LB.66 The transfusion services develop a process for intra-uterine and neonatal testing and transfusion.

LB.66.1 There is a process for intra-uterine and neonatal testing and transfusion that entails determination of the neonate ABO/Rh and conditions for repeat of ABO/Rh testing.

LB.66.2 The process entails performance and interpretation of Direct Anti-globulin Test (DAT).

LB.66.3 The process describes conditions for omitting re-typing and serological cross-match.

LB.66.4 The process considers the clinically significant antibodies of maternal origin.

LB.66.5 The process describes selection of RBC and plasma components for top-up, exchange and intrauterine transfusions.

Standard Intent:

Initial neonatal testing must include ABO and Rh typing of red cells and a screen for red cell antibodies; the antibody detection test may be done on either serum or plasma, from either the infant or the mother.

During any one hospitalization, repeat compatibility testing and ABO/Rh typing may be omitted, provided that the screen for red cell antibodies is negative; that all red cells transfused are group O, ABO-identical or ABO-compatible; and that red cells are either Rh-negative or the same Rh type as the patient.

If an unexpected red cell antibody is detected in the infant's specimen or the mother's serum which contains clinically significant red cell antibodies, the infant should be given either red cell unit that lack the corresponding antigen(s) or units compatible by an antiglobulin crossmatch. This should continue throughout the neonatal admission (≤four months of age) and for as long as maternal antibody persists in the infant's blood.

The selected blood must be fresh (< 14 days old) leukocyte-reduced, irradiated, Sickle screen negative and G6PD screen normal. Neonatal RBC replacement therapy must be given with maximum amount of RBCs per ml of volume. Therefore, the hematocrit of the selected unit must be adjusted to 70 – 80%. If group O RBCs have been transfused, testing for anti-A and/or anti-B must be performed through the antiglobulin phase before switching the newborn back to his/her original blood group.
In the case of HDN, the selected unit must lack the antigen corresponding to the maternal antibody or crossmatch compatible with the mother serum/plasma at the antiglobulin phase.