TRAINING UPDATE

Lab Location:	SGMC and WAH	**Date Implemented:**	1.3.2019
Department:	Blood Bank	**Due Date:**	1.20.2019

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Sample specifications for blood bank testing

Description of change(s):

1. Updated hemolysis chart
2. Samples with 3+ or greater hemolysis cannot be tested on the Echo
3. Hemolyzed specimens (with any degree) cannot be used to make monolayers. Fragmented red blood cell membranes interfere with monolayer formation.

Electronic Document Control System

Document No.: SGAH.BB20[8]
Title: Sample Specifications for Blood Bank Testing
Owner: LESLIE BARRETT
Status PRERELEASED
Doc Effective Date: 01-Jan-2099 **Next Review Date:**

Review

Review: **DEFAULT DOCUMENT**

Approver	Status	Sign-off Date
NICOLAS CACCIABEVE	APPROVED	1/3/19 4:53 pm
STEPHANIE L CODINA	APPROVED	1/2/19 11:15 am
LESLIE BARRETT	APPROVED	1/2/19 10:21 am

Non-Technical SOP

Title	**Sample Specifications for Blood Bank Testing**	
Prepared by	Maria Hall	Date: 8/20/2009
Owner	Stephanie Codina	Date: 8/10/2010

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:	

Review:		
Print Name	**Signature**	**Date**

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1. PURPOSE

The collection of a properly labeled blood sample from the correct patient for pre-transfusion testing is critical to safe blood transfusion. Samples used for compatibility testing for red cell and whole blood products must reasonably represent the patient's current immunological status and be retained for a minimum of 7 days post-transfusion to allow additional testing in the event of an adverse reaction.

2. SCOPE

All specimens for blood bank testing must be labeled in accordance with the procedure outlined below. **Any deviations are only accepted at the pathologist or manager's discretion and must be documented on a PI/variance form.**

3. RESPONSIBILITY

All Blood Bank staff must understand and adhere to this procedure.

The Blood Bank Manager is responsible for implementing, enforcing, maintaining, and reviewing the procedure.

4. DEFINITIONS

Blood Bank Armband Labeling System -- consists of an armband insert and label that each have a unique number printed on them At the time of specimen collection, the phlebotomist prepares the armband by writing the patient's name, medical record number, date/time of collection and his initials/tech code on the insert. The insert is slid into the white armband and placed on the patient's arm. The specimen tube label is applied to the sample and labeled with the patient's full name, medical record number, time/date of collection, and collector's ID/initials.

5. PROCEDURE

A. Labeling

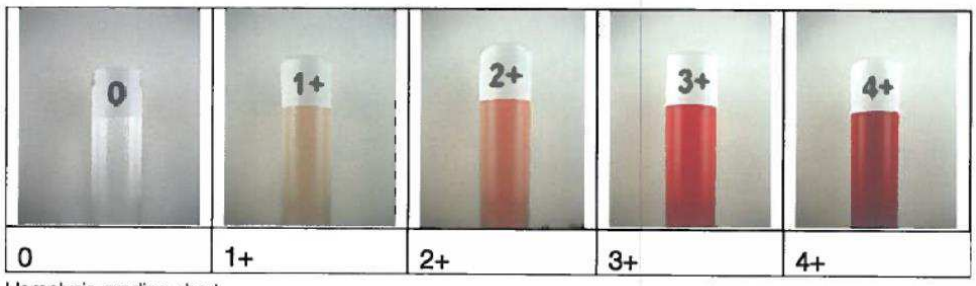
Step	Action
1	Proper identification is essential for all blood bank specimens. A. Labeling must be performed at the patient's bedside, immediately following specimen collection, by the person who collected the specimen. B. Specimens will be rejected if there is evidence that the labeling did not take place at the bedside (i.e. double labeling or additional labeling beneath the blood bank label). C. Specimens from other laboratories will **not** be used for compatibility testing.
2	All blood bank specimens **must** be legibly labeled with the following: A. Patient's complete name B. Patient's medical record number C. Date and time of collection D. Identification of person collecting the specimen E. Blood bank armband number (for TS and TSNEO specimens only) Specimens may be labeled with any label that contains the patient's accurate name and medical record number. The patient name may be truncated due to space limitations on the label; this practice is acceptable. The FIN (billing) number may be used in place of the medical record number during periods of computer downtime and in other situations when the medical record number is not available.
3	Incompletely labeled specimens may be fixed in the confines of the blood bank. A. Laboratory personnel may not correct or alter labels. B. Specimens missing only date and time of collection or phlebotomist's identification may be corrected by the person who collected the specimen. C. The changes must be made in the blood bank.

Step	Action
4	Specimens labeled with an incomplete or incorrect name, medical record number or blood bank armband number will be rejected. A. Cancel and reorder the test in the LIS per procedure. B. Notify nursing or phlebotomy staff to remove the previous blood bank armband and discard or return to the blood bank. C. Complete a PI/Variance report and attach a copy of the specimen label for documentation. Acceptable deviations (but poor practice) are the following: ▪ Nickname on specimen (i.e. Joe for Joseph). ▪ Minor misspelling of name (1 character only). Document misspelling in the Communication Log. Lookup misspelled name in the LIS using Patient/Display/Orders to confirm that there is not another patient with that name. If the misspelled name belongs to, or matches, another patient's data, the patient must be redrawn.
5	Cord blood samples must be designated as "cord blood" and be labeled with the infant's: A. Complete name B. Medical record number C. Date and time of collection D. Collector's identification. Blood Bank armband numbers are not required for cord blood or neonatal type and DAT specimens.
6	Autologous donor units are labeled with the following identifiers by the blood supplier. A. Patient’s full name B. Patient’s birthdate C. Last 4 digits of patient’s SSN (optional) Identifiers must match the same patient identifiers in the LIS exactly. Discrepancies must be investigated and resolved before transfusion takes place.
7	If additional specimen is collected to complete an antibody identification or to refer to the ARC Reference Lab for testing, the additional specimens should be labeled with: A. Patient’s full name B. Patient’s medical record number C. Time and date of collection D. Collector’s initials **The patient’s blood bank armband should NOT be removed. A new armband should NOT be added.** Note: When possible, save some plasma in the original T&S tube for crossmatching. The antibody identification or workup should be completed on the extra or redrawn tubes and the tech should return to the original tube for crossmatching until the original specimen has been depleted.

Step	Action
8	Prior to testing, the blood bank technologist will compare the information printed on the tube to the information listed in the LIS or on the LIS label, and the requisition if available. A. Ensure the patient's name is spelled correctly. B. Ensure the patient's medical record number is correct. Reject the specimen if discrepancies exist. Refer to step 4.
9	Specimens that will undergo automated testing require re-labeling with an LIS label. All other specimens may be labeled with an LIS aliquot label. A. Print an LIS label if needed. B. Compare the information printed on the LIS label to the specimen. a. Ensure the patient's name matches on both labels. b. Ensure the patient's medical record number matches on both labels. C. Place the label on the tube. a. Be sure you do not cover any pertinent information on the original label (name, MRN, time/date of collection, collector's initials). b. If a large label is used (as for automated testing), you may fold the label in half lengthwise to avoid covering the pertinent information below. D. Initial or write your tech code on the label to indicate that you applied the LIS label to the tube.

B. Specimen Type

Step	Action
1	Specimens collected in a tube containing EDTA (lavender or pink top) are preferred for all blood bank testing. A. Specimens may be collected in a plain red top tube or thrombin clot tube. B. Specimen collected in serum separator tubes are not acceptable. C. Specimens collected in heparin may be accepted for some tests; refer to each individual procedure. D. Donor segments are used for donor ABO/Rh and compatibility testing. a. An integral segment detached from the unit at the time of testing is utilized. b. Segments are cut or punctured without obliterating the printed segment number.
2	DAT testing performed on clotted samples can yield false-positive results due to in-vitro complement fixation. All positive DAT results obtained on serum specimens should be repeated on EDTA anticoagulated blood specimens.

Step	Action
3	Specimens with excessive hemolyisis or icterus can interfere with testing. A. Do not test specimens with hemolysis of 3+ or greater on the Echo. These specimens will yield error codes. B. Do not use hemolyzed specimens to prepare monolayers. Fragmented red blood cell membranes will interfere with monolayer formation. C. Do not use grossly hemolyzed specimens for manual testing when you cannot visually discern the plasma and red cell line.  Hemolysis grading chart

C. Age of Sample

Step	Action
1	T&S specimens that will be used for compatibility testing routinely expire at midnight on day 3. Day zero is the day of collection. A. T&S specimens used for compatibility testing of **autologous** units may be extended up to 10 days. B. T&S specimens used for the transfusion of platelets, cryoprecipitate, and plasma products may be used for the entire hospitalization for inpatients and for up to 1 year for outpatients.
2	T&S specimens collected on neonates (<4 months in age) will be good until the infant is discharged or until the infant reaches the age of 4 months, whichever is sooner. A. A new specimen will be collected if the infant is discharged and readmitted. B. Infants greater than 4 months old are treated as adults and samples expire every 3 days.
3	The specimen expiration date may be extended up to 7 days when it is collected as pre-surgical testing **and** the patient has not been pregnant or transfused within the previous 3 months. A. The ordering provider must place an electronic order to extend the T&S before the T&S expires. B. The crossmatch will not be extended if there is any uncertainty about the transfusion or pregnancy history.

D. Retention of Samples

Step	Action
1	Blood Bank specimens are retained at 1-6ºC. A. T&S specimens are retained for at least 14 days. B. Neonatal T&S specimens are retained until the infant is 127 old or 7 days past the baby's discharge date. C. All other samples are stored for 7 days.
2	Unit segments are retained at 1-6ºC. Segments are routinely stored by month for a minimum of 60 days.
3	All specimens and segments are discarded into biohazard trash at the end of the retention period.

E. Centrifugation

Step	Action
1	Blood bank tests that use whole blood do not need to be centrifuged prior to testing. Examples of these tests include A. DAT testing B. Fetal bleed testing C. Cord blood testing
2	Blood bank specimens that require serum or plasma for testing are centrifuged: A. At 3000-3600 RPM for 5-10 minutes when they will be tested using the Galileo Echo or manual capture technology. B. At the above settings or at 6840-7560 RPM for 3 minutes if they will be tested using manual tube methodology.

F. Labeling of Serologic Testing Tubes

Step	Action
1	All serologic test tubes and manual capture strips will be labeled with the patient or unit identity. In addition, the reagent or cell identity will be added to the label for testing performed in a test tube. Capture strips used on the Galileo Echo do not require hand-labeling.
2	The minimum acceptable patient/unit identifiers include: A. The first 3 letters of the patient's last name **or** the patient's first and last initials. B. The last 3 digits of the unit number. C. Additional identifiers will be used if duplicate letters or numbers exist in one batch of patient specimens.
3	Acceptable reagent identifiers will be listed in each individual testing procedure.

6. RELATED DOCUMENTS

SOP: Cancelling Orders

7. REFERENCES

1. Fung, MK, Eder, AF, Spitalnik, SL, and Westhoff, CM. 2017. Technical Manual of the AABB, 19th ed. AABB Publishing, Bethesda, Maryland.
2. Standards for Blood Banks and Transfusion Services, 2018, 31th ed. AABB Publishing, Bethesda, Maryland.
3. Code of Federal Regulations, 21 CFR 606.151, current edition.
4. Immucor, Inc. (2018). Galileo Echo Operator's Manual, v. ECO-001-200. Norcross, GA.

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SOP WAB.001.001, SHB.001.001		
000	8.10.2010	Update owner Section 5: Update to table format, change cord blood labeling, add centrifugation information, add information regarding applying LIS labels to tubes, remove requirement to store segments of crossmatched units with the crossmatch tube, add provision to extend crossmatch to 7 days for PAT.	S Codina	Dr Cacciabeve
001	9.19.2011	Section 5: Add requirement to attach a copy of mislabeled specimen labels to the PI/Variance report. Add requirement to attempt to use the original specimen for crossmatch testing when additional specimen is drawn for the workup. Removed references to gel. Add centrifugation specifications for manual capture and Galileo Echo testing.	S Codina	Dr Cacciabeve
002	2.15.2012	Section 1: Edited sample storage requirement. Samples are stored for 14 days total or 7 days post transfusion per regulatory requirements. Section 5: Updated cord blood labeling requirements for SGAH.	SCodina	NCacciabeve
003	9.25.2012	Section 5: Removed requirement for SGAH to hand-write T&S labels.	SCodina	NCacciabeve
004	11.24.14	Section 5: Removed SSN as an acceptable alternative to the MRN. Added identifiers for autologous units. Section 6: Moved form from section 9 Footer: version # leading zero's dropped due to new EDCS in use as of 10/7/13.	SCodina	NCacciabeve

Version	Date	Reason for Revision	Revised By	Approved By
5	2.24.2015	Section 5: Updated T&S requirements for non-red cell transfusion.	SCodina	NCacciabeve
6	1.30.17	Header: Added WAH Section 4: Updated picture/description of new BB labeling system. Section 5: Added requirement to reorder cancelled specimens. Added pink tube as an acceptable T&S specimen. Added new specimen retention requirements. Section 6: Deleted form AGF160; no longer used	SCodina	NCacciabeve
7	12.31.2018	Section 5: Updated hemolysis information. Section 7: Added Echo manual	SCodina	NCacciabeve

9. ADDENDA AND APPENDICES

None