PP 78. The role of the red cell serology laboratories in finding rare Rh phenotypes through antenatal testing

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Background
Rapid Rh testing is performed on pregnant women by state antenatal clinics. Samples of those testing Rh negative are forwarded to the SANBS Red Cell Serology (RCS) Laboratories for further testing. In RCS, confirmatory Rh testing and irregular antibody screening and identification is performed. The titres of women with obstetrically significant antibodies are monitored throughout the pregnancy and red cell phenotyping tests are performed in order to identify patients with rare phenotypes. This allows for rapid assistance should future transfusions be required and creates the opportunity for family studies.

Methods
The Rapidtest® Rh rapid Rhesus typing test kit (National Bioproducts Institute) is used by the antenatal clinics for the initial Rh testing. Thereafter, RCS confirms the Rh type by the automated gel indirect antiglobulin technique (IAT) and manual anti-D blend IAT. Antibody screening and identification is done using the automated gel IAT. Obstetrically significant antibodies are titrated by the manual IAT. Red cell phenotyping is performed on patients with identified alloantibodies. Samples found to be r'r, occurring in a small percentage of the population, are then sent to the Immunohaematology Reference Laboratory for full Rh phenotyping. In the Reference Laboratory, the red cells are tested against the following reagents: anti-C, -D, -E, -c,-e, -K, -hrs, -Rh 34,-Cw and anti-G.

Samples testing negative against anti-hrs are repeated. This result indicates that the patient is of the rare hrs negative phenotype. Samples testing negative against anti-Rh 34 are repeated using the same reagent, and retested with a different reagent if still negative. This result indicates that the patient is of the rare Rh-34 phenotype. Samples testing positive against anti-Cw indicate the presence of the rare Cw antigen.

Results
RCS received 19,366 between 2011 and 2016, of which 114 samples were found to be r'r and sent for full Rh phenotyping. Of these, 10 were confirmed to be of a rare phenotype; 8 confirmed as Rh-34 and 2 as hrs negative. On average, RCS received 3228 samples per year and identified on average 19 cases of r'r. Reference Laboratory identified an average of 1.6 rare phenotypes per annum. Of the 10 identified phenotypes none received blood transfusion and we were not able to conduct family studies

Conclusion
While no family studies where conducted on the rare phenotype cases identified, it remains an important strategy that requires revitalization. The main reason with family studies not yet conducted, is because they don't receive the report as patient's record goes to the clinic. In future we should be asking clinic staff to help us trace family members.

Abstract Title : Establishing locally derived reference intervals for full blood count parameters and white cell differential counts in the Western Cape region of South Africa.