Beaumont Laboratory
Royal Oak

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Related Documents: P214, P216, P226, P227, P401, P421, P511, P515

SELECTION OF PLATELETS, PLASMA, AND CRYOPRECIPITATE FOR PATIENTS GREATER THAN FOUR MONTHS OLD

RC.BB.CP.PR.229.r01.08.00

Purpose

The purpose of this document is to provide policies relating to the selection of platelets, plasma, and cryoprecipitate for patients greater than four months old.

Scope

This document applies only to the selection of platelets, plasma, and cryoprecipitate for patients greater than four months old.

- This document does not apply to patients less than four months old; if applicable, refer to P515, Policies for the *Selection of Blood Components for Neonatal Transfusion.*
- The policies in this document relating to volume reduction of platelets apply to platelet pheresis products and to platelet pools.
- For patients requiring granulocytes, refer to P216, *Granulocytes by Apheresis*.
- If applicable, refer to P214, *Screening for Platelet Antibodies and Provisions of Special Requests for Platelets*.
- For special transfusion requirements (e.g., cytomegalovirus negative, washed, irradiated, IgA deficient components, etc.) refer to P226, *Special Transfusion Requirements for Patients Greater Than Four Months Old* and to P511*, Washing Platelet Components.*

Principle

The transfusion of ABO-plasma-incompatible products could potentially cause an ABO hemolytic transfusion reaction. The risk is higher for the following populations:

- Group A recipients transfused with group O platelets having a high titer of Anti-A.
- Pediatric patients (less than 12 years old)
- Patients who have received a stem cell transplant.

The policies in this document are meant to reduce the risk of ABO hemolytic transfusion reactions caused by the transfusion of ABO-plasma-incompatible products. These policies are summarized in the Job Aid.

Introduction / Job Aid

The policies in this document are summarized in Table 229, *Selection of Plasma, Cryoprecipitate, and Platelets for Patients Greater than Four Months Old.* This table is copied in a Job Aid and is posted on the platelet rotator. This table indicates the appropriate ABO and Rh of platelets based on: the ABO and Rh of the recipient and the donor, the recipient's age and sex, and whether the patient is known to have received an allogeneic stem cell transplant. This table also indicates whether platelets require volume reduction.

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Policies

Policy to Adhere to Table 229 (the Job Aid)

The technologist must adhere to Table 229 (the Job Aid) when selecting platelets, plasma, and cryoprecipitate.

Bloody Platelets - Platelet components that contain 2 mL or more of donor red blood cells (referred to as "bloody" platelets) must be crossmatch compatible with the recipient.

- The blood supplier may identify a platelet as containing 2 mL or more of donor RBCs. In this case, a pilot tube will usually be supplied by the blood supplier for additional testing that may be required by the transfusion service.
- The *Job Aid: American Red Cross Visual Inspection Reference Guide* includes photographs of platelets that may be used as a standard to determine whether a platelet potentially contains more than 2 mL of donor RBCs. If the red color or tint of the platelet in question is darker than the standard in the job aid then the platelet is considered to be bloody and a crossmatch is required. This job aid is located in a binder at the triage workstation, with the Triage CDMs.
- If a crossmatch is required for a bloody platelet, it is documented on F-120g, *Downtime Special Studies Crossmatching Worksheet.* A segment from the platelet is obtained and centrifuged, to obtain packed cells. An immediate-spin crossmatch is then performed using the recipient's plasma vs. the donor RBCs. A comment with the crossmatch results should be added to the patient's record, under the CMTXT (comment text).

Compatibility Testing

The patient must have a properly labeled sample that was collected during the current admission in order to select platelets, plasma, or cryoprecipitate. The required ABO/Rh testing must be complete, but it is not necessary to wait for the antibody screen results before selecting or dispensing platelets, plasma, and cryoprecipitate. If only an ABO/Rh is ordered for a patient who will receive platelets, plasma, or cryoprecipitate as an outpatient (an antibody screen is not ordered), then the Blood Bank will not perform an antibody screen. Refer to the *Policy to Confirm that ABO/Rh Testing is Complete for Platelets, Plasma, and Cryoprecipitate* in P401, *Dispensing Blood Components.*

Thawing Plasma for Therapeutic Apheresis

When the Blood bank receives an order for therapeutic apheresis, the following steps should be performed:

- Call the **dialysis unit** (ext. 81666) and ask to speak with the patient's caregiver.
- Ask what time the procedure will begin and what volume of FFP will be used.
- After considering the time the procedure will begin and the desired volume of FFP, prepare (thaw / select) the appropriate number of FFP units. Typically, the care giver will place orders for a certain number of FFP units. It is more important for the Blood Bank to thaw the desired <u>volume</u> of FFP than to thaw the number of units that were ordered. Note that it is unlikely that the total volume of thawed FFP will exactly match the desired volume; it is better to reach a thawed volume greater than the desired volume (as opposed to a thawed volume less than the requested volume). For example:

  The floor places an order for 14 units of FFP in EPIC. The Blood Bank calls hemodialysis to determine the desired <u>volume</u> of FFP. They indicate that a volume of 3L (3000mL) will be used. The technologist determines that the sum for the individual volumes of 12 FFP units is 3082 mL. The technologist thaws these 12 FFP units to meet the desired volume (does not thaw 14 units as were ordered).

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Large-Volume Platelets

Platelets with a volume larger than 300 mL are considered to be large-volume platelets. Large-volume platelets should be issued only in the following situations:

- If the patient is currently in the operating room (OR). This is acceptable because the patient's vital signs are monitored in OR.
- If the platelet is being issued as part of a massive transfusion protocol or emergency issue.
- With the notification / approval of the patient's caregiver. This approval will be added as a patient comment in the Blood Bank computer.

When receiving large-volume platelets into inventory, the LGVOL (large volume) attribute is added to the unit, and a notation of the large volume is made on the platelet board.

Double-Bagged Platelets

A large-volume platelet pheresis may be received from the blood supplier in two bags, to permit adequate gas exchange. If a large-volume platelet is received in two bags, then the bags should be combined immediately prior to dispense. The expiration date of the combined platelet is the shorter of:

- The original expiration date (before combining), or
- 24 hours from the time that the bags are combined.

The expiration date is changed as described in the Triage CDM flow *Combining a Double-Bag Platelet Pheresis*

Selection of Platelets based on Rh(D) / Anti-D

- Females 50 years old or younger, and males 18 years old or younger should be transfused with Rh compatible platelets (to prevent Anti-D / alloimmunization). This policy includes patients with passive D (e.g., due to RhIG administration) or a "DUNK" antibody (unknown whether Anti-D reactivity is due to alloimmunization or recent RhIG administration). If applicable refer to the policy *Transfusion of Components that are not Rh Compatible.*
- If a patient has anti-D, it is not necessary to dispense Rh negative platelets unless the platelet has been identified by the blood supplier to contain 2 mL or more of donor red blood cells.

Transfusion of Components that are not Rh Compatible

The Blood Bank will attempt to dispense Rh-compatible platelets. However, if platelets that are not Rh compatible must be dispensed, then the patient's physician must be notified after the event if the patient is:

- a female 50 years old or younger, or
- a male 18 years old or younger.

In these cases, the technologist shall:

- Suggest the use of RhIG or WinRho to the patient's caregivers.
- Document a variance report for follow up with the Medical Director.

Note: After approximately 14 days or 7 Rh positive units have been transfused; the blood bank will notify the caregiver to suggest another dose of RhIG or WinRho, if transfusions will be continuing.

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Isohemagglutinin Titers Performed by Blood Suppliers

- Versiti Michigan performs isohemagglutinin titers (for Anti-A and Anti-B) of all group O apheresis platelets. If the Anti-A or Anti-B titer is above 250, then the platelet will be labeled by Versiti Michigan with the *Isohemagglutinin Tag*. Note that every pooled platelet is screened, but apheresis platelet donors are screened only once. Refer to the communication with Michigan Blood relating to isohemagglutinin titers of group O platelets, 4/22/2013, attached.
- Appleton performs titers for Anti-A on all group O apheresis platelets. If the Anti-A titer is above 250, then the platelet will be labeled by Appleton with the *Anti-A Titer ≥ 1:250 Tag.* Refer to the communication with Appleton Community Blood Center relating to Anti-A titers of group O platelets, 5/6/2013, attached.
- Group O apheresis Platelets that are not collected at Versiti Michigan or Appleton (i.e. Versiti Indiana, Versiti Wisconsin, American Red Cross, etc.) do not routinely have isohemagglutinin titers performed on them.
- Isohemagglutinin titers are not applicable for any group O pooled platelets that are received. If one of the donors within the pool has a high isohemagglutinin titer, the concentrations of Anti-A or Anti-B will be diluted by the other donors within the pool.

Attributes for Group O Platelets

- When group O apheresis platelets from Versiti Michigan or Appleton are processed into inventory, an attribute will be added to indicate whether Versiti Michigan platelets have a high isohemagglutinin titer or Appleton platelets have a high Anti-A titer. This attribute is added to all group O apheresis Versiti Michigan and Appleton platelets as described in the Triage CDM flow *Add / Delete / Display / Edit Unit Attributes.*
    - One of the following attributes will be added: TITH (high isohemagglutinin titer) or TITN (isohemagglutinin titer not high).
- When group O apheresis platelets that are collected at facilities other than Versiti Michigan or Appleton (i.e. Versiti Indiana, Versiti Wisconsin, American Red Cross, etc.) are processed into inventory, a TITU (isohemagglutinin titer unknown) attribute will be added as described in the Triage CDM flow *Add / Delete / Display / Edit Unit Attributes* However, in some instances the apheresis platelet may come labeled as low or normal titer from the supplier, in which case the TITN attribute will be added instead.
- When group O pooled platelets are processed into inventory, no titer attribute will be added.

  Note that all titer codes will display in Soft, for example, under Inventory / Display / Unit. These codes have been purposely built so that if the TITH or TITU attributes are added, then the notation “high isohemagglutinin titer” or “isohemagglutinin titer unknown” will print on the crossmatch tag. If the TITN attribute is added, nothing will print on the crossmatch tag.

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Group O Platelets with a High or Unknown Isohemagglutinin Titer

- If Versiti Michigan or Appleton apheresis platelets have a high isohemagglutinin titer, they must be volume reduced if transfused to a non-group O recipient as indicated in the Job Aid.
- If we receive type O apheresis platelets that are not collected at Versiti Michigan or Appleton and do not have isohemagglutinin titers performed, they must be volume reduced if transfused to a non-group O recipient as indicated in the Job Aid.
- The platelet board at Triage should be documented with a notation to indicate that the platelet has a high titer, when applicable.

Volume Reduction of Platelets

- In order to reduce the risk of ABO hemolytic transfusion reactions caused by the transfusion of ABO-plasma-incompatible platelets, in some cases platelets should be volume reduced. Table 229 (the Job Aid) indicates whether the platelets require volume reduction.
- When indicated, platelets are volume reduced as described in P227, *Volume Reduction of Platelets*.

Pathogen Reduced Platelets

Pathogen reduced platelets may be selected for patients requiring irradiation or CMV negative products. Platelets treated with psoralin are equivalent to a platelet needing to be irradiated or CMV negative.

Emergency Issue / Massive Transfusion

In an emergency issue or massive transfusion the Blood Bank will attempt to issue platelets of the appropriate ABO group, as indicated throughout this document and in the Job Aid. However, if platelets of the appropriate ABO group are unavailable, then it is not necessary to volume reduce platelets for the patient who requires the emergency issue or massive transfusion. These cases are reviewed at Blood Bank rounds.

Documentation of a Variance Report

If volume reduced platelets are indicated, but non-volume reduced platelets are dispensed for any reason other than emergency issue or massive transfusion, then this occurrence shall be documented in a variance report.

Guidelines for Platelet Inventory Management

- Group O platelets will be issued preferentially to group O recipients.
  For example, a technologist is deciding whether to issue a group O platelet or a group A platelet to a group O recipient. Both platelets expire on the same day. The group O platelet should be issued.
- After considering any special transfusion requirements and the ABO/Rh of the recipient and the donor (refer to the Job Aid), platelets with the shortest expiration date shall generally be issued from the Blood Bank first.
- If given a choice by the blood supplier, the Blood Bank will request non-group O platelets.
- The dry erase platelet board in the triage area is used to monitor platelet inventory. The following information is recorded on this board: ABO/Rh; expiration date; special attributes; whether a platelet is crossmatched, HLA matched, volume reduced, large-volume, on hold for a specific patient, etc.

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Transfusion Limits for Patients Receiving ABO-Incompatible Plasma Products
Patients receiving significant volumes of plasma containing incompatible ABO antibodies or unexpected red cell antibodies are at an increased risk for adverse effects. Therefore, the number of ABO-incompatible transfusions to a patient within a 24 hour period should not exceed:

- 6 units of plasma (including both thawed plasma and liquid plasma).
    - Ideally, plasma should always be ABO-compatible. However, some situations such as massive transfusions and inventory shortages may require the use of ABO-incompatible plasma.
- 10 units of platelets (including both pooled and apheresis platelets; does not include volume reduced platelets). 1 unit of pooled platelets = 5 individual units/donors.
- 10 units of pooled cryoprecipitate. 1 unit of pooled cryoprecipitate = 5 individual units/donors.

If the number of transfused ABO-incompatible products exceeds these limits, it shall be reviewed by the Blood Bank Medical Director to determine if any adverse outcomes have occurred.

Examples (Platelet Selection)
Refer to the Job Aid (Table 229) *Selection of Plasma, Cryoprecipitate, and Platelets for Patients Greater than 4 Months Old*

A 10 year-old child is type A positive.

- *The only available platelets are group O apheresis platelets. The platelets must be volume reduced.*
- *The only available platelets are group O pooled platelets. The platelets must be volume reduced.*
- *The next day, the only available platelets are group B apheresis platelets. The platelets must be volume reduced.*

An adult is type A positive.

- *The only available platelets are group O apheresis platelets collected by the American Red Cross. The platelets must be volume reduced.*
- *The only available platelets are group O apheresis platelets collected by Appleton. The platelets were not labeled with a high isohemagglutinin titer by Appleton, and the TITN* (titer not high) *attribute was added. These platelets do not require volume reduction.*
- *The only available platelets are group O pooled platelets. These platelets do not require volume reduction.*
- *The next day, the only available platelets are group B apheresis platelets. It is not necessary to volume reduce the platelets.*

A woman in labor is Rh(D) negative and has Anti-D. Rh negative or Rh positive platelets may be dispensed (she already has Anti-D; there is no longer a need to prevent alloimmunization).

A woman in labor has passive D due to RhiG or a DUNK antibody. Rh negative platelets should be dispensed (to prevent alloimmunization).

An elderly man is Rh(D) negative and has Anti-D. It is acceptable to issue Rh positive platelets (unless the platelet is bloody).

Definitions

- **ABO-identical component:** A component that is of the identical blood group as the recipient.
- **ABO plasma-compatible:** Refers to a platelet, plasma, or cryoprecipitate component that does not contain ABO antibodies corresponding to the recipient's ABO antigens.
- **Alloimmunization:** The process whereby a recipient forms antibodies in an immune response to foreign antigens on donor RBCs.
- **BBCDM:** Blood Bank Computer Documentation Manual
- **Bloody Platelets:** Platelet components that contain > 2 mL of donor red blood cells
- **CMV:** Cytomegalovirus
- **HIS:** The hospital-wide computer system
- **Neonates:** Patients from birth to 4 months old.
- **Passively acquired antibodies:** Antibodies that are transferred from the donor(s) to a recipient through the transfusion or administration of plasma-containing components (i.e., RhIG administration).
- **Pediatric patients:** Generally, patients from 4 months old through 18 years old. Note that in this document, the appropriate ABO of certain blood components is based on whether the patient is:
  - Greater than 4 months old and less than 12 years old, or
  - Greater than 12 years old.
- **Rh compatible:** A blood component of the following specificity:
  - For a Rh negative recipient, the component is Rh negative.
  - For a Rh positive recipient, the component is either Rh positive or Rh negative.
  - For a recipient with a Rh type that is undetermined for any reason, the component is Rh negative.
- **Unexpected antibody:** Any antibody (other than naturally occurring Anti-A or Anti-B that is regularly found in normal serum or plasma) that is currently or was historically present in a patient's sample.

Specimen Collection and Handling

Refer to the referenced Standard Operating Procedures (SOPs).

Forms

F-120g, *Downtime Special Studies Crossmatch Worksheet*

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Table 229: Selection of Plasma, Cryoprecipitate, and Platelets for Patients Greater than 4 Months Old

Component	Age of Recipient	ABO of Recipient	Appropriate Donor ABO	Appropriate Donor Rh
Thawed Plasma	Greater than 4 months old	AB or undetermined	AB	Any Rh type
		A	A or AB	
		B	B or AB	
		O	O, A, B, or AB	
Thawed Cryo-precipitate	Greater than 4 months old, and less than 12 years old	AB or undetermined	AB	Any Rh type
		A	A or AB	
		B	B or AB	
		O	O, A, B, or AB	
	12 years old or greater	any	any	
Platelets .	Greater than 4 months old, and less than 12 years old	Undetermined	AB or volume reduced	Females ≤ 50 years old, and males ≤ 18 years old should be transfused with Rh compatible platelets. If applicable refer to the P229 policy Transfusion of Components that are not Rh Compatible.
		AB	AB or volume reduced	
		A	A, ~~or~~ AB or volume reduced	
		B	B, ~~or~~ AB or volume reduced	
		O	1st choice: O Alternate: A, B, or AB	
	12 years old or greater	GND (Group not determined) and NOT known to have had a bone marrow or stem cell transplant.	A, B, AB or O low titer apheresis, or O pooled	
		GND (Group not determined) and known to have had a bone marrow or stem cell transplant.	Group AB or volume reduced (A, B or O)	
		O	1st choice: O Alternate: A, B, or AB	
		A, B, or AB	• 1st Choice: ABO identical • 2nd Choice: ABO-plasma-compatible • 3rd Choice: Non-group O and not ABO-plasma-compatible • 4th Choice: Group O apheresis platelets that do not have an unknown or high isohemagglutinin titer, or group O pooled platelets. • 5th choice: Volume reduced group O apheresis platelets that have unknown or high titers.	

Notes

1. After considering any special transfusion requirements and the ABO/Rh of the recipient and the donor, platelets with the shortest expiration date shall generally be issued from the Blood Bank first.
2. Once the patient's required ABO/Rh testing is complete then platelets, plasma, or cryoprecipitate may be selected and dispensed; it is not necessary to consider or to wait for antibody screen results.
3. ABO-plasma-compatible: refers to a platelet, plasma, or cryoprecipitate component that does not contain ABO antibodies corresponding to the recipient's ABO antigens.
4. Group A liquid plasma may be used during a massive transfusion protocol in some situations, even if the ABO of the recipient is undetermined. Refer to P421, *Providing Blood Components for Massive Transfusion*.
5. For patients less than 4 months old, refer to P515, *Policies for the Selection of Blood Components for Neonatal Transfusion.*
6. For patients greater than 4 months old and less than 12 years old: If ABO plasma-compatible cryoprecipitate is unavailable, then cryoprecipitate that is not ABO-plasma-compatible may be used but group O is least preferred.

Attachments

- The *Job Aid: Selection of Platelets, Plasma, and Cryoprecipitate for Patients Greater than 4 Months Old* is located on the platelet rotator. This job aid includes a copy of Table 229.
- The *Job Aid: Labeling Blood Products / Volume Reduced Platelets* is located in a binder at the triage workstation, with the Triage CDMs.
- Communication with Michigan Blood relating to isohemagglutinin titers of group O platelets, 4/22/2013.
- Communication with Appleton Community Blood Center relating to Anti-A titers of group O platelets, 5/6/2013.

References

- College of American Pathologists Transfusion Medicine TRM.40670, Granulocytes And/or Platelets Crossmatch-Compatible, current CAP standards
- College of American Pathologists Transfusion Medicine TRM.40700, Whole Blood/Red Cells/Plasma, current CAP standards
- College of American Pathologists Transfusion Medicine TRM.40710, Rh Transfusion, current CAP standards
- College of American Pathologists Transfusion Medicine TRM.40720, Immunohematologic Conditions, current CAP standards
- College of American Pathologists Transfusion Medicine TRM.40740, ABO-Incompatible Donor Plasma - Infants, current CAP standards
- Communication with Michigan Blood relating to isohemagglutinin titers of group O platelets, 4/22/2013.
- Communication with Appleton Community Blood Center relating to Anti-A titers of group O platelets, 5/6/2013.

Authorized Reviewers

Chief, Pathology and Laboratory Medicine
Medical Director and/or Designee, Blood Bank
Manager/Supervisor, Blood Bank

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Document Control

Location of Master: Master electronic file stored on the Beaumont Laboratory server under S:/ Master printed document stored in the *Transfusion Medicine Standard Operating Procedure Manual*.

Number of Controlled Copies posted for educational purposes: 3

Number and Location of circulating Controlled Copies: One copy of the *Job Aid: Selection of Platelets, Plasma, and Cryoprecipitate for Patients Greater than 4 Months Old* is located on the platelet rotator (Table 229). One copy of the *Job Aid: Labeling Blood Products / Volume Reduced Platelets* and one copy of the *Job Aid: American Red Cross Visual Inspection Guide* are located in a binder at the triage workstation, with the Triage CDMs.

Document History

Signature	Date	Revision #	Modifications	Related Documents Reviewed/ Updated
Prepared by: Jennifer Sarhan	06/15/2012	r00.00.00		
Approved by: Peter Millward, MD	09/11/2012			
Reviewed by: (Signature)	**Date**	**Revision #**		**Related Documents Reviewed/ Updated**
Revised by: Jennifer Sarhan	05/01/2013	r01.00.00		
Validated by: Heather Asiala	05/17/2013			
QA: Louisa Serafimovska	06/24/2013			
Supervisor: Judy Easter	06/05/2013			
Approved by: Peter Millward, MD	06/05/2013			
Approved by: Mark Kolins, MD	08/14/2013			

Modifications

- Added the *Principle* section and added the following policies:
  Policy to Adhere to Table 299 (the Job Aid), Isohemagglutinin Titers Performed by Blood Suppliers, Attributes for Group O Platelets Collected by Michigan Blood and Appleton, Group O Platelets with a High Isohemagglutinin Titer, and *Volume Reduction of Platelets.*
- Deleted the following policies, as this information was redundant and is included in Table 229 (the Job Aid): *Policy Against the Transfusion of Group O Platelets to Non-group O Recipients, Platelets for Patients Greater than 4 Months old and Less than 12 Years Old, Platelets for Patients 12 Years Old or Greater,* and *Known Stem Cell Transplant and GND (Group not Determined).*
- Edited the *Examples* section / *An adult is type A positive.*
- Edited Table 229 (the Job Aid) / the section for selecting platelets for patients 12 years old or greater; and deleted the *ABO Requirements* column (this information is included in the *ABO of Recipient* and *Appropriate Donor ABO* columns.

Added as a reference and an attachment: Communication with Michigan Blood relating to isohemagglutinin titers of group O platelets, 4/22/2013 and Communication with Appleton Community Blood Center relating to Anti-A titers of group O platelets, 5/6/2013.

Revised by: Jennifer Sarhan	08/15/2013	r01.01.00	Revised the policy *Large-Volume Platelets*, and added the policy *Double-Bagged Platelets*.	
QA: Louisa Serafimovska	08/21/2013			
Supervisor: Judy Easter	08/21/2013			
Approved by: Peter Millward, MD	08/21/2013			

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Document Control, continued

Signature	Date	Revision #	Modifications	Related Documents Reviewed/ Updated
Revised by: Jennifer Sarhan, QA	12/27/2013	r01.02.00	Page 2, revised the policy *Compatibility Testing.*	
Supervisor: Judy Easter	01/03/2014			
Approved by: Peter Millward, MD	01/03/2014			
Revised by: Laurie Nelson	11/17/2014	r01.03.00	Page 2: added policy for Therapeutic Apheresis	
Validated by: Heather Asiala	11/17/2014			
QA: Jennifer Sarhan	12/11/2014			
Supervisor: Judy Easter	12/10/2014			
Approved by: Peter Millward, MD	12/10/2014			
Reviewed by: Peter Millward, MD	01/16/2015			
Revised by: Ashley Wilson	11/09/2015	r01.04.00	Added note to explain how long a dose of WinRho or RhIG will be acceptable for an RH neg patient to receive RH pos products, updated chart 229-1.	
QA: Anne Sepienza	11/19/2015			
Supervisor: Judy Easter	11/19/2015			
Approved by: Peter Millward, MD	11/19/2015			
Approved by: Peter Millward, MD	08/12/2016			
Approved by: Peter Millward, MD	05/02/2017			
Approved by: Elizabeth Sykes, MD	02/23/2018			
Revised by: Christopher Ferguson	03/16/2018	r01.05.00	Added information regarding untitered type O platelets that aren't from MI Blood or Appleton. Added statement that large volume platelets don't need approval to issue for massives or emergency issue. Removed F-229 references from SOP since form is retired.	
QA: Anne Sepienza	03/22/2018			
Supervisor: Billie Ketelsen	03/22/2018			
Approved by: Peter Millward, MD	03/28/2018			
Approved by: Peter Millward, MD	02/26/2019			
Approved by: Craig Fletcher, MD	03/27/2019			
Revised by: Christopher Ferguson	07/22/2019	r01.06.00	Added policy information for pooled platelets. Group O pooled platelets don't require isohemagglutinin titer attributes. Pooled platelets can go to anyone; don't need to be volume reduced if recipient is greater than 12 years old. Revised authorized reviewer titles. Updated blood suppliers to new Versiti names.	
QA: Anne Sepienza	09/08/2019			
Manager: Billie Ketelsen	07/22/2019			
Approved by: Craig Fletcher, MD	09/19/2019			
Approved by: Craig Fletcher, MD	07/15/2020			
Revised by: Christopher Ferguson	08/04/2020	r01.07.00	Added *Transfusion Limits for Patients Receiving ABO-Incompatible Plasma Products* policy section. Removed QA references.	
Manager: Billie Ketelsen	08/07/2020			
Approved by: Craig Fletcher, MD	08/07/2020			

Document Control, continued

Signature	Date	Revision #	Modifications	Related Documents Reviewed/ Updated
Revised by: Christopher Ferguson	01/20/2021	r01.08.00	Added statement that group A liquid plasma may be used during massive transfusions, even for unknown blood types. Added bone marrow recipients to the table for determining appropriate ABO group for platelet transfusions.	
Manager: Billie Ketelsen	02/03/2021			
Approved by: Craig Fletcher, MD	02/03/2021			
Revised by: Samantha Maynard	08/11/2021	r01.09.00	Pathogen reduced platelets are equivalent to irradiation and may be used in place.	
Manager:				
Approved by: Craig Fletcher, MD				