

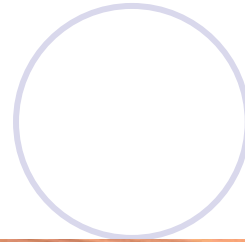
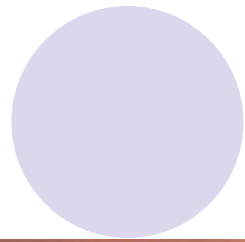
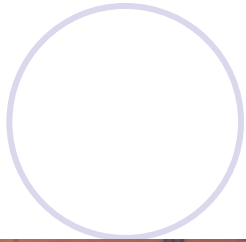
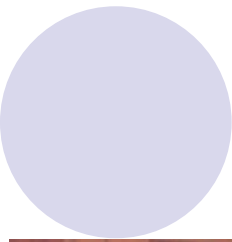
# WHO CARES ABOUT LAB ERRORS?



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SHOT Standing Working Group member

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## The facts

- SHOT 2007 – 121 cases where primary error arose in the laboratory (96 IBCT, 24 Anti-D, 1 HTR)
- Comparable to previous years



# The actions

- BBT 1 (HSC 1998/224) – Action points clinically directed
- BBT 2 (HSC 2002/009) – Action points clinically directed
- BBT 3 (HSC 2007/001) – Some laboratory aimed action points e.g. ‘adequate staffing levels’, competency and training.

# What is causing the problem?

- 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 management not recognising the 'special' status of blood transfusion

# Are these the main problem areas?

- Numbers of staff
- Skill mix of staff
- Training of staff
- Multidisciplinary working
- Cost containment
- Continuity of management by senior staff
- Core hours/out of hours dilemma
- Competency assessments
- Legislative requirements



## **But remember....**

- Requirements of private/small/medium/large transfusion departments will differ
- Requirements for staff – career structure, personal development, knowledge base, competency, satisfaction



# 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 primary aims.
- Minimise the possibility for error to occur (have we created a system where error breeds?)

# Nov 2006 - What's going on out there?

- Questionnaire distributed 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 results

- 323 returns (many difficult to interpret)
- 143 issue < 6000 rbc / yr (low user)
  - 94 issue > 6000 < 11000 rbc / yr  
(moderate user)
  - 86 issue > 11000 rbc / yr (high user)



# Ideal staffing numbers

- 171/ 323 (53%) have set 'ideal' staffing levels
- 9% labs issuing <6000 set ideal staffing at 1 member of staff (?private)
- 15% labs issuing >6000<11000 set ideal staffing at 3 members of staff
- 9% labs issuing >11000 set ideal staffing at 4 or less members of staff

# Ideal staffing numbers

## Highlights (?lowlights!!)

- Issues <6000, Gp/save 15-25000  
6 labs 'happy' with 3 staff
- Issues >6<11000, Gp/save >25000  
2 labs 'happy' with 4 staff
- Issues >11000, Gp/save >25000  
3 labs 'happy' with 3 staff



# 'On the day' staffing

- 171 labs 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



# 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



# **‘On the day’ qualifications**

- 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, RCPATH NBTC (and equivalents) to represent users

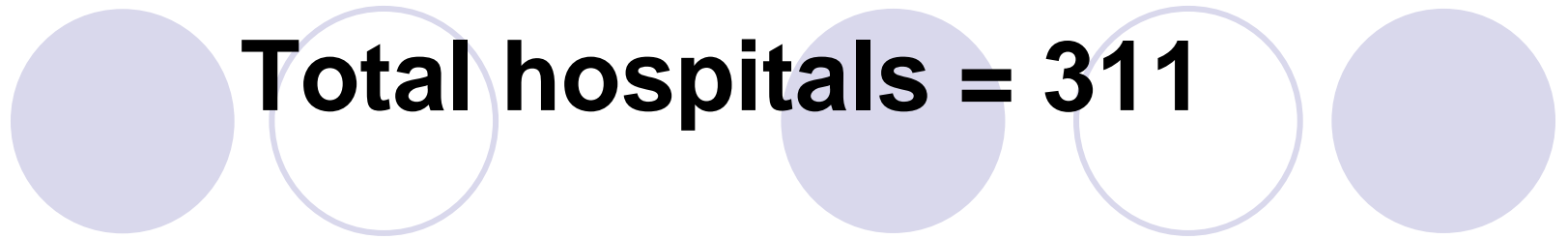
## **For information / specialist input**

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



# Total hospitals = 311

- High use teaching hospitals = 33
- High use Dist Gen Hospitals = 19
- Moderate use hospitals = 100
- Low use hospitals = 102
- Low use (private) hospitals = 57



# Number 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%)

# 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

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

# But what about these examples?

- 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

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

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

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

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



# Training %

[\* includes 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

# Is tradition best?



# Nov 2007 - Recommendations

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



# Short term - technical

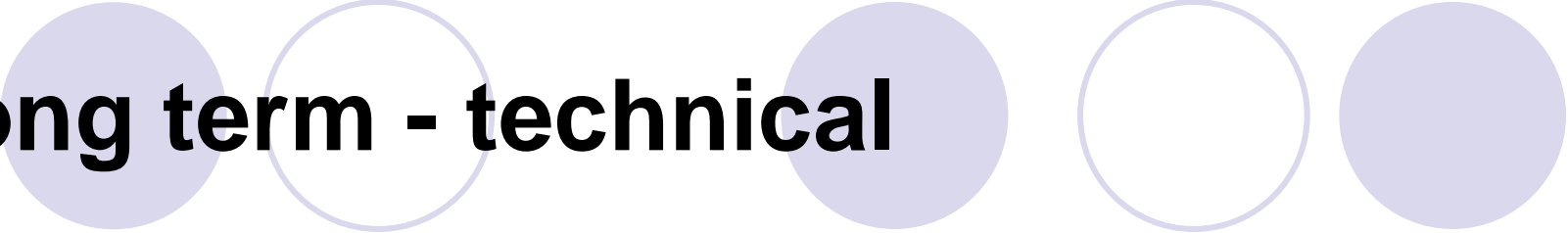
- Full, walk away automation for Group and antibody screening i.e. system does not require any manual input AFTER samples have been loaded onto the analyzer and the analyzer started.
- Low workload blood transfusion departments should assess the possibility of a local collaborative approach in order to achieve this.
- Automated readers for manually set up tests




# Short term - technical

- All automated analysers are to be interfaced to the LIMS
- Automated analysers are to be used 24/7
- Electronic issue of red cells is only to be undertaken where the grouping and antibody screening is fully automated i.e. without manually manipulation of results and in use 24/7

# Long term - technical




- Blood transfusion departments driving forward the development of IT based blood tracking and remote control issue blood fridges to do so as a means of supporting staff NOT at the expense of staff.
- 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.



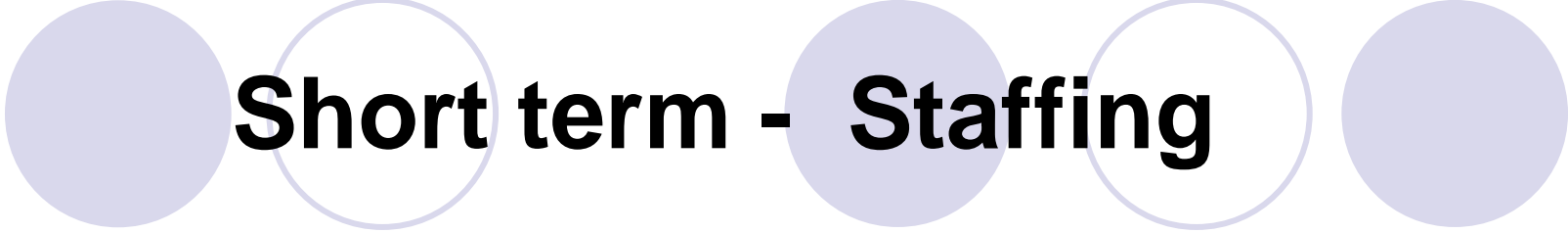
# Short term - Staffing

- 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
- Annual formal review of numbers and skill mix
- Non permanent BT staff to receive training equivalent to 2 days / month
- Training to be delivered annually and must be evidence based

# Short term - Staffing



- All future registrants required to work a 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



# Short term - Staffing

- 100% of staff to receive annual training
- 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

# Long term - Staffing

- BT department managers and those senior staff who may need to supervise the BT department (new appointments) should have a 'higher' qualification in blood transfusion e.g. MSc with blood transfusion modules or IBMS Higher Specialist Diploma in blood transfusion or equivalent
- Blood bank managers (new appointments) should not 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.



# Comments and Questions welcome

- Recommendations to be adopted summer 2008
- The aim to ensure both CPA and MHRA adopt as part of their inspection process

# Time is running out

