Policy Statement	When clinically significant red blood cell antibodies are detected or if a patient has a history of such antibodies, red blood cell products negative for corresponding antigens will be prepared for transfusion. Antigen-negative units will also be provided to neonates with mothers who have clinically significant red cell antibodies, sickle cell disease patients, and to select patients when clinically significant antibodies are unable to be ruled out or to minimize the risk of immune reaction. Transfusion recommendations will be documented in a patient's BBK History file.
Purpose	To provide instructions for antigen typing blood products in the inventory or obtaining antigen-negative red blood cell products from the blood supplier.
Scope	This applies to all testing personnel in the Transfusion Service.
Responsibility	This applies to all testing personnel in the Transfusion Service.

Preanalytical Considerations

- Check the "Special Products" shelf prior to testing or requesting products from the supplier – they may be available in the inventory.
- Notify the patient's caregiver any time crossmatches are ordered and antigen-negative blood products have to be acquired from the supplier or tested in the inventory so they are aware of the delay in the availability of blood.
    - Document communication with the caregiver in the specimen comments.
- If the patient's physician determines the delay in obtaining antigen-negative blood products would be detrimental to the patient, blood products may be released under the emergency release procedure. Refer to TRAN 6008 R.
- Determine whether blood products should be obtained from the blood supplier or if they can be obtained from antigen-typing units in the inventory. Consider the
    - Priority of the transfusion order.
    - Rarity of the phenotype required.
    - Workload in the transfusion service.
    - Turnaround time for antigen-typing units in the inventory compared to the turnaround time for obtaining the products from the blood supplier.
- Day of use Quality Control testing is required for each lot of antisera.
    - Select heterozygous cells for positive control when possible.
- Antisera QC and donor unit antigen-typing are documented on TRAN 6034 Fa.
- The antibody identification process should be complete prior to requesting blood products from the supplier.

Procedure – Request Antigen-Negative Blood Products from Supplier

1. Complete the form for requesting special blood products and fax to the supplier. Maintain the completed form with the patient's file folder. Document this information in the communication log.

    a. Confirm the receipt of the faxed request with the blood supplier reference laboratory.
    b. Follow up as necessary if an extended period of time elapses following a request.

2. When the blood supplier provides a pickup time, document this information in the communication log and send a courier for pickup.

    a. If the blood supplier wants to send deglycerolized blood products the limited outdate will require careful coordination of the processing, shipment, crossmatch and transfusion. Before accepting them discuss the circumstances with the patient's caregivers to confirm the transfusion order and establish a schedule. Document communications and schedules in the communication log.

3. Process the unit(s) as soon as possible upon arrival. Refer to TRAN 5020 R. File the packing slip and special request form in the appropriate hanging wall folder.

    a. Antigen-negative units from the blood supplier will have phenotype results indicated on the lower right quadrant of the ISBT face label, on an attached tie tag, and/or with an accompanying antigen typing report.
    b. Enter the unit's phenotype into the LIS using the Edit Units routine. Refer to TRAN 5020 Ja.
    c. Enter the charge for blood supplier antigen typing under the requisition for the blood product request using the Enter/Edit Req routine and the mnemonic ARCAOU. The charge count is the number of units received times the number of negative antigens requested.
        i. If there is no blood product request add the charges to the TYSC.

4. If a reference unit ordered from the blood supplier is crossmatch-incompatible

    a. Review the antibody identification workup and the patient's history.
    b. Perform a DAT on the blood product.
    c. Consider an antibody to a low incidence antigen.
    d. Follow up as appropriate.

Procedure – Antigen Typing Units in the Inventory

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

1. Select a sufficient number of red blood cell products to test based on the rarity of the phenotype and the number of products required.

2. Use a segment of integral tubing attached to the donor unit to make the appropriate cell suspension for testing.

    a. Use a non-attached segment only after confirming tubing identification numbers match.

3. All testing supplies used during antigen typing must be clearly labeled with identifying information for both reagent and donor unit.

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

    a. Washed donor cells.
    b. Serum-to-cell ratio.
    c. Incubation temperature.
    d. Incubation time (if the incubation time is given as a range, use the maximum incubation time when antigen typing units).
    e. Confirmation criteria for negative reactions.

5. Grade reactions and concurrently record the results on TRAN 6034 Fa.

6. 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 TRAN 6034 Fa.

7. If results are questionable, investigate and follow up as appropriate.

8. Enter the unit's phenotype in the LIS using the Edit Unit routine. Refer to TRAN 5020 Ja.

9. Enter the charge for in-house antigen typing under the requisition for the blood product request using the Enter/Edit Req routine and the mnemonic AGCH. The charge count is the total number of antigen type tests performed, including tests that were positive for the antigen.

a. If there is no blood product request add the charges to the TYSC.

10. Label the blood product with a completed pink “Special Antigen Typing” label.

11. If an antigen-typed unit is crossmatch-incompatible

    a. Review the antibody identification workup and the patient’s history.
    b. Perform a DAT on the blood product.
    c. Consider an antibody to a low incidence antigen.
    d. Follow up as appropriate.