



WHO CARES ABOUT LAB ERRORS?

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The facts

- 1996 – 2006: Consistently high proportion of IBCT errors initiated in laboratory
- SHOT 2007 – 121 cases where primary error arose in the laboratory
(96 IBCT, 24 Anti-D, 1 HTR)
- To date many initiatives have been clinically targeted (BBT's, SPN 14)

Underlying causes?

- Work activity generated by regulatory requirements e.g. CPA, BSQR's, BCSH guidelines, EU WTD
- Recruitment and retention
- Educational content of courses
- Pressure as a result of Government targets
- Pathology senior management not recognising the changing status of blood transfusion
- Knowledge / awareness dilution.



Main problem areas?

- Numbers / skill mix of staff
- Training of staff
- Multidisciplinary working
- Cost containment
- Continuity of blood bank management by senior staff
- Core hours/out of hours dilemma
- Competency assessments
- Resourcing legislative requirements

But remember....

- Requirements of private/small/medium/large transfusion departments will differ
- Ability to respond to recommendations will differ
- Requirements for staff – career structure, personal development, knowledge base, competency, satisfaction and a life away from work!!

Overall objective

- A high quality, clinically safe and timely service 24/7 where
- Patient safety, appropriate component use, staff satisfaction and career development are our aims.
- Minimise the possibility for error to occur (have we created a system where error breeds?)

The laboratory collaborative initiative is born

- Nov 2006: Questionnaire via UK NEQAS
- Aim: snapshot of lab staffing on 'a day'
- Workload (red cell issues and Gp/save)
- Ideal staffing numbers and banding
- Staffing level and banding on 'the day'
- 'On the day' staff – permanent or multi
- 'On day staff' – transfusion qualifications

Questionnaire returns

- 323 returns
- 143 issue < 6000 rbc / annum
 - 94 issue > 6000 < 11000 rbc / annum
 - 86 issue > 11000 rbc / annum

(BSMS classification used)

Ideal staffing numbers

- 171/ 323 (53%) have set 'ideal' staffing levels
- 53% less than ideal 'on the day' but workload still completed
- 16% staffed at $\leq 50\%$ ideal but workload still completed
- Low workload labs maintain staffing levels
- High workload up to 60% below ideal

Staff qualifications

- Total staff working 'on the 'day = 1332
- 226 hold HNC
- 168 hold BSc
- 167 hold FIBMS / MSc (speciality not surveyed)
- 41 hold BBTS certificate

- 730 (55%) possibly without formal transfusion qualification
- 6% labs had no staff with transfusion qualifications working on the day of the survey

March 2007 - The next steps

- workshop meeting

Member bodies

IBMS – collaborative facilitator, BBTS, NEQAS, SHOT, BSH, BCSH, MHRA, CPA, HPC, RCPPath NBTC (and equivalents) to represent users

For information / specialist input

UK Blood Services, DH Blood Policy Group
NPSA, IT Working Group, CNST
DH (and equivalents)



July 2007 - Telephone survey

Aims were to inform about

- use of automation
- use of EI
- Staffing levels
- Current qualifications
- 'out of hours' systems
- Training

Hospitals surveyed

■ High use teaching	24/33	(72.7%)
■ High use DGH	12/19	(63.2%)
■ Moderate use	41/100	(41%)
■ Low use	44/102	(43.1%)
■ Low use private	23/57	(40.4%)
Total	144/311	(46.3%)

Too busy to take part

■ High use teaching	6/33	(18.2%)
■ High use DGH	1/19	(5.3%)
■ Moderate use	3/100	(3%)
■ Low use	5/102	(4.9%)
■ Low use private	1/57	(1.8%)

Automation and EI

	%Depts with walkaway automation	%Depts using automation 24/7	%Depts automation interfaced to LIMS	%Depts using EI
High use teaching (n=18)	100	100	100	44.4
High use DGH (n=11)	100	100	100	36.4
Moderate use (n=38)	92.1	77.1	94.3	37.1
Low use (n=39)	76.9	81.5	81.5	22.2
Low use private (n=22)	18.1	75	100	25

Environment to create error?

- 3 of the automated 'low use' depts are semi-automated
- 1 low use automated lab using EI but NOT 24/7 automation
- 3 moderate use depts using EI but NOT 24/7 automation
- 1 moderate use dept using EI with no automation

Staffing

	% Depts utilising MLA grades on survey day	%Depts with minimum staffing set	%Minimum staffing level <3	%Depts with permanent BT staff	%Depts failing to meet minimum staff levels
High use teaching (n=18)	72.2	72.2	15.4	94.4	30.8
High use DGH (n=11)	54.5	72.7	50	90.9	25
Moderate use (n=38)	31.6	47.4	55.5	84.2	16.7
Low use (n=39)	28.2	51.3	8.5	69.2	20
Low use private (n=22)	4.5	63.6	100	31.8	7.1

'On the day boss' – grade and qualification (% labs)

	BMS 4	BMS 3	BMS 2	BMS 1	FIBMS BT	MSc BT	HNC	Other (not BT based)
High use teaching (n=18)	5.6	83.3	11.1	0	77.8	0	5.6	16.7
High use DGH (n=11)	0	81.8	18.2	0	54.5	18.2	0	27.3
Moderate use (n=38)	10.5	36.8	23.7	26.3	44.7	7.9	21.1	26.3
Low use (n=39)	0	35.9	46.2	15.4	38.5	0	33.3	28.2
Low use private (n=22)	0	22.7	40.9	36.4	27.3	0	13.6	59.1

'Out of hours work' (% labs)

	Shift system	Ext / on call	Back up available	BT Only	Haem + BT	Multi - disciplinary
High use teaching (n=18)	66.7	33.3	55.6	33.3	66.7	0
High use DGH (n=11)	72.7	27.3	54.5	18.2	81.8	0
Moderate use (n=38)	36.8	63.2	15.8	7.9	89.5	2.6
Low use (n=39)	15.4	84.6	17.9	0	82.1	17.9
Low use private (9.1% refer to NHS) (n=22)	4.5	95.5	13.6	0	4.5	86.4

'Out of hours work' Who does it?(%)

[* includes 1 permanent haem, ()Permanent coag]

	BMS 4	BMS 3	BMS 2	BMS 1	Multi-disciplinary staff	Rotational Haem/BT staff	Permanent transfusion staff
High use teaching (n=18)	0	11.1	44.4	44.4	(5.6)	50	44.4
High use DGH (n=11)	0	9.1	9.1	81.8	0	91.9	9.1
Moderate use (n=38)	0	10.5	28.9	82.1	10.5 *	78.9	10.5
Low use (n=39)	0	5.1	25.6	69.2	12.8	76.9	10.3
Low use private (n=22)	0	22.7	36.4	31.8	77.3	22.7	0

Training *(inc 1 'never')

	Trained within 3 months	Trained within 6 months	Trained within 12 months	Last training >12 months
High use teaching (n=18)	72.2	83.3	88.9	11.1
High use DGH (n=11)	45.5	63.6	72.7	27.3
Moderate use (n=38)	73.7	73.7	76.3	23.7*
Low use (n=39)	61.5	71.8	82.1	17.9
Low use private (n=22)	63.6	72.7	77.3	22.7



Early 2008 – summary report for comment


- Aim to cut IBCT errors originating in laboratory by 50% by December 2010
- Set minimum standards for all hospital blood transfusion departments
- Technical and staffing proposed recommendations (short and long term)

Technical – short term

- Implementation or replacement of automation to be for full, walk away system performing ABO/RhD and antibody screening as a minimum.
- Automated analysers to be LIMS interfaced
- Automated analysers to be used 24/7
- EI of red cells only undertaken where group and antibody screen is fully automated 24/7 without manual manipulation of results

Technical – long term

- Manual tests to be read on automated readers interfaced to LIMS
- EI of red cells is only to be undertaken where grouping and antibody screening is fully automated and where the decision to undertake EI is determined by the LIMS i.e. does not require the Biomedical scientist to make the judgment.
- Where blood transfusion departments move towards IT based blood tracking and remote issue blood fridges it is to be done as a means of supporting staff NOT at the expense of staff.




Staffing – short term

- Core hour minimum staffing levels set
- Policy in place for workload planning when staff numbers fall below this level
- Numbers and skill mix to reflect needs with formal annual review
- Non permanent BT staff to receive ongoing training equivalent to 2 days / month
- 100% staff working in BT to have evidence based training / competency assessments delivered annually.

Staffing – short term

- All future registrants required to work a full shift pattern in BT to have a minimum 6 months training in BT before lone working.
- All future registrants required to work a full shift pattern in BT should be working towards a higher BT qualification (BBTS cert, IBMS Spec Dip) with evidence based progress
- Agency staff to come with a 'passport' detailing competency etc
- Use of unregistered (not trainee) staff should be to full advantage of department



Staffing – short term

- Local areas to develop collaborative approach to availability of transfusion expertise 24/7
- All departments to send a minimum of 1 member of staff to the annual NEQAS 1 day meeting

Staffing – long term

- BT department managers and those senior staff who may need to supervise the BT department (new appointments) to have a ‘higher’ qualification in blood transfusion e.g. MSc with blood transfusion modules or IBMS Higher Specialist Diploma in blood transfusion or equivalent
- Other registered permanent BT staff to possess either IBMS specialist diploma or BBTS specialist certificate



Staffing – long term

- Blood bank managers (new appointments) not to participate in shift work that means they are not present during ‘core’ working hours.
- If there is a need for a biomedical scientist grade 1 to lead the blood transfusion department then this should be for <10% of the annual time.

What now?

- Summary report feedback complete
- ?Sept 2008 – final report and recommendations published
- Rigorous adoption of recommendations by CPA and MHRA