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Resolution of ABO and Rh Discrepancies - Blood Bank

Document Type: Policy

I. PURPOSE AND OBJECTIVE:

The purpose of this document is to provide instructions that will enable the Blood Bank staff to resolve the ABO and Rh discrepancies that are most commonly encountered at Beaumont Health.

II. POLICY STATEMENT:

The Blood Bank Staff will use this document for the resolution of ABO and Rh discrepancies that occur while testing in the department.

III. CLINICAL SIGNIFICANCE:

A. ABO discrepancy is a generic term for a variety of situations in which the interpretation of a patient or donor's ABO group is unclear. ABO testing is a two-part process, involving testing a person's red cells for the presence of A and or B antigens, also known as forward typing. The same person's serum is tested for the presence of anti-A and anti-B antibodies, also known as reverse typing. If the results of these two parts of the tests do not agree (for example, if the cell grouping suggests blood group A while the serum grouping looks more like blood group AB), an ABO discrepancy has occurred.

B. Rh discrepancy is a generic term for a variety of situations in which the interpretation of a patient or donor Rh results are unclear. Rh testing is a process involving testing a person's red cells for the presence of D antigens and a control. If the result of this test is not valid, a Rh discrepancy has occurred.

C. ABO/Rh discrepancies happen for a wide variety of reasons, including technical errors, problems with red cell antigens, or problems with serum antibodies. Discrepancies may also result from recent transfusions of blood products that are of a dissimilar ABO or Rh type than the recipient, or from stem cell transplants. Note that stem cell donors may be ABO or Rh dissimilar to the recipient.

ABO and Rh discrepancies may also be caused by numerous technical factors, including sample drawing errors and testing errors.

IV. INTRODUCTION:

A. The ABO and Rh discrepancies included in this document are divided into the following categories:

1. Forward/red cell typing problems
    a. Weak/missing red cell reactivity
    b. Extra red cell reactivity
2. Reverse/serum typing problems
    a. Weak/missing serum reactivity
    b. Extra serum reactivity
3. Rh Typing Discrepancies

V. DEFINITIONS:

A. **ABO discrepancy:** Generic term for a variety of situations in which the interpretation of a patient or donor ABO group is unclear.

B. **Rh discrepancy:** Generic term for a variety of situations in which the interpretation of a patient or donor Rh results are unclear.

C. **Mixed field (MF):** Sample that contains 2 distinct populations of red cells, usually as a result of recent RBC transfusions of a dissimilar ABO or Rh type as the patient.

D. **Rouleaux:** Red cells that assume a stacked-coin formation in testing due to an abnormality with the patient's serum protein. Rouleaux is most readily observed on microscopic examination.

E. **WBIT (wrong blood in tube):** When a sample is drawn from the wrong patient, so that the identifying information of the patient on the label does not correlate with the patient from whom the blood in the tube was drawn.

F. **NPR (No previous result):** A Soft Bank test code that allows repeat ABO/Rh testing. This test code does not generate a patient charge and results do not cross the interface to the hospital computer system.

G. **GND (Group not determined):** If the forward typing and the reverse typing do not agree, an ABO discrepancy has occurred. If the discrepancy cannot be resolved at that time, then the patient's group is considered "Not Determined".

H. **RND (Rh not determined):** If the Rh typing discrepancy of a patient cannot be resolved at that time, then the patient's Rh type is considered "Not Determined".

I. **Health information system (HIS):** Refers to a system designed to manage health care data. This includes systems that collect, store, manage and transmit a patient's electronic health record, a hospital's operational management or a system supporting health care policy decisions.

J. **QSR (Quality Safety Report):** Report made in the hospital incident reporting system (i.e. RL Solutions) regarding any process/incident inconsistent with the routine operation of the hospital or the routine care of patients in any setting. This includes errors that result in actual or potential injury

to a patient or visitor, including near misses or unsafe conditions.

K. **Internal Variance**: Report made internally in the Blood Bank for documentation of an incident such as error detected, accident, complaint, unplanned deviation, or incident for review, evaluation, investigation, and correction.

L. **Designee**: Any Blood Bank technical director, or transfusion medicine fellow.

VI. POLICIES:

A. Valid Graded Reactions

1. To be valid, reactions obtained during ABO/Rh testing must be of the strength indicated in the ABO/Rh Interpretation tables in section VIII.

B. No Previous Result (NPR) and Discrepancy Resolution

1. If an ABO/Rh discrepancy is discovered while completing an NPR, each step taken to resolve the ABO/Rh discrepancy for the NPR must also be completed for the TYPE.
2. All results must be documented in the Blood Bank computer system.

C. Repeat ABO/Rh Testing

1. Upon encountering an ABO/Rh discrepancy, the technologist may first consider repeating the testing by the same method, however, note the following:
   a. Refer to the *Limitations* section near the end of this document for a list of possible technical factors that may be the cause of the discrepancy.
   b. If a discrepancy due to a mixed-field (dual population) reaction is observed in the gel method, the technologist should first consider whether the patient has been recently transfused before repeating the testing in the tube; refer to Transfusion Medicine policy, *Resolution of ABO/Rh Discrepancies for Patients who have been Recently Transfused.*
   c. In some cases, a discrepancy is observed in the gel method and additional testing may be required which should be performed in the tube method. For example, refer to Transfusion Medicine policies, *Resolution of ABO Discrepancies: Enhancement of Weak Reverse Typings* and *Resolution of ABO/Rh Discrepancies Caused by Cold Reacting Antibodies* in which this is specified.

D. Reactivity in the Control Well of the Gel Card

1. When performing ABO or Rh typing using the manual gel method or Ortho Vision™, the control well must be non-reactive.
2. Attempt to resolve the discrepancy by repeating the testing by the tube method as described in Transfusion Medicine policy, Determining The ABO and RhD Of Patients Who Are At Least Four Months Old.

E. ABO/Rh Discrepancies with a Potential to Delay Service

1. Unresolved ABO and Rh discrepancies have the potential to delay the Blood Bank's ability to provide

blood products because a serologic crossmatch may be required.

   a. The patient's caregivers are in the practice of looking at the patient's antibody screen in the HIS, and if it is negative they may assume that blood products will be immediately available.

2. If the potential exists for a delay, Blood Bank staff should add a free text external comment to the antibody screen; i.e., "Potential delay in providing RBCs; call the Blood Bank for additional information."

F. Wrong Blood in Tube Event (WBIT)

1. When the ABO or Rh of a current sample does not match the historical ABO or Rh, the Blood Bank must consider the possibility of a WBIT event. The technologist should (if possible):
   a. Repeat the ABO/Rh of the historical sample (if available) and
   b. Repeat the ABO/Rh on the current sample, and
   c. Redraw the sample and repeat the ABO/Rh on this new sample.
2. If a WBIT is suspected after the above repeat testing, then Blood Bank staff should:
   a. Invalidate all testing performed on the incorrect sample in the Blood Bank computer and ensure that the patient's ABO and Rh of record (demographic screen) corresponds to the correct testing from the correct sample(s).
   b. Document the WBIT as a Quality Safety Report (QSR).
   c. Notify the Supervisor or Lead Medical Technologist of the WBIT event.

G. Mistyped Samples/Technical Issues

1. The Blood Bank should consider the possibility of a mistyped sample if the ABO or Rh results obtained from the first typing of a current sample do not match the ABO or Rh results from the second typing of the same/current sample, or the ABO or Rh of a current sample does not match the ABO or Rh from a historical sample.
2. If the technologist suspects a mistyped sample, the following steps shall be performed:
   a. Repeat the ABO/Rh on the current sample/new sample, and
   b. Repeat the ABO/Rh of the historical sample (if available).
3. If a mistyped sample is suspected after the above repeat testing, then the Blood Bank shall invalidate all test results that are considered to be mistyped in the Blood Bank computer and ensure that the patient's ABO and Rh of record (demographic screen) correspond to the correct results.
   a. Document the mistype on an Internal Variance.
   b. Note that apparent Rh typing "mistypes" can occur due to the use of different reagents and methodologies.

H. Documentation of Resolved ABO or Rh Discrepancies

1. The following policies apply to the documentation of an ABO or Rh discrepancy that is resolved after the applicable investigation:
   a. Observations of all test results must be recorded properly at the time the test is performed.

Therefore, when an ABO or Rh discrepancy is observed, all results (including discrepant results) must be documented at the time the test is performed. The **ABO/Rh** canned message may be used for this purpose.

b. The results should not be interpreted until the investigation is complete and the discrepancy is resolved.

c. Any steps that were taken to resolve the discrepancy should also be documented; e.g., by adding a comment to the test such as "saline-replaced reverse" or "washed cell suspension for forward typing."

d. Applicable messages may be added to the record; i.e., **REVE** "Reverse typing may require 4*C incubation"

e. Discrepant test results should not be interpreted while an unresolved ABO or Rh discrepancy exists; the results must not be interpreted until after the investigation is complete.

f. In most cases the discrepancy will be documented on the form, *ABO/Rh Discrepancy Form.*

I. Documentation of Unresolved ABO or Rh Discrepancies

1. The following policies apply to the documentation of an ABO and/or Rh discrepancy that remains unresolved after the applicable investigation:

   a. All unresolved ABO or Rh discrepancies should be documented on the form, *ABO/Rh Discrepancy Form.*

   b. If an ABO discrepancy remains unresolved after the investigation, then the ABO/Rh test should be interpreted as **GND** (Group Not Determined); this requires supervisory computer access. The canned message **GND** should be added to the ABO/Rh test.

   c. If a Rh discrepancy remains unresolved after the investigation, then the ABO/Rh test should be interpreted as **RND** (Rh Not Determined); this requires supervisory computer access. The canned message **RND** should be added to the ABO/Rh test.

   d. The **ABODC** "ABO Typing Discrepancy" message must be added to the record.

J. Unresolved ABO Discrepancies - Transfusion Required

1. If an ABO discrepancy remains unresolved and a RBC transfusion is necessary, then group O immediate-spin (I.S.) crossmatch-compatible RBCs should be used.
2. If the patient also has unexpected antibodies, then both I.S. and antihuman globulin crossmatches (usually by the gel method) are required; refer to Transfusion Medicine policy, *Policies for Providing RBCs for Patients with Unexpected Antibodies*.

   a. The message **ORBC** "Issue Group O RBCS" should be added. This message may be removed if/when it no longer applies.

3. If an ABO discrepancy remains unresolved and a transfusion of fresh frozen plasma is necessary, then group AB plasma should be provided.

   a. The message **ABFFP** "Use Group AB Plasma" should be added. This message may be removed if/when it no longer applies.

K. Unresolved Rh Discrepancies - Transfusion Required

1. If an Rh discrepancy remains unresolved and a RBC transfusion is necessary, then Rh-negative immediate-spin (I.S.) crossmatch- compatible RBCs should be used.
    a. Adult men older than 18 years and women older than 50 years may receive Rh positive RBCs, but only if necessary to preserve the Rh negative inventory and as long as the patient has not developed Anti-D. See Transfusion Medicine policy, *RBC Crossmatching Guidelines.*
    b. If the patient also has unexpected antibodies, then both immediate-spin and antihuman globulin crossmatches (usually by the gel method) are required; refer to Transfusion Medicine policy, *Policies for Providing RBCs for Patients with Unexpected Antibodies.*
    c. If an Rh discrepancy remains unresolved and a platelet transfusion is required for a female patient 50 years old or younger, or a male patient 18 years old or younger, then Rh-negative platelets should be transfused.
        i. If the Blood Bank is unable to provide Rh-negative blood products to female patients 50 years old or younger or to male patients 18 years or younger, then the technologist should suggest the use of RhIG or WinRho to the patient's caregivers.
        ii. The technologist should also document an internal variance to alert the Supervisor or Lead Medical Technologist to follow up on the administration of RhIG or WinRho.

L. Editing the Patient's ABO or Rh in the Demographic Screen

1. A technologist may only edit the patient's ABO on the demographic screen if directed by Transfusion Medicine policy or with Medical Director approval. For example:
    a. A patient has a historical ABO/Rh of B positive from several years ago. The ABO/Rh of the current sample is A positive, and the technologist suspects a WBIT. As indicated in the policy V.F, *Wrong Blood in Tube (WBIT) Event*, the technologist redraws the current sample and repeats the ABO/Rh on this new sample; the result is A positive. The technologist should interpret the ABO/Rh test as **GND** and should crossmatch group O RBCs. The technologist should not edit the patient's ABO in the demographic screen but instead should submit the Transfusion Medicine form, *ABO/Rh Discrepancy Form,* to the Medical Director or designee for review.
    b. A patient has a historical ABO/Rh of B positive from several years ago. An ABO discrepancy that cannot be resolved is observed in the current sample. The technologist should interpret the ABO/Rh test as **GND** (Group Not Determined), and should **not** remove the previous ABO of B positive from the demographic screen.

2. A technologist may only edit the patient's Rh on the demographic screen if directed by Transfusion Medicine Policy or with Medical Director approval. For example:
    a. A technologist may edit the patient's Rh in the demographic screen if it is discovered that a patient historically Rh negative is actually weak D positive.The technologist should interpret the ABO/Rh test as weak D positive and should edit the Rh in the demographic screen to weak D positive as described in Transfusion Medicine policy, *Resolution of Rh Discrepancies.*

3. If a patient's demographic screen is populated with the incorrect ABO/Rh due to a clerical or testing error, the ABO or Rh may be blanked out by a lead medical technologist or supervisor without Medical Director approval.

M. Resulting the ABO/Rh Test

1. Observations of all test results must be recorded at the time the test is performed. Therefore, when an ABO or Rh discrepancy is observed, all results (including discrepant results) must be documented at the time the test is performed.
    a. The results should not be interpreted until the investigation is complete and the discrepancy is resolved.
    b. The results may be documented on the applicable downtime form, or in the computer using the **ABO/Rh** canned message.
2. If the ABO or Rh test must be interpreted as GND or RND, the applicable canned messages should be added to the ABO/Rh test to clarify the results for the patient's caregivers in the HIS.
    a. **GND** = "ABO group not determined."
    b. **RND** = "Rh not determined."

N. Record of Transfusion

1. The patient's ABO/Rh that appears on the crossmatch tag is the ABO or Rh from the demographic screen. Therefore, if an ABO/Rh discrepancy remains unresolved after the applicable investigation, make sure that the patient's ABO or Rh on the crossmatch tag is correct; e.g. handwrite "ABO group not determined" and/or "Rh not determined" on the tag.

O. Suggested Course of Action for the Resolution of ABO or Rh Discrepancies

1. The following table includes a list of the categories of discrepancies, possible causes from each category that are commonly encountered at Beaumont Health, the suggested course of action and/or related Transfusion Medicine policies to be used to attempt to resolve the discrepancy.

Suggested Course of Action for the Resolution of ABO or Rh Discrepancies		
Discrepancy	**Possible Causes**	**Procedures and/or Policies for Resolution**
Forward/ Cell Typing Problems	Recent RBC transfusions of dissimilar ABO or Rh type	Refer to Transfusion Medicine Policy, *Resolution of ABO or Rh Discrepancies for Patients who have been Recently Transfused*
Weak/ Missing Red Cell Reactivity	Weak ABO subgroups (most commonly A2 subgroup, may present as mixed-field or invalid reaction with the forward A cell typing).	Type patient's RBCs with *Dolichos biflorus* lectin (Anti-A1) as described in Transfusion Medicine policy, *Resolution of ABO Discrepancies For A Subgroups and Patients With Anti-A1.*
	Stem Cell Transplants	Refer to Transfusion Medicine Policy, Resolution of ABO or Rh Discrepancies for Patients who have Received a Stem Cell Transplant
Forward /Cell	Autoagglutinins	Repeat testing using cell suspension that

Typing Problems Extra Red Cell Reactivity		has been washed several times with normal saline, or with warm (37°C) saline.
	Excess protein (may present as rouleaux formation)	Refer to Transfusion Medicine Policy, *Compatibility Testing for Patients with Rouleaux*
	Stem Cell Transplants	Refer to Transfusion Medicine policy, Resolution of ABO or Rh Discrepancies for Patients who have Received a Stem Cell Transplant
Reverse Typing Problems Missing serum activity	Pediatric patients older than 4 months old but less than 2 years old frequently have low levels of ABO antibodies; the ABO "discrepancy" may remain unresolved until the pediatric patient is older.	Refer to policy V.I, *Documentation of Unresolved ABO/Rh Discrepancies* and V.J. *Unresolved ABO Discrepancies -Transfusion Required*
	Elderly or immunosuppressed patients	Refer to Transfusion Medicine Policy, *Enhancement of Weak Reverse Typings*
	Stem Cell Transplants	Refer to Transfusion Medicine Policy, Resolution of ABO or Rh Discrepancies for Patients who have Received a Stem Cell Transplant
Reverse Typing Problems Extra serum activity	Cold reacting antibodies	Refer to Transfusion Medicine Policy, *Resolution of ABO/Rh Discrepancies caused by Cold-Reacting Antibodies*
	Anti-A1 (presents as unexpected reactivity on the A reverse cell in an apparent group A or AB patient)	Refer to Transfusion Medicine Policy, *Resolution of ABO Discrepancies for A Subgroups and Patients with Anti-A1*
	Excess protein (may present as rouleaux formation)	Refer to Transfusion Medicine Policy, *Compatibility Testing for Patients with Rouleaux*
	Transfusion of non-cellular blood products that are a dissimilar ABO type to the patient For example: a type A patient received multiple type O platelets.	Attempt to identify the specificity of the unexpected ABO antibody. Refer to Transfusion Medicine policies, *Antibody Identification* and *Policies Specific to Patients with Passively Acquired Antibodies*
	Stem Cell Transplants	Refer to Transfusion Medicine policy, Resolution of ABO or Rh Discrepancies for Patients who have Received a Stem Cell Transplant
Rh Typing Discrepancies	Failure to add Anti-D reagent or other technical testing errors	Repeat testing. See Notes section for list of potential technical errors.
	Recent RBC transfusion with a dissimilar Rh type	Refer to Transfusion Medicine policy, *Resolution of ABO or Rh*

		Discrepancies for Patients who have been Recently Transfused
	Weak D or partial D phenotype	Refer to Transfusion Medicine policy, *Resolution of Rh Discrepancies*
	Different results obtained with different anti-D reagents containing different formulations/clones of the anti-D reagents.	Refer to Transfusion Medicine policy, *Resolution of Rh Discrepancies*
All Categories	Rouleaux formation	Refer to Transfusion Medicine Policy, *Compatibility Testing for Patients with Rouleaux.*
	WBIT	Refer to Policy V.F Wrong Blood in Tube Events
	Mistyped current or historical sample	Refer to Policy V.G *Mistyped Samples/ Technical Issues*
	Consider other factors or technical errors that may explain the results.	See VI. Notes section near the end of this document for a list of potential technical errors

VII. NOTES:

A. Several factors or technical errors may cause ABO or Rh discrepancies. These include but are not limited to the items in this list.
   1. Sample collection errors or WBIT events
   2. Improperly made cell suspensions
   3. Failure to add reagents or follow directions of manufacturer's inserts
   4. Improper centrifugation
   5. Variation in reagents or methodologies used to perform testing
   6. Improper interpretation or documentation of test results
   7. Previous transfusions with blood products that are a dissimilar ABO or Rh to the patient
   8. Failure to observe hemolysis

VIII. LIMITATIONS:

A. Observations of all test results must be recorded properly at the time the test is performed. Therefore, when an ABO or Rh discrepancy is observed, all results (including discrepant results) must be documented at the time the test is performed.
   1. The ABO/Rh canned message may be used for this purpose
   2. If the ABO or Rh test must be interpreted as GND or RND, the applicable canned messages should be added to the ABO/Rh test to clarify the results for the patient's caregivers in the HIS:
      a. GND = "ABO group not determined."
      b. RND = "Rh not determined."

B. The patient's ABO/Rh that appears on the crossmatch tag is the ABO or Rh from the demographic screen. Therefore, if an ABO/Rh discrepancy remains unresolved after the applicable investigation, then make sure that the patient's ABO or Rh on the crossmatch tag is correct; e.g., handwrite "ABO group not determined" and/or "Rh not determined" on the tag.

IX. INTERPRETATIONS:

ABO Blood Grouping Interpretation (Tube or Gel Method)					
ABO Graded Reactions					ABO Interpretation
Forward			Reverse		
Anti-A	Anti-B	Control	A_1 cells	B cells	
3-4+	0	NA	0	2-4+ or hemolyzed	A
0	3-4+	NA	2-4+ or hemolyzed	0	B
3-4+	3-4+	0	0	0	AB
0	0	NA	2-4+ or hemolyzed	2-4+ or hemolyzed	O
If an ABO discrepancy remains unresolved after completion of the investigation, then a technologist with appropriate computer access will interpret the ABO test as GND (group not determined).					

Rh Typing Interpretation (Tube or Gel)			
Method	Anti-D Graded Reactions	Control	Rh Interpretation
Gel	0	0	Negative
	W+ - 3+	0	Weak D +
	4+	0	Positive
Tube	0	0	Negative
	W+ - 1+	0	Weak D +
	2+ - 4+	0	Positive
Gel or Tube	Any strength	reactivity	RND
If an Rh discrepancy remains unresolved after completion of the investigation, then a technologist with appropriate computer access will interpret the Rh test as RND (Rh not determined).			

X. FORMS:

A. *The ABO/Rh Discrepancy Form* summarizes the steps required to investigate and potentially resolve ABO/Rh discrepancies. If the technologist is unable to resolve an ABO or Rh discrepancy, or if the technologist does not have the necessary computer access required to interpret the results in Soft, the Supervisor, Lead Medical Technologist or technologist with override capabilities will interpret the results in the computer.

XI. REFERENCES:

1. *AABB, Technical Manual*, current edition.

2. *AABB, Standards for Blood Banks and Transfusion Services*, current edition.

Attachments

ABO/Rh Discrepancy Form

Approval Signatures

Step Description	Approver	Date
	Muhammad Arshad: Physician	3/8/2022
	Jeremy Powers: Chief, Pathology	3/1/2022
	Ann Marie Blenc: System Med Dir, Hematopath	2/24/2022
	Ryan Johnson: OUWB Clinical Faculty	2/22/2022
	Vaishali Pansare: Chief, Pathology	2/22/2022
	John Pui: Chief, Pathology	2/22/2022
Policy and Forms Steering Committe (if needed)	Kelly Sartor: Supv, Laboratory	2/22/2022
Policy and Forms Steering Committe (if needed)	Gail Juleff: Project Mgr Policy	2/22/2022
	Craig Fletcher: System Med Dir, Blood Bank	2/21/2022
	Rebecca Thompson: Medical Technologist Lead	2/13/2022
	Anji Miri: Supv, Laboratory	2/9/2022
	Karrie Torgerson: Supv, Laboratory	2/8/2022
	Michael Rasmussen: Supv, Laboratory	2/7/2022
	Kelly Sartor: Supv, Laboratory	2/7/2022
	Teresa Lovins: Supv, Laboratory	2/7/2022

Brooke Klapatch: Medical Technologist Lead	2/7/2022
Kelly Sartor: Supv, Laboratory	2/7/2022

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Name:

MRN:

Date/Tech:

ABO/Rh Discrepancy Form

1. Refer to the following table that details suspected kind(s) of ABO/Rh problem(s), and perform the corresponding Technologist's Actions.
2. Document the results on the applicable downtime form or document the results in the Blood Bank computer system.
    a. If the actions lead to an unsuccessful resolution, document the graded reactions of all unsuccessful attempts to resolve the discrepancy as an internal comment to the ABO/Rh test using predefined canned messages as indicated below.
    b. The supervisor or designee may need to resolve the discrepancy and interpret the results as GND or RND as this requires override capabilities that are not available to all technologists.
3. If an ABO discrepancy remains unresolved and RBC transfusion is necessary, then group O, immediate-spin (I.S.) crossmatch-compatible RBCs should be used.
    a. If the patient also has unexpected antibodies, then both I.S. and antihuman globulin crossmatches (usually by the gel method) are required.
4. If there is no Rh discrepancy and the Rh field of the demographic screen is not populated, then order and perform the RHTT and RRHTT(repeat) tests to update the Rh field so that Rh-specific RBCs may be crossmatched and issued.
5. If there is no ABO discrepancy and the ABO field of the demographic screen is not populated, then order and perform the ABO and NPA tests to update the ABO field so that ABO-specific RBCs may be crossmatched and issued.

Cause of Discrepancy	Technologist's Actions
Recent RBC Transfusions ☐	Results usually appear as mixed field (MF) or dual population (DP) ☐ Verify that the Vision™ printout, if applicable, belongs to the correct patient ☐ Determine if all 5 conditions have been met: 1. The patient had a complete, valid blood type from a historical sample 2. The patient was transfused one or more RBCs of a dissimilar ABO or Rh type in the last 90 days 3. Forward typing discrepancies exist in the current sample 4. The reactivity may be attributed to / explained by the combined ABO/Rh of the recipient's and the donor's RBCs 5. The forward typing discrepancy (attributed to condition 4) is the only unresolved ABO or Rh typing discrepancy observed in the patient's current sample ☐ Interpret and enter results under *Patients/Orders/Results* ☐ Add **ABOTR** canned message to the ABO/Rh test
Weak Reverse ☐	☐ Perform ABO/Rh by tube method. If unsuccessful, then: o Repeat the reverse type using 3 drops of plasma, include a group O control for this and all remaining attempts (group O control must be non-reactive; document the lot #, cell # and reaction result of the group O control). If unsuccessful, then: o Incubate the reverse type (all 3 tubes) at RT for 15 minutes. If unsuccessful, then: o Incubate the reverse type (all 3 tubes) at 4°C for 15 minutes. If unsuccessful, then discrepancy remains unresolved (supervisor or designee will interpret as GND) ☐ Document all results in the computer or the form, *Enhancement of Weak Reverse Typings* ☐ Add the **ABORH** canned message (including lot #, cell # and reaction of the group O control cell and method: 3 drops, RT, or 4°C) to the patient's ABO/Rh result ☐ See *Unresolved Discrepancy* below, if applicable

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ABO/Rh Discrepancy Form

Cold Reacting Antibody ☐	☐ Perform a tube ABO/Rh. If the discrepancy is not resolved, then o Wash patient cells if the unexpected reactivity is in the forward typing ▪ It may be beneficial to wash with warm saline o Perform an all-phase tube panel with auto control if unexpected reactivity remains in the reverse typing (panel is required every 90 days) ▪ For example: Anti-M or Anti-P_1 identified; use antigen negative reverse cells (may need to obtain segments from sister sites) ▪ CRAUS or CAA identified, if panel done in last 90 days then prewarm the reverse ☐ **ABORH** canned message documented (including donor unit number and reaction of the antigen negative reverse cell, or prewarm method) ☐ See *Unresolved Discrepancy* below, if applicable
Anti-A_1 or A subgroup ☐	☐ Perform ABO/Rh by the tube method if Anti-A_1 is suspected ☐ Type the patient's RBCs with Anti-A_1 lectin o Weak ABO subgroups (most commonly A_2 subgroup), may present as mixed-field or negative reactions with the forward A cell typing o Record A_1 antigen typing results in the Blood Bank computer system ☐ Perform an all-phase tube panel to attempt to identify Anti-A_1, if indicated ☐ If Anti-A_1 is identified, then attempt to resolve the ABO discrepancy by performing the reverse type with an A_2 reverse cell ☐ Document **ABORH** canned message ☐ Add the patient message "A_2 or weaker subgroup" or "A_2B or weaker subgroup" ☐ Order and result the ABID as Anti-A_1 if reactive in the reverse typing/panel ☐ See *Unresolved Discrepancy* below, if applicable
Stem Cell Transplant ☐	☐ Do not interpret ABO or Rh. Document the *Stem Cell Transplant History* Form and submit for review by the Medical Director or designee ☐ After review by MD, change ABO/Rh test and/or ABO/Rh demographic as directed ☐ After review by the MD, update comments and messages as directed ☐ See *Unresolved Discrepancy* below, if applicable
Weak D or other Rh Discrepancy ☐	☐ If the Rh type in the demographic screen is weak D, then "once a weak D; always a weak D." The current sample must be interpreted as weak D (regardless of current Rh graded reactions) ☐ Add canned message: **WK+CB**, **WK+YM**, **WK+OL**, or **WK+B** as indicated to the patient's result ☐ If applicable, edit demographic to WK D pos ☐ If unresolved, proceed as described in *Unresolved Discrepancy* and add canned message: **RNDCB, RNDYM, RNDOL,** or **RNDB** ☐ Add **DVAR** canned message to the result for the first time Rh discrepancy
Wrong Blood in Tube Event ☐	☐ Invalidate all incorrect results ☐ Request sample for recollect ☐ Submit a variance or QSR ☐ Until a valid specimen can be collected, tested, and resulted, the patient should be transfused with group O RBCs
Unresolved Discrepancy ☐	☐ Interpret ABO and/or Rh test as GND and/or RND ☐ Add applicable **GND** and/or **RND** canned message to ABO/Rh test and NPR test, if applicable ☐ If banded, perform I.S. crossmatch per policy ☐ Add applicable messages (for example: Use group AB plasma, Issue group O RBCs, Issue Rh negative RBCs, etc.)

Reviewed by / Date : _____