Why don’t you hear what I am saying?

Jane Keidan and Paula Bolton-Maggs
Serious Hazards of Transfusion
Structure of session

- Participants to identify errors shown in teaching video
- Presentation of cases of poor or mis-communication from recent SHOT reports
- Reasons why we continue to fail to get our messages heard
THE STRANGE CASE OF PENNY ALLISON

Note the errors
How many errors did you spot?
Errors

• Nurse does not check name correctly—“Alison Ayling is it?”
• Phlebotomist does not check name correctly “Hello are you Alison?”
• Consultant sends phlebotomist away to finish task of labeling tubes for the first time (senior lack of knowledge of correct process and pulling rank)
• Consultant “You might need a bit of blood after surgery but that’s nothing to worry about is it? Good. Any questions?” ….not waiting for answer
• Phlebotomist “I’ve got to label my tubes” Consultant “Well label them somewhere else man” Again senior lack of knowledge of correct process and pulling rank—-for second time
Errors

• Two sets of unlabeled tubes on phlebotomy trolley—phlebotomist “guessed” which to label with which name
• Consultant “Now you might just need a little blood after surgery” No counselling
• Samples handled manually in laboratory even though non urgent
• Task in laboratory interrupted—is it short staffed?
• BMS labelled blood for two different patients at same time
• Two patients sharing one drip stand
• Consultant does not issue clear instructions “Alison what’s her name”, just gives nurse an unclear message
Errors

• Consultant verbally authorized blood without checking post operative Hb and asked some else to write it up via a third party messenger
• Consultant instructions unclear but not clarified by nurse
• Nurse shouts name at drowsy patients to confirm their identity (although did check their wristbands first)
• Porter given insufficient patient details in phone message to allow him to collect blood safely and made no formal recording of phoned request
• Porter has no formal collection slip and insufficient information on patient when collecting unit from blood bank
• Porter fails to check details on unit at collection
Errors

- Blood bag already pierced and hung before patient ID check
- No positive patient ID check before blood transfusion commenced and, after blood already running, nurse only inspected wrist band
- Only one nurse checker, and no pre transfusion baseline observations taken
- Two patients one drip stand (still) and twisted line (phew!)

Total 22
So we can spot the errors
Can we prevent them?
18 years of SHOT, same errors

- Failure to positively identify the patient
- Labelling away from the patient
- Failure to do the final bedside checks adequately
Multidisciplinary steps in the transfusion process

1 REQUEST
2* SAMPLE
3 SAMPLE RECEIPT
4 TESTING
5 COMPONENT SELECTION
6 LABELLING
7 COLLECTION
8 PRESCRIPTION
9* ADMINISTRATION

* Critical points where positive patient identification is essential
Who was responsible?
Reasons

- Patient not identified correctly
- Sample not labelled at bedside
- Sample not labelled by person taking blood
- Pre-labelled sample used
Newspaper report

- NHS staff most stressed public sector workers, survey finds.
- Healthcare professionals least likely to take a break, and face dwindling resources and an increased workload.
- The large majority of NHS workers (96%) also work beyond their contracted hours, doing an average of five extra hours per week.
- The results come at a time when the health service is under immense strain.

Sarah Johnson  Guardian Friday 12 June 2014
CASE STUDIES FROM SHOT REPORTS
Failure to provide irradiated components

- 50 yr old man NHL under shared care with hospital >100 miles away, had received bendamustine
- Platelet prophylaxis for post-chemo low count on at least two occasions
- He refused to travel to the specialist centre
- Nurse specialist did not read the letters
- 1st prescription for blood components should have been made by a consultant
- The patient did not know he was supposed to have irradiated components and did not have a card
Lack of leadership

- A 90 yr old woman with fractured neck of femur was scheduled for surgery 5d after admission and had deteriorating renal function
- During surgery she bled 3L and was given 2 RBC
- Orthopaedic surgeon activated major haemorrhage protocol but when lab contacted ward there was disagreement about whether this was necessary as there was a ‘do not attempt resuscitation’ order
- The additional components were supplied after 4h (platelets, cryo, FFP)
- She died the next day
Six steps – 5 opportunities to correct the first error

• A request for 4 units SD-FFP made by phone for patient with bleeding disorder. Correct component not specified
• The request form specified SD-FFP but this was not noticed by the BMS, so standard FFP was thawed
• Error missed again at component labelling
• The collector did not check if it was correct
• The prescription did not specify the component
• The final bedside check did not detect the error
All steps of the transfusion process need to be correctly performed

- RBC requested for HSCT patient who required irradiated components
- The BMS missed the flag on the LIMS
- The LIMS was not set up to prevent release of non-irradiated components
- Need for irradiated components was not recorded on the prescription
- The need for irradiated components was not detected at the bedside check
Don’t forget proper identification and correct procedure for a 1\textsuperscript{st} time patient

- A 92 yr old woman was admitted with chest pain, Hb 51g/L, no previous record of blood group
- Month of birth on hospital computer recorded as October as supplied by GP but was actually September
- Grouping samples rejected on 5 occasions because of sample labelling errors
  - Wrong process (one sample, divided and signed by different people)
  - Wrong date of birth
  - Failure of positive patient ID
- Eventually transfused 6h after admission after rebled for 6\textsuperscript{th} and 7\textsuperscript{th} samples
Wrong, wrong and wrong!

- An elderly man admitted with intracranial haemorrhage
- Porter arrived in lab and told BMS that the MHP had been activated
- The porter had come with handwritten details without hospital number
- BMS tried but failed to contact ward, and issued an emergency LIMS number so he could issue 2x FFP and 2x O D-neg
- BMS unable to print issue record, so porter allowed to take blood without signing for it
- Contact from ward established full patient ID but also that it was PCC required and not MHP
Target trumps good care

• An elderly woman was admitted to ED with epistaxis and was prescribed 2 RBC due to severity
• Units issued but not given as transfer was imminent to avoid breach of 4h target
• The patient had been accepted by the surgical team who now refused her
• She waited another 3h in ED but was not transfused
• Review by consultant led to transfer to another hospital by blue light
• The blood was not used
Life-threatening bleeding
Make sure you know your Major Haemorrhage protocol

Aaaaaargh!
Delay in transfusion: emergency repair of Abdominal Aortic Aneurysm

- An elderly man was undergoing repair of AAA. There was delay in delivery/transport of crossmatched blood from the laboratory to theatres
- Uncrossmatched group O blood was available but not used by clinicians despite BMS advice to do so
- Transfusion was delayed for 2 hours 20 minutes after laboratory received the sample
- The patient sustained a cardiac arrest during the procedure; at this stage he had been transfused with 3 units of red cells
• The major haemorrhage protocol was activated only when the estimated blood loss was 3 litres
• Other components of major haemorrhage pack were not issued for an additional hour because of conflicting messages regarding the request received in the lab

Known high risk procedure for blood loss
MHP drills
Clear lines of communication with a co-ordinator
‘All the protocols were broken’

- A 69 yr old man gave a history of haematemesis and melaena when he attended routine anticoagulant clinic.
- He was referred to ED, Hb 54g/L, (history of coronary artery disease) so admission and transfusion planned (18:05). Lab Hb 86g/L, INR 3.3.
- Falling BP 100 systolic at 19:00; IV fluid rate increased, given Vit K at 20:19. PCC also recommended at 19:30 and given at 21:30.
- 22:25 transferred to AMU, chest pain and fast AF, not reviewed or clerked by a Dr.
- No notes or observations between 22:25 and 01:30.
‘The hospital’s system broke and failed this man’

- The nurse on AMU was busy with other patients and had not done any observations because she was not confident using the electronic machine.
- The absence of tachycardia gave a false sense of security but he was on beta blockers.
- Failure to escalate his deterioration to more experienced staff.
- Died on 8th day of admission due to hypoxic brain injury caused by hypovolaemic shock and GI haemorrhage due to diverticular disease of the colon.
Take a history and pay attention to it
Take a history and inform the laboratory

- A 63 yr old woman with AIHA on steroids
- History missed by pre-op nurse clerking although in the GP letter
- 1 wk later admitted for surgery (hernia repair)
- Surgeon and anaesthetist informed of AIHA and that previous attempt at splenectomy was abandoned due to bleeding
- Post op hypotension, Hb 56g/L at 00:43
• Irregular antibodies, no compatible blood
• 08:15 transfer to ICU - critical care team elicit history of AIHA
• Surgeon insists low Hb due to AIHA not bleeding
• 12:00 imaging confirms internal bleeding
• Return to surgery: 2.5L blood evacuated
• O RhD neg red cells given (5), FFP (2) and platelets (1)
Communication?

• A 92 yr old woman on ITU was reviewed and a decision made to transfuse 2 units of RBC over 2 days
• The blood was prescribed as 2 units over 2h each
• 2nd consultant review – transfusion unnecessary
• Transfer to another ward without cancellation of the original prescription
• 3rd consultant review: blood transfused ? as prescribed
• 2h after 2nd unit she developed hypertension and breathlessness with pulmonary oedema confirmed on CXR
• Improved with diuretic but prolonged hospital stay
Reasons we continue to fail

- Competing priorities on resources: time, staff, money, targets
- Communication barriers
- Lack of knowledge: training, fatigue, etc

“Clinical Human factors”
Clinical human factors

• “The science of enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture, organisation on human behaviour and abilities, and application of that knowledge in clinical settings.”

   Ken Catchpole, Human Factors Practitioner, Oxford
To err is human  (Pope)

• “Human Factors is using what we know about people to design safe, effective and efficient systems.” Beverley Norris, Human Factors Lead, NPSA

• “Every system, process, machine, tool or act that a human devises, uses or does is prone to error and failure. The study of and the learning from this simple truth is the basis of Human Factors.” Chris Seal, Airline and Military Pilot and Human Factors Consultant
Moving from risk based approach to resilience engineering

• SHOT will be leading an investigation into transfusion practice to identify critical control points, with the aim of making recommendations for improved practice through redesign of the process.

• Recognising the human factors leading to transfusion errors will move transfusion safety closer to the ultimate goal of eliminating preventable harm.

SHOT report 2015
The fire alarm
Obstetric major haemorrhage with delay in transfusion caused by a fire alarm

- A 40 year old woman was undergoing elective caesarean section and started to bleed excessively
- At the same time, the fire alarm sounded
- The obstetrician and theatre staff were aware of the alarm, but continued with management of the bleeding
- Outpatient areas were evacuated and staff in delivery and theatre were kept updated on the incident
- Urgent bloods were sent to haematology by the tube system and the laboratory was telephoned to alert them to the need for urgent analysis and a need for blood components
Haemorrhage and fire alarm

- However, there was no answer so an assumption was made by clinical staff that the laboratory had been evacuated – the transfusion department was left unattended (against hospital policy)
- The general manager (outside the building with evacuated staff) was contacted and located haematology staff who were cleared to return to the laboratory
- Blood samples were analysed and major haemorrhage pack was requested
- Once samples had been received in the laboratory there was a delay in sending blood products to theatre
Root causes

- Lack of communication between fire co-ordinators and pathology services
- No understanding of consequences of evacuating the laboratory
- Senior lab staff not told what was happening and not able to get update
- Maternity staff failed to use bleep despite knowing lab had been evacuated
- Medical staff ignorance about MH pack (what it contains and how to get it)
What did they do?

- Meeting between fire service and blood transfusion manager – agreed transfusion is an essential service and should not be evacuated unless absolutely necessary
- New policy in transfusion when asked to evacuate the laboratory
- All transfusion staff to be informed about new procedures
- Maternity staff to have training about major haemorrhage
one sailor was waving
Uncertain understanding, unclear communication and a busy night contribute to an erroneous transfusion

- A patient was admitted with a two day history of melaena, with symptomatic anaemia with haemoglobin of 54g/L
- Four units of blood were requested. The BMS looked up the patient history and found a previous record of anti-c, anti-E and anti-S
- The BMS understood the need for appropriately crossmatched, antigen-negative blood and thought this would have to be provided from the Blood Service. He phoned the ward to ask for additional samples for dispatch to the Blood Service
• The BMS telephoned the Blood Service to inform them that samples were being sent
• The staff at the reference laboratory asked the BMS to screen the sample and let them know the result. The BMS’s recollection of the conversation left him with the impression that the staff at the reference laboratory were ‘leaving it with him’. He proceeded to screen the blood for antibodies.
I need it now!

• The doctor then phoned the BMS; the patient’s blood pressure was falling - ‘what is the backup scenario?’ The BMS informed him that he could crossmatch the blood and issue the most compatible if that was required. **Wrong answer**

• The BMS completed the antibody screen and crossmatched the blood. As there were no reactions he issued the four units of red cells.

• The reference laboratory staff then called the BMS to check the results of the screening test as they had not heard back from him.

• They advised that the issued units should be recalled and that they would send 4 units of appropriately antigen-negative blood. **Because they were not antigen-negative and could lead to DHTR**

When the units were recalled, the patient was stable.
It always pours....

- He started to crossmatch the antigen-negative blood received from the blood service but ran into problems with the analyser.
- He telephoned a colleague at another hospital and was advised not to attempt to fix the analyser but to revert to manual crossmatching.

Definitely swimming out of his depth.
The BMS was not familiar with this process (his discipline being biochemistry). He found the SOP and proceeded with the crossmatch, but the pipette was not working and there was a reagent problem.

He therefore reverted to trying to fix the analyser and reported being increasingly worried and probably increasingly unable to think clearly.

When the day shift took over the units were immediately recalled but 2 units had been transfused. No reaction was reported.

On call staff from other disciplines must be adequately trained and have back up.