Ability of clinicians to recognise reportable hazards of transfusion as defined by the ‘Definitions of SHOT reporting categories’, available on the SHOT website

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Overview

- Background: why is this issue important?
- Pilot study: Results
- Proposal to broaden study to the region

Background: why is this issue important

- Clinical consequences of not recognising a reaction could be related to a transfusion
- Valid consent not being obtained
- SHOT data collected incomplete

Clinical need to recognise hazards of transfusion

- To allow hazards of transfusion manifesting as transfusion reactions to be managed appropriately
- Guidelines from BSH as well as local regarding appropriate management and investigation and management of subsequent transfusions
- Failure to recognise hazard could lead to delay / inappropriate management
- Some case studies in SHOT data explemify this (understandably small numbers)

SHOT Report 2015: ‘Confounding clinical features leading to conflicting assessments’.

- In this case a patient with pre-existing CCF and acute renal failure was found to be anaemic
- Three quarters the way through the first of two units prescribed experienced rigors, shortness of breath, tachypnoea, mild fever, periorbital oedema and wheeze.
- The transfusion was stopped and patient treated with a bronchodilator, antihistamine and steroid and continued oxygen therapy.
- Six hours later the oxygen saturation dropped further, a CXR demonstrated worsening pulmonary oedema and treatment with an IV diuretic was given
- although this did not initially result in an adequate diuresis the patient survived.

SHOT Report 2014: ‘Underreporting of TACO, a case identified after notes were reviewed for other reasons’.

- This 93 year old male was unwell with disseminated intravascular coagulation, congestive cardiac failure and a lower respiratory tract infection at the time of transfusion.

- The patient was being transfused with FFP during which he developed shortness of breath which improved after treatment with furosemide.

SHOT Report 2014: ‘Delayed presentation’.

- A 67 year old female was transfused with 3 units of red cells as an outpatient
- Was then readmitted more than 24 hours later with breathlessness, tachycardia, fever and rigors.
- Patient was initially treated with IV fluid and antibiotics and a chest x-ray was performed.
- Once the patient was reviewed by a haematologist on the admission unit the diagnosis was changed to TACO, which resolved with diuresis.

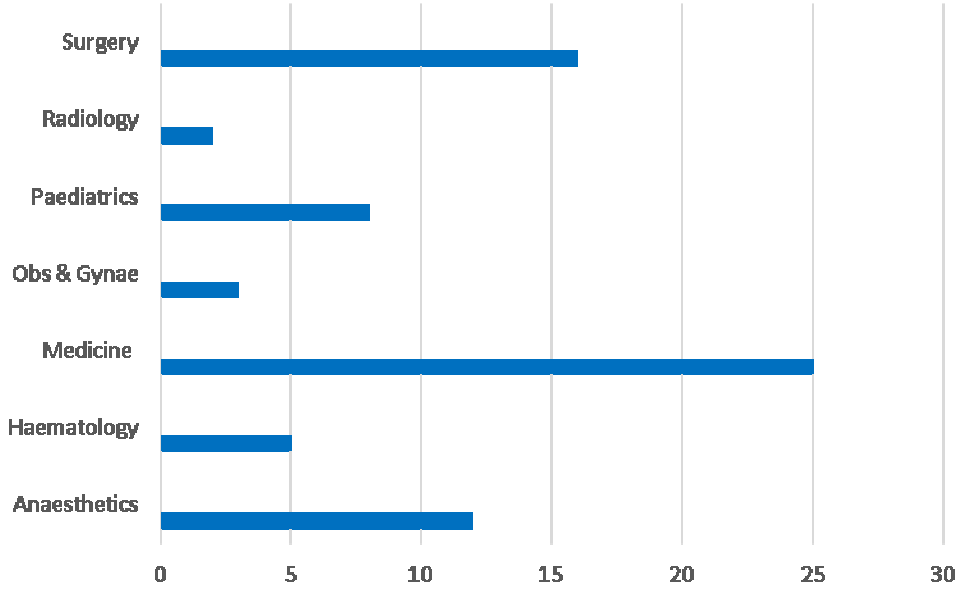
Why is this issue important

- Duty of all clinicians to obtain valid consent from patients, in this case prior to transfusion as recommended by SABTO report.
- If a clinician lacks awareness of the potential hazards of transfusion this will have implications for their ability to obtain informed consent.
- Implications for the collection of data which forms the SHOT report
- Therefore, a number of blood safety initiatives depend on continuity of SHOT data for monitoring and evaluation.

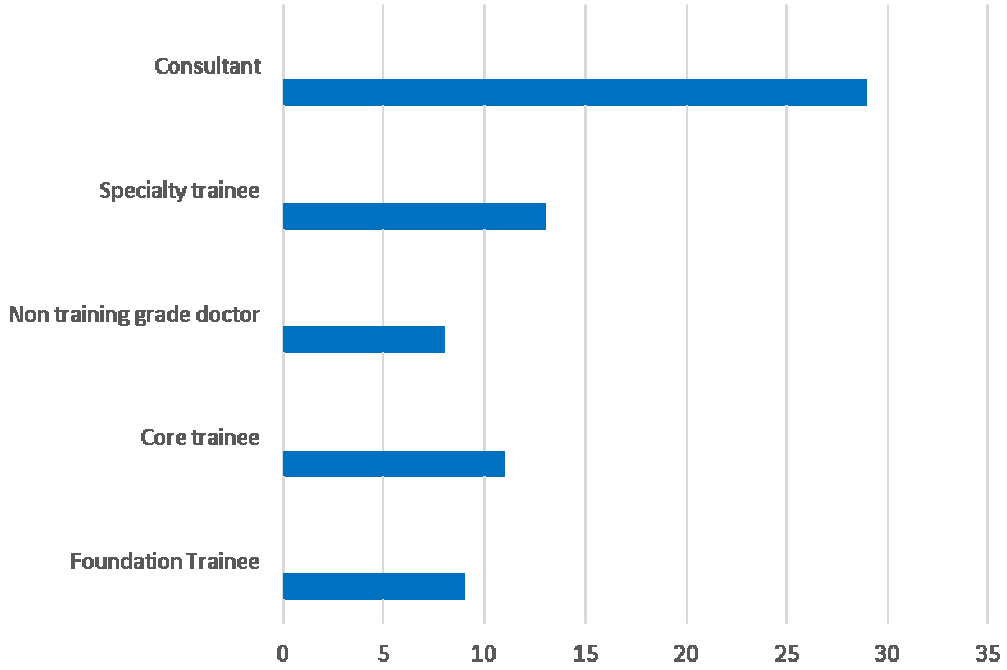
- SO…. A pilot study was done at BRI via online questionnaire

Pilot study (BRI 2015- Online questionnaire 72 respondents)

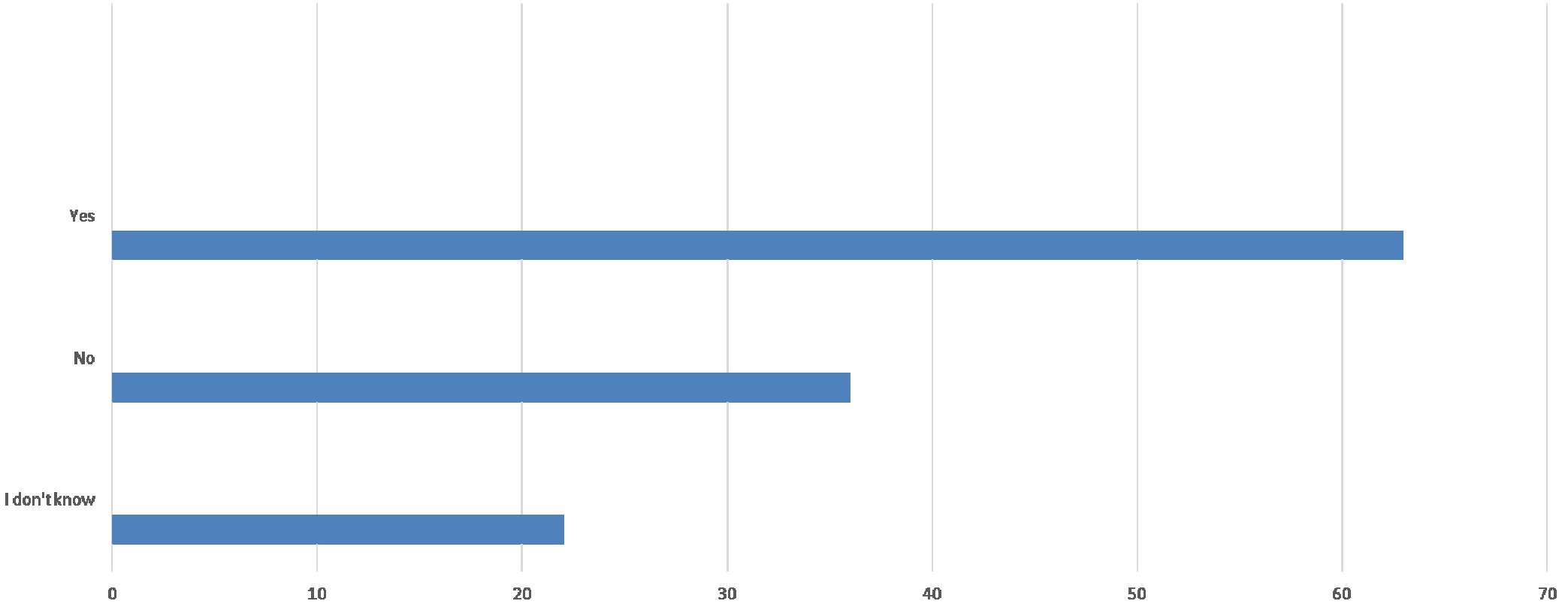
SPECIALTY OF RESPONDENTS



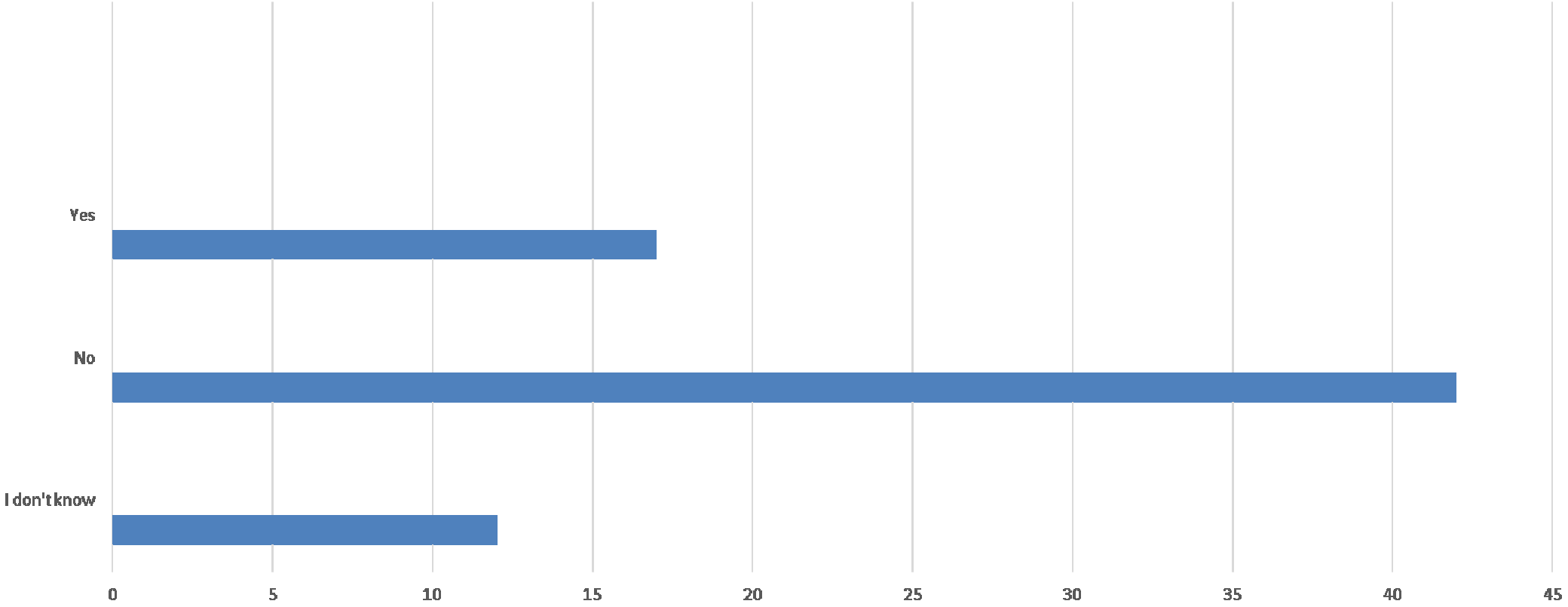
GRADE OF RESPONDENTS



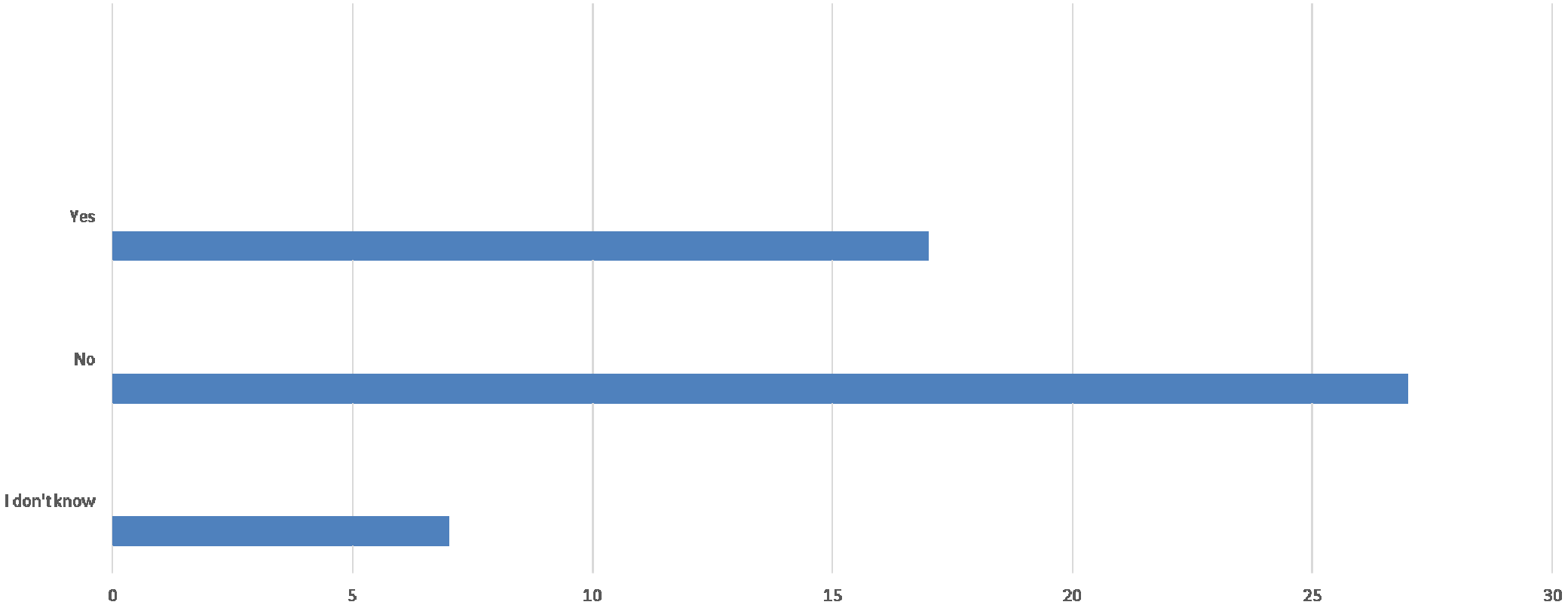
A patient with a platelet count of 90 due to ITP is due to have an ascitic drain inserted. The doctor misreads the thresholds for transfusion and transfuses them with 1 ATD of platelets, which ordinarily would not have been done. The patient does not have a transfusion reaction. Is this consistent with a reportable hazard of transfusion?



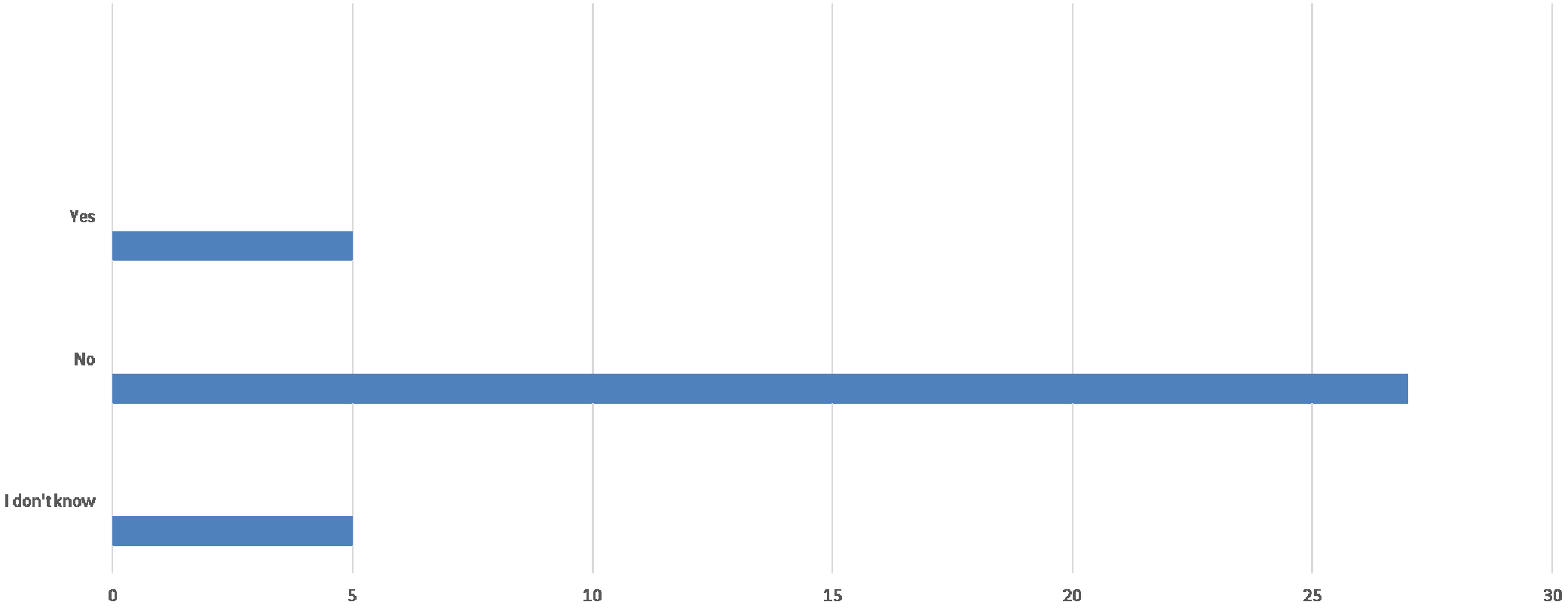
A patient admitted with sepsis and GI bleeding. Found to have thrombocytopenia with a platelet count of 31 so transfused 1 ATD of platelets in view of the bleeding. Two days later when the patients FBC was rechecked the platelet count was found to be 15. Is this consistent with a reportable hazard of transfusion?



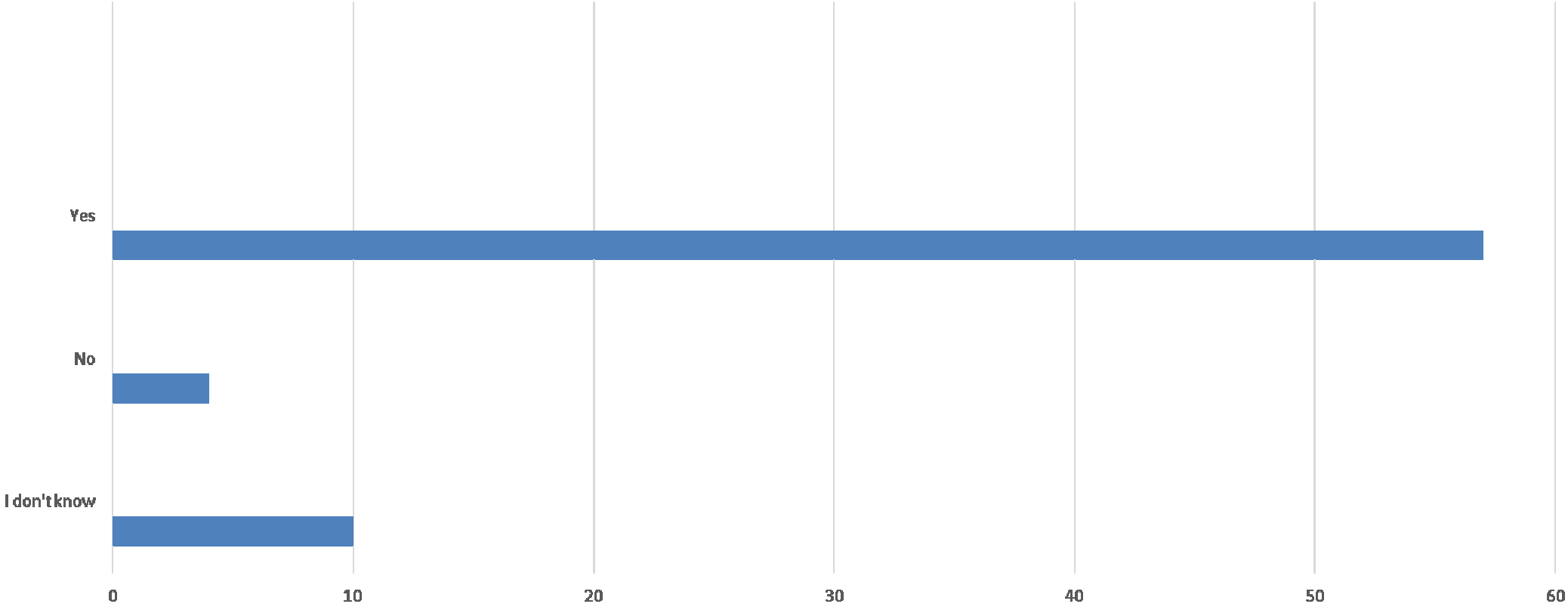
A 79 year old man received 3 units of blood and two hours later was noted to be short of breath and tachycardic and hypertensive with bilateral pulmonary crackles. He recovered with administration of IV furosemide. Is this consistent with a reportable hazard of transfusion?



A 24 year old man comes in having been in a motorbike accident. A major haemorrhage protocol is declared appropriately and he is given as part of his initial resuscitation 4 units of O Rh D negative Kell negative blood. When further work is done on his bloods he is shown to be group AB Rh Positive. Is this consistent with a possible reportable hazard of transfusion?



4 hours post transfusion (after having been in a road traffic accident) a 27 year old man with no prior past medical history developed shortness of breath, with oxygen saturations falling to 86% and bilateral infiltrates on CXR. Is this consistent with a possible reportable hazard of transfusion?



Conclusions

- Results show a variable knowledge of staff awareness of what constitutes hazards of transfusion
- Clinical staff responsible for recognising transfusion reaction
- Therefore SHOT data may be an underestimation of the hazards of transfusion
- Would like to run a larger study involving all hospitals in the region in order to gain an accurate overview of clinicians knowledge of hazards of transfusion: UOB statisticians aiding in calculating sample size for statistical significance.

Updated questionnaire: Plan to distribute it around the region

Question :	Area of possible transfusion reaction
Grade/ Specialty/ Previous transfusion training/ When? / Do you feel confident in your	
A patient with a platelet count of 90 due to ITP is due to have an ascitic drain inserted. The doctor misreads the thresholds for transfusion and transfuses them with 1 ATD of platelets, which ordinarily would not have been done. The patient does not have a transfusion reaction. (Yes)	Avoidable transfusion, Delayed transfusion or Undertransfusion
A 79 year old man received 3 units of blood and two hours later was noted to be short of breath and tachycardic and hypertensive with bilateral pulmonary crackles. He recovered with administration of IV furosemide. (Yes)	Transfusion associated circulatory overload
4 hours post transfusion (after having been in a road traffic accident) a 27 year old man with no prior past medical history developed shortness of breath, with oxygen saturations falling to 86% and bilateral infiltrates on CXR. With no evidence of left ventricular failure (Yes)	Transfusion related acute lung injury
Transfused red cells, pyrexia from 37 to 38.5 but otherwise clinically well 30 minutes after transfusion finished. No obvious underlying cause. Non reportable febrile transfusion reaction	
Patient admitted with sepsis and oozing from line insertions. Found to have thrombocytopenia with a platelet count of 31 so transfused 1 ATD of platelets. The bleeding stopped but remained unwell with pyrexia. Two days later when the patients FBC was rechecked the platelet count was found to be 20. (No)	Post transfusion purpura
A 24 year old man comes in having been in a motorbike accident. A major haemorrhage is declared appropriately and he is given as part of his initial resuscitation 4 units of O Rh D negative Kell negative blood. When further work is done on his bloods he is shown to be group AB Rh Positive. (No)	