

# SOP: Pre-transfusion Compatibility Testing and Cross-matching

This SOP details the procedures for **pre-transfusion compatibility testing and cross-matching**, including patient identification verification, sample collection and labeling, blood typing and antibody screening, compatibility testing methods, interpretation of results, handling of incompatible cross-matches, and documentation requirements. The aim is to ensure safe blood transfusions by preventing hemolytic transfusion reactions through accurate matching of donor and recipient blood types and antibodies.

## 1. Purpose

To ensure safe transfusion practices by accurately matching compatible blood products to patients, thereby minimizing risk of transfusion reactions.

## 2. Scope

This SOP applies to all laboratory personnel performing pre-transfusion testing and cross-matching in the transfusion services laboratory.

## 3. Responsibilities

- Laboratory staff: Perform testing steps as outlined.
- Medical staff: Ensure proper patient identification and specimen collection.
- Supervisory staff: Monitor compliance and provide training.

## 4. Procedure

1. **Patient Identification Verification**
  - Check two patient identifiers (full name, date of birth, medical record number).
  - Confirm against identification band and requisition form.
2. **Sample Collection and Labeling**
  - Collect blood sample in EDTA tube by trained personnel.
  - Label immediately at bedside with patient identifiers, date, time, and collector's initials.
3. **Blood Typing and Antibody Screening**
  - Perform ABO and Rh (D) grouping using standard serological methods.
  - Conduct antibody screen to detect unexpected red cell antibodies.
4. **Compatibility Testing**
  - Select donor units with compatible ABO/Rh types.
  - Perform major cross-match using immediate-spin, antiglobulin, or electronic cross-match as appropriate.
5. **Interpretation of Results**
  - Compatible: No agglutination or hemolysis in the testing phase(s).
  - Incompatible: Agglutination or hemolysis observed; unit must NOT be issued.
6. **Handling Incompatible Cross-matches**
  - Repeat testing to confirm incompatibility.
  - Inform physician immediately if confirmed; obtain alternative compatible units.
  - Document findings and actions taken.
7. **Documentation**
  - Record all results, testing dates/times, personnel, and actions in the laboratory information system.
  - Attach cross-match tags to compatible units.

## 5. Records and Documentation

- Patient and donor identification details.
- Blood group and antibody screen results.
- Cross-match results and interpretations.
- Actions taken in case of incompatibility.
- Staff signatures/initials and dates.

## 6. References

- American Association of Blood Banks (AABB) Standards

- Local transfusion service policies
- CLSI Guidelines