Survey of out of hours referrals to Newcastle RCI 2014-15

Reason for the study

To identify current reasons for, and patterns of, out of hours referral to Red Cell Immunohaematology (RCI) (defined as samples received between 5 pm and 8 pm during weekdays, (between 9 pm and 8 am for January and February 2015) and all samples received at weekends).

Aims of the study

Determine indications for, and times of, referral to RCI reference lab.
Assess whether requests were dealt with in a timely manner, according to clinical urgency.

Methods

The study was agreed by the North East Regional Transfusion Committee (RTC). All urgent/out of hours RCI requests to Newcastle RCI, initially over a 6 month period from May 2014, were studied. As fewer requests were received than were expected, collection was continued for a further 3 months, and completed end February 2015. Data were collected by RCI on a paper form (see Appendix) and the final outcome was recorded by the RTC administrator.

Results

Referral patterns

There were 78 referrals recorded during the study period. (Some referrals were not recorded). The median age of patient was 73.5 years (range 4-94). Most referrals required antibody identification (ID) and crossmatch, but 2 referrals were for investigation of transfusion reactions. The broad clinical categories were very similar to a recent national survey of red cell use (ref http://hospital.blood.co.uk/media/27581/anonymous-nrcs.pdf). The commonest specific clinical problem was Autoimmune Haemolytic Anaemia.
The breakdown of referrals by Trust is shown in Fig 1.
Haemoglobin (Hb) on referral was <70 g/L for 15 referrals, 70-79 g/L for 23, >79 g/L for 22 referrals, and not known in 18 cases.

Urgency of request and timings

20 (26%) requested blood within 1 hour or as soon as possible, 12 (15%) 1-4 hours, 19 (24%) 4-8 hours and for 27 (35%) blood was required more than 8 hours after the request. The timings of starting investigations, blood being ready, and time to transfusion, according to clinical urgency, are shown in Table 1. Of particular interest, for all referrals, whether urgent or not, investigations started within 5 minutes of the sample arriving.

The breakdown of antibodies found was as follows

Antibody	Number of referrals	Antibody	Number of referrals
Panreactive	17	Anti Fya, M, auto anti-C	2
Allo anti E	6	Anti Cw, D, BgA, Ce, S	1
Allo anti e	5	None	9
Auto anti c, allo anti K	5	Weak, non-specific	4
Auto anti e, allo anti Jka, allo anti C, weak non-specific	4	Other	8
Anti Kpa	3	Not stated	10

Was blood used?

For 54 referrals, at least 1 unit was transfused. In 22 cases blood was not transfused. For 16 cases it was not required, in 1 case the patient died, in 5 cases the reason was not known. Two other cases did not require blood as the referrals were for investigation of transfusion reactions.

Other findings
28 samples were transported by taxi, 12 by Lifeline, 8 by Northumbria blood bikes, 1 by NHS Blood and Transplant (NHSBT), and for 28 referrals, the mode of transport was not known.
Delivery of crossmatched blood showed a more complex pattern including “ad hoc” “collects” blood bikes, lifeline, taxi and routine NHSBT deliveries for less urgent cases. One referral was associated with a “blue light” delivery.
No referrals were discussed with the Centre or Duty NHSBT consultant.

Conclusions

- Amazingly prompt response when the sample arrived!
- 41% of referrals needed blood within 4 hours
- The majority of referrals were for a medical, rather than surgical indication
- Urgency did not appear to be related to patients’ haemoglobin.
- Urgent samples were treated more rapidly than less urgent: but the response was always quick

Recommendations
RCI should check SPN205 to ensure centre/ duty consultant is contacted when appropriate. Indications for contact include: patients with urgent requirements with Hb <60g/L, patients requiring urgent blood when antibody specificity has not yet been determined, inadequate sample labelling in urgent cases.

Fig 1 Referral by Trust

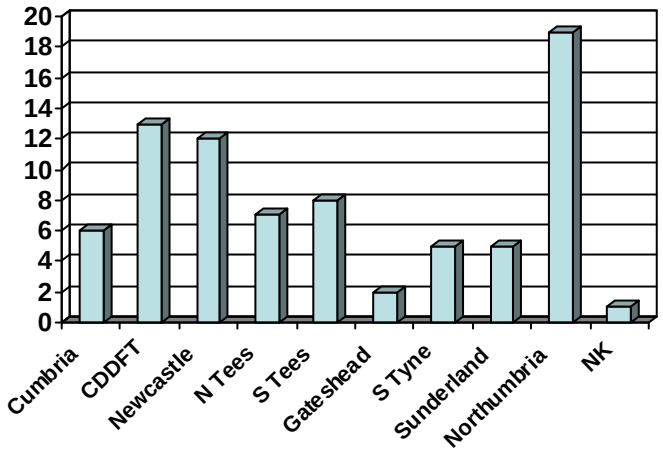

Table 1 Timings of investigations, according to urgency of transfusion

Urgency	ASAP	1- 4 hrs	4-8 hrs	>8 hrs
Median time, arrival to investigation start, minutes	**0 mins** (up to 4 hrs 10 min)	**1 mins** (up to 1 hr 45 min)	**0 mins** (up to 2 hrs 30 min)	**1.5 mins** (up to 8 hrs +)
Time taken from start of investigation to units ready, hours	**1hr 45 min** (range 1hr to 4 hrs 45 min)	**2 hrs** (range 1hr to 3 hrs 50 min)	**1 hr 45 min** (range 50 min to 4 hrs)	**2 hr 30 min** (range 1 hr to 4hrs 30 min)
Time from blood ready to transfusion, hours	**4 hrs** (range 1 hr 20 to 84 hrs ??)	**6 hrs** (range 2 hrs 15 min to 9 hrs 30 min)	**11 hrs** (range 4 hrs to 24 hrs)	**14 hrs** (range 8 hrs to 40 hrs)

Appendix: Data collection form

Patient details	NHSBT number:				
	Hospital number:				
	Patient Age:				
	Previously known to RCI:	Y		N	
	Hospital name:				
Request details	Reason for RCI referral:				
	Diagnosis:				
	Hb (g/L):				
	Is the patient bleeding:	Y		N	
	Is a crossmatch required:	Y		N	
	How many units:				
	Any special requirements?				
	Was advice from NHSBT consultant sought:	Y		N	
	If yes, outcome of advice:				
Timing	Date blood taken:				
	Time blood taken:				
	Time blood arrived at local lab:				
	Time referred to RCI:				
	Urgency:	ASAP	1-4	4-8	>8
	Time left local hospital:				
	Transport mechanism:				
	Time arrived at RCI:				
	Time RCI investigations started:				
	Time RCI result given to requestor:				
	Time blood left issues (if applicable):				
	Transport mechanism:				
	Total time work took:				
Transfusion	Was blood transfused (if applicable):	Y		N	
	Number of units transfused:				
	If blood not transfused or less than the number of units requested transfused state reason:				
	Time blood transfused (if applicable):				
Investigatio	Investigation needed and summary of RCI findings:				
	Genotype required:	Y		N	
	Can local lab access results via Sp-ICE:	Y		N	