

Immunohematology Practicum Objectives – 645

The following objectives are to be completed by the student for successful completion of this clinical rotation. The objectives within the psychomotor domain will be achieved by practice and evaluated through demonstration by the student. The objectives within the cognitive domain will be obtained through readings and evaluated through written exams.

Upon completion of the clinical practicum and as applicable to the affiliate blood bank, the student will be able to:

Specimen Acceptability, Processing and Handling

1. Identify the types of blood samples and collection tubes appropriate for routine testing in the blood bank.
2. Determine the acceptability of a sample for compatibility testing based on sample age, compliance with labeling criteria and appearance as defined by institutional policy and AABB standards.
3. Identify procedures for storage of patient samples, including length of time and location.

Quality Assurance and Control

1. Identify quality assurance procedures in blood bank, including those performed daily, monthly, quarterly, bi-annually and annually (to include all storage devices, reagents, instruments, irradiators as may be present in the affiliate laboratory).
2. Identify the accrediting and inspection agencies that monitor blood banks/transfusion services and donor centers.

Routine Techniques and Procedures

1. Prepare appropriate cell suspensions as may be required by the affiliate institution for tube (3-5%) or gel testing (0.8%).
2. Grade and interpret macroscopic and microscopic (following institutional policy) agglutination reactions.
3. Demonstrate ability to appropriately prioritize tasks, report results and complete required documentation, using techniques that minimize error.
4. Verify patients meet laboratory defined audit criteria (when applicable) for approval of component therapy.

ABO/Rh Testing Procedures

1. Interpret the results of ABO/Rh testing without error.
2. Perform weak D testing on designated samples.
3. Identify ABO discrepancies and identify or perform appropriate procedures to resolve for the following:
 - a. mixed field agglutination
 - b. subgroups of A
 - c. hypogammaglobulinemia
 - d. rouleaux
 - e. cold reacting alloantibody
 - f. cold reacting autoantibody

Antibody Screen, Antibody Identification, Direct Antiglobulin Testing

1. Correctly describe the principle, perform, and interpret antibody screening tests using methodology designated by the affiliate:
 - a. tube agglutination
 - b. gel
 - c. solid phase
2. Identify sources of false negatives and false positives in antiglobulin testing.
3. Perform and evaluate the results of an antibody identification panel, including special antigen testing and identify the antibody or antibodies present in the sample, including demonstration of knowledge of the serologic characteristics or antibodies to the following blood group systems:
 - a. Rh
 - b. Kell
 - c. Kidd
 - d. Duffy
 - e. MNSs
 - f. Lewis
 - g. Lutheran
 - h. I
 - i. P
4. Describe the appropriate application (purpose and principle) of the following techniques to assist in antibody screening and identification.
 - a. enhancement media (LISS, PEG)
 - b. enzymes
 - c. elution
 - d. saline replacement
 - e. adsorption (cold/warm)
 - f. neutralization
 - g. pre-warming technique
5. Perform Direct Antiglobulin Testing and describe its application and interpretation with respect to HDN, Hemolytic Transfusion Reaction and autoimmune Hemolytic Anemia.

Compatibility Testing

1. Identify/perform the steps involved compatibility testing using different techniques (IS, AHG, Gel, Pre-warm, Abbreviated or Electronic XM), including check of previous records.
2. Perform and interpret results for compatibility testing and explain possible causes of incompatible crossmatches. Discuss or perform procedures to resolve incompatible cross match results.
3. Select the most appropriate donor units to crossmatch with a recipient when ABO/Rh specific are unavailable and/or when patient presents with:
 - a. single or multiple alloantibodies
 - b. autoantibodies
 - c. allo and autoantibodies
4. Perform or describe the laboratory investigative studies to be used for a suspected transfusion reaction, stating the purpose of each procedure.
5. Identify situation, procedures and consequences for switching between ABO/Rh specific, ABO/Rh compatible and Rh incompatible donor products.

Prenatal Testing, Hemolytic Disease of the Newborn and Rhlg Administration

1. Distinguish between ABO and Rh-related hemolytic disease of the newborn according to clinical and serological presentation.
2. Perform and interpret prenatal testing for mothers and postnatal testing for mothers and babies.
3. Perform and demonstrate knowledge of the principles and applications of testing need for administration of Rhlg including candidate selection, fetal screen and testing (KB) for dosage of Rhlg.
4. Identify and describe significance of other assays (perhaps performed by other departments) used to monitor HDN.
5. Describe criteria for treatment of a fetus/newborn including selection of blood and compatibility testing needed for exchange or intrauterine transfusion.

Component Preparation, Issue, and Inventory Management

1. Prepare and/or describe preparation, issue, pooling (where applicable), segregation, storage, shelf-life, relabeling and indications for use of the following components as applicable to both closed and “open” products:
 - a. pRBCs
 - b. FFP
 - c. Platelets (random or pheresis)
 - d. Cryoprecipitate
 - e. Frozen RBCs
 - f. Leukoreduced RBCs
 - g. Irradiated RBCs
 - h. Washed RBCs
 - i. Rhlg
2. Describe the rationale for review management of inventory and inspection of blood products.

Immunohematology Practicum – CLS 645

Performance Tasks Checklist

Note: This checklist contains a number of Immunohematology tests that may not necessarily be performed in the department at your clinical site or may be performed in another department. The CLS student will perform assigned tests that may or may not be included in this list. However, the student is responsible for applying the objectives to each of the test listed below and any additional assigned by the site. Performing truly independently at all tasks may not be achievable at this stage, but with supervision the student should be able to perform most tasks with minimal oversight.

Please evaluate the student using the following scale:

1. Exceeds Standards (100%): Consistently exceeds entry level expectations. Student demonstrates exceptional initiative and independent functioning. Can perform tasks independently.
2. Above Standards (90%): Consistent in meeting entry-level expectations. Student performance demonstrates initiative and independent functioning. Student may excel in some areas.
3. Meets Standards (80%): Consistent in meeting entry-level expectations. Can perform procedures with supervision.
4. Below Standards (70%): Performance is marginally below entry-level expectations. Student needs to improve to achieve entry-level competencies.
5. Fails to Meet Standards (60%): Performance is significantly below entry-level expectations. Performance is unacceptable. Needs continuous monitoring and supervision.

N/A: Not applicable. No opportunity to evaluate criteria. Please mark “NA” across the rating scale if there has been inadequate opportunity to evaluate an attribute.

Student Name: _____

Clinical Site: _____

Test methodologies used by student (Check all that apply):

- Tube Aggultination Gel
 Solid Phase

Work Habits *continued*

	Exceeds Standards (100%)	Above Standards (90%)	Meets Standards (80%)	Below Standards (70%)	Fails to Meet Standards (60%)	N/A
Demonstrates comprehension of basic blood banking concepts in decision-making, interpretation of results, and problem-solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verifies acceptability of patient samples and audit criteria, initiates appropriate follow-up if unacceptable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verifies acceptance criteria for component therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Makes efficient use of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments on work habits:

Please identify this student's area(s) of greatest strength.

Please identify this student's area(s) of greatest weakness or area(s) where greatest improvement is needed.

If you had a position in your transfusion service, and had the authority to hire, would you hire this student?

Name: _____

Title: _____

Date: _____