Transfusion errors in the Laboratory – barriers to implementing safer transfusion practice

John Revill
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Laboratory aspects

- Issues “in” or “close” to laboratory
- Use of SHOT data

BUT

- Personal opinion
- Based upon practical experience
Blood transfusion awareness

• High profile
    • Sent direct to & for action of Trust CE’s
  – vCJD & media publicity
  – Blood safety measures
  – Regulatory changes
  – Haemovigilence & SHOT Reports

• But is there a problem in the Laboratories?
SHOT data

• Only 47% of labs reported problems to Scheme

• ? Why
  – Lack of HTC’s, SPOT’S
  – pressure of work, too many forms, lack of commitment

• ?Baseline reporting data
Incidents – where? (1)

• Vein to Vein overview
  – Complex over several managerial boundaries

• Blood Transfusion Laboratory
  – IBCT - approx 31%
  – Near Miss - approx 18%
  – Serology failures in ATR and DTR sections

• Blood Transfusion Centres
  – 10 reports from various causes
Incidents – where? (2)

• Haematology Laboratory
  – Incorrect Hb results
    • Poor sample collection
      – Diluted samples from near drip sites
      – Use of large syringes / sedimentation
      – Incorrect identification of patient
    • Faulty processing
      – Machine / operator errors
      – Also POC testing (blood gas analysers)
  • Communication failures
Incidents – when?

- 58% during core hours
- 42% at other times
- ? Approx 20% of work in labs performed out of hours
Incidents – who is responsible?

• Not easily available from SHOT database
  – Software deficiencies
  – User responses unclear

• Personal data
  – >50% of problems out of core hours
  – >80% of these problems involve staff not working permanently in BT
  – Some recurrent offenders
  • Retraining issues
Incidents – why?

No simple answer

• Failure to follow protocols
• “Honest” errors or failings
• “Overwork”
How do we avoid errors?

• Require to provide a high quality service at all times

BUT

• Not realistically possible for 100% error free process
• But why do hospital labs have these problems?
• Interdependency of all component parts
Regulatory moving target!

- Most heavily regulated section of Pathology
- Frequent updates or new Guidelines
- Impending EU Directive
- Component changes due to safety initiatives
- Staff training/awareness difficulties
- Increasing demand upon resources
Staffing difficulties (1)

- Increased demands upon staff in post also include
  - 24/7 working
  - Lack of supervision / experience
  - If senior staff participate then unable to perform managerial responsibilities
  - Working time directive
Staffing difficulties (2)

- Risk management initiatives (inc. incident monitoring)
- Statistical production
  - audits (local & national)
- Financial crosscharging (in England)
- Blood reduction initiatives
  - Clinical/nursing training & educational requirements
- Accreditation pressures
  - Quality Manager specifically for BT?
Staffing difficulties (3)

- Recruitment /retention problems
  - Reluctance to move between jobs
- BMS are now a “shortage occupation”
  - i.e., an endangered species
  - Use of locums is increasing
  - but what effect “Agenda for Change” ???
- Improved post graduate training
  - Professional training / education developments
  - Competency based
- Skill gap!
Staffing in Blood Transfusion Laboratories

- Require a core of permanent trained staff
  - BT is becoming increasingly complex !!!
- Current staffing levels (and expertise) in most laboratories need to be improved
- Links with clinical areas to be improved with use of SPOT’s
- Clinical leadership
  - National shortage of Consultant Haematologists
  - Expansion of clinical commitments
  - Joint NBS / hospital Consultants
Computerisation

• **Essential for safe practice 24/7**

• **Record keeping**
  – Patient transfusion details
    • Need to review database for previous patient information
  – Special transfusion requirements
    • Significant problem nationally
      – Communication /education failings
    • ? National record with ICRS in future

• **Control of work processing**
  – Validation of results
  – Rule based warnings / alerts

• **But commercial systems available are of variable quality**
  – BT is poor relation of high volume sample Depts.
Sample processing (1)

- Automation
  - Higher throughput & should increase efficiency
  - Eliminates manual variations and potential errors

BUT

- Expensive
- Needs to be fully validated before introduction
  - Often trust manufacturers’ claims
- Automation or staff in some hospitals!!
- Beware of manual result editing!
  - SHOT incidents / near miss’s reported
- Need effective internal QC monitoring

NOT FOOLPROOF
Sample processing (2)

- **Workflow patterns must be controlled**
  - Out of routine hours testing increases risk or errors
  - Patient admission patterns
  - Increasing pressures within system
  - Problems with antibody patients

- **Financial restrictions**
  - Stringent cost cutting
  - Usually little room to reduce costs in BT lab practice
    - Changes in clinical practice required
  - Elimination of checks or procedures
  - Inability to purchase QC materials
  - Dangers of “cutting corners”
Neonatal / Paediatric patients

- Disproportionate incident rate
  - 13% of IBCT
- Increased special needs / requirements
- Lack of awareness amongst all staff groups
- ? Full utilisation of rule based computer systems
On going issues (1)

- Despite advances in technology, blood banking is still very much a human based activity requiring a “hands-on” approach for sample collection, testing, issue and transfusion of blood components.
- Significant interest in near patient identification technology to reduce errors in venepuncture and blood administration.
  - Most labs need to improve audit trails in controlling blood movements.
On going issues (2)

Improvement in resources to support safety agenda

- Hospital management must recognise the link between good BT practice and the patient safety agenda ensuring that adequate resources are provided to enable safety improvements
  - HSC 2002/009
On going issues (3)

- Must resolve staff recruitment issues
- Support improved staff training/developments
- “Vein to Vein” involvements
  - Overview
  - Education
  - Audits
People are going to make mistakes
“To err is human”

Laboratories must

• Improve checking systems to make wrong actions more difficult
• Use computer software to maximum benefit
• Improve systems for error recognition
• Monitor/ evaluate/ rectify deficiencies
Safer transfusion practice - is it possible?

• Currently overall reasonably high standards
  – but variations in practice

• No clearly defined national quality management system
  – EU Blood Directive
    • Introduces legislated quality principles to follow in practice

• But this will require significant effort and an improvement in resources