NHS
Blood and Transplant

Serious Hazards of Transfusion (SHOT)

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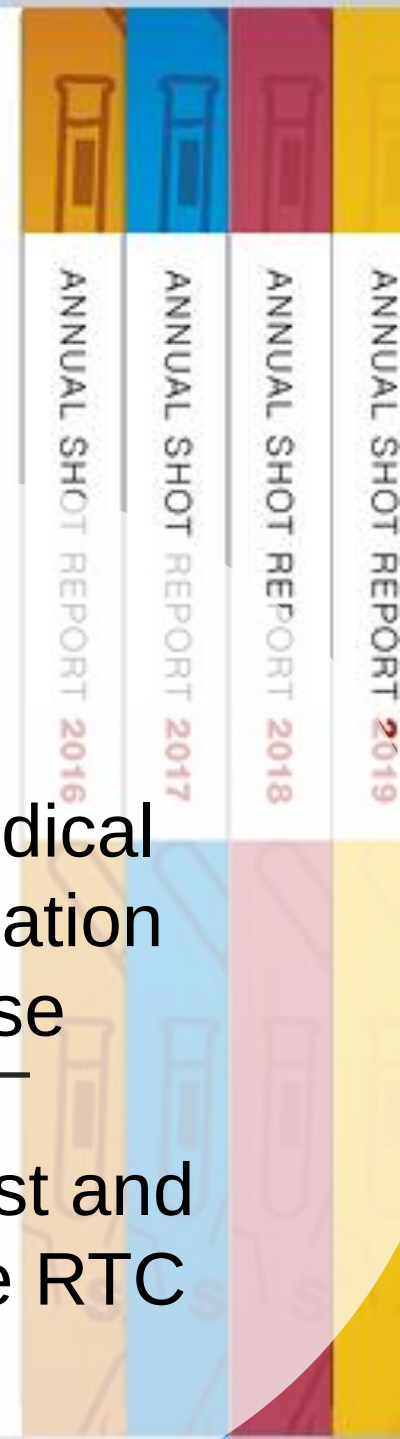
SHOT

Serious Hazards of Transfusion



Non-Medical Authorisation Course

North East and Yorkshire RTC

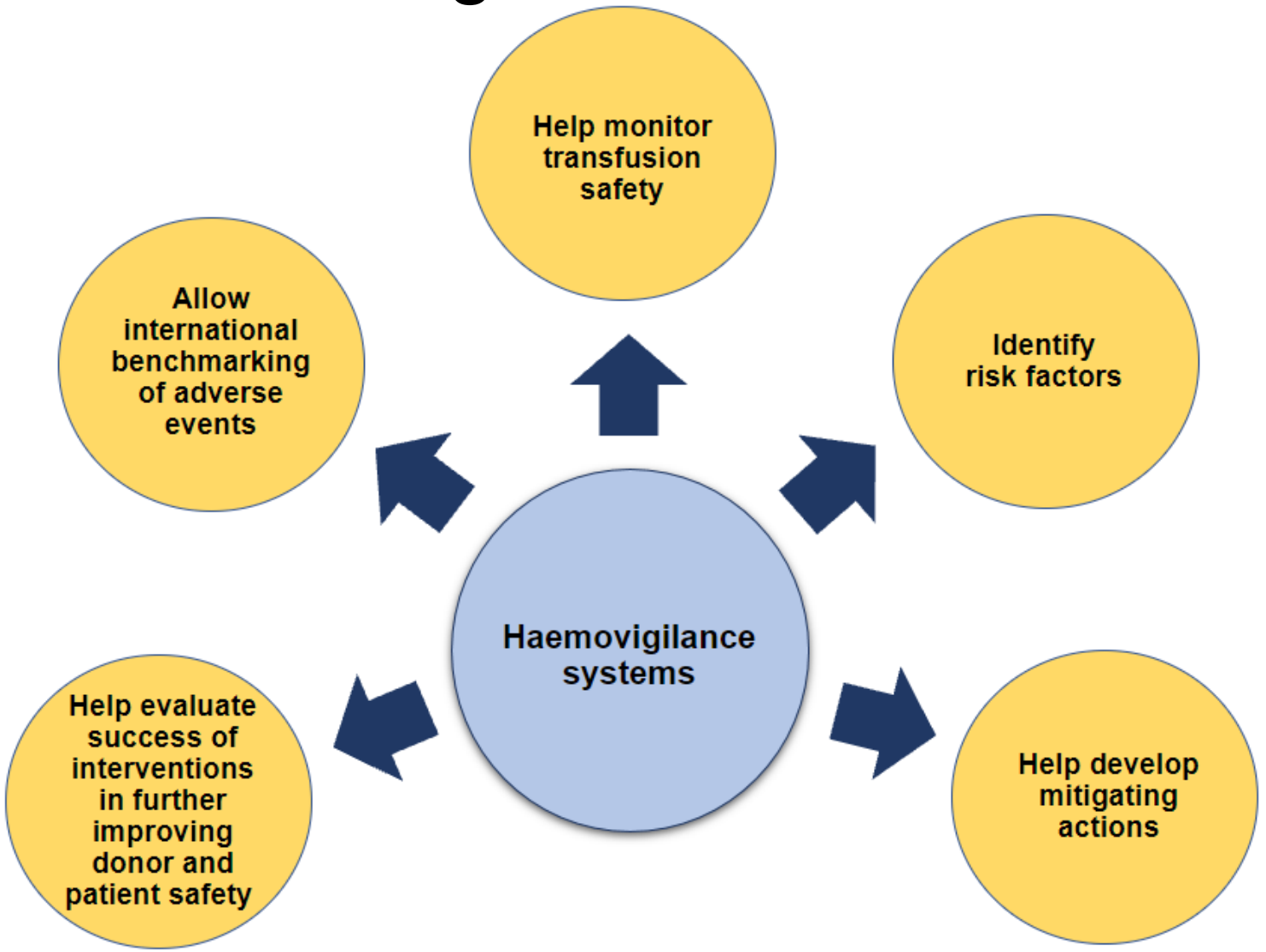
OBJECTIVES: At the end of this lesson learners will be able to:

- Discuss the role of SHOT and the haemovigilance process in UK
- Understand the importance of identifying Human Factors in incident investigations
- Understand the role of haemovigilance in improving transfusion safety
- Apply knowledge to a SHOT case-based discussion

Haemovigilance

Refers to the systematic surveillance of adverse reactions and adverse events related to transfusion with the aim of improving transfusion safety

Why do we need Haemovigilance?

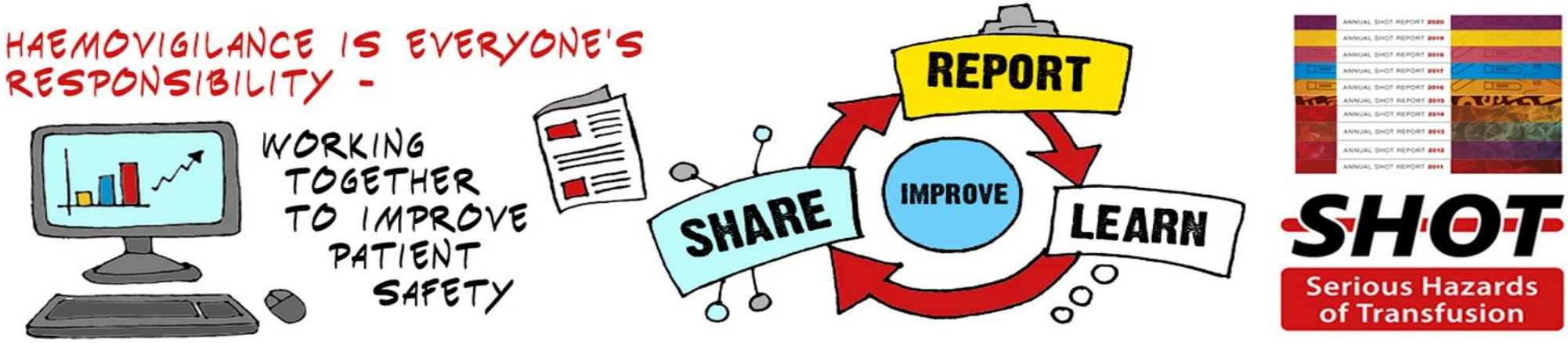


How has haemovigilance helped?

Provides assurance regarding safety of transfusions in the UK

Has demonstrated reduction in TTI, ABOi and TRALI

TRALI risk reduction measures including testing of female donors was as a result of HV data



Haemovigilance tools and processes

Recognise unsafe transfusion practice and recify

Uncover underlying causes (such as human factors) and solutions

Investigate what went wrong. NOT a blame game

Share any learning

SHOT Overview

SHOT works in collaboration with the MHRA and collects and analyses information on transfusion reactions & adverse events from all healthcare organisations in the UK that are involved in blood transfusion

Includes transfusion of red cells, plasma, cryoprecipitate and platelets

Additionally errors related to Anti-D Ig administration, immune anti-D cases & prothrombin complex concentrates (PCC)

Funded by the **4 UK Blood Services** and is affiliated to the Royal College of Pathologists

Overseen by a Steering Group whose membership includes representatives from the Royal Colleges (medical and nursing) and other specialist societies

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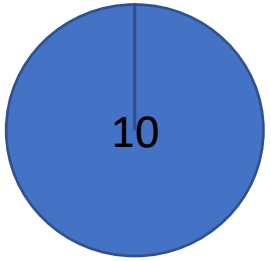
When was SHOT established?

1. **1986**
2. **1996**
3. **2006**
4. **2016**



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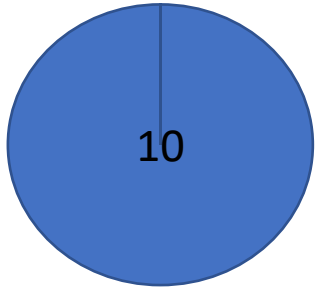
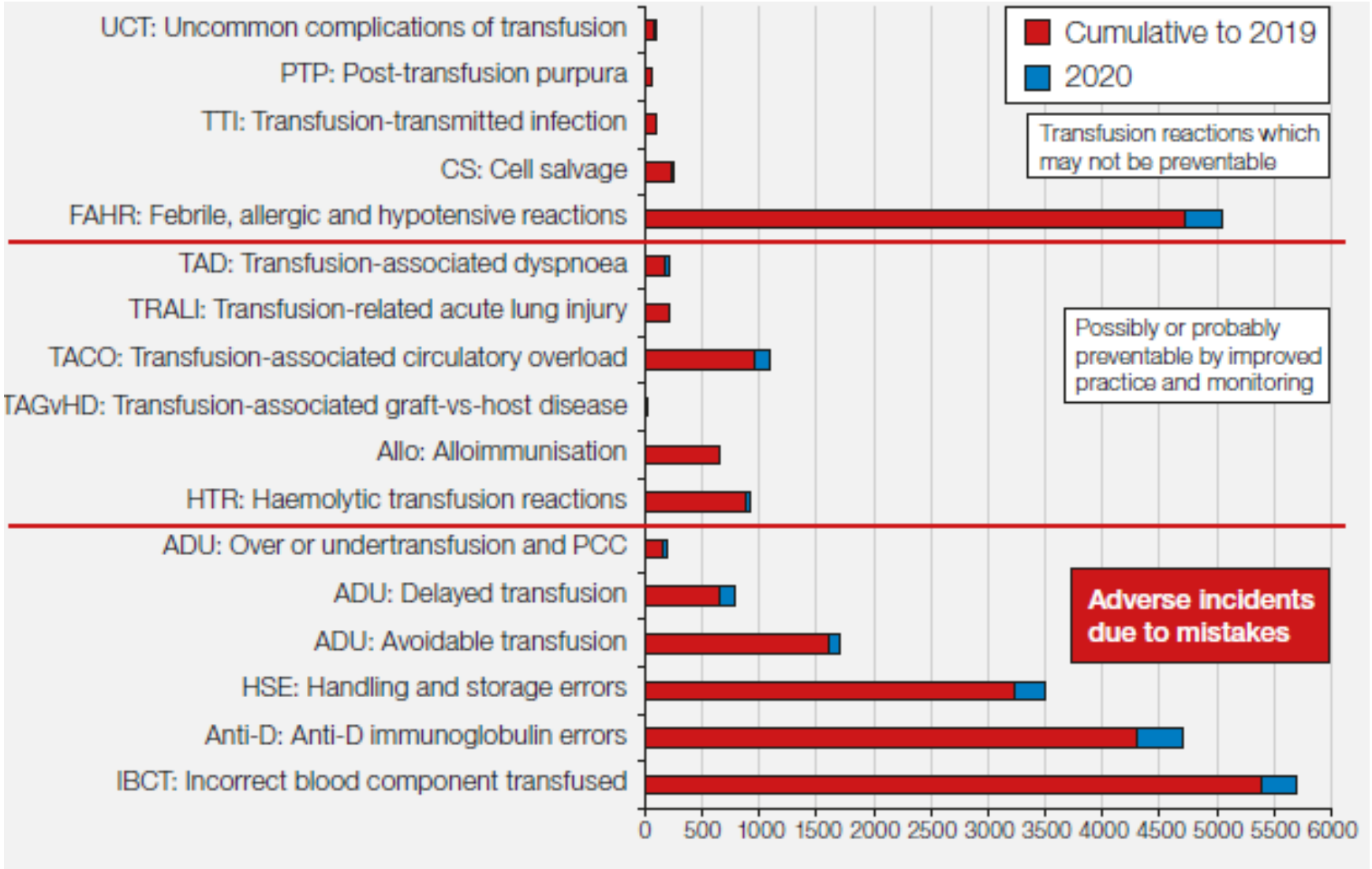
Is reporting to SHOT a legal requirement?

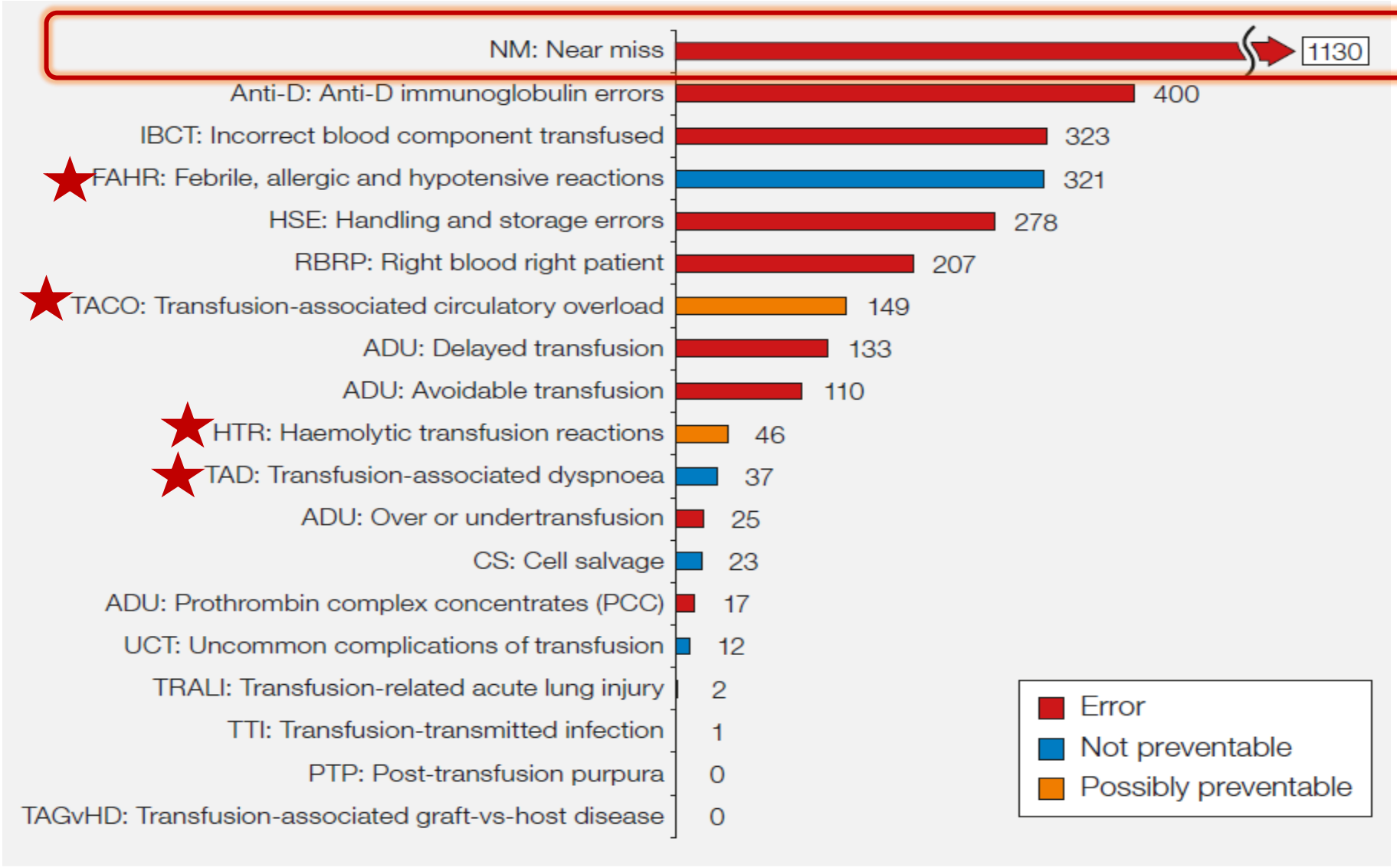
1. **YES**
2. **NO**



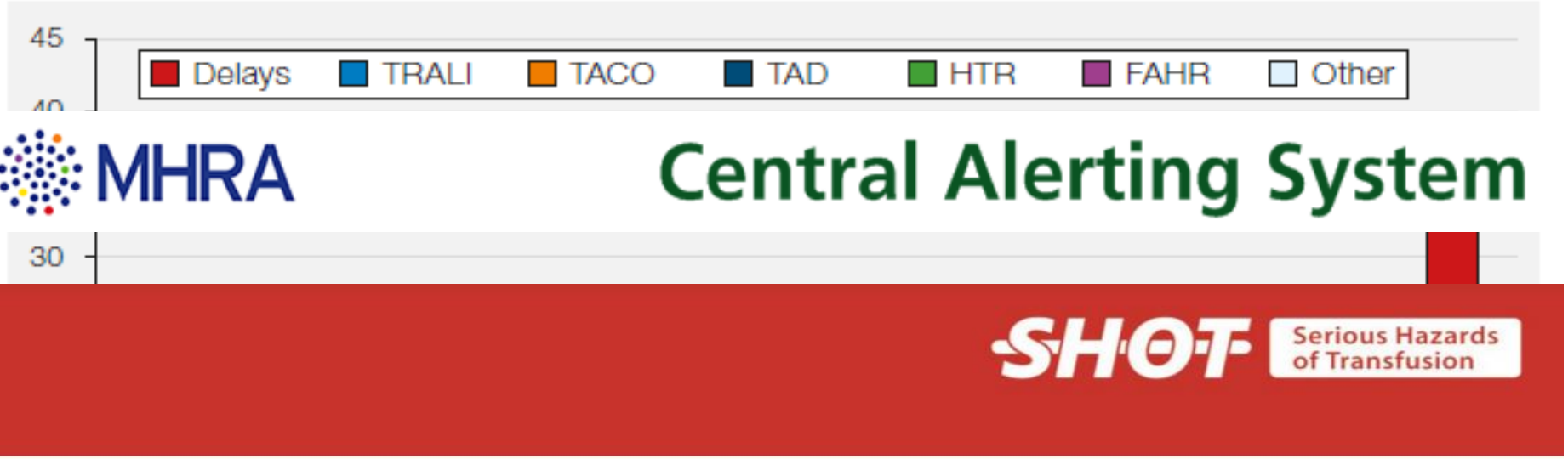
Cumulative data for SHOT categories 1996-2020 (n=25218)



Summary data for 2020, all categories (n=3214)



Transfusion related deaths 2010-2020



MHRA Central Alerting System

SHOT Serious Hazards of Transfusion

Preventing transfusion delays in bleeding and critically anaemic patients.

Date of Issue:	17-Jan-22	Reference No:	SHOT/2022/001
This alert is for action by: **NHS and independent (acute and specialist) sector where transfusions are carried out.**			
Access to blood components and products is a complex safety critical issue that is relevant across many departments and professions. Implementation of this alert should be coordinated by an executive leader (or equivalent role in organisations without executive boards) and supported by their designated senior leads for medical, nursing and pathology teams.			

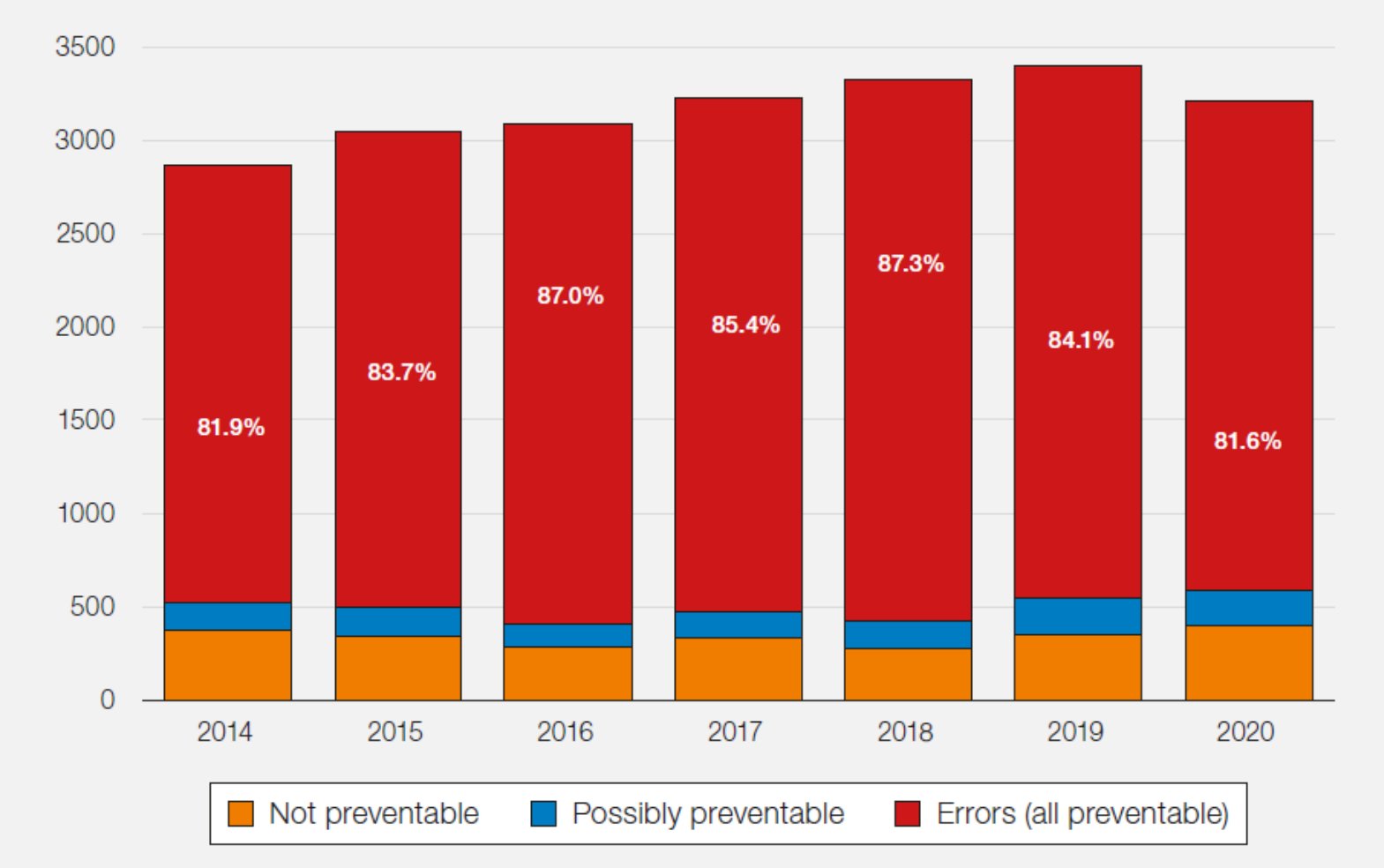
TRALI=transfusion-related acute lung injury; TACO=transfusion-associated circulatory overload; TAD=transfusion-associated dyspnoea; HTR=haemolytic transfusion reaction; FAHR=febrile, allergic and hypotensive reactions

Please refer to the respective Annual SHOT Reports for further details regarding these deaths.

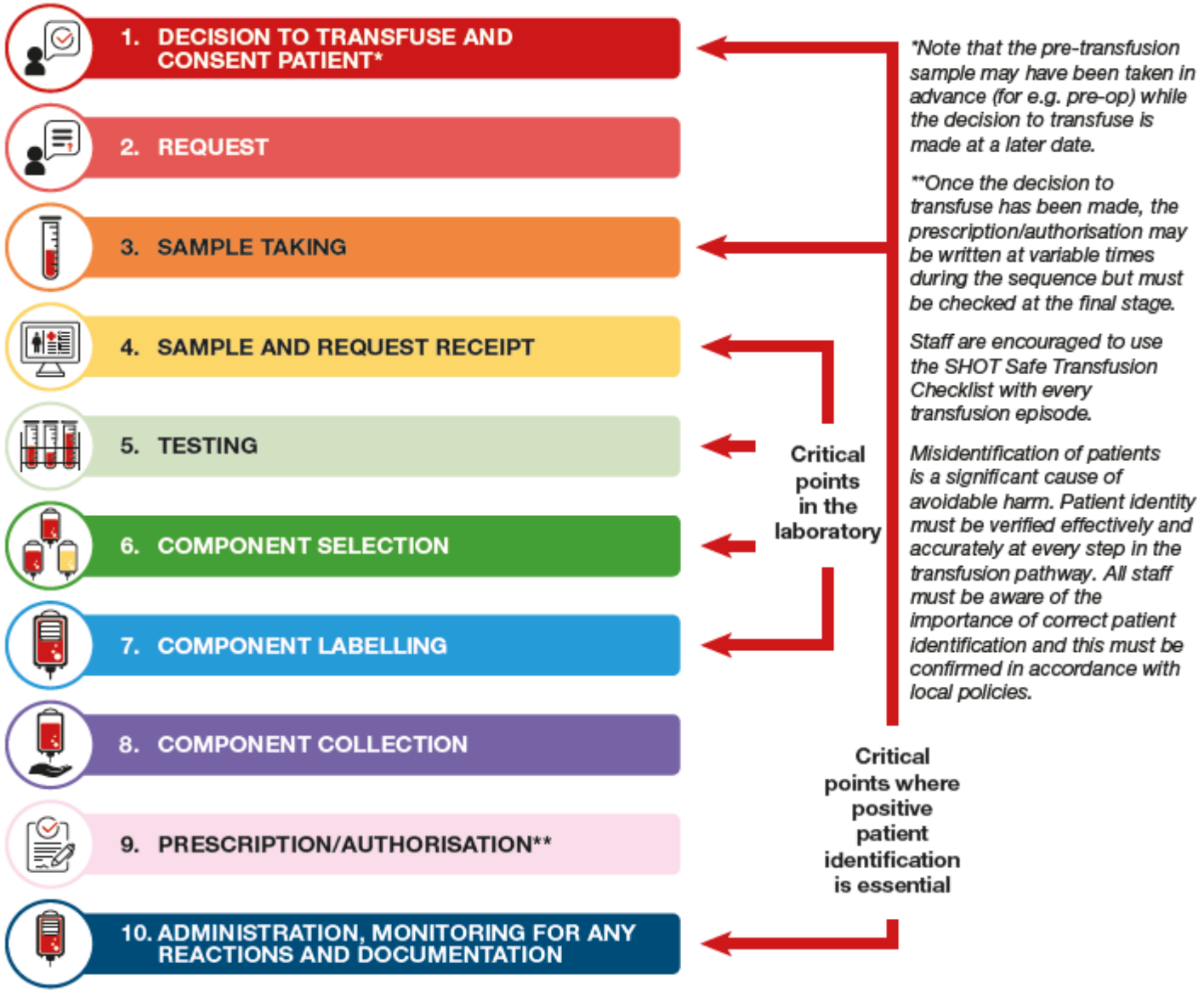
Important to note:

TACO and delays are the most common causes of transfusion-related deaths year on year. There has been an increase in the number of deaths reported due to TACO and delays in 2020

Errors as a percentage of total reports 2014- 2020

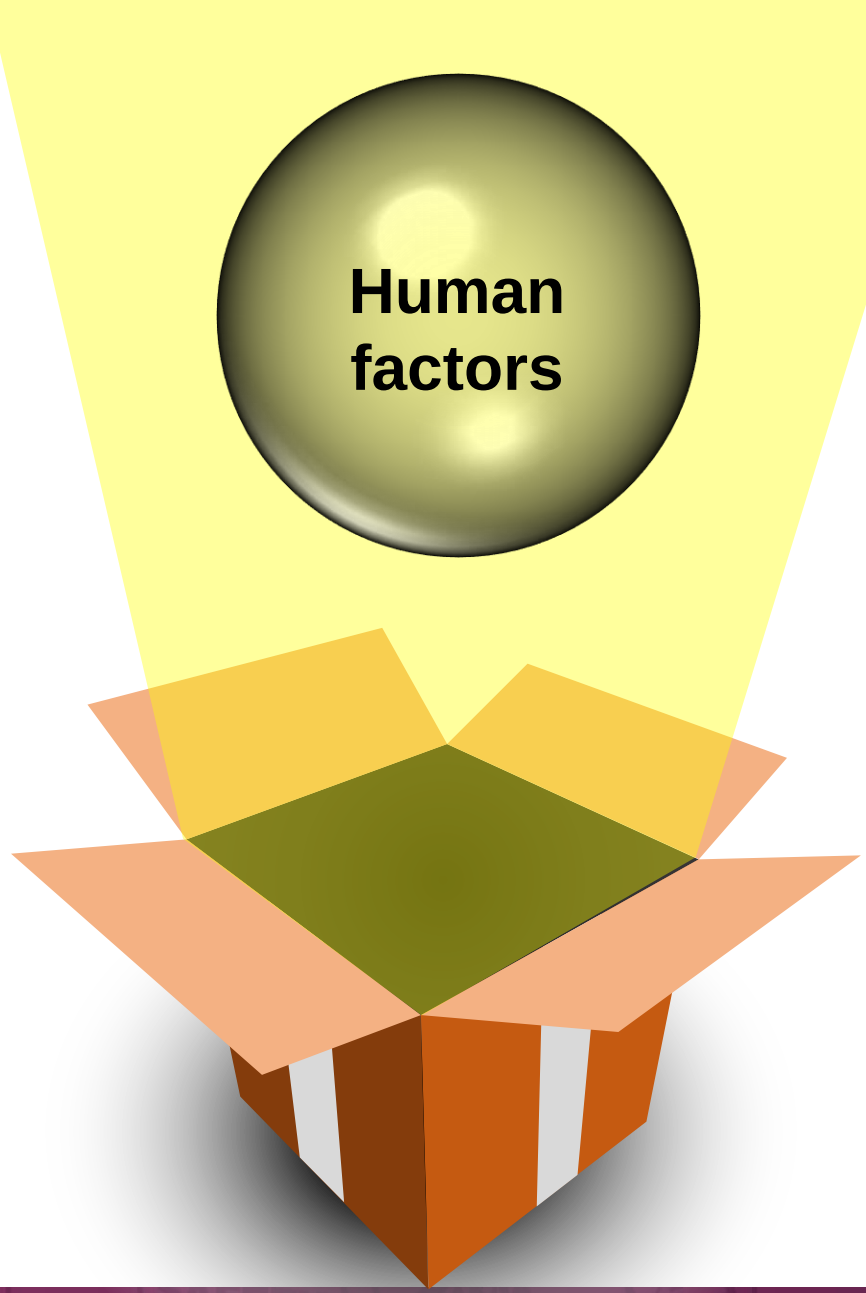


Ten steps in transfusion



Human factors

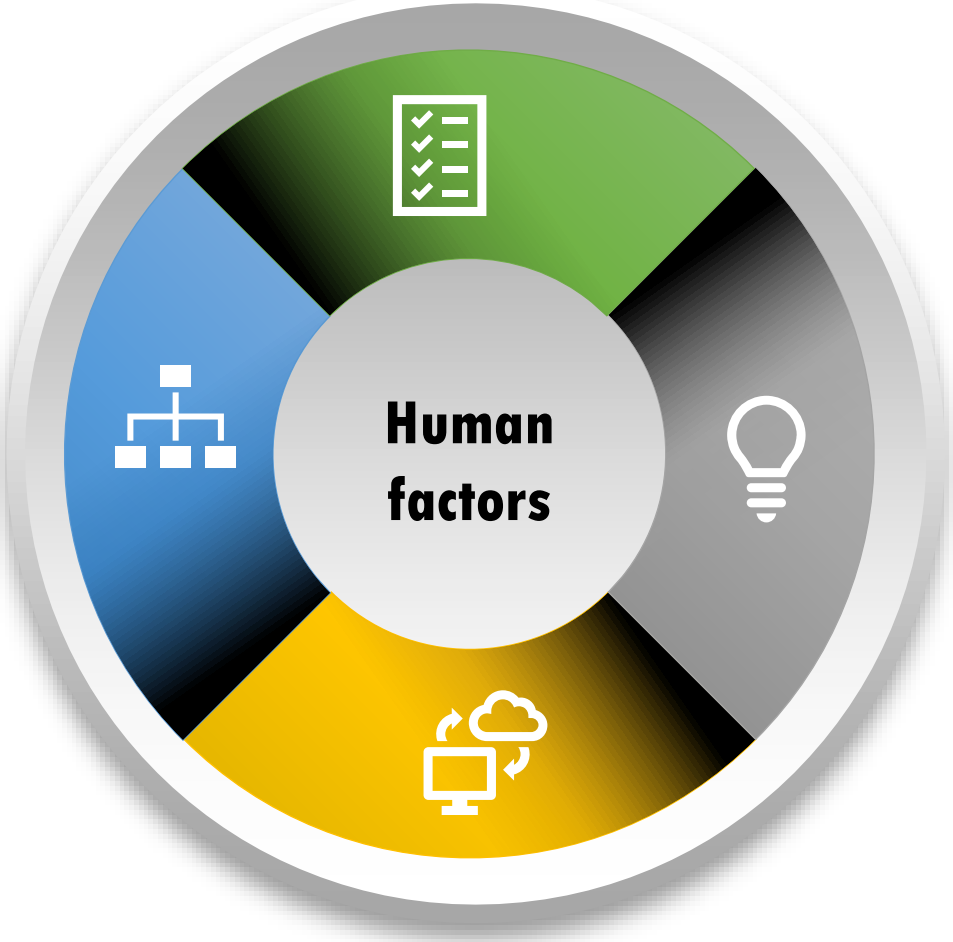
"The scientific discipline concerned with the understanding of interactions among humans and other elements of a system"



‘Human factors’ does not mean focusing on humans alone

Tasks and work processes

Management systems



Environment

Equipment and facilities

Why Human Factors?

ABOi red cell transfusions 2016-2020

19 ABOi red cell transfusions reported

1495 **ABOi near miss events**

Bedside check not carried out leading to ABO incompatible (ABOi) transfusion

A patient in his 60s was being treated for anaemia which was still being investigated, pre-transfusion haemoglobin was 68g/L

A unit of red cells was ordered and was collected by the healthcare assistant.

When the unit arrived on the ward two nurses undertook the pre-administration checking procedures at the nursing station, and not at the patient's bedside

One nurse then took the unit of red cells and the associated paperwork to the patient's bedside (the other nurse was called away to deal with something else)

The nurse proceeded to complete the bedside checks alone but did not carry out positive patient identification by checking the patient's identification wristband and the transfusion was started

Approximately 35 minutes later the patient began to experience breathing difficulties and became 'shaking and jittery'

The transfusion was stopped and at this point it was noticed that the unit of blood being transfused was for another patient

The patient was admitted to high dependency unit overnight for observations due to the reaction to the wrong blood administration

SHOT Serious Hazards of Transfusion

Safe Transfusion Practice: Transfusion Checklist

Transfusion Request Ensure that:	Signature to confirm
The reason for transfusion is documented in the patient record	
Details on the transfusion authorisation (prescription) sheet are completed and any specific requirements documented	
All fields on the transfusion request form are completed and the form is signed	
The identity details on the transfusion sample are completed correctly and samples labelled at the patient's bedside. These must be handwritten unless electronic systems are available that generate and print a label at the bedside from the patient ID band are available	
The patient has (and where appropriate family/carers have) received information, has agreed to the transfusion, and this is documented **Or** In cases where the patient is unconscious and/or unable to consent and the blood component is given in patient's best interest, ensure this is documented in the patient's notes, and information given retrospectively	
The laboratory is informed of the degree of urgency of the request	
Pre-Transfusion Checks **Ensure that**	
There is adequate and satisfactory venous access: establish or verify patency of peripheral or central venous access device	
A formal pre-transfusion risk assessment for transfusion-associated circulatory overload (TACO) is undertaken whenever possible (especially if older than 50 years or weighing less than 50kg), and appropriate preventative actions taken	
The blood component is ready to be collected	
Collection **Ensure that:**	
Documentation stating the patient identity details is correct and matches the details on the unit	
You have the correct component as per the prescription or authorisation	
The unit has the special requirements that are documented on the prescription or authorisation	
The patient blood group matches or is compatible with the group of the unit	
The unit is in date and is in good condition (i.e. no leaks/clots or discolouration)	
The unit is signed for by a person trained and competency assessed in blood collection	
The time the component was removed from temperature control (e.g. refrigerator) and received in the clinical area are both recorded	
Administration **Ensure that:**	
Pre-transfusion observations are taken and recorded within 60 before commencement Temperature | Blood pressure Pulse | Respiration rate	
Documentation for the transfusion record is complete and accurate	
The unit has the special requirements that are documented on the prescription or authorisation	
You have the correct component as per the prescription or authorisation	
The patient blood group matches or is compatible with the group of the unit	
The correct blood transfusion administration set is used, (and a fresh set if transfusing platelets)	
Pre-administration identification checks are performed at the bedside, including a check of the identity band against the unit compatibility label. Confirm identity verification with the patient where possible, using open ended questions	
A blood warmer or infusion device (if used) is set correctly and monitored	
Observations are carried out, as a minimum at 15 minutes Temperature | Blood pressure Pulse | Respiration rate	
Any adverse events/complications are reported to the responsible clinician and the transfusion laboratory, and are immediately acted upon and documented in the patient record and reported	
The finish time of the transfusion is documented	
The transfusion is completed within 4 hours of removal from temperature-controlled storage *(Note that once thawed, FFP should be transfused as soon as possible. If delay is unavoidable, FFP should be used within 4 hours if stored at 20–24 °C or within 24 hours if stored at 2–6 °C. Cryoprecipitate, once thawed has to be kept at room temp and used within 4 hours)*	

SHOT Serious Hazards of Transfusion

Safe Transfusion Practice: Transfusion Checklist

Post Transfusion Ensure that:	Signature to confirm
Post-transfusion observations are taken and recorded Temperature | Blood pressure Pulse | Respiration rate	
The traceability documentation record is completed and correctly returned or scanned electronically as, as per local policy	
The component pack and other equipment is disposed of correctly	
The outcome of the transfusion is documented in the patient record	
A post-transfusion information sheet given to the patient (if a day-case or received the transfusion in an emergency)	

The A-E Decision Tree to facilitate decision making in transfusion

A
- Assess patient
- Any avoidable blood loss (frequent, unnecessary tests/interventions)

B
- Blood results (all) reviewed including trends - ensure results valid and reliable
- Best treatment option- is transfusion the best treatment option? If yes, what components needed, how many, what order and any specific requriements needed?

C
- Consent/Communication (adequate patient information- both verbal and written) to patients and where appropriate families and carers
- Correctable factors to be addressed like bleeding, haematinic deficiency

D
- Do not forget other measures (vitamin K, tranexamic acid, cell salvage, etc)
- Do not hesitate to question colleagues regarding decisions made and ask for rationale
- Do not forget to document in patient's notes and in discharge summaries

E
- Ensure timely communications to laboratory- need to be clear, concise and accurate
- Ensure all relevant transfusion checklists including TACO risk assessment and actions rising thereafter have been completed
- Evidence based decisions made weighing risks, benefits and options available
- Ensure patient receives adequate post-transfusion information if transfusion given as a day case

Transfusion process (nine steps)

The NHSBT Patient Blood Management team and SHOT have co-produced a 'Pre-transfusion blood sampling' animated video and another outlining critical steps for completing 'Pre-administration bedside checks of blood components'. These can be found here: https://www.shotuk.org/resources/current-

This checklist has been updated in June 2020 and provides a structured process to ensure that the right component is transfused to the right patient at the right time for the right reason and will help ensure patients have received the right information about their transfusion in a timely manner where possible. There is a lack of unequivocal evidence to support either a one- or two-person checking procedure. There is no evidence from SHOT reports (Bolton-Maggs, 2015) to suggest that two-person checking is safer than one. If local policy requires a two-person checking procedure, each person should complete all the checks independently (double independent checking).The checklist will help improve transfusion safety and is a requirement following the CMO CAS alert sent out in November 2017: CEM/CMO/2017/005 and can be found at this link: https://www.cas.mhra.gov.uk/ViewandAcknowledgment/ViewAlert.aspx?AlertID=102663. We encourage users to utilise this document to help draft checklists locally.

SCAN ME

Case study 1

- Female patient in her 20s received one unit of RBC for obstetric haemorrhage following miscarriage
- Her Hb was 68 g/L
- BP - 115/65 mm Hg Pulse – 80 bpm RR – 20 bpm
- Immediately after transfusion temp raise from 37.3 – 39.5
- No other symptoms
- Given paracetamol, antihistamine and steroids
- Patient fully recovered

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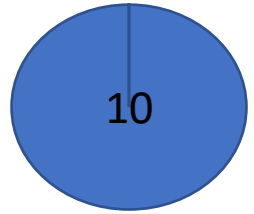
Case study 1

Did the patient receive the correct treatment for her transfusion reaction?

1. **YES**

2. **NO**



Case study 1

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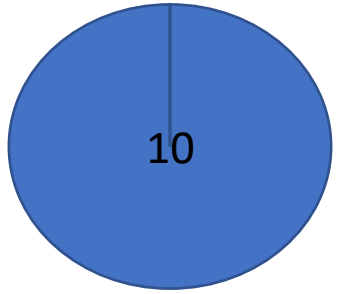
Would you report this reaction to SHOT?

1. YES
2. NO



SHOT Bite No.5:

SHOT Serious Hazards of Transfusion

Febrile, Allergic and Hypotensive Reactions (FAHR) - Getting the diagnosis right

Background: Febrile and allergic reactions are among the commonest reactions to transfusion. Around 300 moderate-severe reactions are reported to SHOT each year (~15 per 100,000 components transfused) and mild reactions occur even more frequently. Challenges in management include **classifying** the type of reaction, judging its **severity** and if necessary, **investigating to exclude an alternative cause** (such as a haemolytic reaction or bacterial infection). It is vital that the patient is treated appropriately, both to manage their symptoms and enable transfusion to continue where reactions are mild.

SHOT data consistently show that 40% of these reactions are misclassified by the reporter, and 40-50% of patients with febrile reactions are inappropriately treated with an antihistamine and steroid.

"Reaction to transfusion" is not a single diagnosis requiring a uniform standard treatment!

This SHOT Bite includes:

- A guide to help frontline staff use the patient's symptoms and signs to correctly classify and manage febrile and allergic reactions
- An illustrative case

Illustrative case

A 50 year old female with acute myeloid leukaemia on the haematology ward received a unit of platelets. At the end of the transfusion she developed rigors, nausea, tachycardia and chest pain.

Baseline observations: Temp 36.8, BP 117/70, Pulse 68, RR 18, Sp02 98%. Post transfusion observations: Temp 37.4, BP 161/53, Pulse 115, RR 20, Sp02 100%.

She was treated with hydrocortisone and chlorphenamine and repeat group and screen was sent. This was reported as a mixed reaction.

Commentary:

This patient's small temperature rise was not sufficient to be considered a fever, but her symptoms were overwhelmingly inflammatory.

There were no allergic features and the SHOT expert reclassified this as a febrile-type reaction.

The use of chlorphenamine and hydrocortisone was inappropriate. In an immunocompromised patient, assessing for infection (both related to and unrelated to transfusion) would be important.

Any reaction that is moderate or severe should be reported to SHOT

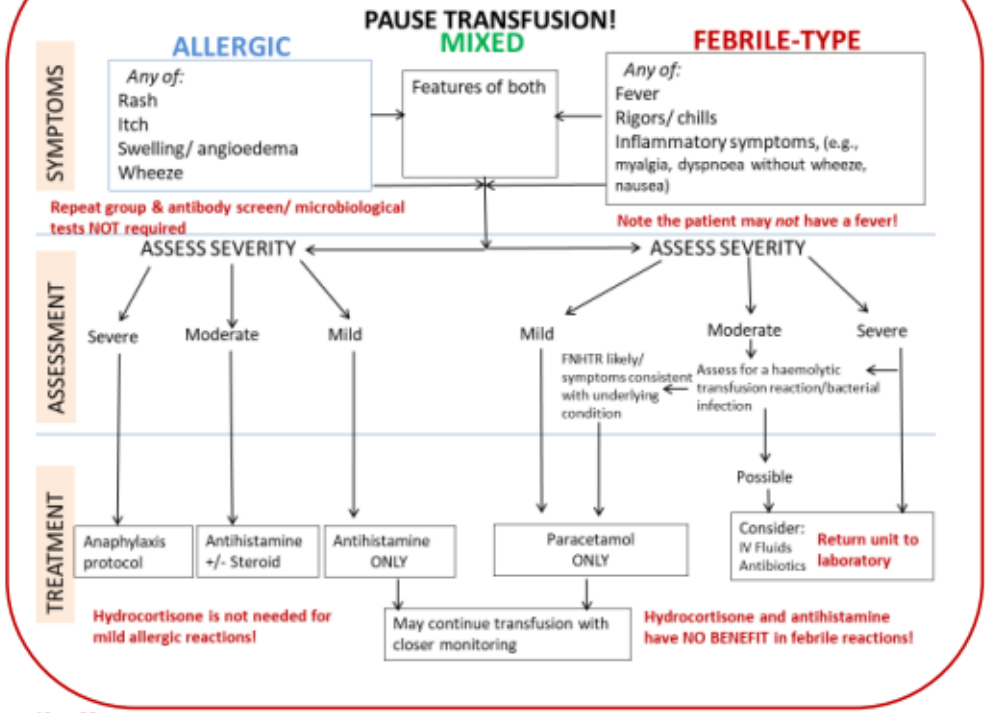
Grading of severity of febrile, allergic, and hypotensive reactions and SHOT reporting criteria can be found in the SHOT definitions document which is reviewed and updated annually and can be accessed from this link https://www.shotuk.org/resources/current-resources/

SHOT Bite No.5:

SHOT Serious Hazards of Transfusion

Febrile, Allergic and Hypotensive Reactions (FAHR) - Getting the diagnosis right

Algorithm to help identify type of FAHR reaction and management



Key Messages

- It is important to try to classify the type of reaction to be able to correctly investigate and treat. Follow local policy for transfusion reaction investigation, including returning the unit to the laboratory
- In a febrile non-haemolytic transfusion reaction, laboratory investigations are expected to be normal. These are done to exclude alternative causes
- Treat febrile reactions with paracetamol. Antihistamines and steroids are of no benefit, and could potentially cause harm
- Pure allergic reactions are not associated with febrile type symptoms

See the BSH guidelines on Investigation and Management of Acute Transfusion Reactions for more detail on assessing severity and choice of investigations: https://b-s-h.org.uk/guidelines/guidelines/investigation-and-management-of-acute-transfusion-reactions/

SHOT FAHR cumulative data https://www.shotuk.org/resources/current-resources/data-drawers/fahr-data-drawer-2/

September 2021

SCAN ME

SHOT Bite Febrile, allergic and hypotensive reactions (FAHR) – Getting the diagnosis right

Case study 2 (part 1)

- Female patient in her 80s with iron deficiency anaemia, cardiac and renal impairment and pre-transfusion peripheral oedema
- Hb result was 48 g/L
- Weight 50 kg

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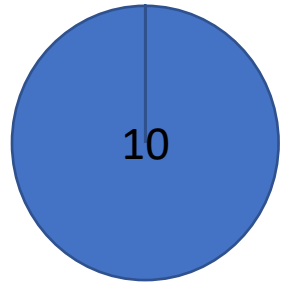
Does this patient have risks of TACO?

1. YES
2. NO



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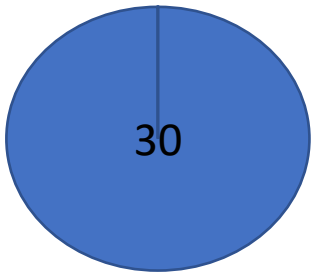
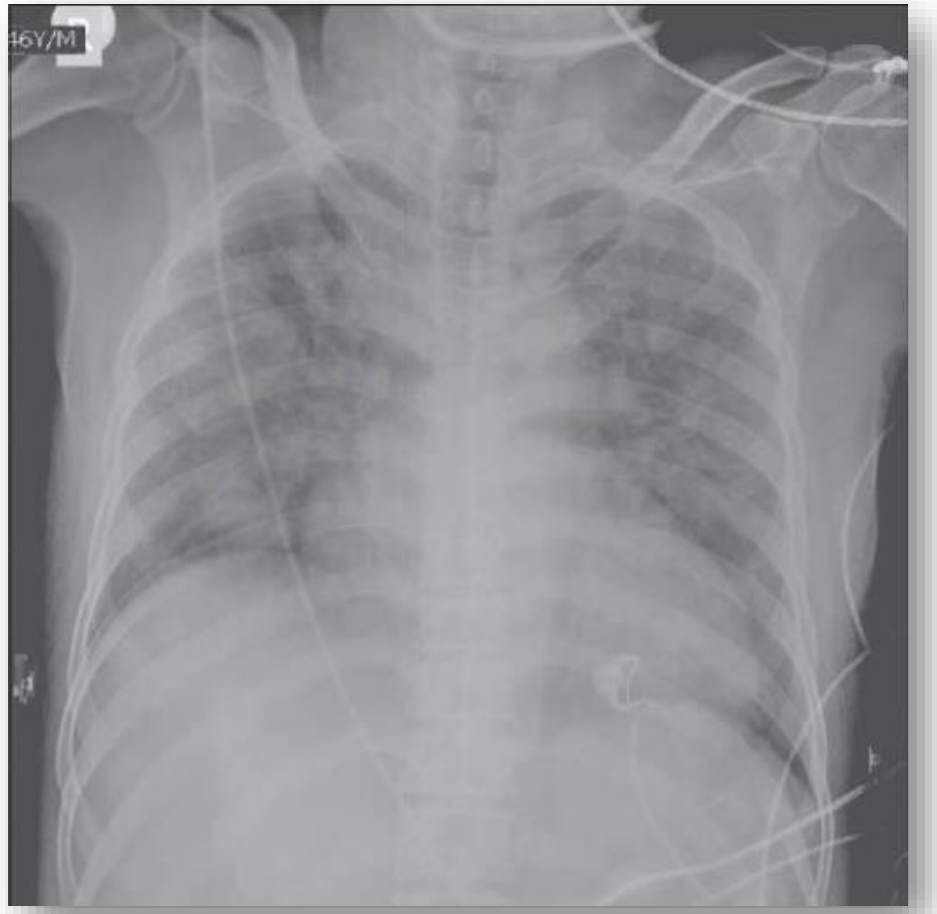
What are the risk factors for TACO?



Case study 2 (part 2)

- Received 2 units of RBC and during 2nd unit became breathless and O2 sat dropped to 91%
- Post-transfusion chest x-ray showed fluid overload
- Administered Oxygen and IV diuretic with improvement
- Patient fully recovered



What should be the immediate approach to the patient?

Respiratory symptoms during or after transfusion could be caused by the blood components transfused or have an alternative cause, and it is often not immediately clear. It could be due to the patient's underlying condition (not related to transfusion), an allergic/anaphylactic reaction, or one of the recognised pulmonary complications of transfusion: Transfusion associated circulatory overload (TACO)/Transfusion related acute lung injury (TRALI)/Transfusion associated dyspnoea (TAD). See the BSH guideline for the management of Acute Transfusion Reactions (ATR) https://b-s-h.org.uk/guidelines/guidelines/investigation-and-management-of-acute-transfusion-reactions/ . Initial treatment of ATR is not dependent on classification but should be directed by symptoms and signs. Treatment of severe reactions should not be delayed until the results of investigations are available.

How do I know if it is an allergic/anaphylactic reaction?

Many of the acute immunologic reactions post transfusion can present with fever and/or respiratory symptoms, making it challenging to distinguish them from each other in the initial stages. Associated clinical signs and symptoms may provide a clue for example: angioedema and wheeze in cases of allergy/anaphylaxis and/or there may be supporting tests such as a raised mast cell tryptase. Allergic reactions should be reported to SHOT/SABRE in the FAHR category.

What if it's not thought to be an allergic reaction, but the blood seems the likely cause?

In this case consider whether this could be one of the pulmonary complications of transfusion: TACO/TRALI/TAD. Timing is the first consideration. TRALI occurs within 6 hours, and TACO/TAD within 12 hours (though SHOT accept cases up to 24 hours). You will need access to the patient's records including medical history, transfusion history, vital sign observations, chest examination and imaging (before and after transfusion), details of non-blood fluids given, fluid balance chart, details of medications given (including diuretics) and the response to them, blood tests etc. It is essential that as much information as possible is provided. Lack of data is a significant problem in differentiating between pulmonary complications categories.

How do I differentiate TRALI and TACO?

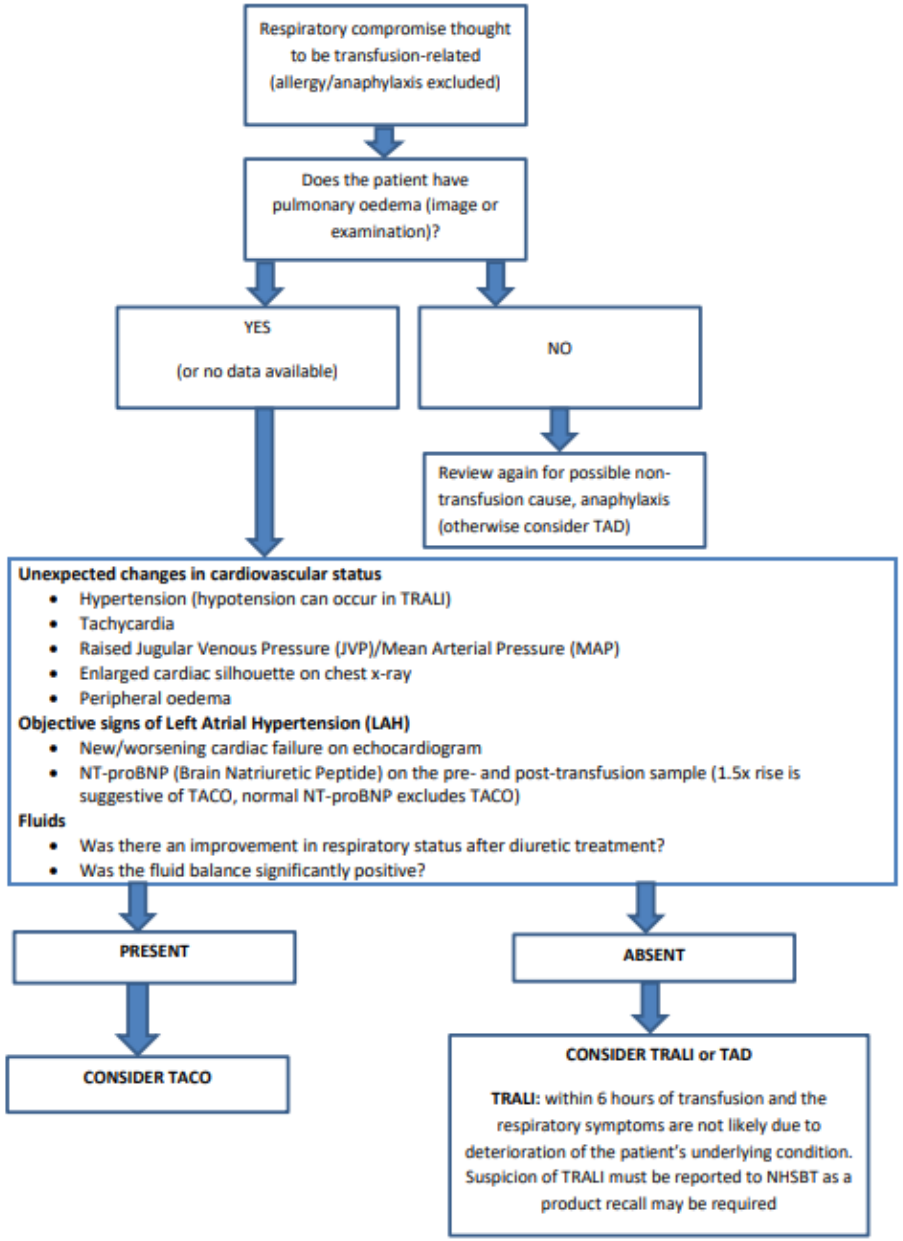
This can be very difficult, and it is recognised that they may co-exist. The algorithm below provides some guidance and suggestions for further testing that may help. These will be in addition to your standard laboratory testing panel for transfusion reactions. A useful approach is to establish whether there are signs of pulmonary oedema, more specifically left atrial hypertension (LAH). Echocardiogram and/or NT-proBNP levels should be reported if available. Fever can occur in both TACO and TRALI.

What should I report to SHOT/SABRE?

If you suspect TRALI you must report it to the Blood Service as a product recall of components from the same donor may be required. The Blood Service consultant will co-ordinate investigation. Any patient who develops respiratory distress during or up to 24 hours after transfusion, where transfusion is the suspected cause must be reported to SHOT/SABRE. SHOT experts can transfer cases between categories following assessment if required.

The algorithm below helps in differentiating among the different categories of pulmonary complications post transfusion but please note that this does not substitute for clinical judgment in the patient evaluation.

SHOT Bite No 11: Respiratory symptoms during transfusion



SHOT Serious Hazards of Transfusion

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SHOT Bite Respiratory symptoms during a transfusion

TACO Checklist	Patient Risk Assessment	YES	NO
	Does the patient have any of the following: diagnosis of 'heart failure', congestive cardiac failure (CCF), severe aortic stenosis, or moderate to severe left ventricular dysfunction?		
	Is the patient on a regular diuretic?		
	Does the patient have severe anaemia?		
	Is the patient known to have pulmonary oedema?		
	Does the patient have respiratory symptoms of undiagnosed cause?		
	Is the fluid balance clinically significantly positive?		
	Is the patient receiving intravenous fluids (or received them in the previous 24 hours)?		
	Is there any peripheral oedema?		
	Does the patient have hypoalbuminaemia?		
	Does the patient have significant renal impairment?		

If Risks Identified	YES	NO
Review the need for transfusion (do the benefits outweigh the risks)?		
Can the transfusion be safely deferred until the issue is investigated, treated or resolved?		

If Proceeding with Transfusion: Assign Actions	TICK
Body weight dosing for red cells	
Transfuse a single unit (red cells) and review symptoms	
Measure fluid balance	
Prophylactic diuretic prescribed	
Monitor vital signs closely, including oxygen saturation	

Name (PRINT):	
Role:	
Date:	**Time (24hr):**
Signature:	

Due to the differences in adult and neonatal physiology, babies may have a different

A **TACO checklist** should be utilised whenever possible prior to every transfusion, especially in vulnerable patients

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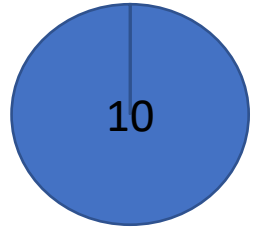
Is the TACO checklist used at your organisation?

1. YES
2. NO



A **TACO investigation guidance tool** has been developed and can be accessed from ‘Current resources’ on the SHOT website

TACO Incident Investigation Guidance Tool

SHOT Serious Hazards of Transfusion

The following guidance tool has been developed to support local investigations following reports of transfusion-associated circulatory overload (TACO) and identify areas for improvement. This document should be used in conjunction with local policies. Where gaps are identified, appropriate steps will need to be taken locally to ensure safe transfusions.

Tick ☐ to focus incident investigation and indicate where actions are required. See SHOT report and website for TACO checklist. Appropriate actions need to be taken locally to address gaps identified with the following exercise.

START

Was a pre-transfusion TACO risk assessment performed? → NO

YES

Were TACO risk factors identified? → NO

YES

Could the transfusion have been safely deferred? → NO

YES

Mitigating actions taken

- Weight-adjusted red cell dosing
- Single unit transfusion and review
- Use of diuretic
- Fluid balance
- Close monitoring and oxygen saturations
- None

FINISH

	Tick if actions needed
Note 1	Is a TACO risk assessment included in your transfusion policy? If not, what is the reason for this? Actions needed to address this should be captured as part of incident investigation. ☐
	If the TACO risk assessment is implemented in your organisation, why was it not performed for this individual patient? Was there a process or individual practice error? ☐
Note 2	If risk factors were not identified for this patient, review the patient’s clinical details to evaluate whether risks were missed. Consider why the risks may have been missed. ☐
	Was the decision to transfuse appropriate? Was the correct dose of the component prescribed? ☐
	Were standard precautions undertaken (including appropriate indication and dose)? ☐
Note 3	If the transfusion went ahead despite risk factors being present, consider whether this was a reasonable risk-balanced decision e.g. benefit outweighed risk of TACO, risk factors identified were not reversible, pragmatic reasons/otherwise not feasible to defer. ☐
Note 4	Was the patient’s weight taken within the last 7 days available? ☐
	Does the transfusion policy provide guidance and tools to help clinicians calculate the correct dose (e.g. a formula or dosage calculator)? ☐
	If the patient was not bleeding, did they receive an appropriate dose for their body weight? Please note that there are weight-based red cell calculators available such as (https://rcdcalculator.co.uk/). ☐
	Did the prescriber/authoriser calculate the actual dose required to meet the target haemoglobin? ☐
Note 5	If the patient received more than one red cell unit/other blood component, was the patient reviewed after each unit to assess response and need for further transfusions? ☐
	Is this practice reflected in the transfusion policy in your organisation? ☐
Note 6	If a diuretic was not given, was this appropriate (e.g. contraindicated)? If a diuretic could have been given, what was the reason for it not being prescribed? ☐
	If a diuretic was prescribed but not given, what was the reason for this omission? ☐
Note 7	Was the fluid balance chart inaccurate? If so, what was the reason for this? ☐
	Was the fluid balance chart incomplete? If so, what was the reason for this? ☐
Note 8	Was the patient under close observations and were oxygen saturations being performed with every set of observations (or on continuous monitoring), if not consider why? ☐
	Is this included in your transfusion policy for patients at risk of TACO? ☐
Note 9	If the patient had risk factors for TACO but no mitigations were taken, consider why. ☐
	Were no instructions given – why? ☐
	Were instructions given but not followed – why? ☐
Note 10	If it could have been deferred, consider what led to the decision to proceed with transfusion. ☐

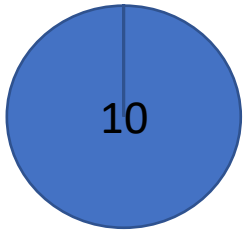
July 2021

SCAN ME

Join: **vevox.app** ID: **188-206-970** POLL OPEN

Have you used the TACO investigation guidance tool?

1. YES
2. NO



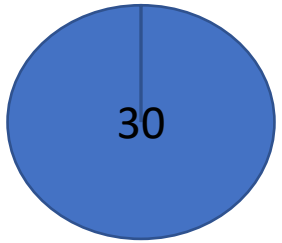
Case study 3

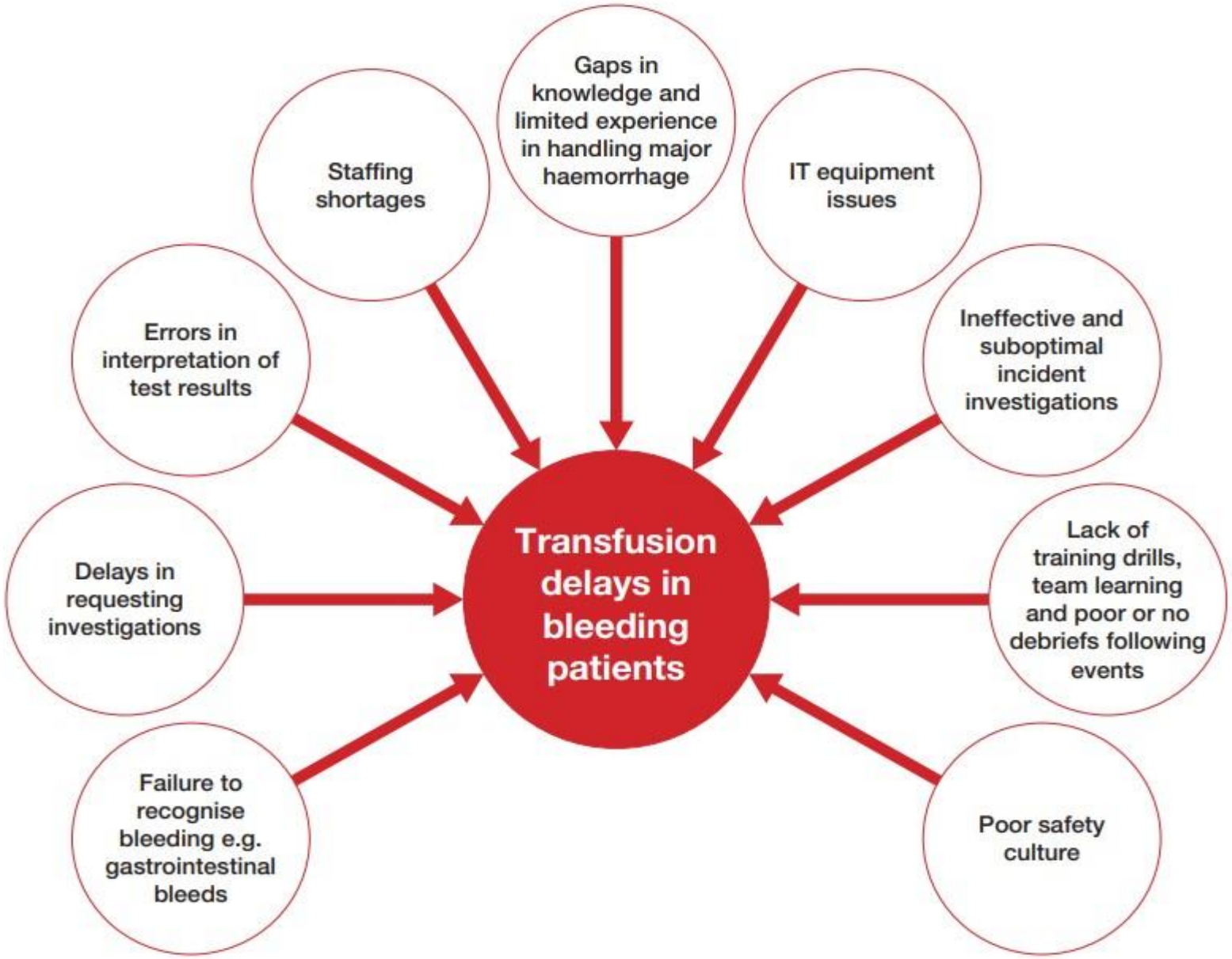
- An elderly woman on Warfarin was admitted to ED with a history of melaena
- She was pale and tachycardic BP 88/55 mm Hg
- Her Hb on the blood gas machine on admission was 41.8g/L
- Transfusion delayed for 7 hours from admission due to communication failures when transferred to a ward
- Patient died

Join: **vevox.app** ID: **188-206-970**

Enter Text and Press Send

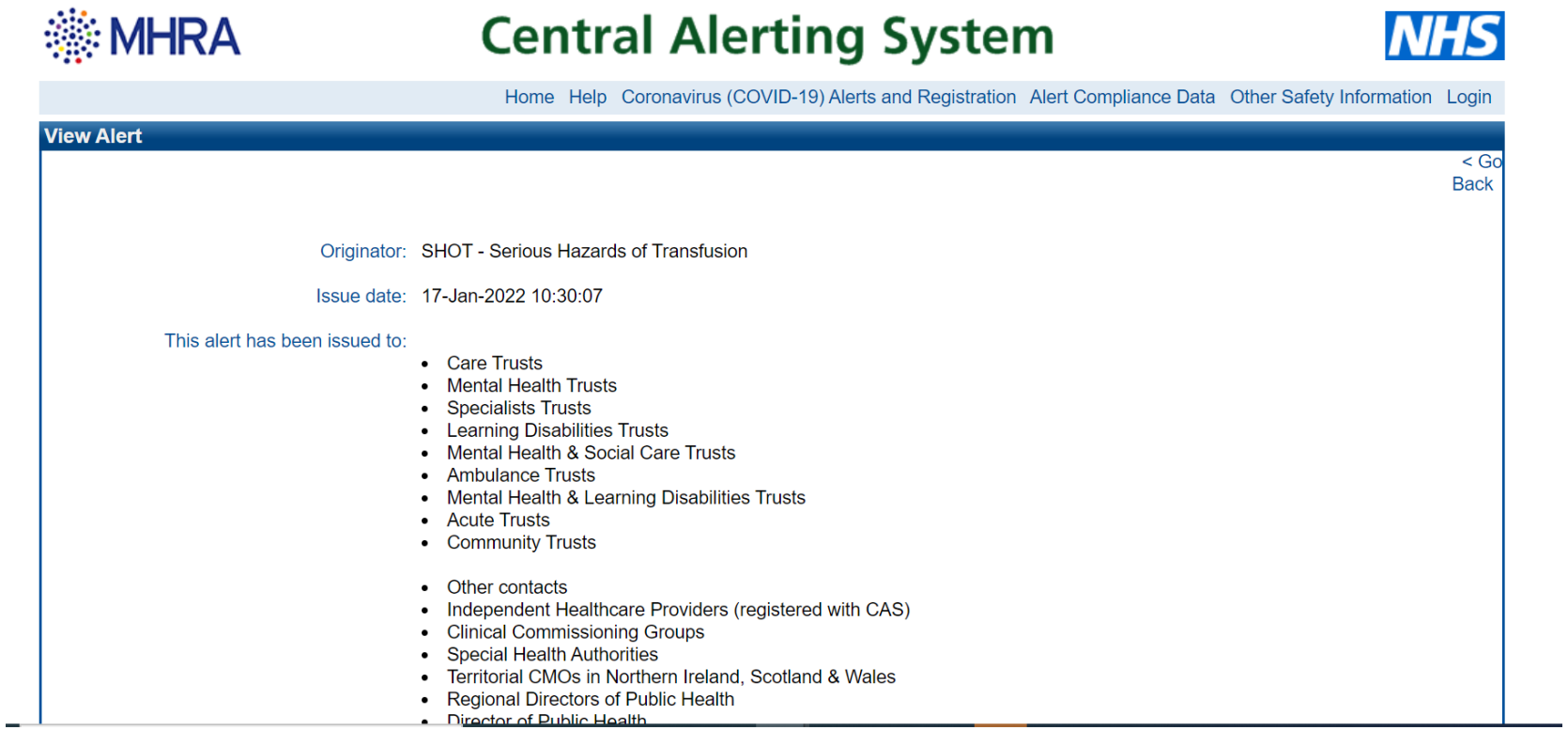
What are the common factors contributing to transfusion delays?





Annual SHOT Report , 2020

CAS alert addressing preventable transfusion delays



MHRA

Central Alerting System

NHS

Home Help Coronavirus (COVID-19) Alerts and Registration Alert Compliance Data Other Safety Information Login

View Alert

< Go Back

Originator: SHOT - Serious Hazards of Transfusion

Issue date: 17-Jan-2022 10:30:07

This alert has been issued to:

- Care Trusts
- Mental Health Trusts
- Specialists Trusts
- Learning Disabilities Trusts
- Mental Health & Social Care Trusts
- Ambulance Trusts
- Mental Health & Learning Disabilities Trusts
- Acute Trusts
- Community Trusts

- Other contacts
- Independent Healthcare Providers (registered with CAS)
- Clinical Commissioning Groups
- Special Health Authorities
- Territorial CMOs in Northern Ireland, Scotland & Wales
- Regional Directors of Public Health
- Director of Public Health

The A-E decision tree to facilitate safe transfusion decisions

A

Assess patient
Any avoidable blood loss
(frequent, unnecessary tests/interventions)

B

Blood results (all) reviewed including trends – valid and reliable?
Best treatment option—is transfusion the best treatment option? If yes, what components needed, how many, what order and any specific requirements needed?

C

Consent/communication (adequate patient information—both verbal and written) to patients and where appropriate to families and carers
Correctable factors to be addressed like bleeding, haematinic deficiency

D

Do not forget other measures (vitamin K, tranexamic acid, cell salvage, etc)
Do not hesitate to question colleagues regarding decisions made and ask for rationale
Do not forget to document in patient's notes and in discharge summaries

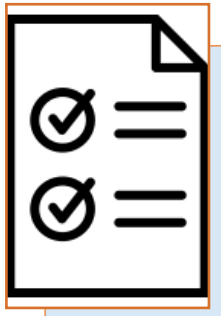
E

Ensure timely communications to laboratory- need to be clear, concise and accurate
Ensure all relevant transfusion checklists including TACO risk assessment and actions arising thereafter have been completed
Evidence based decisions made weighing risks, benefits and options available
Ensure patient receives adequate post-transfusion information if transfusion given as a day case

Paediatric HV Highlights

Paediatric reports accounted for **8.5% (159/1877)** of the total cases reported to SHOT in 2020

There were **3** deaths possibly or probably related to transfusion. Of these, one was related to transfusion-associated necrotising enterocolitis and 2 were related to transfusion delays



Massive blood loss in children is less common than in adults and hospitals should have protocols in place for appropriate and timely management

Communication and education regarding specific requirements and their indications remains vital

Management of D-incompatible platelet transfusions in neonates and children should be discussed with a haematologist

Education and training resources should be provided for those administering neonatal transfusions to reduce errors

Transfusion in neonates and children

A Education and training

Educational resources should be provided for those administering neonatal transfusions to reduce errors

B Administration

Neonatal blood administration sets are available which allow blood transfusions to be delivered by a syringe driver

C Special requirements

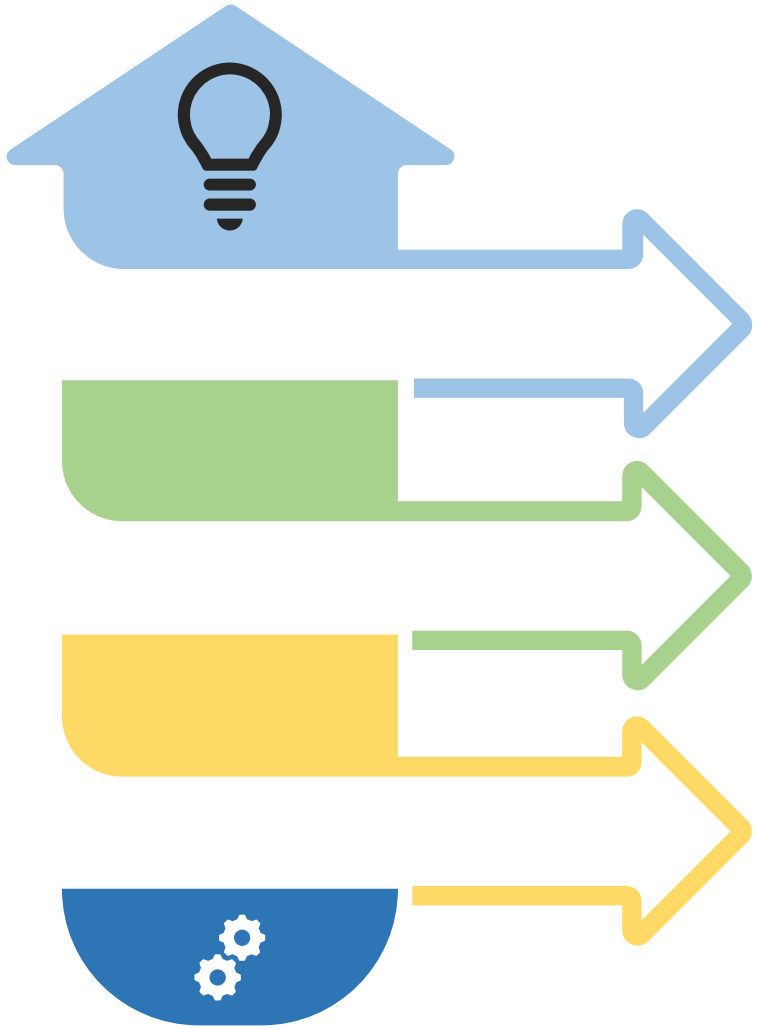
Specification of components for neonates/infants and children are available in the BSH guidelines (BSH New at al. 2016 and 2020). Staff must be aware of local policies

D Transfusion reactions

Recognising transfusion reactions in neonates and children can be challenging. Staff need to be vigilant, identify and manage appropriately

The SHOT paediatric video which is available on the SHOT website (https://www.shotuk.org/resources/current-resources/videos/

Main recommendations from the 2020 Annual SHOT report



Delays

Transfusion delays, particularly in major haemorrhage and major trauma situations, must be prevented. Delays in provision and administration of blood components including delays in anticoagulant reversal, particularly in patients with intracranial haemorrhage (ICH), can result in death, or serious sequelae. Every minute counts in these situations

Information Technology

Effective and reliable transfusion information technology (IT) systems should be implemented to reduce the risk of errors at all steps in the transfusion pathway, provided they are configured and used correctly

Investigating Incidents

Effective investigation of all incidents and near miss events, application of effective corrective and preventive actions, and closing the loop by measuring the effectiveness of interventions should be carried out to optimise learning from incidents

OBJECTIVES: You should now be able to:

- Discuss the role of SHOT and the haemovigilance process in UK
- Understand the importance of identifying Human Factors in incident investigations
- Understand the role of haemovigilance in improving transfusion safety
- Apply knowledge to a SHOT case-based discussion

Suggested future activities

Spend some time with a haemovigilance reporter when they are completing a SHOT report

Attend a hospital transfusion committee meeting

Attend an investigation meeting

Review your hospital transfusion policies

Carry out a consent audit / audit of use of checklist / SRNM

Carry out an audit of your Trust's SHOT reports

Resources

- Many more resources, including the 2020 Annual SHOT Report are available on the SHOT website www.shotuk.org

- In particular our educational resources
  - SHOT Bites
  - SHOTcasts
  - Webinars
  - Videos Email signatures

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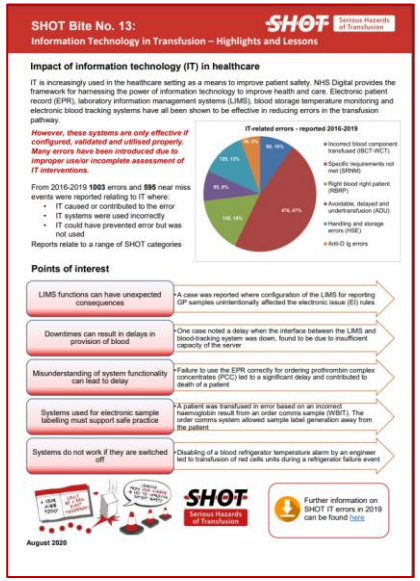
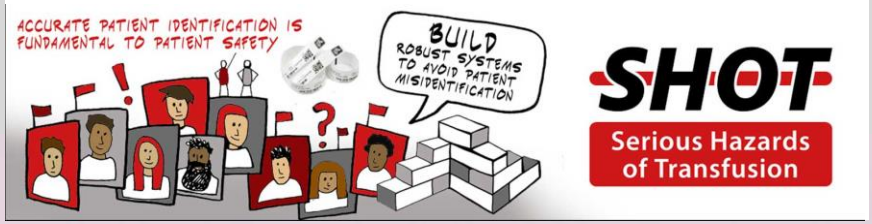
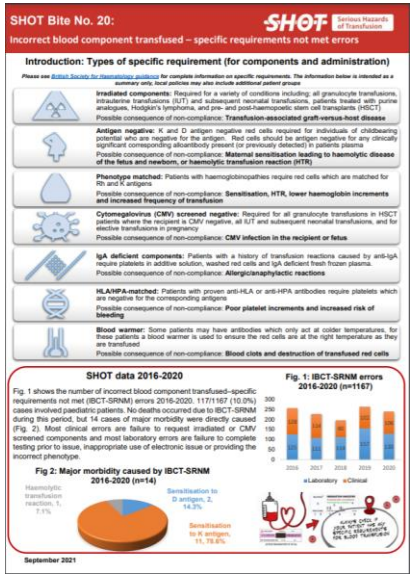
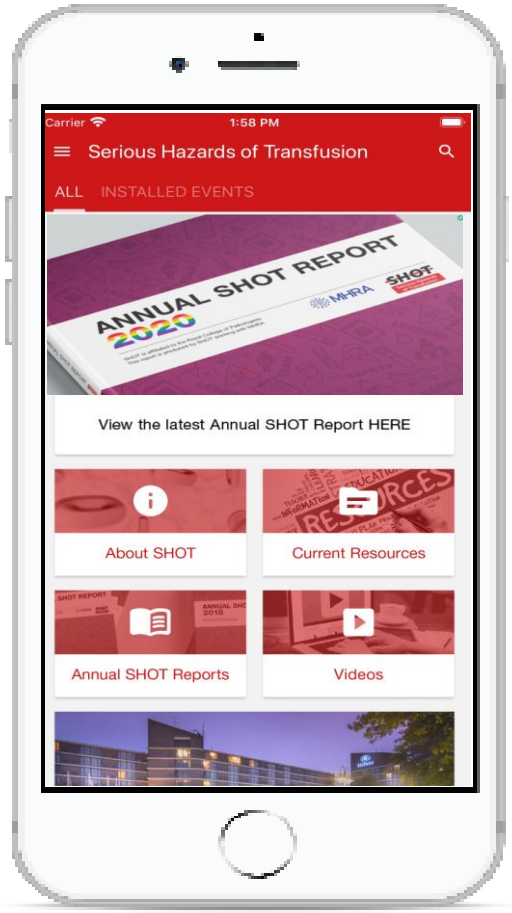






SHOT App



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GET IT ON Google Play

Acknowledgements

- The SHOT team
- The Steering Group and Working Expert Group members
- The vigilant reporters and hospital staff who share their incidents

For further information visit: www.shotuk.org

Please feel free to provide feedback about this presentation either directly to the SHOT team or via PBM team