South West Regional Transfusion Committee

Transfusion Matters

Study day for BMS's and lab staff with <24 months transfusion experience
Wednesday 4th October 2023

Chair: Carol Stenning

This event will start promptly at 09.45 – please mute your microphones and turn your cameras off

Housekeeping

- We want this event to be as interactive as possible so please join in the Q&A sessions – this can spark valuable discussion!
- During a presentation, if you want to ask a questions, please use the 'raise your hand' function.
- When not speaking, please keep yourself on mute to avoid background noise and interference.
- Feel free to use the 'chat' function to join in if you prefer.
- For any TEAMS issues first try leaving and dialling back in, we will keep an eye out for 're-admissions', for further issues contact Jackie McMahon@ jackie.mcmahon@nhsbt.nhs.uk Any other IT issues will need to be referred to your own Helpdesk.
- You will receive a link via email, for feedback, after the event. Your suggestions help us improve and tailor the education we deliver to meet your needs. We really appreciate all constructive feedback. Completing the feedback will enable you to access your Certificate of Attendance.

Programme

South West Regional Transfusion Committee

Transfusion MATTERS

4th October 2023

Topic	Speaker	Hospital/Organisation	Time
Welcome/Housekeeping	Carol Stenning	NHSBT	09.45-09.50
Major Haemorrhage & Avoiding Delays	Tim Wreford-Bush	North Bristol NHS Trust	09.50-10.20
Obstetric Patients & anti-D Ig	Ian Sullivan	Royal Cornwall Hospitals NHS FT	10.20-10.50
Break	**10 minutes**		10.50-11.00
Specific Requirements – Risks & Consequences	Vikki Chandler-Vizard	University Hospitals Dorset NHS FT (Poole)	11.00-11.30
Empowerment	Julia Pinder	Torbay & South Devon NHS FT	11.30-12.00

NHS
North Bristol
NHS Trust

Major Hemorrhage and Avoiding Delays

Tim Wreford-Bush

NBTCARES

What is a MH

- **Major haemorrhage is a clinical emergency that results in morbidity and mortality**
- **Variable definitions of major haemorrhage continue to be used in the literature based on volumes of blood loss, or volume of blood transfused over a period of time**

What is a MH

- Defined pragmatically as a situation where more than four units of RBC's are transfused within one hour, with an ongoing need for transfusion
- Other definitions exist, such as the loss of 1-1.5 circulating blood volumes within a 24- hour period
- In obstetric cases if there is >1500ml of blood loss with significant ongoing haemorrhage and/or DIC.
- Delayed recognition of bleeding continues to be one factor for adverse outcomes in the management of major haemorrhage.

Experience

North Bristol NHS Trust

- **This talk is aimed at BMS's and lab staff with <24 months transfusion experience**
- **You need to be as good as all other BMS when it comes to MH if you lone work e.g. nights**
- **This is the same presentation I would give any BMS**

How long should it take to provide blood?

NHS North Bristol NHS Trust

- 👍 **for 15 mins**
- ❤️ **for 30 mins**
- 👏 **for 20 mins**
- 😳 **for 5 mins**

NBTCARES

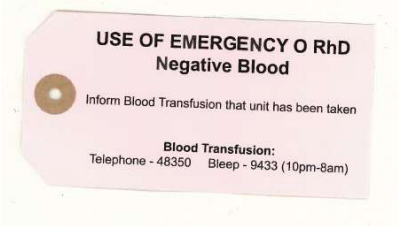
How long should it take to provide blood?

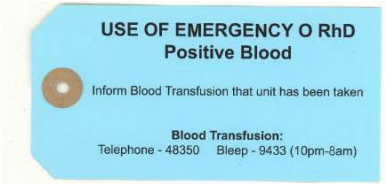
NHS North Bristol NHS Trust

- **We all have competencies, and a time limit is associated with that**
- **This is about your individual ability to provide blood**
- **That is just part of the process**
- **But does not take into account the Policy or SOP**
- **So the correct answer “when they need it”**
- **Taking 15 mins to provide blood, but they have died in 10 due to blood loss is too late**

Emergency Blood

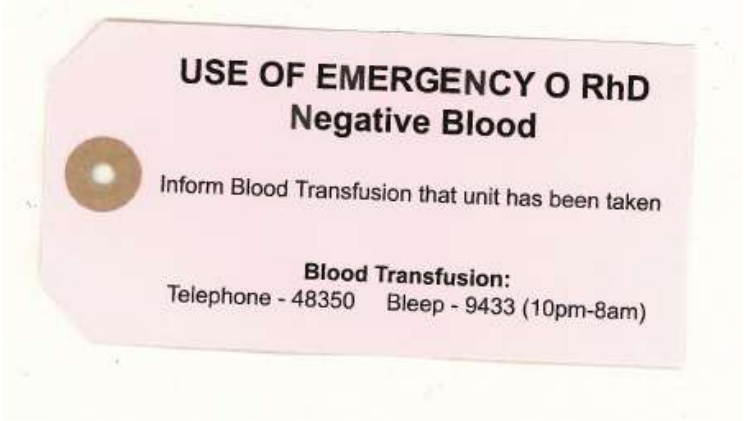
- **RBC**
- **Adult units**
- **O D Negative - select fresh (<14 days old) O D Negative, Kell Negative**
- **O D Positive - select fresh (<14 days old) O D Positive, Kell Negative**
- **Units should be changed before the expiry date to enable transfusion to others and reduce wastage**

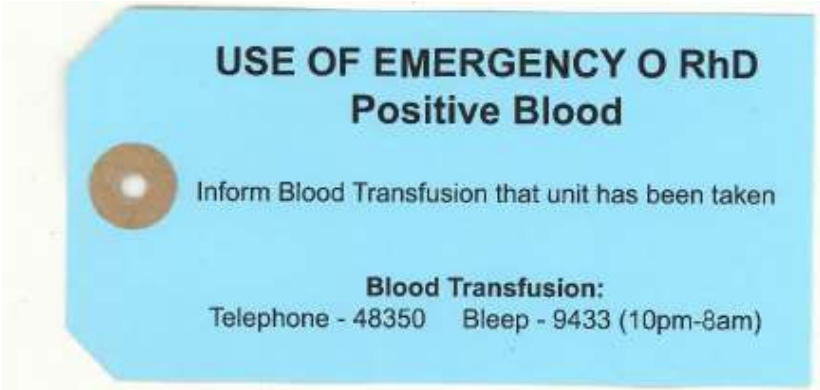




Emergency Blood

- **O D negative RBC (for females, male children <16 years old and air ambulance stock)**
- **O D positive RBC (for males >16 years old and females > 50 years old)**
- **Paediatric O D negative blood**

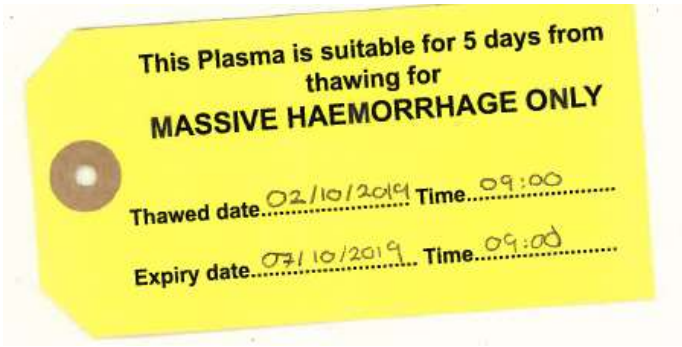




Emergency Blood

NHS North Bristol NHS Trust

- **Plasma**
- **Pre-Thawed (5 day) Emergency FFP**
- **Group A negative for high titre**
- **AB**
- **Rh D is not a consideration**



- **Platelets**
- **A Negative or Positive (high titre negative)**
- **O Negative (pooled) high titre negative (pooled platelets contain hardly any residual plasma due to the processing method)**

Locations of EM stock

- RBC
  - Lab
  - Satellite Blood Fridges
    - Emergency department
    - Maternity
    - Theatres
    - External sites away from main hospital
  - Air Ambulance
- Plasma
  - Lab
  - Air Ambulance
- Platelets
  - Lab

Activation

- There must be a way to activate the MH
- Usually via Switch board
- Must be well established
- Include all relevant personnel and teams
- Phone
- Bleep

Appendix 1 **Major Haemorrhage Flowchart** North Bristol NHS Trust

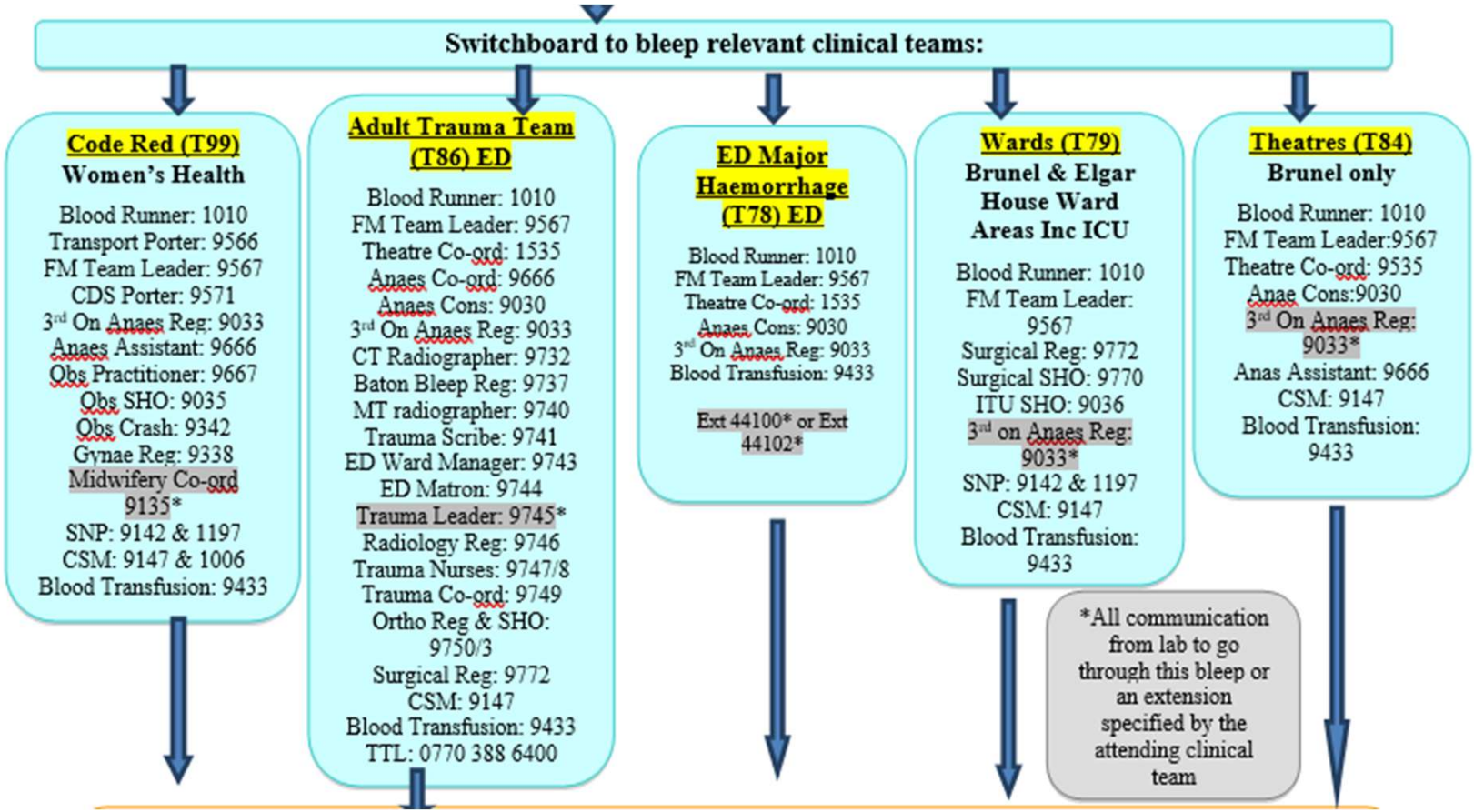
Major Haemorrhage Protocol
(Definition: Anticipated requirement for >4 units RBCs in 1 hour with on-going need for transfusion)

Clinical area to:

1) **Call 2222** - state 'Major Haemorrhage', location & clinical team required
2) **Contact Transfusion** to confirm alert received and give full clinical details:
Ext 48350 (8am – 10pm) Bleep 9433 (10pm – 8am or if extension busy)
3) **Take samples** – X-match, FBC, U&E, clotting and TEG
N.B. 2 X-match samples (taken separately) needed if no previous G&S
4) **Send samples to lab** (TEG to level 2) via clinical staff / porter on foot

Switchboard to bleep relevant clinical teams:

NHS
North Bristol
NHS Trust



NBTCARES

team

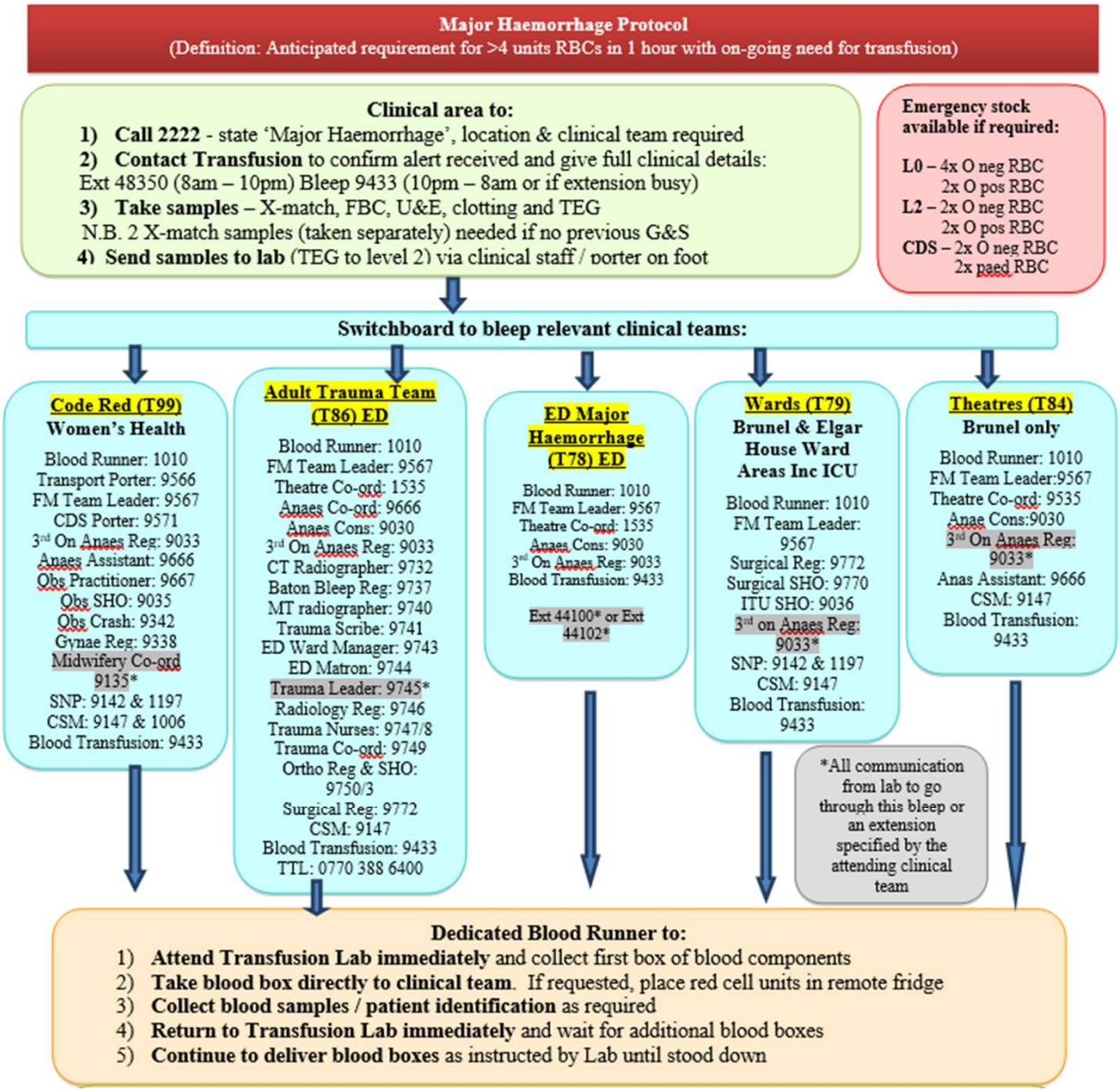
Dedicated Blood Runner to:

1) **Attend Transfusion Lab immediately** and collect first box of blood components
2) **Take blood box directly to clinical team**. If requested, place red cell units in remote fridge
3) **Collect blood samples / patient identification** as required
4) **Return to Transfusion Lab immediately** and wait for additional blood boxes
5) **Continue to deliver blood boxes** as instructed by Lab until stood down

Clinical area:

1) **Standard Issue**: Shock Pack 1 (4x RBC, 4x FFP). Inform Lab of additional requirements. If ongoing bleeding / platelets needed request Shock Pack 2 (4 x RBC, 4 x FFP, 1 x Plts)
2) **Inform Lab of 'Stand Down'** – Ext 48350 (8am – 10pm) Bleep 9433 (10pm – 8am)
3) **Inform lab of emergency stock usage** – Blood fridge, blood unit and patient details
4) **Return completed traceability labels** ASAP if unable to use BloodTrack PDA- retain a photocopy in the clinical area.
5) Complete and return adult major haemorrhage audit form.

Appendix 1 **Major Haemorrhage Flowchart**



So what do we do on activation?

North Bristol NHS Trust

- **Clinical area are supposed to contact lab to provide information**
  - **Patient ID**
  - **Shock pack one: 4 units of red cells and 4 units of pre thawed 5-day FFP (if available).**
  - **Shock pack two: 4 units of red cells and 4 units of FFP and 1 bag of platelets**
  - **Different Trusts may have different terminology and content**
    - **Cryo, Fibrinogen concentrate, Lyoplas**

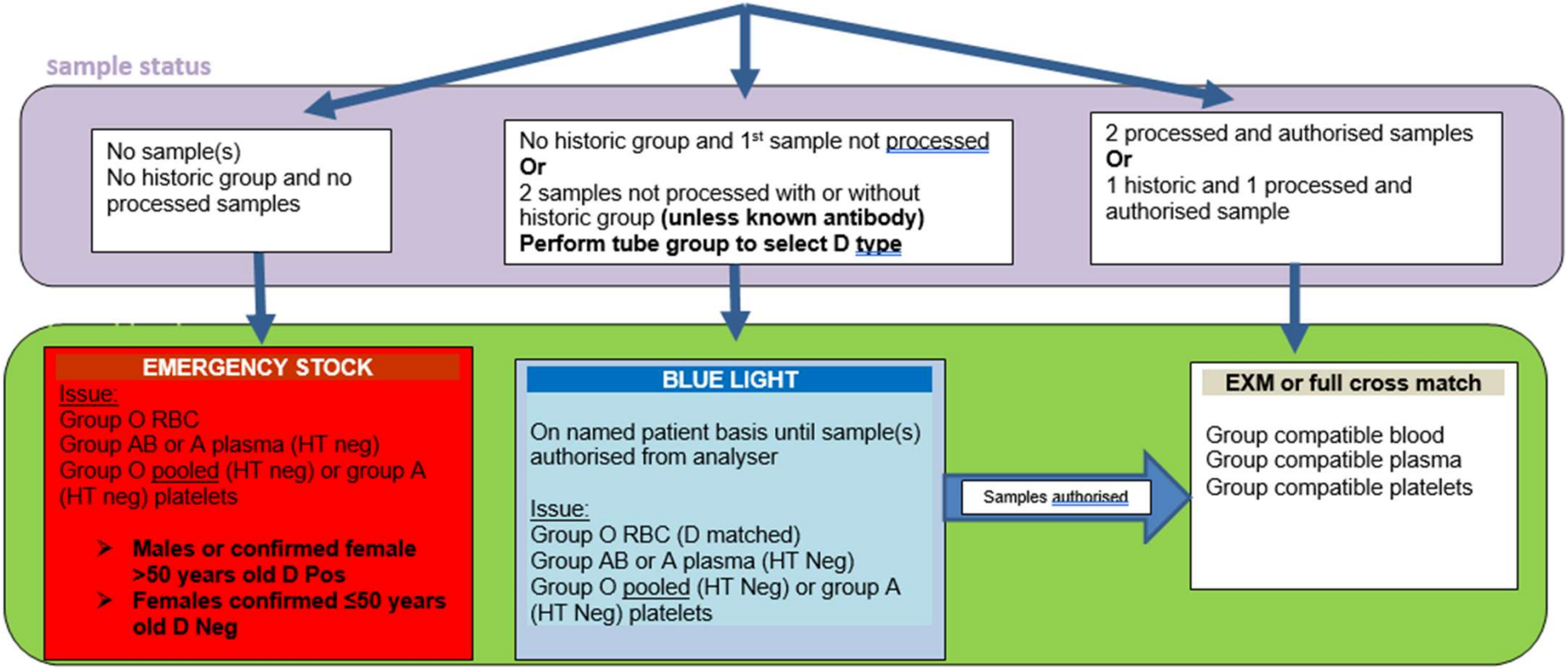
When do they want the blood?

- Serological crossmatch = 1 hour
- Group specific= 10-15 mins
- Emergency stock = Time it takes to get to the blood fridge
  - How long can they wait?
  - Do we have a history on the patient?
  - Do they have some units already there being transfused?
  - Is there named patient blood already available?
  - How long will it take to get blood from the lab

Appendix 3:

North Bristol NHS Trust

Request for Blood/Blood Products in Major Haemorrhage/Code Red



NBTCARES

What if patient has antibodies

- Inform clinicians as soon as possible that there is a potential for incompatible blood and a transfusion reaction
  - We are not saying they can't have blood, this will be a clinical discission
- Set up a crossmatch
- In extreme emergencies, if the antibody has been identified, select antigen negative units
- If antibody not identified or antigen negative blood available, Group O D pos/neg K neg units
- Educated guess of possible antibodies based on screen
- What can you realistically achieve in the time you have

START

Ask- "Can you wait 1 hour for crossmatched blood (or from when the sample arrives if not already in the lab), but it still may be incompatible depending on what we discover?"

Yes → Select ABO (O if only one sample), D, Rh, K matched and antigen negative if known or random* units and set up XM and panel.

If incompatible or antibody identified shows dosage and the selected units are not antigen negative then return to the start of this flow chart

No ↓

Ask – "Can you wait 15 - 20 minutes for uncrossmatched blood. If transfused, there is a risk of a reaction"

Yes → Select ABO or group O if only one sample, D,Rh, K matched and antigen negative if known and available or random* units and issue as blue light (group O only) or uncrossmatched for ABO matched depending on sample authorisation.

Retain a segment of the pilot tube/pig tail to set up retrospective XM ASAP. Set up a panel on the patient.

Then → Lab to inform Haematologist[!] as soon as possible after blood has been issued. Complete the crossmatch on the pigtail vs patient sample and inform clinicians of outcome.

[!] If sample has been processed is still valid and antibody identified, only contact Haematologist if blood is not antigen negative. Then advise the clinical team to consider corticosteroid +/- IvIg.

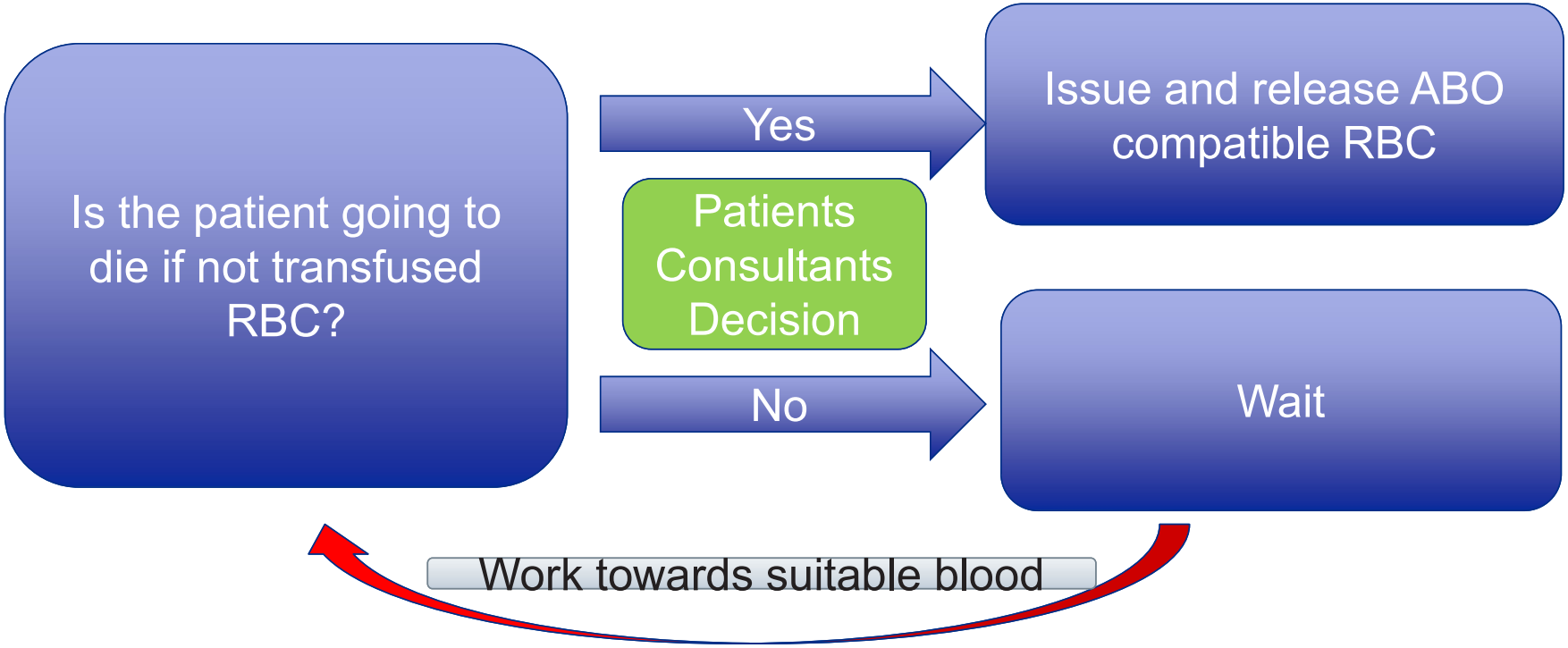
No ↓

Instruct them to take the emergency stock from the nearest blood fridge and say "there is a risk of a reaction with those units and the patient must be monitored and consider corticosteroid +/- IvIg "**.

Then → Lab to inform a Haematologist as soon as possible after blood has been issued and provide full details and antibody and unit antigen status. And that the clinical team has been told "there is a risk of a reaction and to consider corticosteroid +/- IvIg".

*If unknown antibodies or unconfirmed, use the 3 cell screen to "best guess" the possible antibodies and if available select antigen negative units.
**If the antibody is known check if the emergency stock was antigen negative and inform the clinical team and Haematologist of a possible reaction
Antibodies not considered clinically significant- C^w, Kp^a, N, P1, Le^a, Le^b, Lu^a,

Simple view


Is the patient going to die if not transfused RBC?
Yes
Issue and release ABO compatible RBC
Patients Consultants Decision
No
Wait
Work towards suitable blood

Running out of O Neg

NHS North Bristol NHS Trust

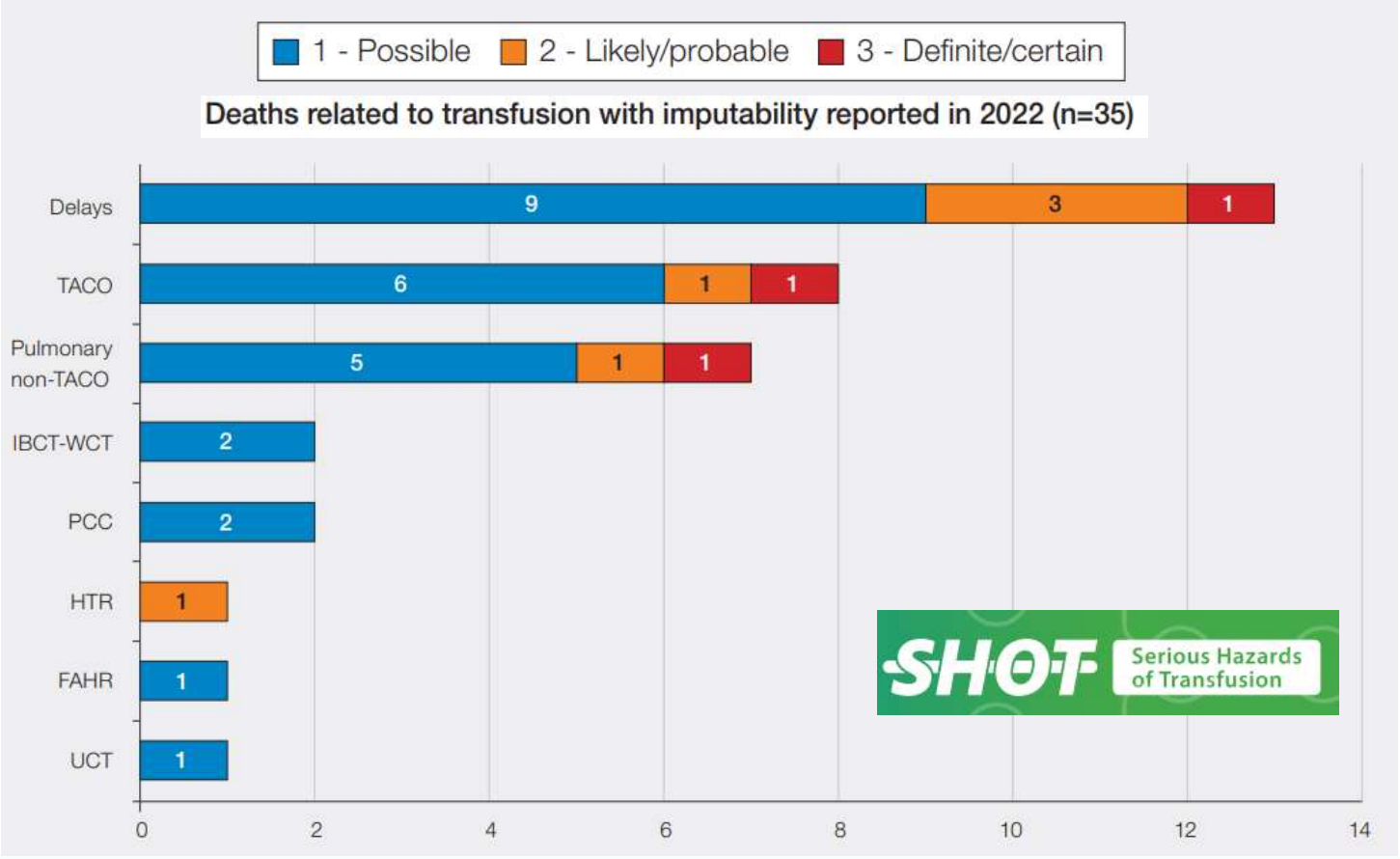
- **Are there any issued O Neg to a patient that could be returned to stock**
- **Emergency blue light order form NHSBT**
- **Switch to O Pos**
- **If childbearing potential, follow up later**

Running out of O Pos

NHS North Bristol NHS Trust

- **Are there any issued O Pos to a patient that could be returned to stock**
- **Emergency blue light order form NHSBT**
- **Switch to O Neg**

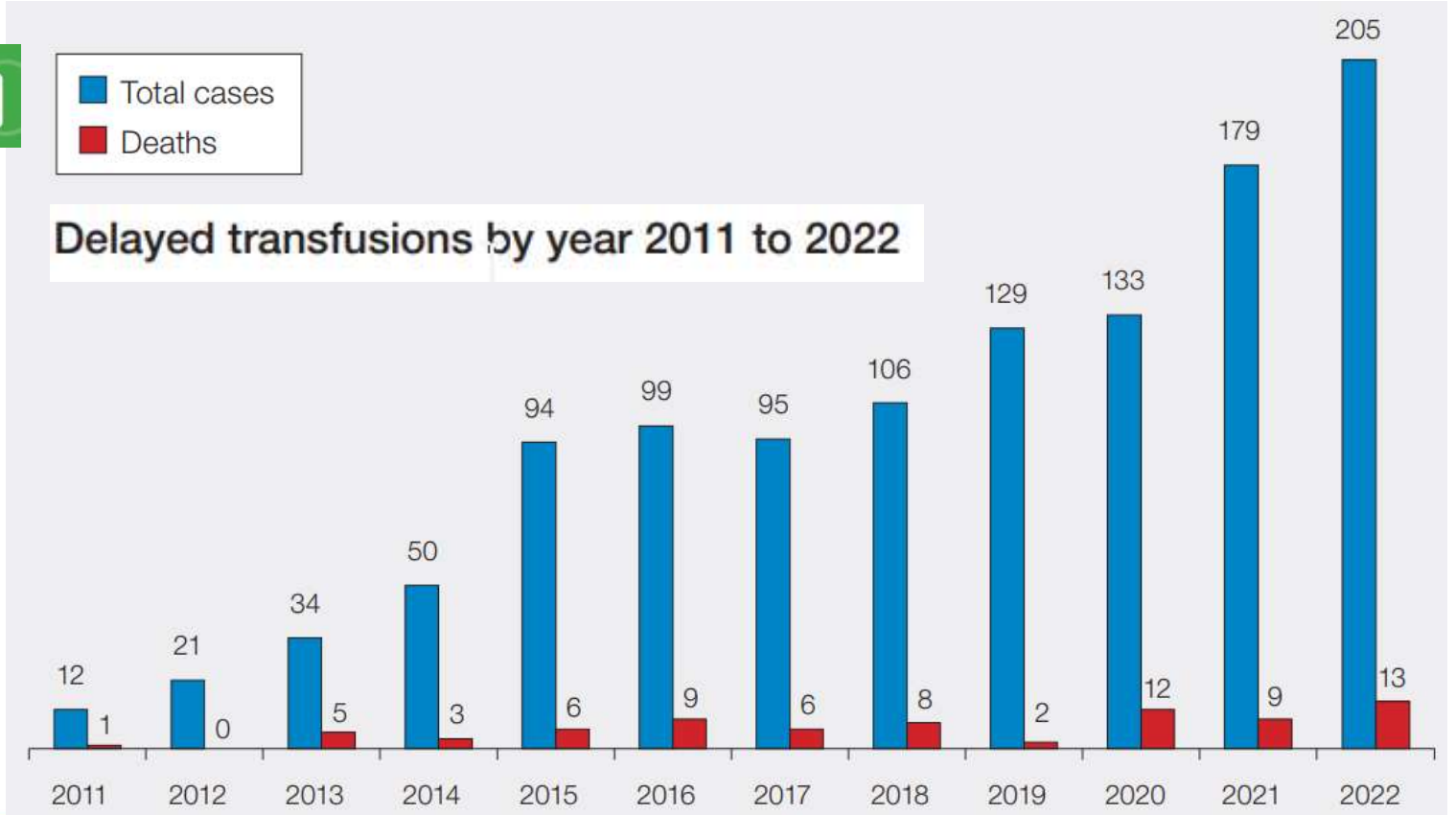
SHOT


1 - Possible
2 - Likely/probable
3 - Definite/certain
Deaths related to transfusion with imputability reported in 2022 (n=35)
Delays
TACO
Pulmonary non-TACO
IBCT-WCT
PCC
HTR
FAHR
UCT
9
3
1
6
1
1
5
1
1
2
2
1
1
1
0
2
4
6
8
10
12
14
SHOT
Serious Hazards of Transfusion

SHOT

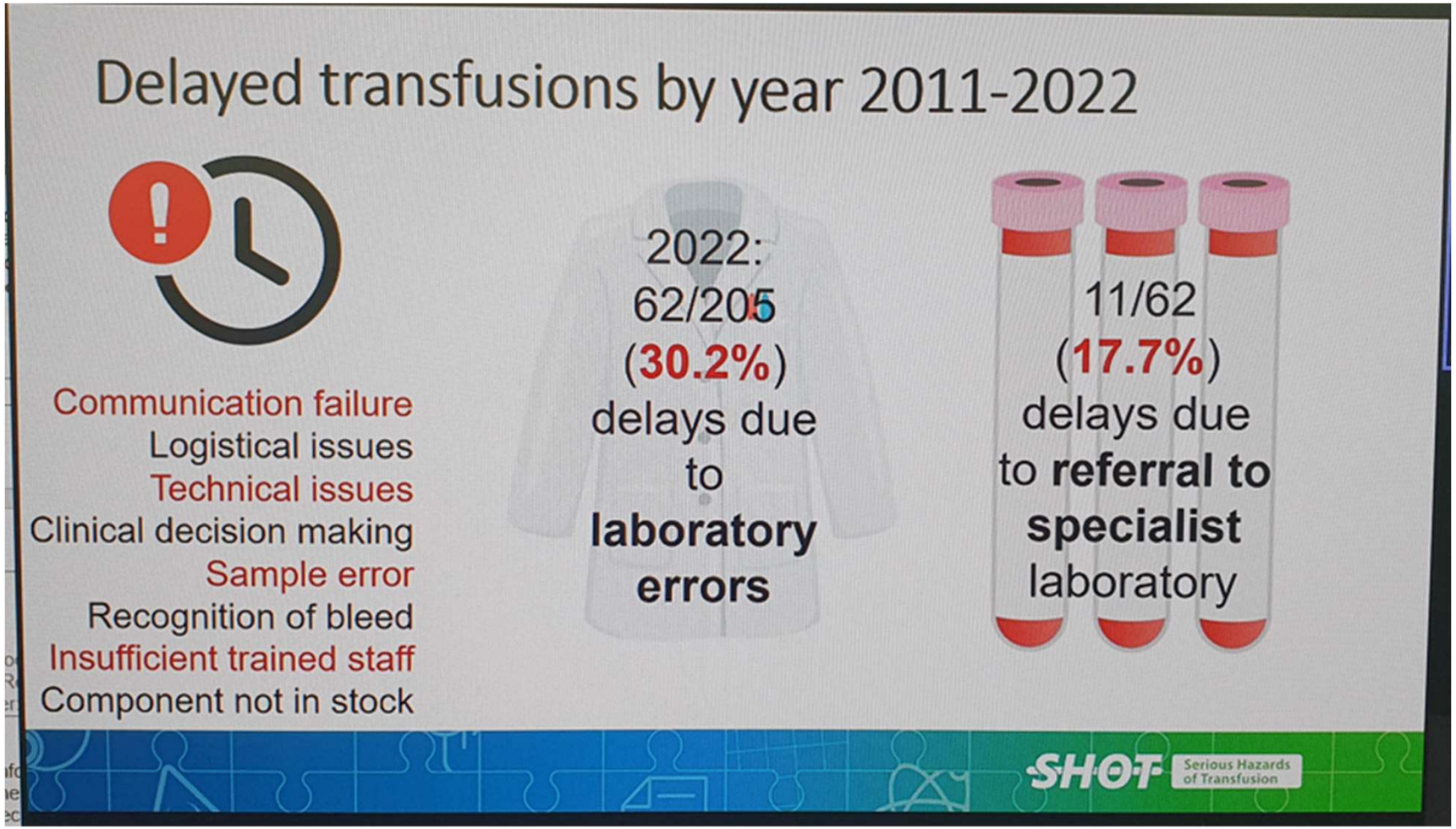
NHS North Bristol NHS Trust

SHOT Serious Hazards of Transfusion

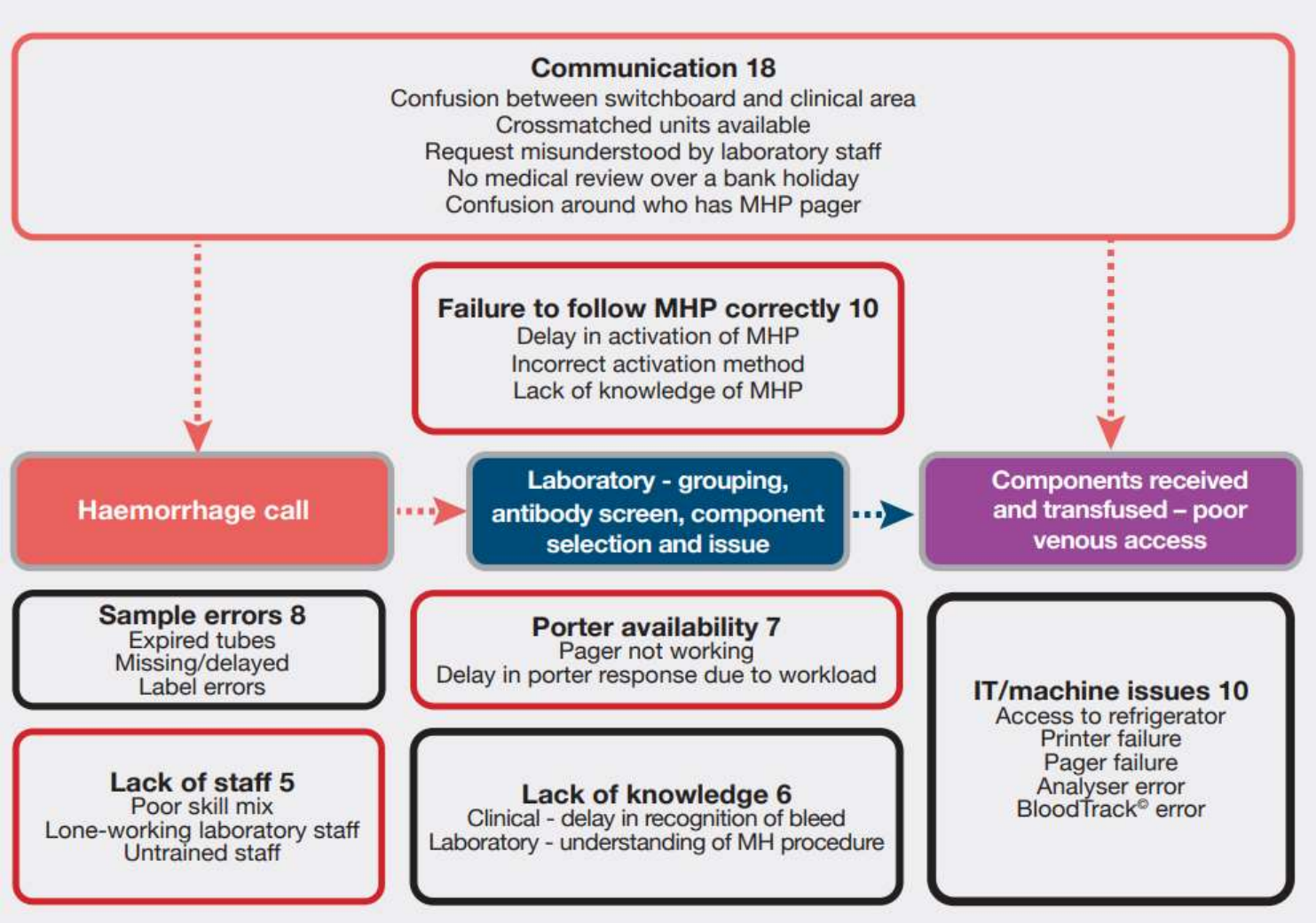


Communication failure
Logistical issues
Technical issues
Clinical decision making
Sample error
Recognition of bleed
Insufficient trained staff
Component not in stock

NBTCARES



- **SHOT-REPORT-2022-FINAL-Bookmarked-1.pdf (shotuk.org)**


Communication 18
Confusion between switchboard and clinical area
Crossmatched units available
Request misunderstood by laboratory staff
No medical review over a bank holiday
Confusion around who has MHP pager
Failure to follow MHP correctly 10
Delay in activation of MHP
Incorrect activation method
Lack of knowledge of MHP
Haemorrhage call
Laboratory - grouping, antibody screen, component selection and issue
Components received and transfused – poor venous access
Sample errors 8
Expired tubes
Missing/delayed
Label errors
Porter availability 7
Pager not working
Delay in porter response due to workload
IT/machine issues 10
Access to refrigerator
Printer failure
Pager failure
Analyser error
BloodTrack© error
Lack of staff 5
Poor skill mix
Lone-working laboratory staff
Untrained staff
Lack of knowledge 6
Clinical - delay in recognition of bleed
Laboratory - understanding of MH procedure

Communication

NHS North Bristol NHS Trust

- The most likely reason for delay
- Where is the blood going?
  - Have they told you
  - Do you have an idea e.g Theatres level 2, ED, Central delivery
- If you know where it is but no patient details send the shock pack as if it was a female of childbearing potential
- Call switchboard
- If you have no idea at all, prepare and wait

Delays

NHS North Bristol NHS Trust

- **Rule 1- Treat every MH call as real**
  - **“This particular medic calls MH more often than others and they don’t use the blood anyway”**

- **Reacting too late**

CAS Report

North Bristol NHS Trust

- SHOT_2022_001.pdf

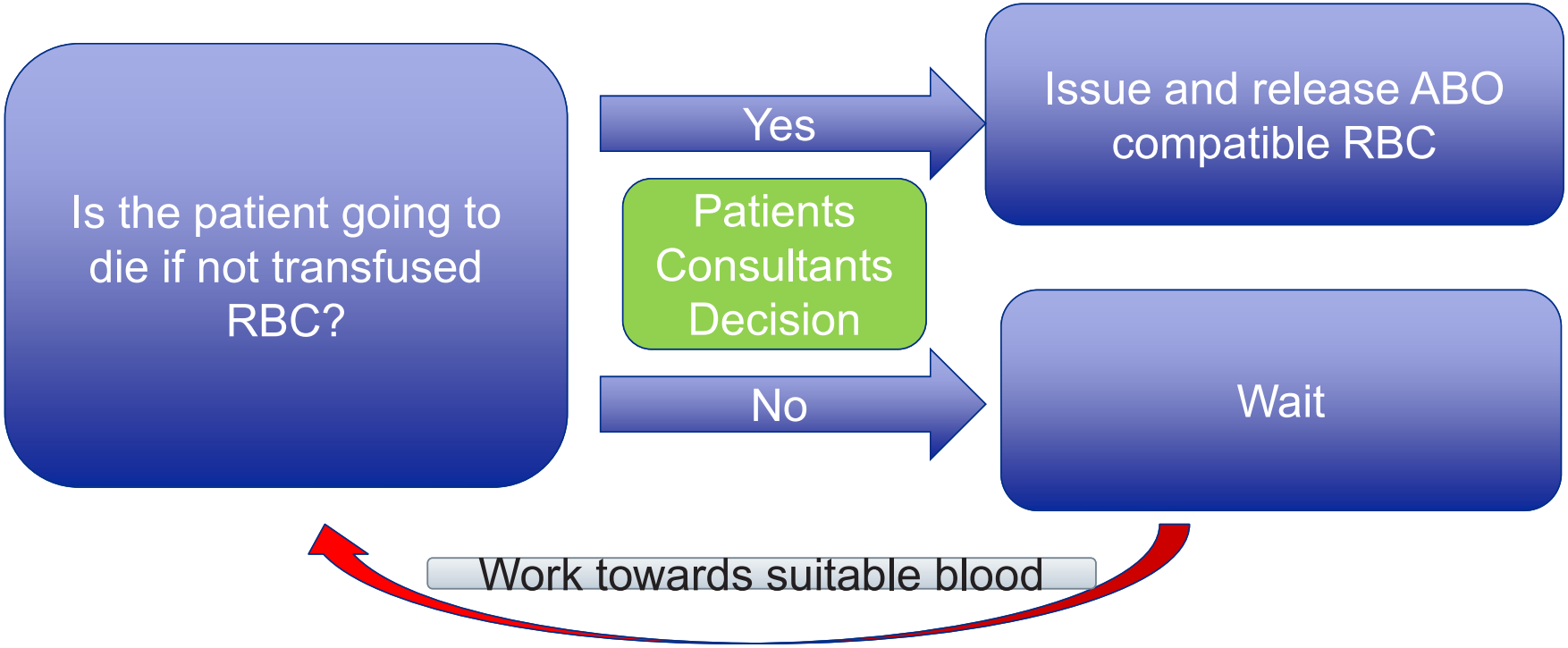
- **The Central Alerting System (CAS) is a web-based cascading system for issuing patient safety alerts**
- **SHOT January 2022**
- **Transfusion delays contributed to 54 potentially preventable deaths accounting for 25.5% of all transfusion deaths reported to SHOT**

Simulations in the laboratory

NHS North Bristol NHS Trust

- If your lab does not have many MH run scenarios
- Ideally yearly
- Include
  - Activation
  - Issue of components
  - Packing
  - Sending
- These simulations should also be practice in other areas of the hospital

Simple view


Is the patient going to die if not transfused RBC?
Yes
Issue and release ABO compatible RBC
Patients Consultants Decision
No
Wait
Work towards suitable blood

NHS
North Bristol
NHS Trust

Thank you

Obstetric Patients & anti-D Ig Q & A Session

Ian Sullivan
Transfusion Laboratory Manager
Royal Cornwall Hospitals NHS Trust

Transfusion MATTERS

Refreshment Break

Specific Requirements – Risks & Consequences

Vikki Chandler-Vizard
Transfusion Practitioner
University Hospitals Dorset NHS FT (Poole)

Special Requirements – Irradiated Red Cells

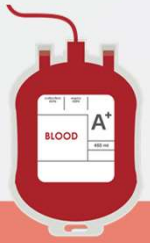
Scenario 1: Irradiated blood components

Transfusion MATTERS

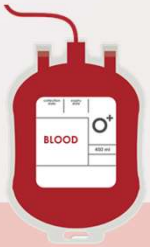
Patient:

- **Male patient in Emergency department.**
- **Known: A positive and G&S sample received**
- **Request received: 2 x RBCs 'ASAP'**
- **Historic 'special' requirement on LIMS: Irradiated blood components.**
- **Clinical details - Hb = 63 g/L**

There are **no routine deliveries** from NHSBT **until the following day.**



You only have **1 unit in stock** that is **group A** and **irradiated.**



You do **have a group O unit** that is **irradiated.**

Scenario 1: Things to consider

Transfusion MATTERS

Patient:

- **Male patient in Emergency department.**
- **Known: A positive and G&S sample received**
- **Request received: 2 x RBCs 'ASAP'**
- **Historic 'special' requirement on LIMS: Irradiated blood components.**
- **Clinical details - Hb = 63 g/L**

Does the patient still need irradiated blood, what is the indication?

Discuss with Requestor/Haematologist

Indication for transfusion:
What's the transfusion Hb trigger?
Is there an Hb target?

Clinical details:
Is the patient stable?
Is the patient bleeding?
Is the patient symptomatic?

Scenario 1: Options

Transfusion MATTERS

Patient:

- **Male patient in Emergency department.**
- **Known: A positive and G&S sample received**
- **Request received: 2 x RBCs 'ASAP'**
- **Historic 'special' requirement on LIMS: Irradiated blood components.**
- **Clinical details - Hb = 63 g/L**

Further detail:

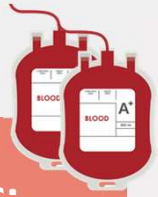
- Patient is stable, **not bleeding but symptomatic.**

Option 1

Transfuse 1 Apos irradiated unit

If 2nd unit required…….

Option 2



Transfuse 2 Apos units:

1 x A Pos **Irradiated**

1 x A Pos **Non Irradiated**

Option 3

Transfuse 2 irradiated Units:

1 x **A Pos** Irradiated

1 x **O Pos** Irradiated

Scenario 1: Risks & Consequences

Transfusion MATTERS

Option 1

Transfuse 1 A+ irradiated unit
2nd unit required:
Ad-hoc vs Routine

Possible under transfusion

Review patient post 1 unit
Hb levels, symptoms, other treatment and aims

Is 2nd unit necessary?

Potential Impact

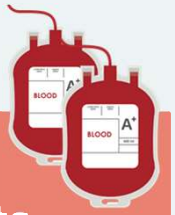
Potential for delay if 2 units indicated

Ad-hoc vs Routine for delivery of 2nd A pos irradiated unit

Scenario 1: Risks & Consequences

Transfusion MATTERS

Option 2



Transfuse 2 A+ units
1 x A Pos **Irradiated**
1 x A Pos **Non Irradiated**

Special requirement NOT met!

Non irradiated red cells to an immune compromised patients: **risk of transfusion associated graft versus host disease (TA-GvHD).**

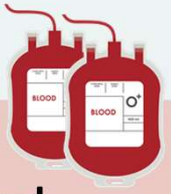
Potential Impact

Potential for death from TAGvHD if irradiated requirement correct

Scenario 1: Risks & Consequences

Transfusion MATTERS

Option 3



Transfuse 2 irradiated Units
1 x **A Pos** Irradiated
1 x **O Pos** Irradiated

Requirements met

Patient transfused requested units meeting requirement– no impact clinically

Potential Impact

Patient transfused

Mixed field reactions in the future.

Potential for delays with grouping and future issue of RBCs.

May be excluded from Electronic issue – impact?

Scenario 1: **Comments**

Factors to consider:

- Clinical urgency
- Relevance of flag and impact of not being met
- Weight of patient and expected Hb increment
- Are there any units >14 days old in stock – alternative to irradiated blood in emergency
- Appropriate units on another ‘site’ that could be used

Good communication, combined with understanding the rationale and risks, is key

Transfusion MATTERS

Un-crossmatched Red Cells vs 'Waiting'

Scenario 2:

Transfusion MATTERS

Patient:

- **Female patient in Emergency department.**
- **No historic data on LIMS**
- **Two separate G&S sample received**
- **Request received:** **2 x RBCs 'ASAP'**
- **Clinical details -** **Hb = 45 g/L, post chemo for pancreatic cancer**

The analyser is unable to interpret the patient blood group due to haemolysis

The analyser is unable to interpret the patient antibody screen due to haemolysis

You have **both group O Pos and O Neg emergency** blood available.

Scenario 2: Things to consider

Transfusion MATTERS

Patient:

- **Female patient in Emergency department.**
- **No historic data on LIMS**
- **Two separate G&S sample received**
- **Request received: 2 x RBCs 'ASAP'**
- **Clinical details - Hb = 45 g/L, post chemo for pancreatic cancer**
- **Further detail: patient not bleeding but unstable and symptomatic**

Potential issues:
The analyser won't process the sample but what can you see with manual techniques?

Other Clinical Details:
Is the patient stable, bleeding, symptomatic?
What's the age of the patient?

Workload schedule:
What time of day is it?
Are you lone working/what support do you have?

Discuss with Requestor/Haematologist/ RCI

Scenario 2: Options

Transfusion MATTERS

Patient:

- **Female patient in Emergency department.**
- **No historic data on LIMS**
- **Two separate G&S sample received**
- **Request received: 2 x RBCs 'ASAP'**
- **Clinical details - Hb = 45 g/L, post chemo for pancreatic cancer**

Option 1

Send samples to RCI for group, antibody screen and crossmatch – wait for their results and them to provide red cells

Option 2

Attempt manual techniques for group and antibody screen but send sample to RCI for crossmatch and red cells

Option 3

Attempt manual techniques, send sample to RCI for investigation BUT provide emergency group O if transfusion needed urgently

Scenario 2: **Risks & Consequences**

Transfusion MATTERS

Option 1

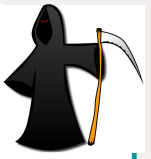
Send samples to RCI for group, antibody screen and crossmatch – wait for their results and red cells

Under/Delayed transfusion

Accurate results and compatible red cells BUT

Patient has a very low Hb and is probably haemolysing – significant delay in red cell provision waiting for RCI process

Potential Impact



Potential death from delayed transfusion

Scenario 2: Risks & Consequences

Transfusion MATTERS

Option 2

Attempt manual techniques for group and antibody screen

Send sample to RCI for crossmatch and red cells

Potential for 'good' serological information

Manual techniques, whilst not routine, can provide useful information by 'eye'.

Gives you more information to work with – likely group, potential for allo antibodies, likely compatible units

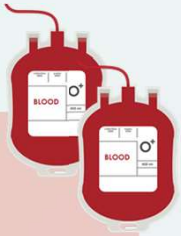
Potential Impact

However, no blood provision could still lead to delay, under transfusion and DEATH

Scenario 2: Risks & Consequences

Transfusion MATTERS

Option 3



Attempt manual techniques

Send sample to RCI for investigation

BUT provide emergency group O if transfusion needed urgently

Patient will receive red cells

Manual techniques could provide you with useful information (particularly RHD type if female). You may 'see' a negative antibody screen even if analyser doesn't.

Giving Group O is NOT going to be ABO incompatible and could save life!

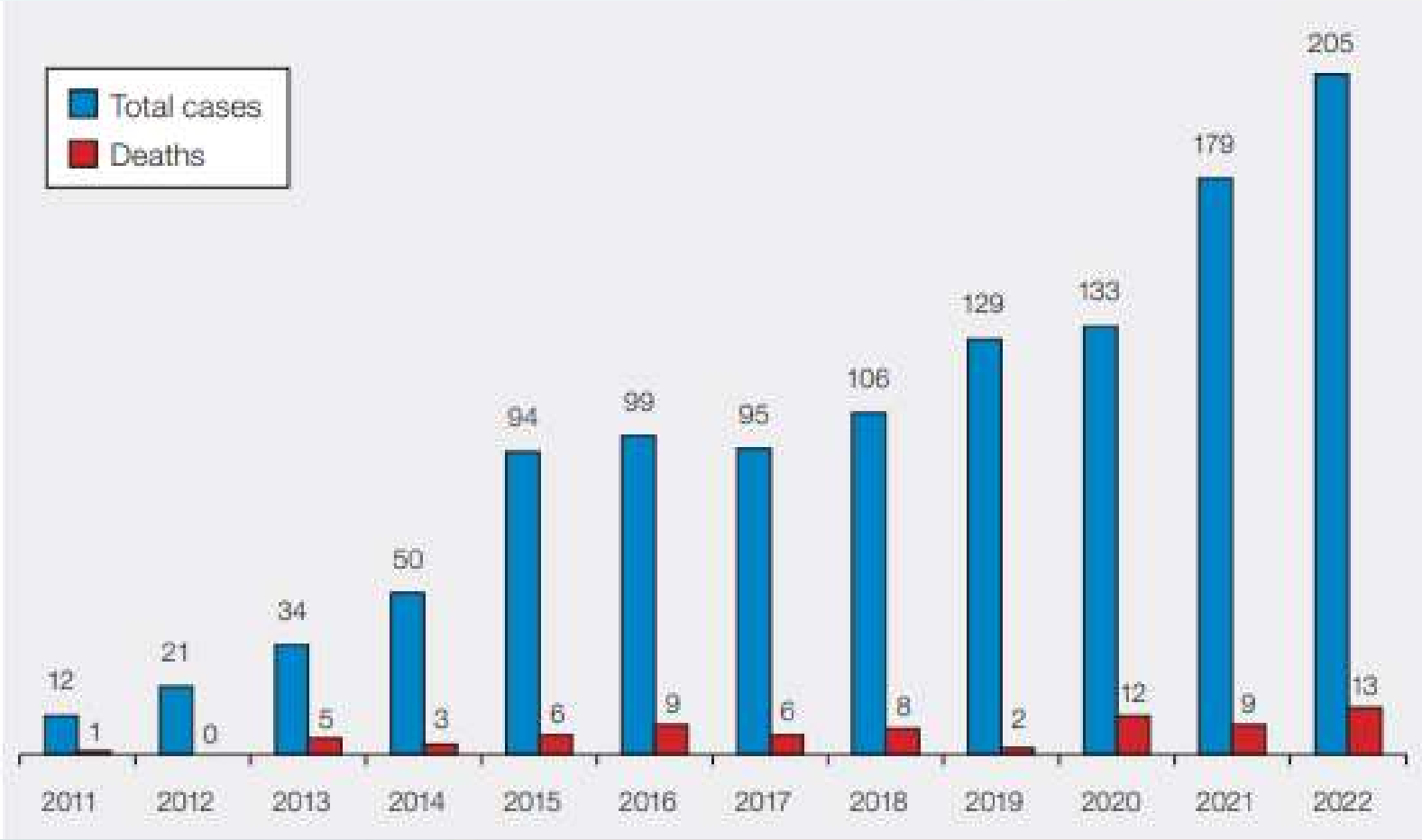
Impact

Units will not be ABO incompatible and patient transfused.

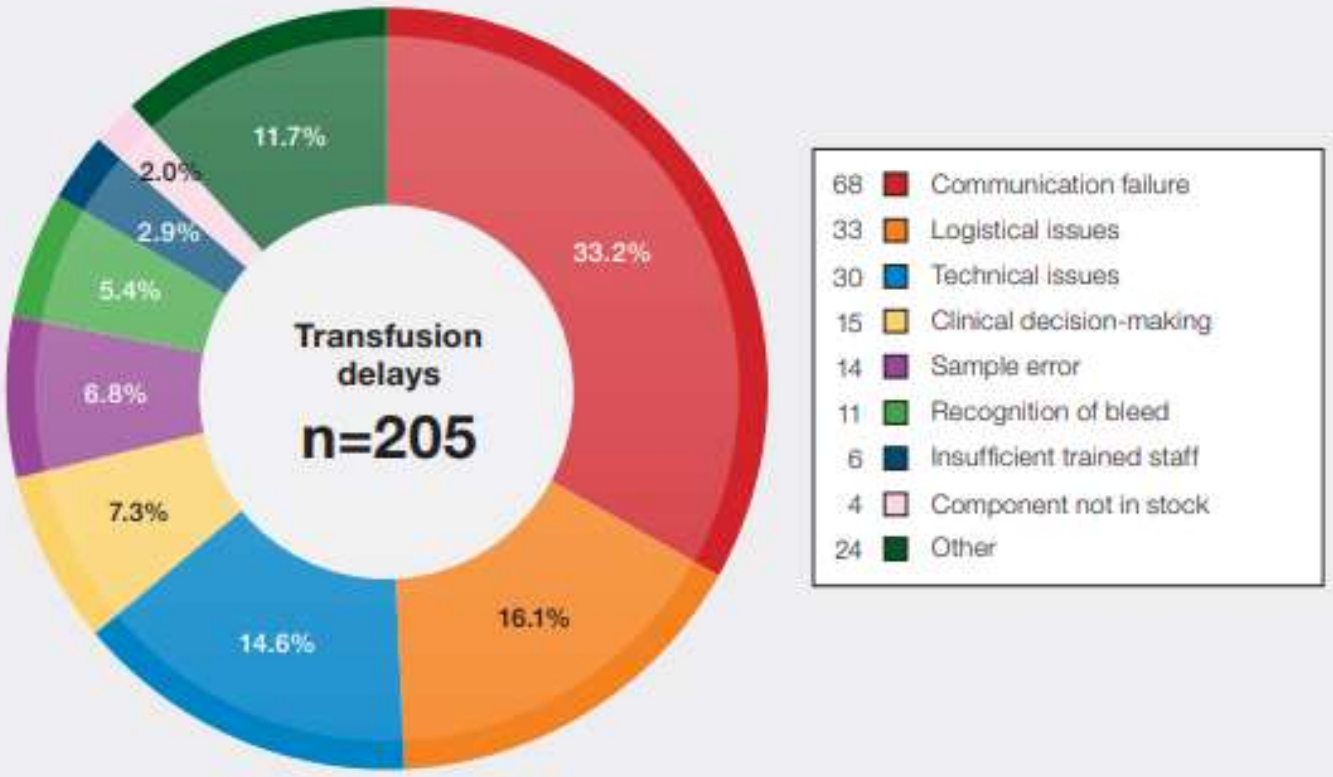
Very small potential patient could have clinically significant alloantibody …..

Risk – very unlikely, weigh this against not transfusing!

2022 SHOT report: Delayed transfusions and deaths by year from 2011



2022 SHOT report: Delayed transfusions



Provide ‘something’ in urgent, emergency situations

Risk assess ALL your options and use information you have to make best judgement at the time

Be clear in your advice and component availability

Good, concise communication can make all the difference!

Transfusion MATTERS

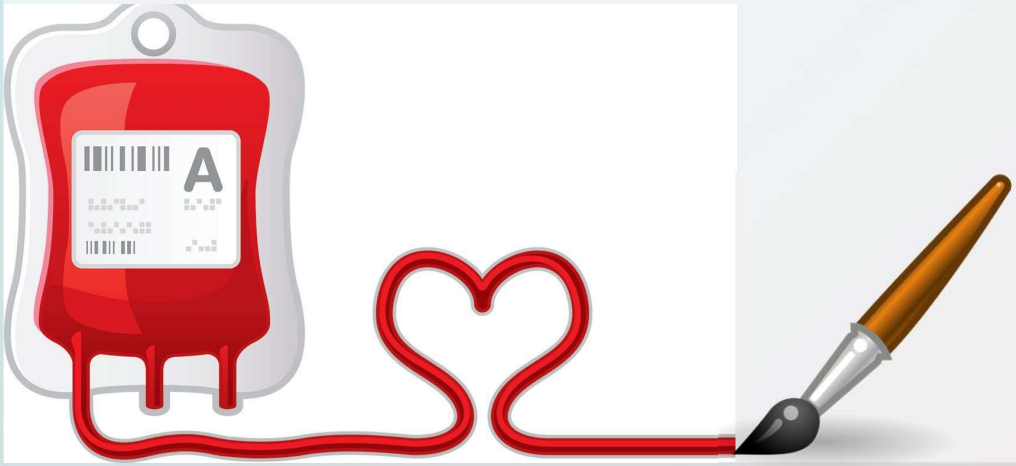
Thank you – Any Questions?

Empowerment

Julia Pinder
Transfusion Practitioner
Torbay & South Devon NHS FT

Transfusion MATTERS

Empowerment…the Art of challenging requests!



WHY are we challenging requests?

Transfusion MATTERS

Transfusion is not without risk – it must be justified

You will be part of better patient care

You may prevent unjustified and/or incorrect component transfusion

National guidance requires you to challenge requests that don't appear justified

YOU ARE THE GATEKEEPERS!

You are part of a multidisciplinary team all working to care for patient

You will provide support to your clinical colleagues

You won't be involved in transfusing patients unnecessarily

They may be the doctor but you will probably know more about the policy/component/requirement of that request

HOW do we challenge requests?

Transfusion MATTERS

Be concise

Don't say 'NO' or refuse out right

Do get a… information you ne… first

…er 'solutions'

…into an …gument

…discuss provision …d options

…ng ag…

USE THE SBAR TOOL!

SBAR Tool for Communication

Transfusion MATTERS

S

Situation:
Why are you calling, what is the request?

B

Background:
What information do you have, what is guidance/policy?

A

Assessment:
What are the clinical details/information you have?

R

Recommendation:
What can/could you provide?

WHAT to remember!

Transfusion MATTERS

Can you
a safe,
compro

calm!

Transfusion MATTERS