

## Blood Stocks Management Scheme Inventory Practice Survey - Hospital Platelet Inventory Practice

This year's inventory practice survey was centred around gaining a better understanding of current hospital platelet stock practices for NHSBT served hospitals. Its intention was to establish a full picture of the scope and variation of current procedures to better inform future collection and manufacturing models and to identify best practice models to help support others and where possible formulate some best practice guidance.

BSMS currently has **258** hospital sites served by NHSBT registered to the scheme. Each hospital receives a component usage category for red cells and platelets based on volume of annual issues and these are shown below.

BSMS user category	N°. of Hospitals	Group criteria (n°. Plt units issued annually)*includes stock movements
Very High	37	> 1,700
High	51	> 880 & ≤ 1,700
Moderate	72	> 350 & ≤ 880
Low	47	> 80 & ≤ 350
Very Low	51	≤ 80

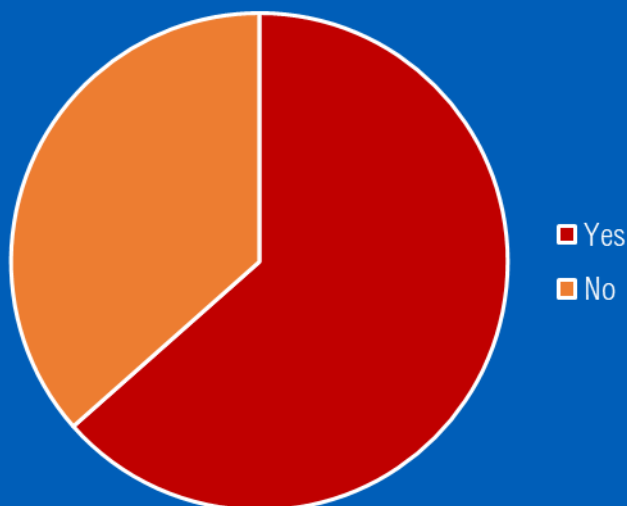
### Survey Results

We received **115** responses to the survey, however additional responses detailing stock platelet specification were also received and considered in further analysis.

#### Q4. Do you hold "stock" platelets

Yes	73
No	42

Platelet Survey Q4 - Do you hold stock platelets?



**63.5%** of survey responses indicated that their hospital held at least one stock platelet unit. It should be noted that of those who responded to the survey, these primarily included hospitals classified as very high, high or moderate users (as shown above). It is reasonable to assume that the majority of low and very low platelet usage sites will not stock platelets.

Additional analysis including submissions received without a full survey response is shown below:

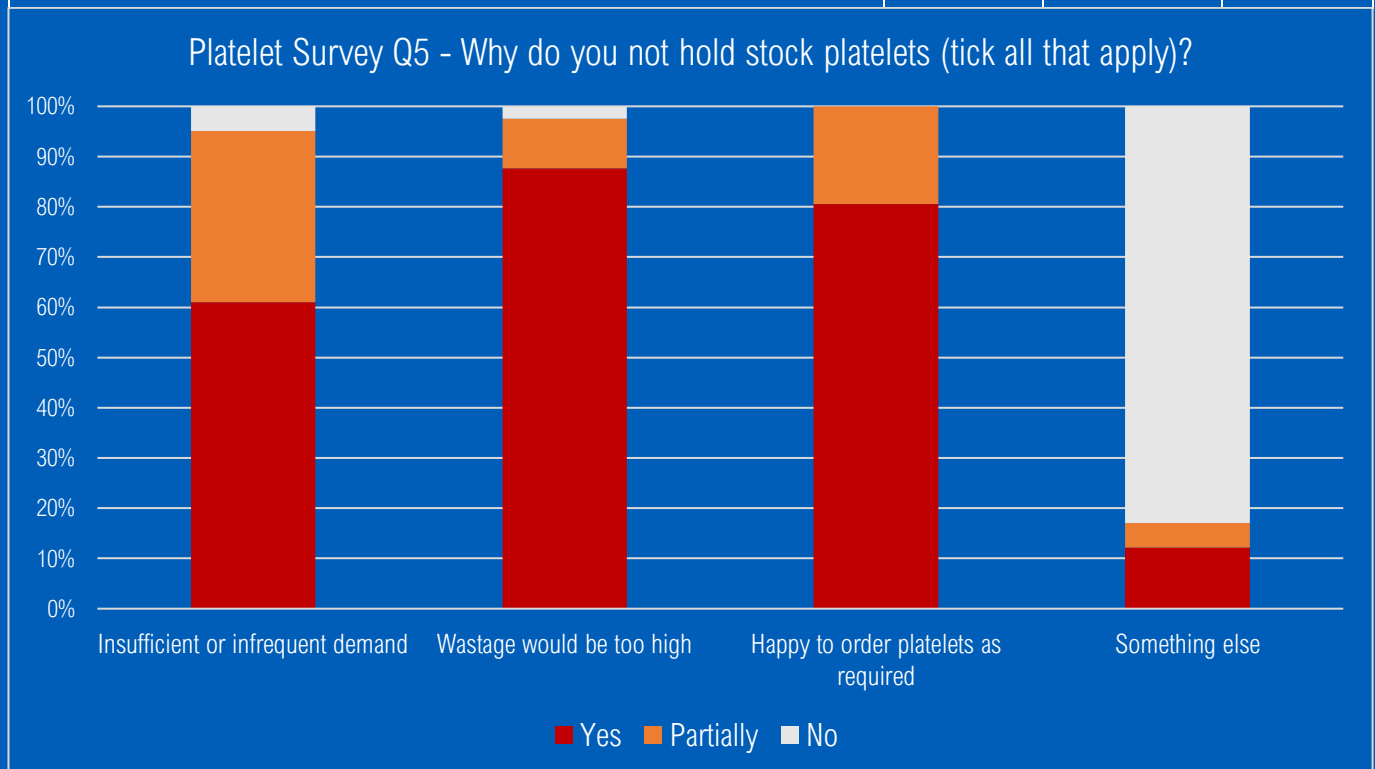
BSMS User Category	Hospitals in category	Response received	Holds stock platelet	% Survey participation	% holding platelet stock*
Very High	37	33	32	89.2%	97.0%
High	51	39	35	76.5%	89.7%
Moderate	72	47	29	65.3%	61.7%
Low	47	20	5	42.6%	25.0%
Very Low	51	10	0	19.6%	0.0%

\*indicates percentage of hospitals within group stating they hold stock platelets whose response was received via either the online survey or email submission.

Investigating the reasons given for sites **not** holding stock platelets, the results are shown below.

### Q5. Why do you not hold stock platelets (tick all that apply)?

Reason	Yes	Partially	No
Insufficient or infrequent demand	61%	34.1%	4.9%
Wastage would be too high	87.7%	9.8%	2.4%
Happy to order platelets as required	80.5%	19.5%	0%
Something else	12.2%	4.9%	82.9%

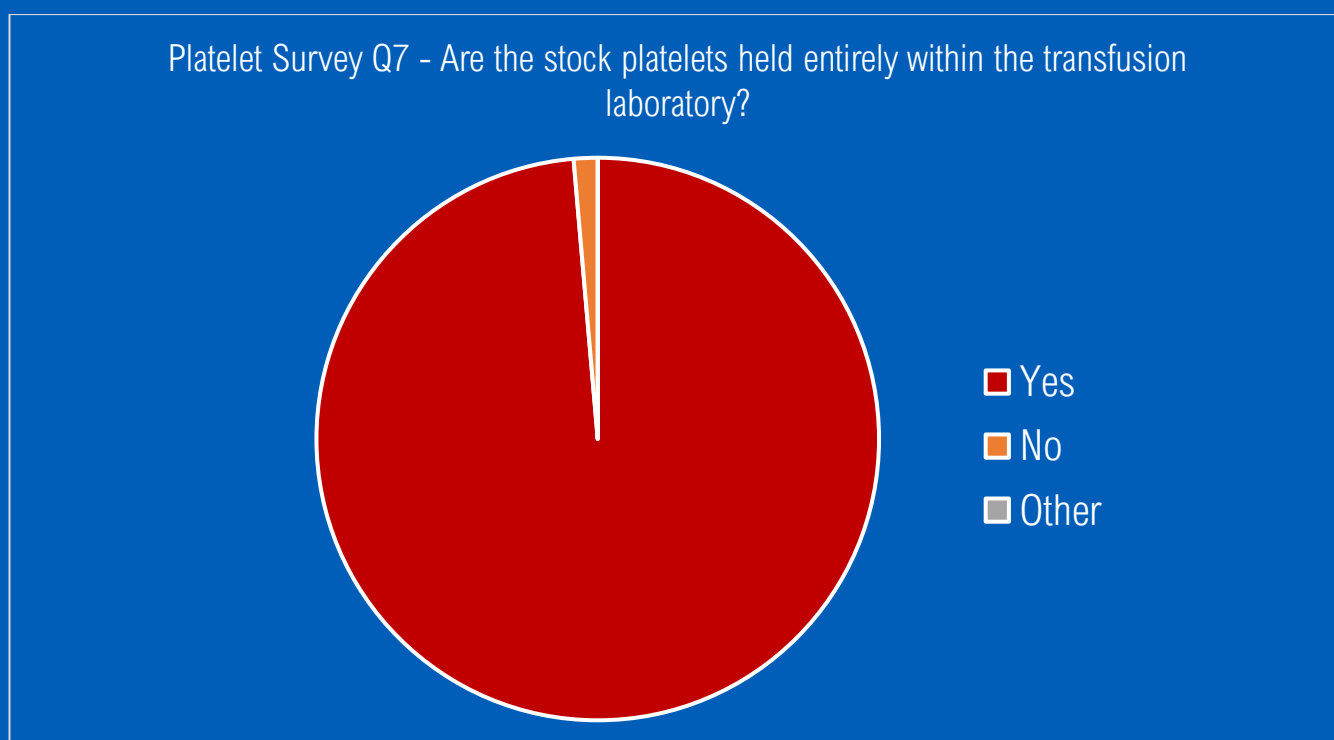


## Q6 Commentary

The reasons sites do not hold stock platelets appear to be consistent across the responses, with the majority of hospitals stating the (1) Insufficient or infrequent demand, (2) possibility of high wastage and (3) operational capability to order as required all feature in their decision. Reassuringly from a stock management perspective a high level of wastage and therefore further impact on the platelet supply chain was considered key to nearly 90% of responders.

## Q7. Are the stock platelets held entirely within the transfusion laboratory?

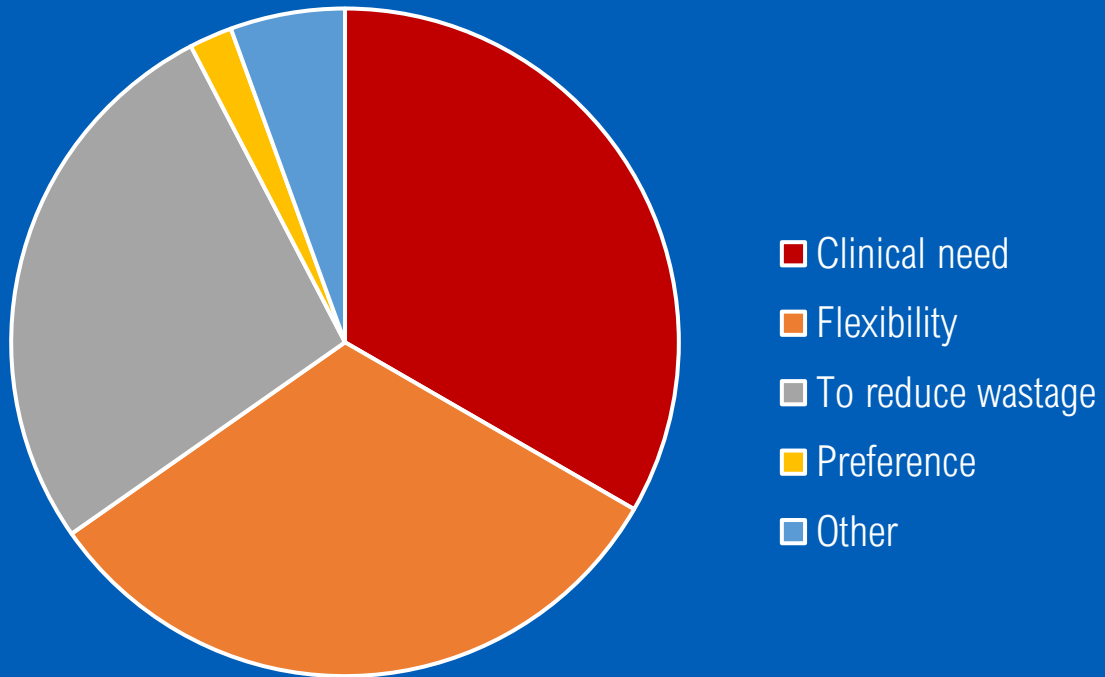
Yes	72
No	1
Other	0



## Q8. Why do you have the current specification selection?

Clinical need	48
Flexibility	46
To reduce wastage	39
Preference	3
Other	8

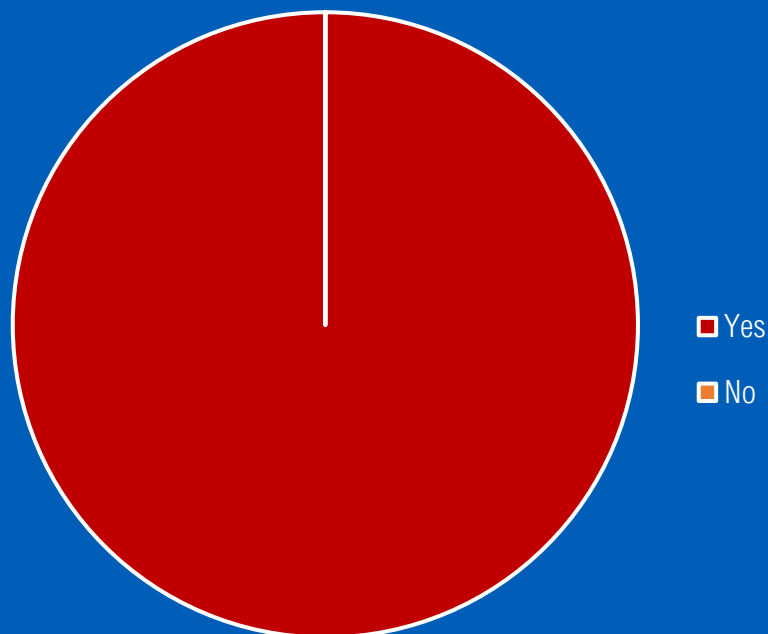
## Platelet Survey Q8 - Why do you have the current specification selection?



## Q9. Do you have an active MHP?

Yes	73
No	0

## Platelet Survey Q9 - Do you have an active Major Haemorrhage Protocol?

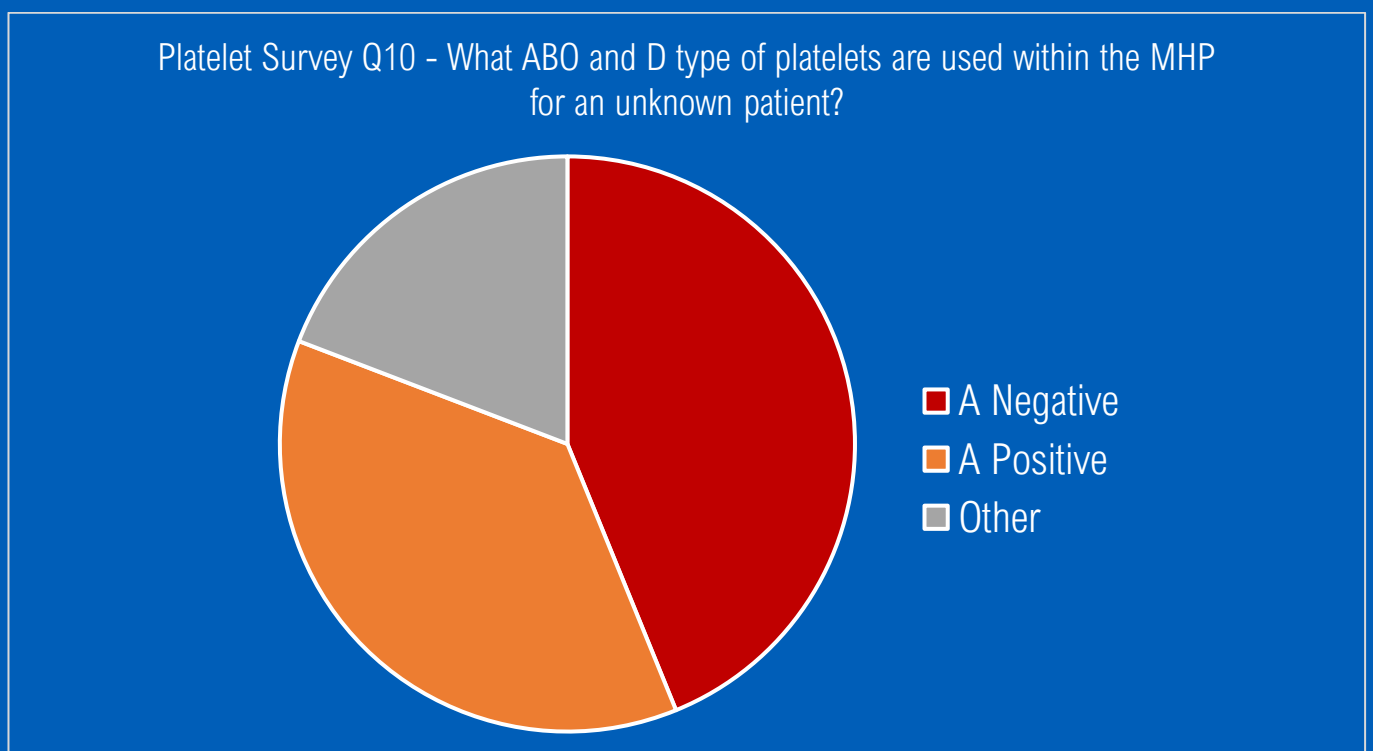


## Q9 Commentary

As expected, all sites holding stock platelets have a functioning Major Haemorrhage Protocol (MHP) and for some sites this might be a contributory factor in the decision to hold stock platelets. Furthermore, it might also dictate the specification of such stock, especially if only one unit is held.

## Q10. What ABO and D type of platelets are used within the MHP for an unknown patient?

A Negative	32
A Positive	27
Other	14



## Q10 commentary

**43.8%** of responders holding stock platelets use A Negative platelets for unknown patients as directed by the local MHP; **37%** use A Positive platelets, while **19.2%** use something else.



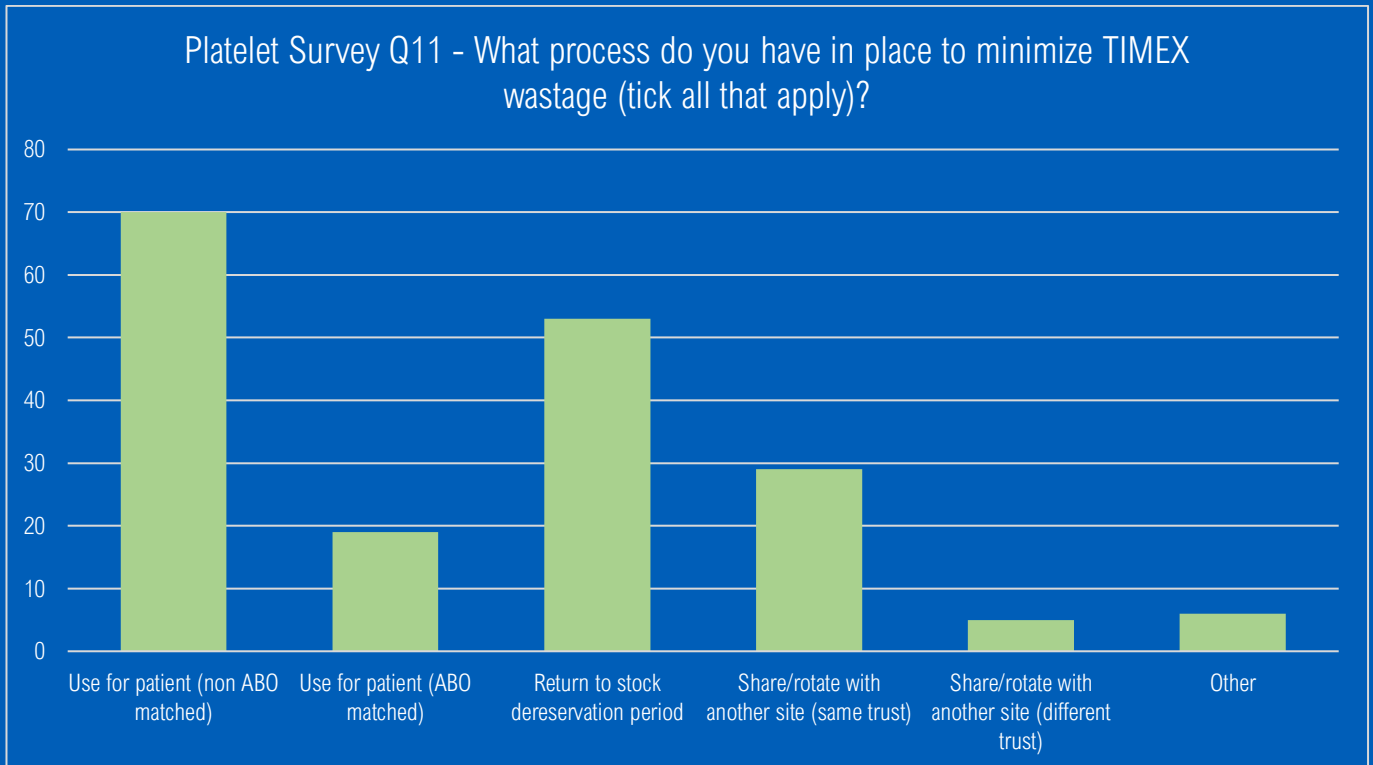
### Emergency use

It is acceptable to use ABO incompatible platelets negative for high titre agglutinins in the management of patients with major haemorrhage. D negative platelets should be used for females <50 years of age of unknown blood group.

Source: BSH Haematological management of major haemorrhage, Addendum March 2017(1)

**Q11.** What processes do you have in place to minimize TIMEX wastage (tick all that apply)?

Use for patient (non-ABO matched)	70
Use for patient (ABO matched)	19
Return to stock dereservation period	53
Share/rotate with another site (same trust)	29
Share/rotate with another site (different trust)	5
Other	6



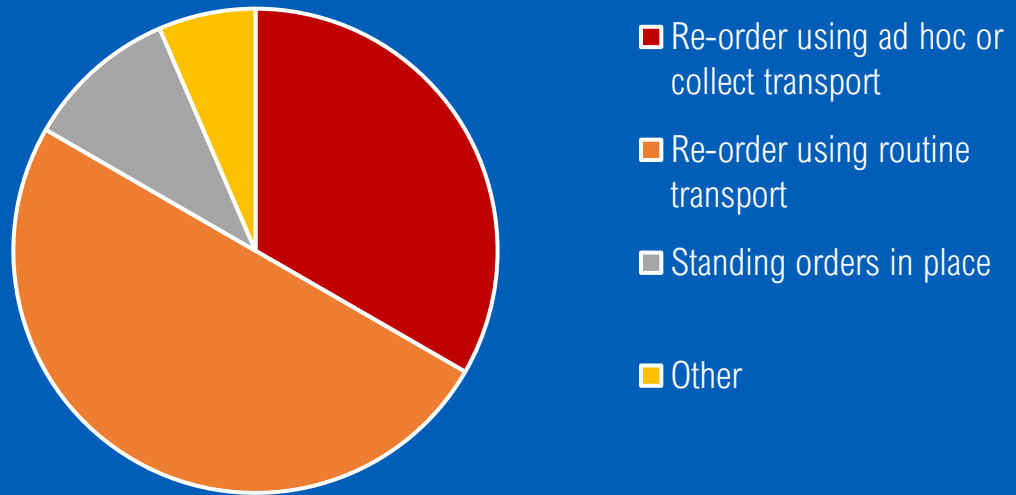
**Q11 Commentary**

The majority of laboratory strategies to minimising stock platelet wastage focus on returning units to stock and attempting to re-use for a patient non-ABO matched (**96%**) or for ABO matched patient (**26%**) where possible. The ability to share either within hospital group/trust or outside of catchment is a significant safety net for minimising loses. Establishing sharing networks can be influenced by governance and logistic issues however these should be encouraged and investigated where possible.

**Q12.** What mechanism do you use to replace stock platelets (tick all that apply)?

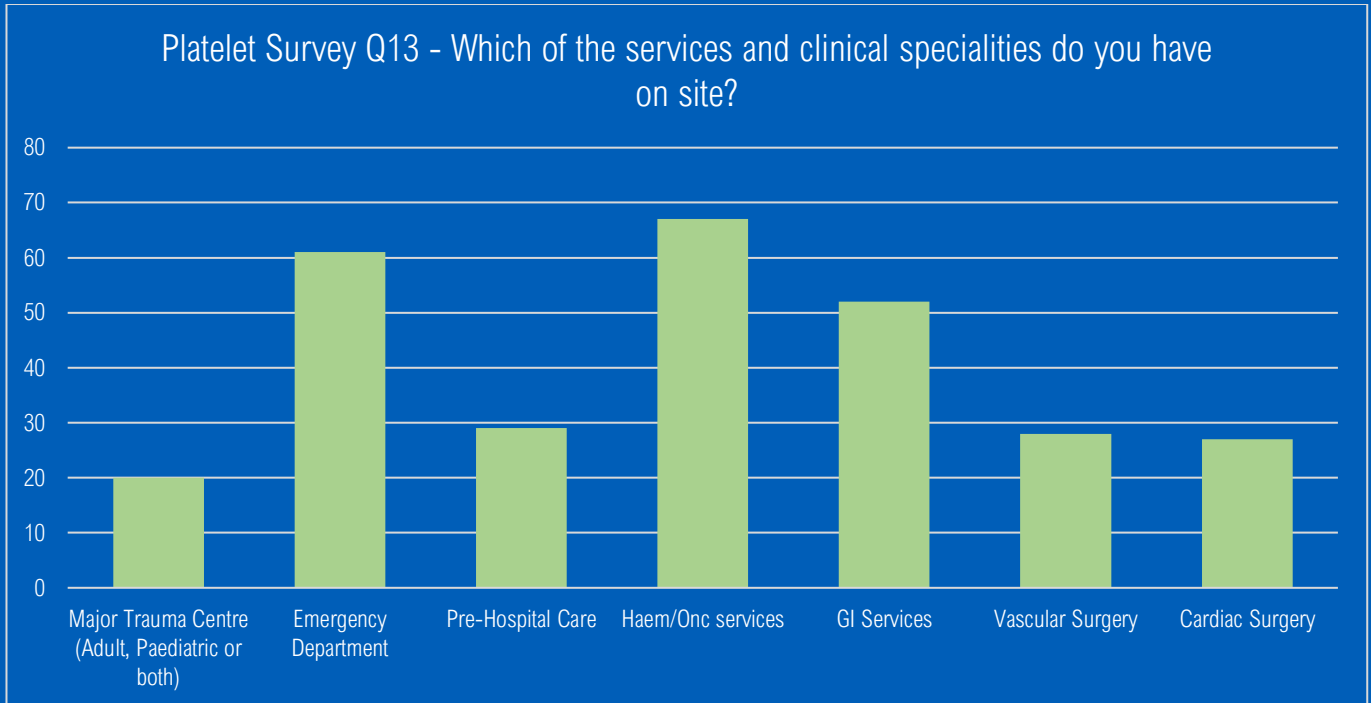
Re-order using ad hoc or collect transport	36
Re-order using routine transport	54
Standing orders in place	11
Other	7

Platelet Survey Q12 - What mechanism do you use to replace stock platelets (tick all that apply)?



**Q13.** Which of the following services and clinical specialities do you have on site (or serve remotely)?

Major Trauma Centre (Adult, Paediatric or both)	20
Emergency Department	61
Pre-Hospital Care	29
Haem/Onc services	67
GI Services	52
Vascular Surgery	28
Cardiac Surgery	27



### Q13 commentary

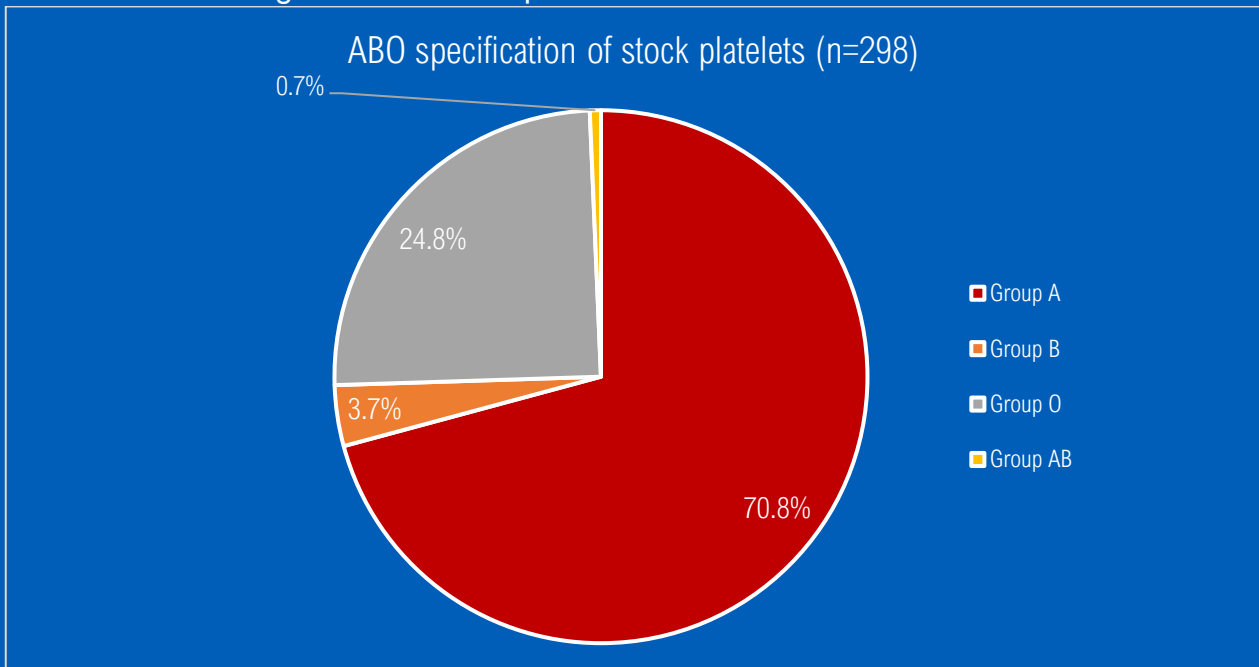
Whilst the presence of certain clinical specialties whose demand for platelets is high and often requires rapid provision (such as ED (with or without MTC status), vascular and cardiac surgical services) increases the need for holding stock platelets; it is also likely that the presence of on-site haematology and oncology services not only carries the same function but also very likely helps local management of platelet demand and minimises time expiry wastage acting as a suitable channel for utilising short dated platelets with consistent and often predictable demand.



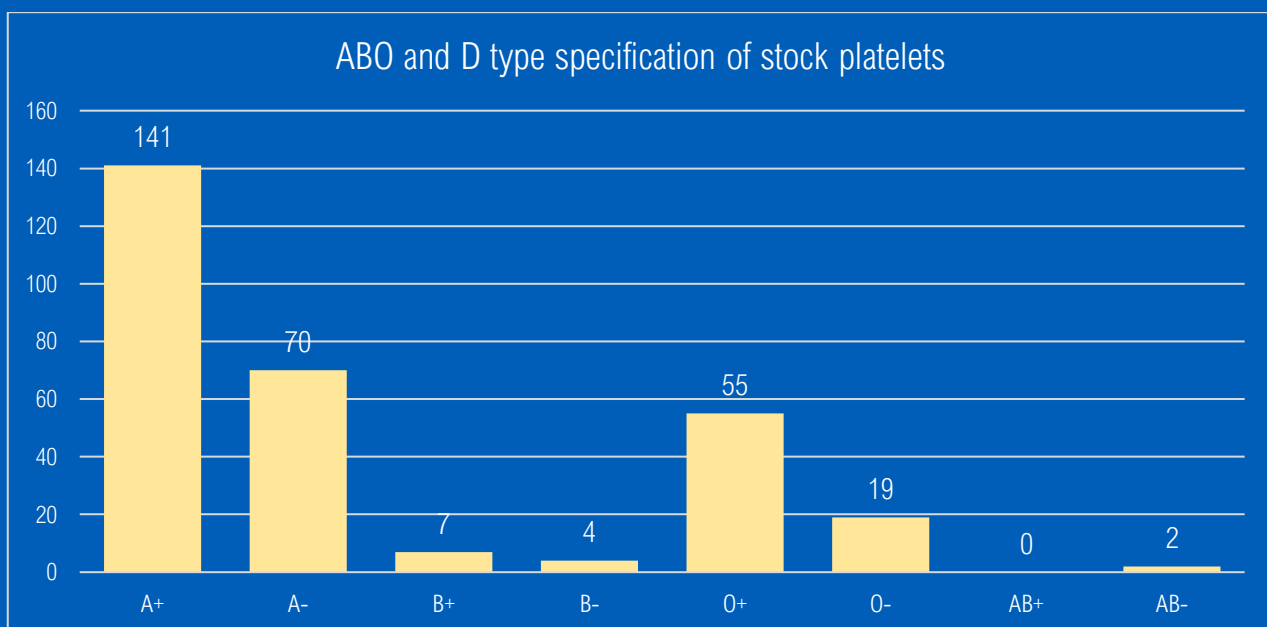
## Further analysis

Of the responses received, there was a total of 298 platelets being held as stock in order to meet the individual hospital requirements. The variety of specifications required to meet this need provides NHSBT with a supply challenge; however, the data provided by hospitals is extremely useful in allowing NHSBT to consider its collection and manufacturing strategy to best meet this challenge.

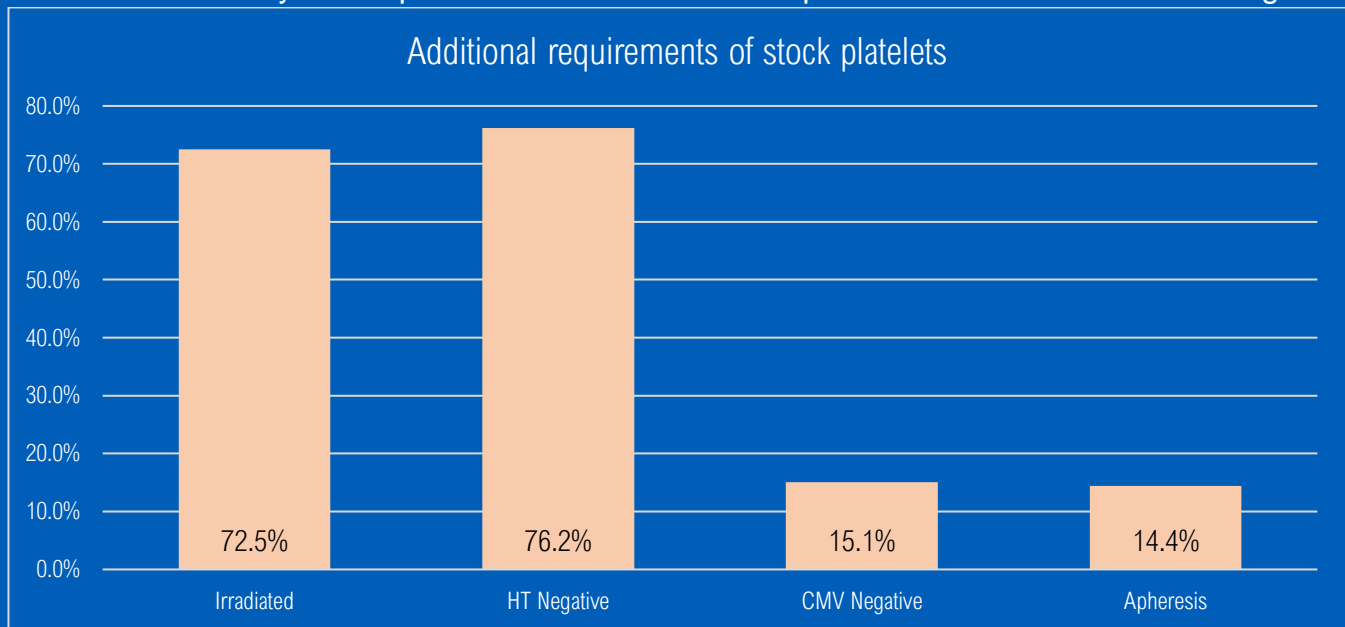
Of the responses we received, group A platelets are the primary “go to” request for stock specification accounting for 70.8% of requests.



Adding to that the addition D antigen specification shows that almost 50% of stock platelet requests are A Positive.



It is likely that further specification of platelet requests is at least in part influenced by the need to maintain flexibility of component in order to maximise potential use in the clinical setting.



## Support and follow our recommendations:

### In the absence of HLA or HPA

- ABO matched platelets give the highest platelet count increment and are in the patient's best interest.

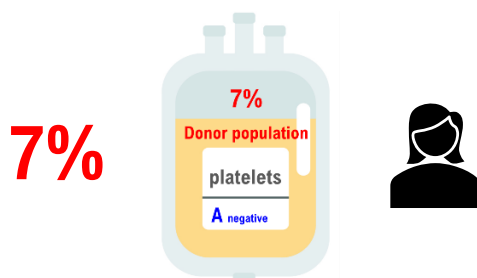
### AB D neg

- These platelets should only be ordered for named patients. Demand continues to exceed supply and requests may be met with non-ABO matched substitutions.

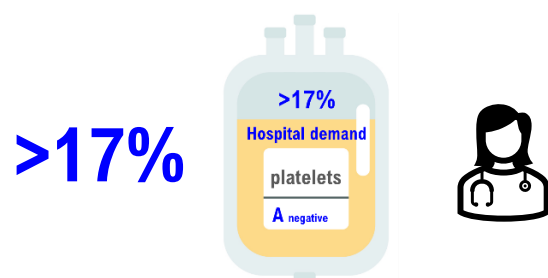
### A D neg

- When time permits, match ABO group, rather than rely on A D neg platelets. Using these platelets as a 'universal' component contributes to >17% of total platelet demand from a potential donor population of only 7%.

### DONOR POPULATION



### HOSPITAL DEMAND



### Substitutions

- Demand for A D neg is highly variable which complicates the supply chain of this short shelf-life product.
- To be able to supply highest demand we collect beyond the proportionate donor population to supply all stock holding units to this level.
- When demand is low, we may offer older A D neg units for group acceptable substitutions in date of expiry order to reduce wastage of this valuable resource.

We issue a 'first in first out' process, orders for high spec such as Apheresis, CMV and HT negative may have their appropriateness questioned to reduce wastage.

## Acknowledgements

Report created and written by **Matthew Bend** (BSMS Manager) and **Jill Caulfield** (BSMS Lead Specialist) with support from **Matthew Sharp** (BSMS Data Analyst).

We would like to take the opportunity to thank all the hospital transfusion staff you responded to the survey and for their ongoing support. In addition, we would like to thank NHSBT's Patient Blood Management (PBM) team and Hospital Customer Service team for their assistance in obtaining as many responses as possible. Finally, thanks to Rebekah Rogers (BSMS Admin support) for helping with hospital communications and review of survey responses.

## References

Estcourt, L. J., Birchall, J., Allard, S., Bassey, S. J., Hersey, P., Kerr, J. P., Mumford, A. D., Stanworth, S. J., Tinegate, H. and the British Committee for Standards in Haematology (2017), Guidelines for the use of platelet transfusions. Br J Haematol, 176: 365–394

Patient Blood Management Platelet resources <https://hospital.blood.co.uk/patient-services/patient-blood-management/platelets/>