Policy Statement	A patient's red blood cell phenotype may be determined during or after the course of antibody identification to assist in the identification or confirm the findings, to provide antigen-negative units prophylactically in multiply transfused patients, to assist in a blood type discrepancy, and when a neonate is born to a mother with a clinically significant antibody.
Purpose	This procedure provides instructions for completing antigen typing for patients.
Scope	This applies to all testing personnel in the Transfusion Service.
Responsibility	This applies to all testing personnel in the Transfusion Service.

Preanalytical Considerations

- Obtain transfusion history prior to testing.
  - If a patient has been transfused within the previous three months antigen typing results are not reliable and must not be reported. Testing may be performed with careful observation of mixed field results but interpretation should be made with caution.
  - If available, a pretransfusion specimen should be used to determine a patient's phenotype.
  - If a patient's phenotype isn't performed following antibody identification due to recent transfusion, notation should be made to perform the testing in the future.
- Phenotype results may be obtained from other healthcare institutions or the ARC IRL. Obtain a faxed or electronic copy of the results for the patient's file.
  - If unable to obtain a copy of the results, read the results back and document the individual's name and the time/date.
- If a patient has a cold autoantibody, it may be necessary to wash their red cells with warm (37°C) saline prior to testing to avoid false positive results.
- If a patient has a positive DAT, antigen typing tests which require an IAT (e.g. Fy^a, Fy^b, S, or s) won't be valid.
- Day of use Quality Control testing is required for each lot of antisera.
  - Select heterozygous cells for positive control when possible.
- Antisera QC testing is documented on TRAN 6034 Fa while patient test results must be documented on TRAN 6006 Fb and into the LIS.
- When determining a patient's phenotype to confirm antibody identification, test for both the antigen in question and the antithetical antigen. If the antibody is in the Rh system test the entire Rh phenotype (C,c,E,e).
  - If the test for the E antigen is negative, the test for the e antigen may be omitted because it is extremely likely to be positive.

Procedure

- Verify Quality Control testing has been performed for the day.
    - If QC testing wasn't performed, it may be performed in tandem with patient samples.

1. All testing supplies used during antigen typing must be clearly labeled with identifying information for both reagent and patient.

2. Refer to manufacturer instructions to perform testing. Different antisera may have unique characteristics to their test procedure. Examples include:

    a. Washed patient cells.
    b. Serum-to-cell ratio.
    c. Incubation temperature.
    d. Incubation time.
    e. Confirmation criteria for negative reactions.

3. Grade reactions and concurrently record the results on the appropriate worksheet.

4. If follow up testing is required for negative reactions (e.g. additional incubation time or check cells for IAT) perform and document results concurrently on the appropriate worksheet.

5. If results are questionable, investigate and follow up as appropriate. Examples of questionable results:

    a. The graded reaction is 1+ or less.
    b. The patient's phenotype is extremely unlikely or rare (e.g. Jk(a-b-), Le(a+b+), (M-N-)).
    c. The phenotype doesn't match with antibody identification and there's no indication of autoantibody.

6. Document the phenotype in the LIS under the mnemonic AGI. Each antigen tested must have its own AGI test requisition (unique specimen number) for billing purposes.

    a. Phenotype information from other institutions should be entered directly into the BBK History. A dated comment should be added to BBK Hx Comments regarding the source of the information.