**NHSBT Platelets strategy**

1. **What is NHSBT’s platelet strategy in response to recent SaBTO recommendations?**

   NHSBT developed a new platelet strategy which was approved by its Board in May 2014. This recommends that NHSBT move from 80% component donation (CD) to 60% over the next two years (by April 2016), with a corresponding increase in platelets pooled from whole blood donations. Additionally, the use of Platelet Additive Solution will be phased in over the next two years, initially for pooled platelets in 2015/16, followed by apheresis platelets at a later date.

   The strategy responds to the recent SaBTO (Department of Health’s independent Advisory Committee for the Safety of Blood Tissues and Organs) recommendation to remove the requirement to collect 80% of platelets by apheresis and to the use of Platelet Additive Solution (PAS) to re-suspend platelets.

   The platelet strategy also looks at how NHSBT can best respond to the SaBTO recommendation in a way that delivers operational efficiencies as well as ensuring a safe supply of platelets for patients.

   If you would like to see the strategy paper which also includes changes affecting the Brentwood Blood centre, please follow the following link:

   [http://www.nhsbt.nhs.uk/download/board_papers/july14/m14_74_Platelet_Supply_Project.pdf](http://www.nhsbt.nhs.uk/download/board_papers/july14/m14_74_Platelet_Supply_Project.pdf)

2. **What is NHSBT’s target for Apheresis platelet collection this year (2014/15)?**

   Our target for this year is 75%.

3. **Do you have a longer target in mind after April 2016?**

   NHSBT will review the target in 2016 once we have reached the 60%.

4. **What steps will NHSBT need to take to get to the 60% target?**

   The reduction to 60% for apheresis platelet collection by April 2016 will be achieved through a combination of a reduction in component donation chairs across static donor centres and/or converting some to whole blood chairs. There will also be a reduction associated with the changes NHSBT are making to our Brentwood centre. Additionally manufacturing capacity will be increased to make the additional pooled platelets...
5. **What are the benefits of pooled platelets?**

There are a number of benefits when using pooled platelets:

- There are more platelets in a pack with a pooled component rather than CD platelets
- Pooled platelets have fewer white cells than CD platelets
- Pooling reduces the inherent variation in platelets between individual donors
- Pooled platelets are more cost effective than apheresis platelets.
- Pooling allows us to continue to respond to changes in demand at a blood group level

6. **Are pooled platelets cheaper to produce?**

Yes, pooled platelets are more cost effective than those collected by apheresis collection – the cost of Adult Therapeutic Dose of platelets collected by Component Donation is approximately £50 more expensive. NHSBT has no current plans to introduce a higher charge for apheresis platelets. The costs associated with the provision of the both collection methods is averaged out when the price is calculated and presented to the National Commissioning Group. There will be some savings as a result of increased pooling, however there will also be an increase in costs associated with the addition of Platelet Additive Solution to replace plasma in all platelets. Any material costs or savings will be shared with the National Commissioning Group.

7. **What changes is NHSBT making to reduce the complexity of multiple component choices for hospitals?**

After feedback from Children’s hospitals and via the Blood Stocks Management Scheme roadshows, NHSBT has taken the decision to harmonise our guidance regarding the age cut-off for provision of apheresis platelets, where available - hopefully this will simplify decision making at the request stage. (see question 9 below)

8. **What is the impact on Children’s hospitals?**

NHSBT will continue to provide apheresis platelets where they are readily available, with the option of providing a pool where this is not possible.

9. **What is the impact on other hospitals?**

NHSBT will continue to provide apheresis platelets (by specification) for IUTs, neonatal use, and for absolute indications such as HLA or HPA selected.

NHSBT will provide apheresis platelets (where readily available) for named patients born on or after 1.1.96, but will offer an equally efficacious pool where apheresis are not readily available “off the shelf”. There are no absolute indications for apheresis platelets for patients born before 1.1.96 apart from those patients requiring HLA or HPA selected platelets - NHSBT will issue what is readily available locally for these patients.
10. Should Trusts that do not include a Children’s hospital hold a stock of apheresis platelets “just in case”?
No, there is no reason to hold stock platelets as apheresis ‘just in case’.

11. Is NHSBT making any changes to platelet stocks available within its Stock Holding Units?
Yes, NHSBT has reviewed the current demand for apheresis platelets and anticipated an increase in demand from a number of hospitals who may now need to actively place orders for apheresis components. Stock levels of both apheresis and pooled platelets will be adjusted on an ongoing basis to match changes in demand profiles as these changes progress.

12. What does readily available “off the shelf” mean?
Off the shelf means available for issue from the hospitals’ local regular supplying centre. NHSBT will only transfer apheresis stock for matched or more specialised components as these may need to be sourced from the National Pool to ensure the optimum match.

13. Will hospitals need to change their ordering practise?
Yes. NHSBT is recommending a pro-active review of platelet prescribing and ordering protocols and a proactive communication of changes. Hospitals who have historically ordered a high percentage of apheresis platelets for patients outside the Transfusion Guidelines will need to change their ordering practise to reflect a move to pooled components. All hospitals will need to consider the new advice from NHSBT to provide apheresis platelets for all children and young adults born on or after 1.1.96. Hospitals that have relied on an automatic supply of apheresis platelets and are not currently ordering any apheresis platelets need to consider whether they need to do so for named patients in future. Hospitals who have an agreement with NHSBT to hold a small platelet stock to cover specific surgical procedures and hospitals participating in the Integrated Stock Initiative will need to review the requirement for apheresis platelets within this stock.

14. Will NHSBT be able to continue to support the current level of requests for apheresis platelets within the 60% target?
No, which is why NHSBT will be working closely with hospitals to ensure that they fully understand current guidelines and have an opportunity to update their ordering practices before we reach this level. Our communication plan includes regular communications on the progress of the Platelet Supply Project, information on guidelines and evidence from the published literature where appropriate. Our plan is to continue to provide the most appropriate platelet components to meet the needs of all patient groups. To achieve this, we need to ensure that there are adequate apheresis platelets available for children and patients who require these components as defined within the Transfusion Guidelines. NHSBT will continue to meet clinical need; there will be no change in the overall supply of platelets to hospitals and to patients who need them.
Platelet Additive Solution (PAS)

1. **What is Platelet Additive Solution (PAS) and what benefits does this have?**
   SaBTO have recommended the use of PAS in order to further reduce the risk of vCJD transmission. Studies show patients get the same benefits from platelets stored either in plasma or PAS. PAS is widely used in many other European countries. The use of PAS will free up additional male plasma for FFP (Fresh Frozen Plasma) production.

2. **What impact does PAS have on NHSBT operations?**
   The intention will be for NHSBT manufacturing staff to use a unit of Platelet Additive Solution when constructing a platelet pool rather than a unit of plasma from a male donor. This releases the male plasma unit to be used for additional frozen product manufacture. NHSBT are still undertaking validations for platelet additive solution for pooled platelets and project these to be completed by early 2015. Once NHSBT have the results of these NHSBT will better understand any potential implications and impact for operations. Apheresis platelets in PAS validations are not planned until later in 2015.

3. **Is this all about saving money?**
   No, the new strategy is driven by our response to the SaBTO recommendation, which shows that platelets collected by apheresis are as clinically effective as those donated by whole blood donors, which are then pooled for patient use. Collecting platelets by pooling whole blood donations is more efficient and cost effective overall. As a publicly funded organisation it is important that NHSBT collect blood and platelets efficiently and effectively so NHSBT don’t waste donors’ precious donations. NHSBT remain acutely aware of the financial pressures facing public sector services and, in particular, our NHS hospital customers. NHSBT work on the basis that every £1 saved on the price of our products and services is £1 available to treat patients. Our overriding consideration is always the safety and sustainability of the blood supply to hospitals and patients in need.

4. **What other messages are important for Hospitals and how can Hospitals help?**
   NHSBT remain absolutely committed to maintaining a sufficient and appropriate platelet supply to patients. Hospitals can help in the following ways:

   HLA-selected platelets are directed donations for a named patient, and should not be used for other patients without a documented process to cover the removal of the directed donation label to ensure that the audit trail for the product is maintained. NHSBT currently supplies 72% of HLA-selected platelet requests as Grade A/B1 matches but wants to increase this to 80%. In order to continue to provide this high standard of care for patients, NHSBT would appreciate it if hospitals can give us 24 hours notice of requests for
HLA-selection wherever possible. NHSBT will continue to provide a 24/7 on-call service, and so will continue to respond to more urgent requests.

Additionally it will be helpful if hospitals could ensure that they are following the SaBTO guidance regarding CMV negative platelets. Ordering HLA matched platelets as CMV negative reduces the donor pool for matching and in some cases will result in a less well matched component being supplied than would be the case if CMV unselected NHSBT accepted. SaBTO guidance states that leucodepletion provides adequate protection against CMV transmission.

Finally, only using HLA selected products where a corrected count increment shows benefit from the use of these products will also help both the supply of grade A and B1 matched products and also will reduce costs for hospitals. Additionally supplying NHSBT with the corrected count increment enables us to provide hospitals with the best matches for your patients.

**Safety & effectiveness**

5. Are pooled platelets equally clinically effective to those collected by apheresis?
Platelets collected by apheresis and those collected from pooled donations are both clinically effective. However, NHSBT will continue to provide apheresis platelets for certain groups of patients who require them.

**Useful References:**

Heddle NM et al (systematic review). Comparison of corrected count increment (CCI) shows no differences between apheresis and buffy coat derived platelets; Transfusion 2008 July; 48(7):1447-1458

Slichter SJ et al. Type of platelet component had no relation to inter-transfusion interval. Blood 2005 May15:105(10):4106-4114


Cardigan R et al. Similar recovery and survival of BC derived platelets in plasma vs PAS over 7 days. Transfusion 49 (supp3) 2009

Kerkhoffs JL et al. Clinical effectiveness of pooled platelets in plasma vs additive. B.J.Haematol 2010 Jul;150(2)209-17

6. Which groups of patients will still receive platelets collected by apheresis?
NHSBT are confident that we can continue to meet the clinical needs of patients including those who may need platelets donated by apheresis for the following indications:

- Intrauterine and neonatal transfusions (by pack specification)
- Children and young adults born on or after 1.1.1996
- Patients requiring HLA- and HPA-selected components due to the presence of HLA/HPA antibodies, or in cases of NAIT (Neonatal Allo-Immune Thrombocytopenia)
- HLA matched platelets will also be supplied to patients with inherited platelet disorders including Glanzmann’s and Bernard Soulier irrespective of whether or not they have circulating antibodies
- Patients requiring IgA deficient components due to being IgA deficient and having had a previous reaction (very infrequent) should be referred to the NHSBT on call consultant haematologist to devise individually tailored component support

7. Are NHSBT producing a product that is less safe?
NHSBT have taken the decision to reduce to 60% on the basis that platelets in pools are as clinically effective as those collected by apheresis. The Trial to Reduce Alloimmunisation to Platelets (TRAP) study and a systematic review showed no differences in corrected count increments and inter-transfusion interval between pooled and apheresis platelets, except for patients refractory to platelet transfusion due to alloimmunisation to HLA antigens (who will continue to require HLA matched apheresis platelets).

Additionally, there is no reported difference, from either the TRAP study or systematic review, in the rate of alloimmunisation between apheresis and pooled platelets so long as the products are leucodepleted. The same is true of the rate of febrile transfusion reactions and TRALI when using pooled platelets as opposed to those donated by apheresis. In addition, re-suspension of platelets in PAS acts to reduce allergic transfusion reactions, and thus improve the patient’s experience. Data from the UK and elsewhere demonstrate good preservation of platelet function in PAS.

8. Will we see more transfusion reactions?
There is no evidence to support this. There are a number of publications which describe no difference in febrile non-haemolytic transfusion reactions comparing apheresis vs pools:

TRAP study, Heddle systematic review

9. Will we see more HLA alloimmunisation?
There is no evidence to support this. HLA alloimmunisation is dependent on residual leucocytes in the component rather than the number of different platelets present.

TRAP study, Heddle systematic review, Slichter et al 2005
10. Will we see more TRALI?
There is no evidence to support this. A systematic review of buffycoat derived platelets in plasma found that the risk of TRALI was equal.

Vamvakas EC. Transfusion 2009 Dec;49(12):2743-58

Supply

11. Will this affect the supply of platelets across the country?
NHSBT will continue to meet clinical need; there will be no change in the overall supply of platelets to hospitals and to patients who need them.

Background

12. How does NHSBT collect platelets now?
Apheresis platelets or platelets collected via automated component donation are made by separating the platelets from a single donor through a machine called a cell separator and returning the remainder of the blood back to the donor. Each donor can donate two or three adult doses each time by this method, with each dose only containing platelets from one donor. This requires a dedicated panel of donors who attend static donor centres.

Pooled platelets are made by separating the platelets from four whole blood donations of the same blood group and ‘pooling’ them together to make a single dose of platelets for transfusion to an adult patient. Therefore in each dose there are four contributions from four different donors. NHSBT currently manufactures platelets using two different methods, from apheresis and from whole blood collection.

13. Why was the 80% platelet target introduced?
In 2007 the Department of Health requested that at least 80% of Adult Therapeutic Doses (ATDs) of platelets that are issued to hospitals must be derived from single donors (via CD), rather than from multiple donors. This was a risk-reduction strategy which responded to the need to reduce the risk of variant Creutzfeld Jackob Disease (vCJD) transmission by platelets infusion. NHSBT has, since 2009, supplied 80% of platelets requested by hospitals from CD collection. Prior to this time NHSBT had been producing around 40% of platelets by CD.

14. Why can’t NHSBT just stick to 80% platelets and make no changes?
A lot of time energy and effort has gone into hitting the 80% target set by the Department of Health, now that target has been removed and NHSBT have been asked to set our own target NHSBT can look at other options bearing in
mind that pooled platelets are less expensive to collect and manufacture than apheresis platelets.

15. I am told that collecting platelets from whole blood is less efficient than by apheresis - is this true?
Collecting platelets from whole blood is actually more efficient and cost effective for the NHS as a whole because platelets can be extracted from a whole blood donation, allowing us to have a unit of red cells as well as platelets from a single donation. Special equipment and expensive consumables are also needed for apheresis donation. Pooled platelets collected via whole blood donation are therefore less expensive to collect and manufacture than those collected by apheresis.

**SaBTO recommendation**

16. Who are SaBTO?
The Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO) advises UK ministers and health departments on the most appropriate ways to ensure the safety of blood, cells, tissues and organs for transfusion/transplantation.

17. Are SaBTO an independent organisation?
Yes. SaBTO’s role is to provide independent advice to UK ministers and health departments. Members are appointed to SaBTO to fulfil the role of the Committee, not as representatives of any organisation. You can find out more about SaBTO on their NHSBTsite, including papers and minutes from their meetings: [https://www.gov.uk/government/groups/advisory-committee-on-the-safety-of-blood-tissues-and-organs#code-of-practice](https://www.gov.uk/government/groups/advisory-committee-on-the-safety-of-blood-tissues-and-organs#code-of-practice)

18. Why did SaBTO look at the issue now and on what evidence is this based?
The 80% target to collect platelets by apheresis was established in 2007 to reduce the risk of vCJD transmission. Since 2009 there have been developments in the understanding of vCJD which have led to a revision of the assumptions concerning the prevalence of vCJD in the UK population, the infectivity associated with a whole blood donation, and the susceptibility of a recipient to become infected. As a result the Advisory Committee for Dangerous Pathogens (ACDP) conducted detailed modelling and revised their assessment of the risk of vCJD transmission. This prompted SaBTO to conduct a review, looking at the risk of vCJD transmission by all blood components - red cells, plasma and platelets. As a result of this review they made their recommendation to remove the requirement to collect 80% of platelets by apheresis and to use Platelet Additive Solution for the suspension of platelets.

19. Why haven’t they given a new target - a new 80%?
SaBTO didn’t define a new target percentage of apheresis collections but instead advised that each UK Blood Service should set their own level.
20. Have the Department of Health accepted the recommendation made by SaBTO?

Yes. This recommendation was formally accepted by the Department of Health in December 2013.