

# Collaborative working to provide patient centered care

Karen Madgwick FIBMS, CSci\*, DMLM, Shehan Palihavadana MSc, BSc\*\* Arne de Kreuk MD PhD\*

\*North Middlesex University Hospital NHS Trust, London, United Kingdom

\*\* Hospital Services Laboratory, London, United Kingdom

## Introduction

North Middlesex University Hospital NHS Trust (NMUH) is a 400 bed acute hospital in North London. The hospital is a specialist centre for the treatment of inherited red cell disorders caring for approximately 500 adult patients with Sickle Cell Anaemia (SCA) and 40 patients with B Thalassemia. The service has a dedicated red cell day unit where 15 to 30 patients attend weekly for their life saving blood transfusions. Up to the 20<sup>th</sup> March 2019 the Haematology Day unit was adjacent to the Medical Day Unit with a dedicated area encompassing a reception desk, a small office and a large open space with 9 reclining chairs and one bed. The unit was open Wednesday 9 -5, Thursday and Friday 9 – 9 and alternate Saturdays. At the end of each treatment the patients would agree a date for their next transfusion and be given blood forms so that they could book to attend the out patient phlebotomy service for their next pre transfusion bloods. During the week 16<sup>th</sup> March, the Haematology team were asked to review and make the service as safe as possible for the vulnerable (shielding) patients. A decision was made to move the day unit to the front of the hospital within an out-patient clinic area where patients could park and access the area quickly and easily without walking through the hospital. Four separate clinic rooms were repurposed with three, two and one reclining chair and one with a bed for the automated exchanges. The second change was to rethink how the patients would get there pre transfusion blood samples done. In order to reduce visits and contacts all patients were phoned and encouraged, where possible, to come for same day pre transfusion bloods. This system was in place from 25<sup>th</sup> March to 31<sup>st</sup> August. During the last week in August a further change was made and patients were required to have a negative Covid-19 swab prior to attending for their transfusion. In order to accommodate the swab and to minimise visits the day unit opened on a Monday 10am to 6pm for bloods and swabs. From 31<sup>st</sup> August, to date, the patients are asked to attend for Covid-19 swab and pre transfusion bloods, taken by the dedicated haematology nursing team 48 to 72 hours prior to their attendance.

## Background

These alterations required the laboratory to make some difficult and challenging changes almost overnight. The NMUH has an outsourced pathology provider Hospital Services Laboratory (HSL), part of the TDL group. HSL staffs, and runs, a Rapid Response Laboratory (RRL) on the NMUH site. The RRL includes a Blood Transfusion Laboratory which provides a full range of testing and blood component support to the Trust. The inherited red cell service accounts for approximately 35 % of the transfusion laboratory's workload (excluding antenatal samples). Prior to March 2020 workload from the day unit would trickle in over the Monday, Tuesday and Wednesday as patients attended outpatients phlebotomy to get their bloods done and the laboratory workload could be managed by processing samples in order of date of attendance for transfusion. From the 25<sup>th</sup> March the laboratory had to process 7 urgent samples a day to ensure that the patient was kept waiting for a minimal time. On 31<sup>st</sup> August a further change was implemented requiring all patients to have a negative Covid-19 swab result prior to attending for transfusion. As turnaround time for a Covid-19 swab result was 48 hours a new challenge was presented. A system was set up for patients scheduled for transfusion on Wednesday and Thursday to attend the day unit on Monday for swab and pre transfusion bloods. In order to ensure a Covid-19 result it became difficult to guarantee completion of the blood transfusion within 72 hours in line with guidance (1).

## Method

### Same day bloods (March to August):

- Spreadsheet sent to the laboratory of all patients attending the following week
- Checks made for previous antibodies.
- If antibodies previously reported, but not recently detected the IAT crossmatch set up prior to putting sample on analyser.
- If antibodies known and previously detected consider order of testing, panel, IAT crossmatch, analyser for group and screen.
- Highlight exceptions e.g. RCI referrals or complex antibody investigations.

### 72 hour (September to date):

- Spreadsheet sent to the laboratory of all patients attending the following week.
- Highlight exceptions e.g. RCI referrals or complex antibody investigations.
- Sticker implemented (Figure 1) so that staff are aware when the transfusion should be completed by.

## Results

- A total of 304 transfusions (168 top up, 129 automated red cell exchange and 7 manual exchange) between March and September using a same day blood (Figure 2).
- A total of 102 transfusion (56 top up, 41 automated red cell exchange and 5 manual) between September and October.
- 13 of the regular attenders (91 episodes) had historical and or current red cell antibodies
- 1 patient (7 episodes) required referral to RCI with an individual plan of attendance for pre transfusion blood samples.

Figure 1: Sticker placed on the patient identity label attached to the unit

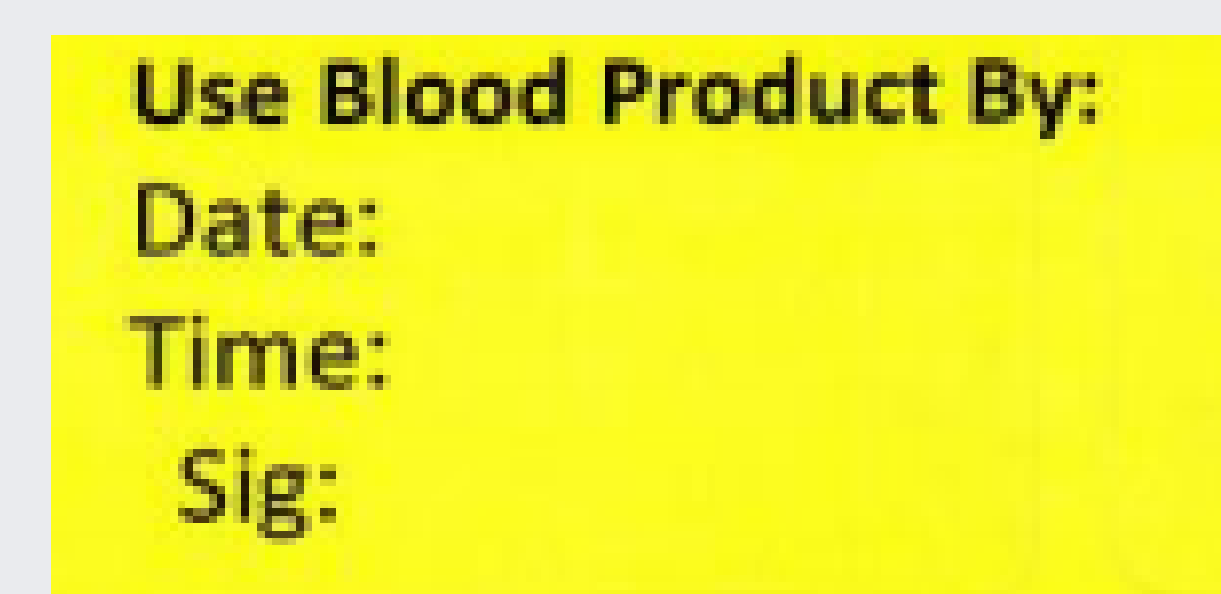


Figure 2: Automated exchange, top up transfusion, manual exchange (left to right)



## Conclusion

2020 has been a challenging time for all. Clinical laboratories have had to introduce new tests, have undergone difficult and challenging changes to their working practices, while still having to maintain a full and essential service. The HSL Blood Transfusion Department serving the patients at North Middlesex have adapted quickly and efficiently to the changing needs of the patients with inherited red cell disorders. It is acknowledged that the adaptations may not have been possible if laboratory staffing levels had been severely affected but fortunately above minimum staffing levels have been maintained. In addition, during March to May, transfusion workload was reduced due to a reduction in elective surgical work. The most difficult change was providing same day testing for patients with known antibodies. Traditionally pre transfusion testing would be performed in a strict order in accordance with the standard operating procedure with the automated ABO, Rh D and antibody screen being performed and reviewed prior to further testing. On patients known to have previous antibodies this system was changed to allow for an almost reverse order approach with the indirect antiglobin test (crossmatch) being set up prior to the sample going onto the analyser. As this allowed most of the incubation steps to occur simultaneously this greatly reduced the patient waiting time from approximately 3 hours to one hour. This allowed flexibility in the order of the steps without compromising patient safety. Pre planning and communication became essential between the laboratory and the clinical area facilitated by emailing a list of patients to the laboratory a week in advance, with exceptions highlighted early and individual plans made. The move in September to Covid-19 swab testing created further challenges to ensure that sample to transfusion end occurred with the required 72 hours (1). The stickers (Figure 1) were introduced to guide clinical staff as to the time when transfusion of the unit needed to be finished by. This enabled staff to adjust start times, transfusion rates or to request an extension to the time allowance in patients where it was safe to do so. Patients were generally happy with the changes acknowledging the efforts made to offer as much protection as possible while still facilitating their treatments. A suggestion made by the patients which will be implemented is to change the wording on the sticker as they were concerned that the red cell unit was near its expiry, it is planned to change the wording to 'Ensure transfusion completed by'.

In summary all staff thought that the changes were positive leading to supportive, patient centred care. In addition a closer and more positive working relationship has developed between the laboratory and clinical staff.

## Reference

1. British Committee for Standards in Haematology. *Guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories*. Transfusion Medicine Vol 23 (1) 3-35