IV. FACTORS THAT CAN AFFECT LABORATORY RESULTS

1. HLA typing

- Age of the specimen-ACD blood samples should be tested immediately, and must be tested within 72 hours.

- Storage conditions-If ACD and clotted specimens are not tested immediately, they must be stored properly. ACD specimens at room temperature and clotted specimens at refrigerator temperature. Protect specimens from freezing.

- Patient diagnosis- Leukemia, aplastic anemia, SLE may influence both the number of lymphocytes available and the expression of HLA markers. Autoimmune diseases may cause the production of autoantibodies which result in positive crossmatches, and positive antibody screening.

- Medications: Prednisone, procainamide, chemotherapeutic agents, OKT-3, immunosuppressants, among others can effect the results of HLA typing and antibody screening.

- Blood/component transfusions - Presence of donor cells after large amounts of whole blood may give extra reactions in typing. The dilution effect may produce false negative reactions and reduce the number of lymphocytes in a sample. Presence of soluble HLA factors in plasma may neutralize antibody. As a general rule, peripheral blood from donors will not be used for crossmatching after the donor has received more than his/her blood volume in the last 48 hours. Nodes recovered with the organs will be used for crossmatching.

- Hemolysis - may inactivate some components of the test system.

2. Infectious disease testing
• Specimens collected in the “window” period between infection and seroconversion or after disappearance of the antigen and appearance of detectable antibody may produce false negative reactions.

• Specimens excessively diluted with IV fluids or blood/components may result in false negatives; false positive results may be caused by positive results in the serum of the donor of transfused blood or blood components.

• The use of heat inactivated serum may give false positive results in ELISA.

• Specimens older that the limit stated in the manufacturer’s circular may give false positive or false negative tests.

• ELISA assays are not intended for use with excessively hemolyzed sera, and specimens from cadaver donors may give false positive results especially with the Hepatitis B surface antigen and Hepatitis C antibody screening tests.