

Clinical Performance Objectives in MEDT 472
Clinical Practice in Immunohematology
Department of Medical and Research Technology
University of Maryland School of Medicine

Upon completion of the **Clinical Immunohematology** rotation the **MLS** student will be able to:

I. Specimen Handling and Processing

1. Following departmental protocol and demonstrate safe work practices by:
 - a. Wearing personal protective equipment (PPE) as required.
 - b. Handling and disposing of contaminated materials according to standard precautions.
 - c. Handling chemicals according to safety procedures.
2. Determine the acceptability of a sample for compatibility testing based on sample age, sample appearance and institutional policy.

II. Quality Assurance/Quality Control and Regulatory Issues

1. Perform daily quality control for routine testing according to the operating procedures of the laboratory with 100% accuracy.
2. Recognize discrepant results in routine ABO, Rh and antibody screen testing with 100% accuracy.
3. Report all discrepant results to the clinical instructor.
4. Perform or observe basic laboratory computer applications where relevant.

III. Routine Technical Procedures – ABO/Rh, Ab Screen and DAT

1. Using a “0 to 4+” scale, grade macroscopic agglutination reactions within ± 1 agglutination grade of the instructor.
2. Prepare a 3-5% red cell suspension as needed for tube testing.
3. Label test tubes for routine testing according to laboratory procedure without error.
4. Perform ABO and Rh testing on a **minimum of 25 samples** with 100% accuracy.
5. Interpret the results of ABO and Rh testing without error.
6. Perform weak D testing on designated patient samples when available. (optional)*

7. Perform ABO confirmatory testing on a **minimum of 20 donor segments** with 100% accuracy.
8. Identify mixed field agglutination in 2 samples to the satisfaction of the clinical instructor.
9. Perform antibody screening on a **minimum of 20 samples** to the satisfaction of the clinical instructor.
10. Perform DAT and DAT Battery on a **minimum 2 samples** to the satisfaction of the clinical instructor.

IV. Routine Technical Procedures – Cross-Matching and Transfusion Management

1. Label test tubes for routine compatibility testing according to laboratory protocol without error.
2. Perform the appropriate cross-match procedure, immediate spin (IS) or Full (IAT), on a **minimum of 10 samples** when given the relevant patient information and the policy of the laboratory.
3. Select the most appropriate donor units to crossmatch with a patient when ABO specific red cells are available and when not available.
4. Select the most appropriate donor units when the patient presents with a single alloantibody.
5. Interpret the results of crossmatching with 100% accuracy
6. Distinguish ABO and Rh-related HDN according to clinical and serologic presentation.
7. Perform or discuss the prenatal (mother) and postnatal (mother and newborn) serologic workups for managing cases of HDN.
8. Observe or discuss the procedures for RhIg administration including candidate selection, FMH screening, and dosage determination.
9. Perform or describe a **minimum of 1 transfusion reaction work-up**, according to laboratory protocol.

V. Reference Procedures

1. Perform routine antibody identification panels on a **minimum of 5 samples** according to the acceptable precision of the laboratory.

2. Interpret the results of routine and selected cell panels to determine the specificity of single and multiple antibodies (simple).
1. Perform or discuss the following reference techniques to assist in antibody identification:
 - Selected cell panel
 - Red cell (antigen) phenotyping
 - Enhancement media (PeG & LISS)
 - Acid Elution
 - Saline replacement
 - REST (optional)

V. Donor /Components/Product Disposition

- i. Describe, and, if available, perform the processing of a donor to include:
 - Donor history
 - Physical exam
 - Donor acceptability
 - Proper unit collection and handling
2. Discuss or observe the following forms of blood product handling and manipulation:
 - Pooling
 - Aliquoting
 - Washing
 - Irradiating
3. Review the daily inventory and inspection of blood products.
4. Issue or observe the issue (release) of a **minimum of 5 blood products** for administration.