Lab Location:	SGMC and WOMC	**Date Implemented:**	4/20/21
Department:	Blood Bank	**Due Date:**	5/4/21

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Reference Workup for Antibody Identification

Description of change(s):

1. Added ARC priority codes to procedure. Please ensure you are adequately selecting the priority code. Don't just send everything STAT.
   a. STAT = life-threatening
   b. ASAP = don't use
   c. Date/Time Needed = ARC recommends using this the most
   d. Routine = 36-hour TAT
2. Added requirement to pull the service number for the ARC workup and enter into the BBREF order.
3. Added requirement to pull billing with the reference lab results and attach to report.

SGAH.BB107 Reference Workup for Antibody Identification

Copy of version 3.0 (approved and current)

Last Approval or Periodic Review Completed	4/16/2021		**Controlled Copy of a Manual** ID 18349	
			Location	SG & WAH BB vol 2
Next Periodic Review Needed On or Before	4/16/2023		**Organization**	Adventist HealthCare
Effective Date	4/16/2021			

Approval and Periodic Review Signatures

Type	Description	Date	Version	Performed By	Notes
Approval	Lab Director	4/16/2021	3.0	Nicolas Cacciabeve	
Approval	BB approval	4/15/2021	3.0	Stephanie Codina	
Approval	QA approval	4/15/2021	3.0	Leslie Barrett	
Approval	Lab Director	7/5/2018	2.0	Nicolas Cacciabeve	Recorded when document uploaded to MediaLab
Periodic review	Designated Reviewer	7/5/2018	2.0	Nicolas Cacciabeve	Recorded when document uploaded to MediaLab

Approvals and periodic reviews that occurred before this document was added to the MediaLab Document Control system may not be listed.

Version History

Version	Status	Type	Date Added	Date Effective	Date Retired
3.0	Approved and Current	Major revision	4/15/2021	4/16/2021	Indefinite
2.0	Retired	First version in Document Control	6/22/2019	7/9/2018	4/16/2021

Adventist HealthCare Site: Shady Grove Medical Center, White Oak Medical Center	Title: Reference Workup for Antibody Identification

Non-Technical SOP

Title	Reference Workup for Antibody Identification	
Prepared by	Stephanie Codina	Date: 5/2/2011
Owner	Stephanie Codina	Date: 5/2/2011

Laboratory Approval		
Print Name and Title	Signature	Date
Refer to the electronic signature page for approval and approval dates.		
Local Issue Date:	Local Effective Date:	

TABLE OF CONTENTS

1. **PURPOSE**

   In certain situations, specimens are referred to the reference laboratory for antibody identification, ABO discrepancy resolution, or other workup. This procedure outlines the steps that will be followed to refer, bill, and result a reference specimen.

2. **SCOPE**

   This procedure applies to any complex specimen that will be referred to the American Red Cross Reference laboratory for testing.

3. **RESPONSIBILITY**

   All blood bank staff members must understand and adhere to this procedure when referring specimens to the American Red Cross Reference Laboratory.
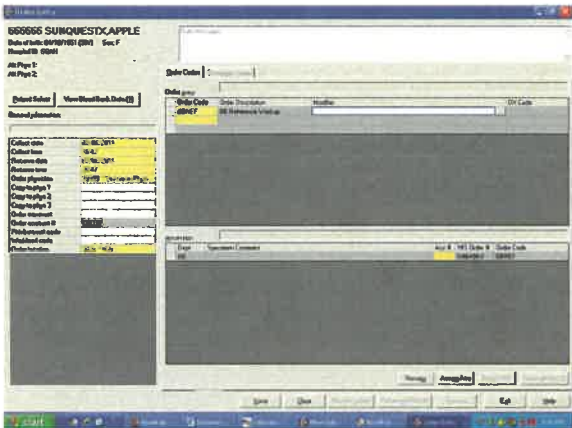
4. **DEFINITIONS**

   N/A

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5. PROCEDURE

Sending Specimens TO the Reference Lab

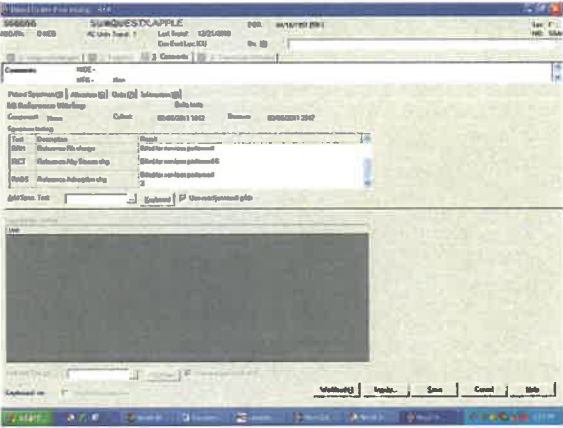| Step	Action
1	Specimens are referred to the reference laboratory for testing in various situations. The decision to refer a specimen is based on the complexity of the workup, availability of reagents, departmental workload, and staffing. Specimens containing suspected warm auto, strong cold auto, and multiple antibodies are routinely referred. The techs working the bench have the authority to determine if a specimen should be referred to a reference lab for testing.
2	Notify the patient's nurse or physician when a decision has been made to refer the specimen to a reference lab for testing. Ascertain the patient's current transfusion needs, clinical status, transfusion history, and a list of current medications. Determine the priority of the request based on the following criteria. Reference Workups: • STAT = reserved for life-threatening situations that require immediate transfusion. STAT requests are generally completed within 10 hours. • ASAP = ARC has recommended that we do not use this priority code. • Date/Time Needed = should be used any time blood is needed more than 10 hours from the time ARC will begin the workup. This priority code requires the user to enter the date and time that the patient requires the transfusion. • Routine = workup will be ready within 36 hours of specimen receipt. Antigen-Negative Units: • STAT = 1-hour processing + shipping time • ASAP = 4-hour processing + shipping time • Date/Time Requested = 8-hour processing + shipping time Notify a pathologist if a patient needs blood urgently and delays may occur. Document pathologist notification in the shift-to-shift communication log.
3	Instruct a phlebotomist or nurse to collected additional specimen from the patient for reference referral. A. ARC requests two 7mL clot tubes and two 7mL EDTA tubes for each workup. At a minimum, send one 10mL EDTA tube. B. Specimens must be labeled with the patient's full name, medical record number, date and time of collection, collector's identification, and the current blood bank armband number.

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Step	Action

4	Submit an online request for testing using the ARC Hospital management Solutions System. Print the PDF document that generates. Keep one copy with the antibody identification paperwork and submit the second copy with the specimens.
	
	During periods of computer downtime, complete an "Immunohematology Consultation Request" form. See appendix A for reference.
	    A. Complete the lines in Box 2 by filling in the hospital information.
	        a. ARC Customer Number
	            i. SGMC = B1SHAD
	            ii. WOMC = B1WOAK
	        b. Address, phone number, and fax number of the blood bank.
	        c. Name of the person referring the specimen.
	        d. Date of the request.
	        e. Treating physician.
	    B. Complete Box 3 by filling in the patient information.
	        a. Patient's name, medical record number, birthdate, race, and gender.
	        b. Date of specimen collection and patient's ABO/Rh.
	        c. Patient's diagnosis, H&H, and current medications.
	        d. Patient's transfusion and pregnancy histories and any known antibodies.
	    C. Complete Box 4 by filling in the testing information.
	        a. Priority of request.
	        b. Investigation requested.
	        c. Blood product needs.
	    D. Complete Box 5 with the testing results obtained in our laboratory.

5	If the patient requires blood transfusion urgently or within the same day, complete an "Urgency Assessment Tool."
	    A. Patient's hemoglobin and date/time collected
	    B. Date/time of blood transfusion
	    C. Reason for expedited handling
	    D. Patient name and diagnosis
	    E. Referring hospital name and telephone number
	    F. Name and telephone number of referring physician

6	Make a copy of the completed form and any screen/panel antigrams.

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Step	Action
7	Order a reference test in the LIS. A. Access Sunquest function "Order Entry." B. In the "Lookup By" prompt, select "Patient ID" from the dropdown menu. C. At the "Value" prompt, type in the patient's medical record number. D. At the "Collect Date" and "Collect Time" prompt, type the date and time the specimen was collected from the actual specimen tube. E. Tab through the "Receive Date" and "Receive Time" prompts to default the current date and time. F. At the "Order Physician" prompt, type in the number of the physician who ordered the workup. Click on the ellipses to search by physician name. G. Tab until your cursor reaches the "Order Code" box. Type "BBREF" in the box and press the "Tab" key. H. Click the "Save" button. I. Apply a copy of the label to the Antibody Identification form.
8	Enter the service number that corresponds to the ARC service order into the LIS using Sunquest function, "Blood Order Processing.

Step	Action
9	Wrap the specimens in absorbent sheets and place them inside a biohazard ziplock bag. Place the following items inside a specimen transport box or canister and secure the box or canister closed. Use packaging tape if needed. A. One PDF copy of the service request form that prints (or the downtime form if applicable). B. The Urgency Assessment Tool form, if applicable. C. Copies of the screen or panel antigrams. D. The biohazard bag containing the patient specimen(s). Do not send the original T&S specimen to ARC with the workup samples.
10	Label the box or canister with the following: Red Cross Reference Lab 4700 Mount Hope Drive Baltimore
11	Contact a courier and arrange for pickup and delivery of the specimen(s).

Receipt of Initial Report

Step	Action
1	The reference lab will upload the results of the workup into the ARC Hospital Management Solutions System as soon as the workup is complete. Print copies of <u>both</u> the workup and the billing sheet using the service number.
2	Enter the results of the testing in the LIS. Refer to the specific procedure for result entry mnemonics. A. Access Sunquest function "Blood Order Processing." B. At the "Lookup By" prompt, select "Patient Name" from the dropdown menu. ARC does not include the patient's medical record number on the report. C. At the "Value" prompt, type the patient's last,first name or a portion of it and click the "Search" button. D. Highlight the correct patient from the list that appears and click the "Select" button. E. Highlight the "BBREF" test that matches the date and time of the results from the list and click the "Select" button. F. Enter the results in the appropriate fields. Note: There are times when the reference lab will not complete an entire workup and will only rule out potential new antibodies. In this situation, enter mnemonic "NAAB" which expands to "No additional antibodies detected."
3	Enter the antibody identification into the T&S specimen results per procedure, "Antibody Identification."

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Step	Action
4	The reference lab will upload a preliminary billing sheet along with the patient results. Staff member should attach a copy of the billing report to the workup. Staff members trained to enter reference billing will bill the workup. A. While in the Blood Order Processing BBREF data entry screen, type a semicolon (;) then the mnemonic for the reference test in the "Add Spec Test" field and press the tab key. See appendix C for a list of reference test mnemonics. B. The test that was selected will appear. Highlight the result field and press the "Tab" button. A new line will open. C. In the new line, type one semicolon (;) then the number of the particular test to bill. DO NOT press the semicolon twice (;;) as it will change the field to a freetext field and will not bill the appropriate number of tests. D. Continue steps B and C until all tests have been billed. E. Click the "Save" button. Note: If a test is added in error you can fix it by: • If the test was added before saving, highlight the test and press the "Shift" and "Delete" keys together. This will remove the test. • If the test was added after saving, you must add a credit test. Follow the instructions above using the credit test mnemonic from Appendix C.
5	Document the following information on the billing form. A. Medical record number of patient B. Accession number of the patient specimen to which it was billed C. Date billed D. Tech initials. **Billed to Patient** **MRN:** **Access#:** **Date:** **Tech:**
6	Place the form in the appropriate bin for billing reconciliation.

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6. RELATED DOCUMENTS
SOP: ARC Hospital Management Solutions System
SOP: Antibody Identification

7. REFERENCES
None

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SWB.016.000		
000	8.2.12	Section 5: Added new computer entry mnemonic for no new antibodies detected	SCodina	NCacciabeve
001	6.28.18	Header: Added WAH Section 5: Updated to include new electronic process and ARC Hospital Management Solutions System Footer: version # leading zero's dropped due to new EDCS in use as of 10/7/13.	SCodina	NCacciabeve
2	4/8/21	Header: changed WAH to WOMC Section 5: Added ARC priority codes with descriptions. Added requirement to print reference billing and add service number to BBREF test.	SCodina	NCacciabeve

9. ADDENDA AND APPENDICES
Appendix A: Immunohematology Consultation Request
Appendix B: ARCBS After-Hours Patient Urgency Assessment Tool
Appendix C: Reference Lab Billing Mnemonics

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Appendix A

Immunohematology Consultation Request

American Red Cross
Biomedical Services
Washington, DC 20006

Immunohematology Consultation Request

Greater Chesapeake & Potomac
Baltimore, MD 21215
CLIA # 21D0649813

Reference Lab contact numbers: Phone: 410-764-4650 (800-728-5411)   Fax: 410-764-4912 (800-764-4909)
See page 2 for instructions, sample types and tube labeling requirements

① Call Reference Laboratory before sending sample

Reference Lab person contacted: _____   Date/Time contacted: _____

② Submitting Facility Information

Facility Name/ID: _____   Request Date: _____

Facility Address: _____   City/State: _____   Zip: _____

Blood Bank Contact: _____

Blood Bank Phone #: _____   Requesting Physician: _____

Blood Bank Fax #: _____

③ Patient Information

Patient Name: _____   Patient ID: _____

Birth Date/Age: _____   Race: _____   Gender: M ☐   F ☐

Specimen Date: _____   ABO/Rh: _____

Diagnosis: _____   Hgb/Hct: _____

Medications: _____

Additional information: _____

Transfusion History: No record ☐

Within last 3 months: No ☐ Yes ☐ ► Dates / products: _____

Prior to last 3 months: No ☐ Yes ☐ ► Dates / products: _____

Pregnancy History: Number: _____   Currently pregnant? No ☐ Yes ☐ ► Due date: _____

Known RBC antibody(ies)   Anti -D ☐ -C ☐ -c ☐ -E ☐ -e ☐ -K ☐ -Fyᵃ ☐ -Fyᵇ ☐ -Jkᵃ ☐ -Jkᵇ ☐ -S ☐ -s ☐

Other (list): _____

④ Test Request   Routine ☐ (1-2 business days)   Previously tested by ARC ☐

* Priority ☐ (same business day)

* Critical ☐ (one work shift)   * Must submit Urgency Assessment Tool

Investigation Requested: (Check all that apply)

ABO/Rh typing ☐   Incompatible crossmatch ☐   RBC phenotype ☐
Positive DAT ☐   Suspected transfusion reaction ☐   Titer ☐
Antibody identification ☐   HDFN ☐   Eluate ☐   OTHER SPECIFY: _____

Products Requested for this patient: (Check all that apply)   **Product Attributes: (Check all that apply)**

units requested: _____   CMV-negative ☐
                                                               Leukoreduced ☐
OTHER SPECIFY: _____   Irradiated ☐
                                                  Hemoglobin S-negative RBC ☐
Date/time needed: _____   OTHER SPECIFY: _____

⑤ Summary of Antibody Testing Results: Please provide copies of blood bank test results.

Tube: LISS ☐ PEG ☐ ENZ ☐   IS   37C   AHG
      Other: ☐ _____   I   ___ ___ ___
                               II   ___ ___ ___   DAT: _____
Gel ☐   III ___ ___ ___
Solid Phase ☐   AHG Used: Polyspecific ☐ IgG ☐   ELUATE: _____

American Red Cross Biomedical Services
Form: Immunohematology Consultation Request

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Appendix B

ARCBS After-Hours Patient Urgency Assessment Tool

American Red Cross Biomedical Services (ARCBS) After-Hours Patient Urgency Assessment Tool
FOR AFTER-HOURS: CALL-IN EMERGENT WORK-UP BY CONTACTING: 410-764-4650 or 1-800-728-5411. If there is no answer, call 410-764-4640 and the after-hours technologist will be paged. If transfusion is required in less than 15 hours, contact your facility MD. The Blood Bank MD *or the referring patient's physician* needs to contact the ARC physician on-call to discuss the case. Call 410-764-4640 and the ARC Physician on call will be paged.

Obtain the following information to assist with after-hours communications:
Patient's current hemoglobin value (include date/time): _____. Date/time blood transfusion ordered: _____. Reason for expedited handling: _____.

Patient Name:	Patient Diagnosis:
Referring Hospital:	Referring Hospital Blood Bank Telephone Number:
Name of Referring Physician to Contact:	Telephone Number of Referring Physician to Contact:

| **Approved Scenarios:**

1. Active bleeding
2. Emergency surgery
3. Symptomatic anemia
4. Emergency red cell exchange
5. Recent medical history that could be adversely impacted by development or worsening of anemia
6. Organ transplant with red cell antibodies
7. Suspected hemolytic transfusion reaction where ARC did test of record crossmatch

Disapproved Scenarios:

1. Outpatient transfusion (patient otherwise stable)
2. Elective surgery (antibody ID or requests for antigen negative blood)
3. Transfusion not emergent and patient's condition unlikely to change for several hours
4. Requests for workup when transfusing antigen negative units prophylactically
5. Known AIHA and workup performed within last seven days
6. Patient with known antibodies requiring rare blood when units not stored on site
7. Typing donor units for low incidence antigens | **Assessing Urgency**

The following questions are designed to help identify referrals for immunohematologic resolution that should be elevated to an emergency status.

1. Patient's clinical symptoms or other relevant symptoms?
   a. Compromised cardiopulmonary reserve (presence of cardiac and/or pulmonary disease)? Yes / No
   b. Increased rate/magnitude of blood loss (actual) anticipated? Yes / No
   c. Atherosclerotic Disease (cardiovascular, cerebrovascular, peripheral vascular disease)? Yes / No
   d. Altered O_2 consumption (affected by pharmacologic agents, sepsis, or other factors)? Yes / No

2. Is the patient actively bleeding? Yes / No
Note: A rapid drop in hemoglobin (> 1 gm / 24 hours) may place the patient at risk.

3. Does the patient require emergency surgery during the next 24 hours? Yes / No

Emergency status should be considered for those patients who:
  • Suffer any of the symptoms listed in #1.
  • Or have a "Yes" answer to either question 2 or 3. |

Name of ARC Physician On-Call:
ARC Physician On-Call Follow-Up Contact Regarding Transfusion Date/Time and Outcome:

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Appendix C

Reference Lab Billing Mnemonics

CPT Code	CPT Description	Charge Code	Charge Description	Credit Code	Credit Description
85660	Hgb S, per test, patient sample	RHGBS	Reference Hgb S charge	CRHGBS	Reference Hgb S Credit
86156	Cold Agglutinin screen, per screen	RCAS	Reference cold agglutinin screen	CRCAS	Ref cold agglutinin scn credit
86157	Cold Agglutinin titer, per titration	CAT	Reference cold agglutinin titer	RCAT	Ref cold agglutinin titer credit
86850	Antibody Screen, each media	RICT	Reference Aby Screen Chg	CRICT	Refer Aby Scrfeen Credit
86860	Elution, each	RELU	Reference Elution Charge	CRELU	Reference Elution Credit
86870	AB ID/each panel and media	RABI	Reference Panel Charge	CRABI	Reference Panel Credit
86880	DAT, each antisera	RDAT	Reference DAT Charge	CRDAT	Reference DAT Credit
86885	AbID/each selected reagent cell	RAB1	Reference AbID each cell	CRAB1	Reference AbId each cell Credit
86886	Indirect titer, per antibody	RIDT	Reference indirect titer per ab	CRIDT	Ref indirect titer per ab Credit
86900	ABO Type	RABO	Reference ABO Charge	CRABO	Reference Laboratory Credit
86901	Rh Type	RRH	Reference Rh charge	CRRH	Reference Rh Credit
86904	Ag screen with patient serum, per unit	ANPTCH	An Scr Pt's serum chg	ANPTCR	An Scr Pt's serum cr
86905	RBC Ag, other than ABO or D, each (patient)	RPHEN	Reference Phenotype charge	CRPHEN	Ref Phenotype Credit
86906	Rh phenotyping complete	RRHPH	Reference Rh Phenotype charge	CRRHPH	Ref Rh Phenotype Credit
86940	Hemolysins and agglutinins auto, each	RHAA	Reference Hem and Agg Auto Each	CRHAA	Ref Hem and Agg Auto Credit
86941	Hemolysins and agglutinins incubated	RHAI	Ref hemolysins and agglutinins	CRHAI	Ref hemolysins and agglut Credit
86970	Pre-Rx RBCs w/chemicals/drugs/per cell	RPRBC	Ref Pretreatemtn RBC chg	CRPRBC	Ref Pretreatment Credit
86971	Pretreatment with enzymes, per cell	REZT1	Reference pretreat with enz/cell	CREZT1	Ref pretreat with enz/cell Credit
86972	Separation by density gradient, retics	RSEP	Ref separation by density grad	CRSEP	Ref sep by density grad Credit
86975	Incubation: serum and drugs, each	RSDI	Ref serum/drug incubation/cell	CRSDI	Ref serum/drug inc/cell Credit
86976	Dilution of serum, per aliquot	RSDIL	Ref dilution of serum per alq	CRSDIL	Ref dil of serum /alq Credit
86977	Incubation with inhibitors, per aliquot	RINH	Reference Inhibition Chg	CRINH	Ref Inhibition Credit
86978	Differential/Auto Ads, each ads	RADS	Reference Adsorption chg	CRADS	Ref Adsorption Credit
86999	Miscellaneous Adsorptions, per ads	RMAD	Ref misc adsorptions	CRMAD	Ref misc adsorptions Credit
86999	Thawing rare reagent red cells, per cell	RTHRC	Reference thaw rare rbc	CRTHRC	Ref thaw rar rbc Credit
86999	Hypotonic wash RBC separation	RHW	Ref hypotonic wash rc sep	CRHW	Ref hypotonic wash rc sep Credit
86999	IgA testing	RIGA	Reference IgA testing	CRIGA	Reference IgA testing Credit
86999	Monocyte monolayer assay	RMMA	Ref monocyte mono layer	CRMMA	Ref monocyte mono layer Credit
86999	Historic antigen negative, per antigen	RUNAG	Ref unconfirmed ag neg	CRUNAG	Ref unconfirmed ag neg Credit
86999	RBC antigen nega ARDP high rare/unit	RHIN	Reference high incidence neg rc	CRHIN	Ref high incidence neg rc Credit
86999	Red cell antigen neg, pheno/unit (r', r", e)	RPHRH	Reference rc ag neg lt e	CRPHRH	Ref rc ag neg lt e Credit
66125	Import fee-red cell	RIMF	Ref import fee rare	CRIMF	Ref import fee rare Credit
66126	Unit search fee for red cells	RUSF	Ref unit search fee	CRUSF	Ref unit search fee Credit
66127	Special recruitment for products	RRFP	Reference special recruit for rbc	CRRFP	Ref special recruit for rbc Credit
86999	Platelet crossmatch	PLAXM	Platelet Xmatch charge	CPLAXM	Platelet Xmatch Credit
86999	Special antiglobulin test	RSAT	Ref special antibody test	CRSAT	Ref special antibody test Credit

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