pack per container. Place ice pack at one end of shipping container
- Place cardboard insert next to ice pack .Two insulated corrugated boards are required.

Note: *If the ice pack storage is colder than $-20 \pm 3^{\circ}C$, ensure that there are four cardboard inserts between the ice pack and the red cells or thawed plasma*

- Place RBCs/thawed plasma in upright position next to cardboard inserts Ports of RBC may be folded, if necessary.
- Place a gel pack ($2^{\circ}C$ to $6^{\circ}C$) beside the RBCs/thawed plasma on other side of shipping container
- Empty air space in the container must be minimized. Move the gel pack close to the blood product and fill empty space with packing material
- Close box leave for 5 to 10 minutes before placing product in box

Ice pack Cardboard inserts Red cell units/Thawed plasma Gel pack packing Material



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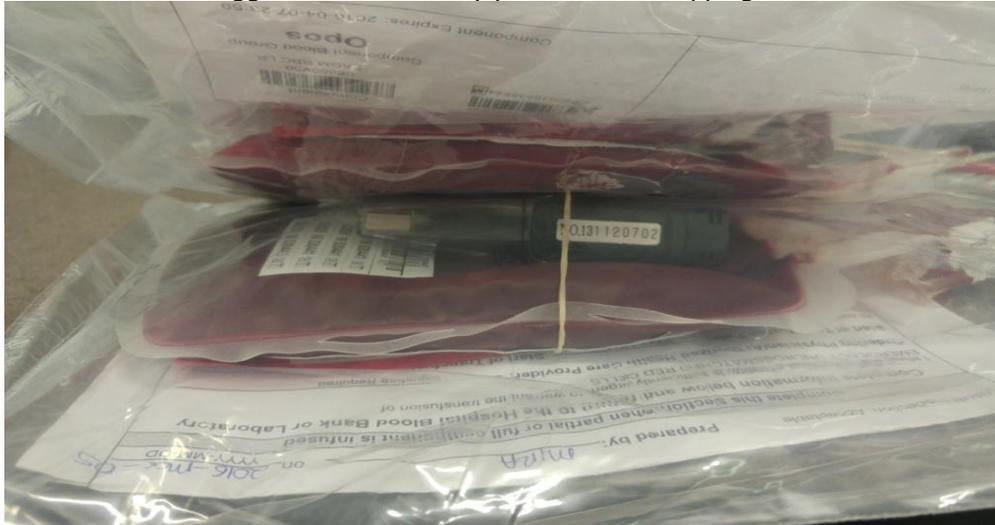
4.0 Procedure Cont'd...

4.7.1 cont'd

4.7.1.2 For Red cells being shipped with data logger; refer to INV Procedure- Temperature Verification in Red Cell Shipments: Use of Temperature Data Logger and Download of Data Files step 4.1

Note: Red cells requested to be sent with patient being transported by ambulance/Life Flight/Stars from one facility to another facility **do not** require a data logger to be enclosed

- Complete Shipping Container Tracking Form F160-QCFORM-38
- Place programmed data logger between the red cells units and secure with elastic
- Place units in fridge for 5 to 10 minutes
- Start data logger and immediately place units in shipping box



4.7.2 For packing plasma protein products (derivatives) that require refrigeration when transporting inside a transport vehicle at room temperature

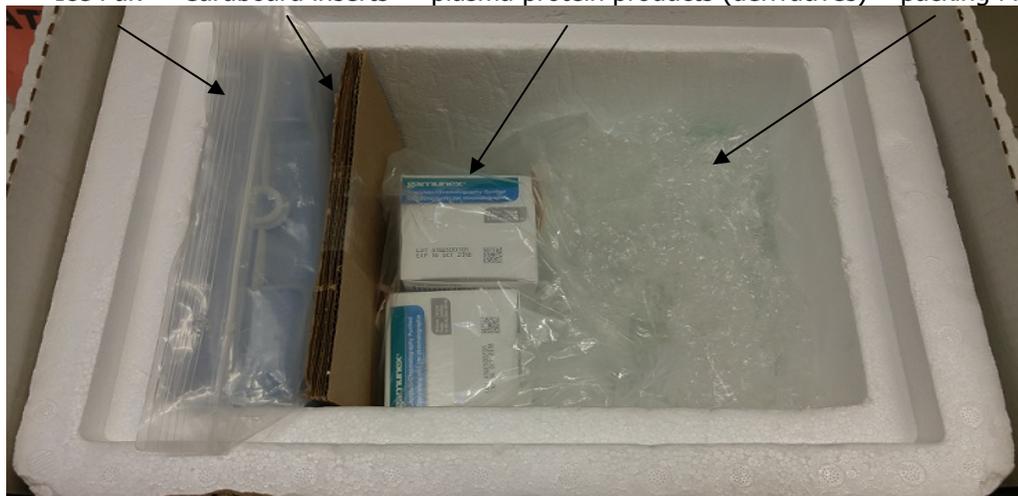
- Use one ice pack per container. Place ice pack at one end of shipping container
- Place cardboard insert next to ice pack .Two insulated corrugated boards are required.

Note: If the ice pack storage is colder than $-20 \pm 3^{\circ}\text{C}$, ensure that there are four **cardboards inserts between the ice pack and the red cells or thawed plasma**

- Place plasma protein products (derivatives) next to cardboard inserts
- Empty air space in the container must be minimized. Move the ice pack close to the product and fill empty space with packing material

Note: If packing plasma protein products (derivatives) that do not require refrigeration; place product in container and fill empty space with packing material

Ice Pak Cardboard inserts plasma protein products (derivatives) packing Material



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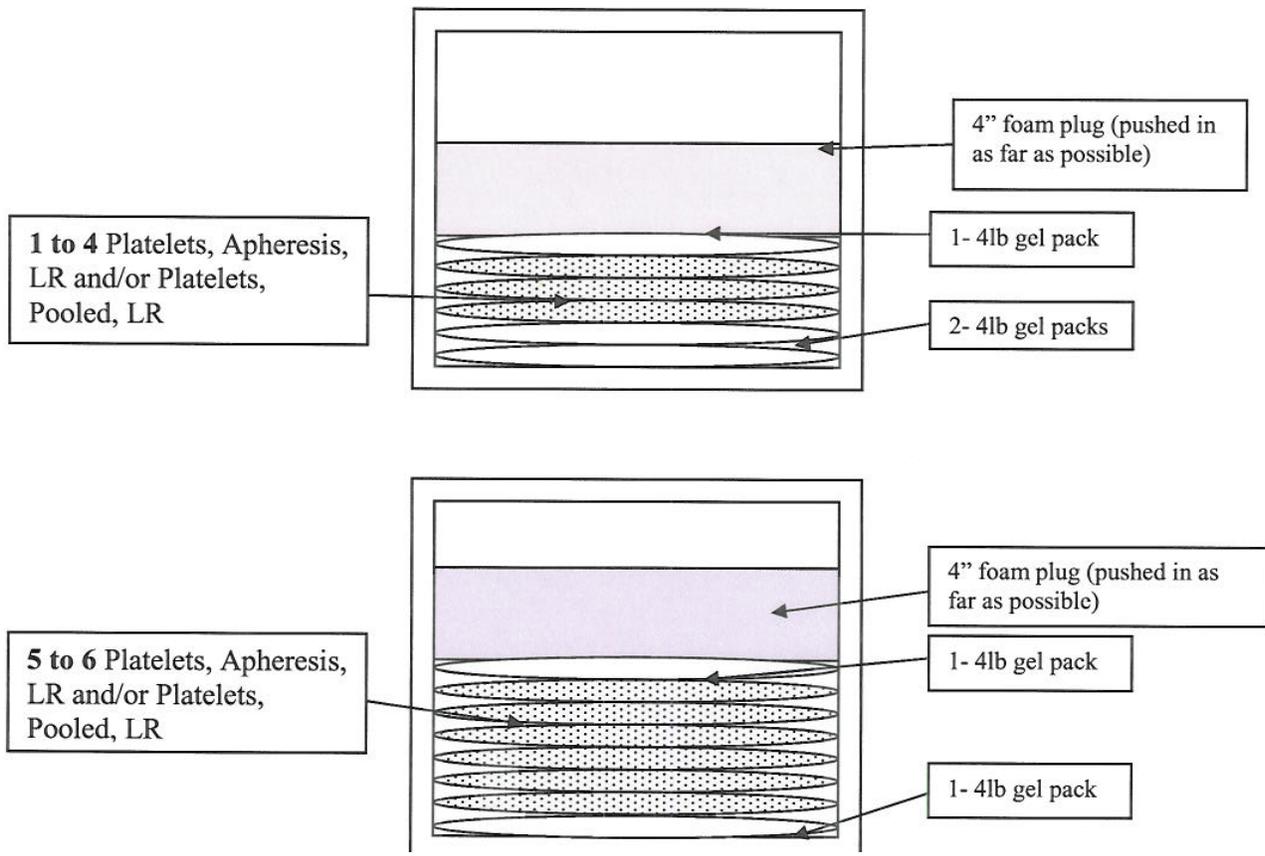
4.0 Procedure Cont'd...

4.7.3 For packing Platelets. Platelets **shall** always be transported at room temperature.

Note: *If packing more than on unit of platelets reverse the ports to ensure platelets will lay flat*

- To maximize survival time, pack to simulate a full shipment as indicated below:

If shipping...	Then place...	And...
1 to 4 Platelets, Apheresis, LR and/or Platelets, Pooled, LR	2 gel packs on bottom	1 gel pack on top of product followed by 4" foam plug.
5 to 6 Platelets, Apheresis, LR and/or Platelets, Pooled, LR	1 gel pack on bottom	1 gel pack on top of product followed by 4" foam plug.



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4.0 Procedure Cont'd...

- 4.8** Close the lid of the inner Styrofoam container.
- 4.9** Retain a copy of (photocopy if necessary)
- For non- Trace Line sites-INV Form- Inter-facility blood, blood Component and derivative transfer
 - For Trace Line sites- packing slip
 - If shipping red cells with data logger -Shipping Container Tracking Form F160-QCFORM-38
- 4.10** On the top of the Styrofoam lid in the shipping container place:
- For non- Trace Line sites-the original INV Form- Inter-facility blood, blood Component and derivative transfer, and BTS patient report (if applicable)
 - For Trace Line sites-One copy of the packing slip, and Transfusion medicine Results Report (if applicable)
 - If shipping red cells with data logger completed Shipping Container Tracking Form F160-QCFORM-38
- 4.11** Close the cardboard shipping container, fasten the strap securely, and attach a security seal to the strap.
- Security seals are usually plastic and must be placed through the two sides of the strap. This provides assurance that the box was not opened "en route".
- 4.12** Address the shipping container.
- If shipping by public transportation, place a large label with the address of the receiving facility on the outside of the container
 - If shipping with a patient, complete INV Form- patient Care Team Instructions and tape to the outside of the container
- Note:** *Ensure a "Do not Refrigerate-Keep at Room Temperature" label is affixed*
- 4.13** Prepare a waybill if applicable, and attach to the shipping container:
- Retain shipper copy
- 4.14** Contact one or more of the following to arrange for shipping:
- Designated transport personnel
 - Patient care area
 - Patient transport personnel
- 4.15** To the receiving facility lab/blood, bank/BTS fax a copy of
- For non-Trace Line sites-INV Form- Inter-facility blood, blood Component and derivative transfer
 - For Trace Line sites- packing slip

5.0 Reporting

- 5.1** For non-Trace Line sites: document the transfer information (including facility) and the blood, blood components and /or derivatives' information in the appropriate blood bank log.

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6.0 Procedural Notes

- 6.1** If product is being transported with a patient and final destination blood bank has not been determined, fax a copy of the Inter facility blood, blood Component and derivative transfer/packing slip to the Transfusion medicine Office for investigation.
- 6.2** Facility Fax numbers may be found on the DSM intranet.
- 6.3** If a DSM site receives a shipment from CBS for another DSM site in error and
- There is no mechanism in place to deliver the box directly to the correct site without opening it
 - Receiving site is **not** DSM Trace Line testing site and/or DSM Trace Line hub site that is acting as a transport facilitator. The receiving DSM site must
 - Notify CBS immediately by telephone and follow with a completed CBS Customer Feedback Form
 - Deface all patient identifiers from packing slips prior to filing and document that this has occurred on the CBS Customer Feedback Form
 - Document receipt of the product in manual logs books if applicable but do not include the original patient demographics.
 - Document unit information with comment that the units were sent in error and ensure final disposition is complete.
 - If the product in question is difficult to replace (e.g. Special phenotyped units, or washed red cells etc) call the TM physician on call for instructions.
- 6.4** If there is any delay in the transport of products:
- Identify the reason with the transport driver
 - Unpack the box and perform visual inspection
 - Quarantine product
 - Call TM physician on call for instructions
 - Complete a TM Consult Form
 - Ensure all documentation of product and final disposition is complete.