Derby Teaching Hospitals NHS Foundation Trust provides both acute hospital and community based health services, serving a population of over 600,000 people in and around Southern Derbyshire.

The Royal Derby Hospital, which incorporates the Derbyshire Children’s Hospital, is a busy acute teaching hospital.

The Trust treats a million patients each year and more than 6,000 babies are born in its maternity unit annually. Every year 72,000 elective operations take place in the hospital’s suite of 35 modern operating theatres, an average of more than 280 operations per day. The hospital has a total of 1,100 beds.

Pathology at the Royal Derby Hospital consists of three departments, Blood Sciences (Incorporating Haematology, Biochemistry, Immunology and Blood Transfusion), Cellular Pathology, and Microbiology.

The Blood Transfusion Laboratory is CPA accredited, MHRA compliant, meets current BCSH guidelines, and participates in all relevant Quality Assurance schemes. The department processes around 60,000 blood group and antibody screens annually utilising two Bio-Rad IH-1000 analysers and Bio-Rad gel column technology. Routine Internal Quality Control (IQC) is performed daily using the Bio-Rad Basic QC kit as well as additional third party QC material. Other tests performed are Antibody identification, Compatibility testing including serological crossmatch and electronic issue, Neonatal sample testing, Kleihauer testing and Direct Antiglobulin testing is undertaken. The department provides an Antenatal Screening Service and a routine Antenatal Anti-D prophyaxis (RAADP) programme.

In January 2016 Bio-Rad installed a software package called Unity Real Time® 2 (URT2) onto the Bio-Rad analysers for evaluation. URT2 can be utilised to provide trend analysis/monitoring of sensitivity of the internal quality control material being processed routinely on the analysers.

It is a requirement of the International Standard ISO 15189:2012(E), 5.6.2.3 that:

“Quality control data shall be reviewed at regular intervals to detect trends in examination performance that may indicate problems in the examination system”.

Initial results show that the Basic QC 1 & 2 cell samples in routine use on both the analysers appear to be stable throughout the period they are used maintaining consistent strengths of reaction for both grouping and antibody screening. Reports can be generated from URT2 software as PDF documents which are reviewed at local Quality meetings. Remote access for managers to the results on URT2 via the hospital network is also a useful feature.

Further evaluation of the EQAS blood typing system will take place in Cycles 2 and 3 in June and October 2016.

In July 2016 the Pathology Service of the Royal Derby Hospital underwent a United Kingdom Accreditation Service (UKAS) inspection as part of the transition from Clinical Pathology Accreditation (CPA) to the ISO 15189:2012(E) standards. This assessment, the IQC trending process was reviewed and the use of the URT2 software was found to be a satisfactory method of IQC trend analysis.

An EQAS online account was set up for the Derby Blood Transfusion Laboratory, which allowed us access to the portal to set up the instrument requirements (IH-1000) and test requirements.

Once the system was configured we could enter the results for each test performed and submit the results accordingly. The report, available 48 hours later, provided a comparison with other EQAS users using similar and alternative technologies.

In addition to evaluating the Unity software for IQC we were also involved in trialling the new Bio-Rad EQAS blood typing system. In February 2016 we received the first cycle of EQAS material which consisted of 4 blind samples, 3 samples suitable for Blood Grouping, phenotyping, antibody screening and antibody identification plus a further sample to act as a donor sample for compatibility testing. The samples were run routinely on the IH-1000 analysers and the results subsequently submitted before the closing date on the dedicated EQAS online portal via the Bio-Rad QCNet website.