Transfusion Laboratories: The Perfect Storm

Debbie Asher
Network Transfusion Manager
Eastern Pathology Alliance
The plan

UK Transfusion Laboratory Collaborative: minimum standards for staff qualifications, training, competency and the use of information technology in hospital transfusion laboratories 2014

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SUMMARY

The SHOT Adverse Incident Reporting Scheme has consistently reported an unacceptably high level of errors originating in the laboratory setting. In 2006 an initiative was launched in conjunction with the IBMS, SHOT, RCPATH, BBTS, UK NEQAS, the NHSE NBTC and the equivalents in Scotland, Wales and Northern Ireland that led to the formation of the UK TLC. The UK TLC in considering the nature and spread of the errors documented by SHOT concluded that a significant proportion of these errors were most likely to be related to either the use of information technology or staff education, staffing levels, skill mix, training and competency issues. In the absence of any formal guidance on these matters, the UK TLC developed a series of recommendations using the results of two laboratory surveys conducted in 2007 and 2008.

In producing the initial (2009) recommendations the UK TLC had intended to provide guidance on ‘best practice’ in these areas. In doing so, it was anticipated (by the UK TLC) that laboratories complying with these recommendations would see a fall in the errors reported to SHOT by them, thereby leading to an overall reduction of errors reported to SHOT by all laboratories. The UK TLC considered the expected level of error reduction and agreed that a 50% reduction in reportable errors originating in the laboratory could be achieved by September 2012.

This target was not met and in response, the UK TLC undertook a new survey of laboratories in 2013. Using the results of this new survey, the UK TLC has revisited its recommendations and developed them further into minimum standards for education, training, competency and the use of information technology for the hospital transfusion laboratory (the UK TLC standards). Compliance with the UK TLC standards described below...
The reality

![Bar chart showing the number of reports over years: SHOT laboratory errors, SHOT laboratory near miss, MHRA SAE.](chart.png)
Quality of service is suffering due to increased numbers of very inexperienced staff and the inability to recruit anyone with BT experience.

As the technical transfusion lead I struggle to keep up with workload within my core 37.5 hours, and regularly work additional hours.

Lack of resource and support leads me to feel stressed and under considerable pressure regularly, and the only aspect that keeps me in this profession is my personal interest in the subject.

Rotation of staff due to shift systems means less continuity.

General comments

As the technical transfusion lead I struggle to keep up with workload within my core 37.5 hours, and regularly work additional hours.

Lack of resource and support leads me to feel stressed and under considerable pressure regularly, and the only aspect that keeps me in this profession is my personal interest in the subject.

Rotation of staff due to shift systems means less continuity.
NETWORK FORMATION

INCREASING REGULATION

AFC PAY & CONDITIONS

IMPOSITION OF SHIFT

CHANGES TO TRAINING
Carter Report

• Consolidation of pathology
  – The review
  – My experience

• Regulation
  – ‘We also recommend that all pathology service providers should be subject to mandatory accreditation by an organisation independent of the providers and the professions’

• Reform of the Pathology Workforce
  – Skill mix
  – Workforce planning
  – Education and training
• Consolidation
  – The review
  – My experience

• Regulation
  – ‘We also recommend that all pathology service providers should be subject to mandatory accreditation by an independent organisation and the professions’

• Reform of the
  – Skill mix
  – Workforce planning
  – Education and training
The 3 Laboratories
Based on the evidence we have collected, we believe there is a strong case for consolidation of pathology to improve quality, patient safety and efficiency.

Consolidation enhances quality by creating critical mass and by delivering better value for money through economies of scale.

Characteristics of a good consolidated service would be:
• Responsibility for management of the end-to-end service;
• Full IT connectivity;
• Effective resource management;
• Non-urgent and specialist tests concentrated in a core laboratory with other work located in settings where a rapid turnaround is needed.
Carter Report

Reinvestment of savings is essential to deliver and assure service quality.

We recognise that to realise these potentially significant savings from consolidation, some transitional investment and support may be required.

IT connectivity should be put in place for NHS pathology services as a matter of priority.
Eastern Pathology Alliance

1x8a
1x7
1x4
2x3
10xBMS

7xBMS

Pre EPA | EPA
---|---
1x8a | 
1x7 | 1x7
1x4 | 1x4
2x3 | 1x3
10xBMS | 7xBMS

1x8a and 1x7

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5x3
In your professional judgement does your full establishment of staff allow you to deliver all operational and regulatory activities?
The vacancies or long term absences or maternity leave in each grade and the length of time posts have been vacant.
Reasons for Leaving

Reasons for leaving

Number of laboratories

Retired
Early retirement
Redundancy
Promotion
Left for a new organisation at the same grade
Left an NHS job for a non-NHS post
Left an non NHS job post
Left the profession for employment elsewhere
Left substantive employment to work as an agency locum

>5
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1
Skill Mix

Increasing automation has created a widening gap between the functions and skills of pathology staff.

There is scope for better alignment of skills with functions.

More broadly based skills to enable staff to work more easily across and between the different disciplines.

Maintaining specialist pathology and managerial expertise.

Service consolidation would also help to address professional isolation.

Provision to enable the future workforce to be re-skilled.
Workforce Planning

Where there is a clear vision of what pathology services should look like in the future, there should also be a workforce plan (numbers, skills, grades). A migration programme could then be devised, taking account of the age profile of the existing workforce, recruitment and retention rates and skill mix.

make effective contractual arrangements for reducing reliance on costly on-call arrangements.
Education and Training

Further work is put in hand to reform the workforce. Training curricula would be revised accordingly and models to provide sustainable training capacity introduced. This needs to be linked to more intelligent workforce planning arrangements to cover pathology as a whole making available to pathologists more training in clinical leadership and for pathology managers training in business management.
In Summary – what has not happened:

• Reinvestment of savings is essential
• Transitional investment and support may be required
• IT connectivity ..... Priority
• Provision to enable the future workforce to be re-skilled
• A migration programme could then be devised
• Models to provide sustainable training capacity introduced
• Intelligent workforce planning arrangements
Training

• IBMS accredited Biomedical Science degree – University of Essex

• Modernising Scientific Careers (MSC) – University of Hertfordshire

• Trainees

• Inexperienced band 5 staff
## Training in Haematology/Transfusion

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AfC Pay and Conditions

- Voluntary on-call vs mandatory participation in shift
- Loss of on call payments
- Differential pay for difficult shifts no longer attractive
- 1% cap on pay increases
Unintended Consequences

- Increase use of unqualified, multidisciplinary & junior staff
- Poor quality of applicants
- Vacant posts unfilled for long spells
- Loss of "body of knowledge" as experienced staff leave
- No staff available for training and keeping competencies up to date
- Educational events not well attended—further loss of knowledge
- Reduction in funding for training & development
- Increasing workload
Where do we go?

“A dream becomes a goal when action is taken toward its achievement.”
– Ro Bennett

STOP TALKING ABOUT THE PROBLEM AND START THINKING ABOUT THE SOLUTION.
– Brian Tracy

PAINT YOUR OWN RAINBOW.
What can we do?

• Provide the evidence to highlight the problems through:
  – UK Transfusion Laboratory Collaborative (UKTLC)
    • Biennial questionnaire
  – Haemovigilance (SABRE/SHOT/MHRA)
    • Thorough Root Cause Analysis
    • Including human factors
Cyber Attack!

Transfusion Error May 2017

Organisational and Strategic Factors
- All IT at JPUH was down due to Cyber Attack by WannaCry ransomware virus.
- No LIMS, no ImmuLINK, no EBTS. No photocopying.
- Insufficient staff to be able to pull BMS off shift for re-training in a timely fashion, following a number of errors.

Task Factors
- No downtime lists of antibody history and special requirements.

Equipment & Resources
- No IT. Analyser functioning. Result printing direct from analyser. No LIMS.

Working Condition Factors
- Night shift. Lone working in transfusion/haematology.
- Chemist also in laboratory.

Individual Factors
- Inexperienced band 5 with only X months experience.
- Had made a number of errors in the preceding weeks and it had been identified that extra time was required in transfusion to determine the cause of the errors (careless, lack of knowledge etc). Date had been set for this training but unable to pull him off the shift until training complete.

Problem or Issue to be explored CDP/SDP
- 2 units of Jka pos blood given to a patient with anti-Jka.

Communication Factors
- At least 2 phone calls from the EADU stating blood was urgent and asking when it would be ready. BMS felt rushed.
- BMS did not think to ask for help/advice from Consultant Haematologist on call.

Education and Training Factors
- During discussion of error and subsequent re-training:
  - BMS's knowledge of process was sound and he understood the process he should have followed and why.
  - He did not understand the clinical significance of anti-Jka.
  - When challenged with the question "what would you do if the clinician demanded blood now, at various points?", interrupting the process, he was very uncertain. This needs to be strengthened in the training and competence assessment.

Team and Social Factors
- Disconnect between the laboratory team and the clinical team.
- Despite the Cyber attack, the weekend on call Consultant Haematologist had not offered overt support to the laboratory.
- Inexperienced team members do not think to contact clinical team for advice.

Patient Factors
- Patient was bleeding and had come to the hospital urgently at night.
- Post the event he was deemed to be stable so blood was not needed as urgently as the BMS was led to believe.
**Human Factors**

As three quarters of all incidents reported to SHOT are related to mistakes, we would like to understand more about why these occur. Mistakes in medical practice may be related to workplace features. What are the human factors that contribute to errors in transfusion practice?

For the questions below, please estimate on a scale of 0 to 10, where 0 is none and 10 is total cause.

SHOT has recognised how difficult it can be for reporters to score the human factors aspects of an incident. Therefore, a short self-learning package has been prepared and published on the SHOT website. Please copy and paste this link <www.shotuk.org/human-factors-tuition-package/> into your internet browser to access the tuition package. We suggest you may want to save this incident report if you are planning to read the package now.

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<td>Does the site have on-going staffing issues that are impacting on lab workload, training, or QMS tasks?</td>
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Dear Deborah

Further to the feedback that you provided to us last week for our next corporate strategy, the group consisting of council members and executive staff, had a very productive meeting and your input was very much appreciated. Thank you.

The next steps are for us to pull together all of the discussions and ideas from the event and to start drafting our strategy. In the next few months, a draft copy will be available. We wish to share this version of the strategy with you for comment before we publish it on our website and share with other members.

Once the draft strategy is ready it will be taken to Council in December for agreement and to be signed off.

Kind regards and thanks again for taking part, your feedback is valued.

Ian Sturdgess
President
Institute of Biomedical Science
12 Coldbath Square
London
EC1R 5HL

tel 020 7713 0214, ext 146
fax 020 7837 3286
www.ibms.org
<table>
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<tr>
<th>Date</th>
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<td>Jan 2016</td>
<td>discussed at the NBTC executive</td>
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<td>March 2016</td>
<td>discussed at the full NBTC</td>
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<tr>
<td>Sept 2016</td>
<td>telecon arranged between NBTC executive and Sue Hill, Chief Scientific Officer. She did not make the call. Her deputy, Fiona Garragher, was sympathetic, noting that the pressures are common across all of pathology</td>
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<tr>
<td>Jan 2017</td>
<td>invited to an NBTC workshop. Meeting included a presentation from NHSBT to consider how they might support hospital transfusion laboratories:</td>
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NHSBT support....a pilot study

• Evaluate the potential benefits of adopting a more algorithmic approach to testing across RCI and hospital transfusion laboratories.

• Small networks of hospital transfusion laboratories agree testing protocols with NHSBT including triggers for referring investigations to RCI. Thus hospital-based testing would be standardised and optimised to fit the resources available in each laboratory.

• By adopting agreed and standardised testing protocols, NHSBT would support adjunctive hospital-based activities such as staff training, validation, change control, documentation, and compliance.

• The RCI laboratory would gain increased insight into hospital laboratory procedures removing some of the duplication of effort currently involved in confirming results obtained by hospital laboratories.
NHSBT support (2)

• The proposed pilot would be supported by a dedicated NHSBT-funded senior clinical scientist with operational responsibilities spanning NHSBT as well as participating hospital laboratories. Pilot will evaluate the potential benefits of sharing senior scientific managerial posts between NHSBT and hospital Trusts.

• NHSBT is seeking expressions of interest from hospital transfusion laboratories interesting in participating in a pilot study for around two years.

• The pilot would preferably include a small network of laboratories supported by a single RCI laboratory. Participating laboratories would need to be prepared to review and potentially change practices as well as to undertake to measure and record several performance parameters.

• The NBTC supports this initiative to see if the potential benefits are realisable.
You can’t change the direction of the wind but you can adjust your sails to reach your destination

Discuss!