

Implementation Guide

Single Unit Transfusion Policy

**National Institute for Health and Care Excellence (NICE)
Blood Transfusion Recommendations:**

‘Consider single-unit red blood cell transfusions for adults who do not have active bleeding.’

‘After each single-unit red blood cell transfusion, clinically reassess and check haemoglobin levels, and give further transfusions if needed’

**National Blood Transfusion Committee
PBM Recommendation number A9:**

‘Transfuse one dose of blood component at a time, e.g. one unit of red cells or platelets, in non-bleeding patients and reassess patient clinically and with further blood count to determine if further transfusion is needed’

**By the NHSBT Patient Blood Management Team
In collaboration with Kings College Hospital and University Hospital
Lewisham**

December 2015

1. Introduction

Patient Blood Management (PBM) initiatives⁴ aim to optimise the care of patients who might need a transfusion. These initiatives involve a multidisciplinary approach to transfusion and transfusion alternatives which are evidence based. Clinical trials have shown that a restrictive transfusion approach to red cell transfusions reduces the number of units transfused without a detrimental effect on patient outcomes^{1,2,3}. One strategy to enable a restrictive transfusion policy is to implement a single unit transfusion policy for stable, non-bleeding adult patients.

Collaboration between NHS Blood & Transplant, NHS Trusts and the London Regional Transfusion Committee (RTC) helped implement and evaluate a Single Unit Transfusion Policy with the aim of:

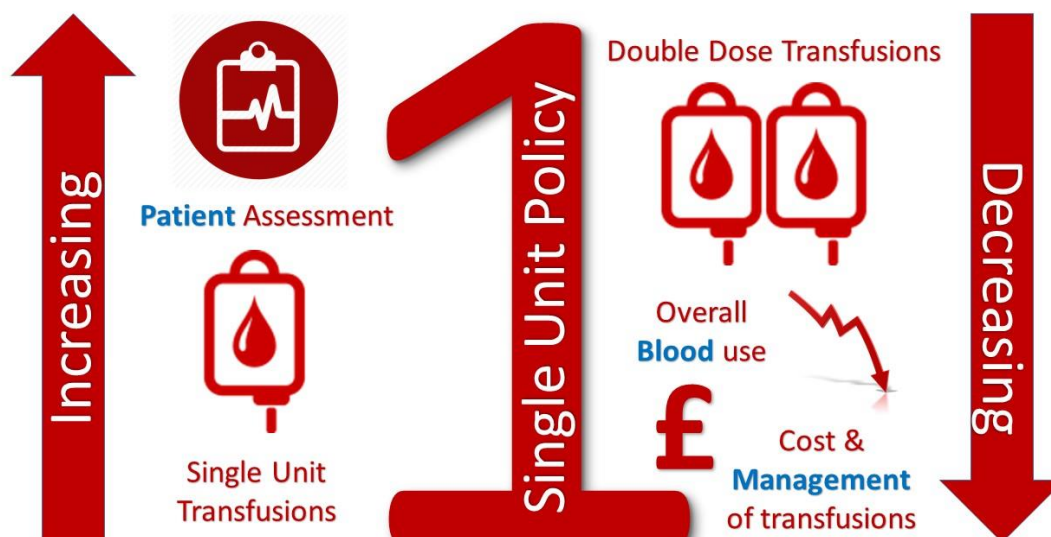
- Highlighting one aspect of PBM with the overall aim of improving patient outcomes and reducing the number of inappropriate red cell transfusions.
- Assessing the potential impact on blood usage that hospitals may realise once a single unit transfusion policy has been implemented.

This implementation guide has been developed following learning from projects run in partnership between NHSBT, University Lewisham Hospital, Kings College Hospital and the RTC.

At Kings College Hospital, the single unit policy was implemented across 8 general medical in-patient wards and at Lewisham it was rolled out to 2 elderly care wards. Over a 6 month period at Kings College Hospital there was a reduction in red cell use of 50% in the 8 selected wards. This equated to a reduction of 232 red cell units with a base unit cost saving of £28,304* just on red cells.

(Note: Lewisham Hospital pilot work is in the implementation and review phase at time of production. This implementation guide will be updated with any new learning as the work progresses)

*cost of red cell unit £122 based on 2013-14 NHSBT price list.



2. Implementation

This section provides steps on how a change in practice was achieved at the selected pilot sites. Please contact your local PBM Practitioner for further information or support.

2.1. Get approval from the Hospital Transfusion Team/Committee

Having approval to look at the implementation of a single unit policy from the relevant committees is important to ensure trust governance and patient safety is aware, to which the Hospital Transfusion Committee (HTC) should have reporting lines. This also allows a regular forum to report results and discuss any challenges that might arise.

If your hospital has a PBM sub-group of the HTC this may be a project they add to their workplan and become the working group for the HTC. (This is related to *NBTC PBM Recommendation A1, 'All NHS Trusts should establish a multi-disciplinary PBM programme through HTC or as subgroup of HTC'*)

**SINGLE Unit Blood Transfusions
reduce the risk of an adverse reaction**

2.2. Assess the need

Perform a hospital wide audit looking at a months red cell issues to determine current red cell ordering practice in the hospital. Collect the following information:

- Patient information – Name, Hospital Number/NHS number, date of birth, gender
- Transfusion information – unit number, date and time of unit collection, pre and post Hb result
- Number of units transfused before a Hb check
- Number of units transfused within a 24 hour period

The results of this audit will show your hospital profile regarding single unit prescribing practice. A step wise approach to implementation across hospital sites will be better, as you can continuously learn and use success and results to motivate the next ward/clinical division for implementation.

To identify a clinical area to start with, use the audit results to select a clinical area with a high proportion of 2 unit red cell transfusions as they could benefit most from implementation of a single unit transfusion policy.

Case studies showing potential over transfusion can be used to gain clinician support and approval. Examples from areas that already have reliance on a single unit policy can be used as examples of best practice.

2.3. Engage with consultants in the chosen clinical area – Champion

(This is also linked to NBTC PBM Recommendation D2 'Identify PBM champions to help educate staff and patients')

Having an engaged and supporting clinician in the area where you are to implement the change in policy is vital and will help encourage members of their team and colleagues to adapt practice. Recruiting a trainee doctor to help run the project will help to spread the idea through the more junior staff.

Having a consultant and a junior as area champions supports active engagement with all levels of prescribing staff.

2.4. Collect data

Collect 6 months worth of retrospective data for the selected clinical area using the same fields as described in 2.2. The audit template used in the project can be downloaded at

<http://hospital.blood.co.uk/patient-services/patient-blood-management/single-unit-blood-transfusions/>

This data can be used to support change in practice and as comparison data following implementation of the single unit transfusion policy.

In addition, collecting length of stay and patient readmission data can help determine if the change in practice has a detrimental effect on the wider hospital practice.

Don't give unit two without review

Before you transfuse your patient:

- What is your patient's current haemoglobin level?
- What is your patient's target haemoglobin level and would this be achieved by transfusing one unit?



2.5. Train & Educate staff

Training the right clinical staff groups is key to changing practice on the wards. Using the audit data it may be possible to determine the requestor of the blood components which will therefore, help determine which staff groups need education. Junior staff are often the group making the decision to transfuse.

Training and empowering the laboratory staff to monitor and challenge requests will help support the implementation and educate the ward staff.

Involving the nurses on the wards will give them confidence to challenge decisions made and help determine if a further transfusion is required.

For those hospitals that are looking to implement this, 'one at a time is fine' pin badges are available from NHSBT's PBM Team which can help in visually identifying who has been trained.



Patients should be involved in the decision to transfuse and when they are being reassessed. Ensuring patients are given access to written information and the opportunities to ask questions is important in informed consent to transfusion and when implementing a single unit policy.

2.6. Develop/use resources

Poster and publicity tools can help prompt staff and remind them of the change in practice. Tools to help decision making can also be used to give staff the confidence to make an appropriate decision when transfusing patients. Resources developed during the project can be found at <http://hospital.blood.co.uk/patient-services/patient-blood-management/single-unit-blood-transfusions/>

Hospitals and Science

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Single Unit Blood Transfusions

These currently include;

- Single Unit Policy - Handout
- Single Unit Transfusion Poster
- Single Unit Transfusion Flyer
- Single Unit Transfusion Screen Saver
- Single Unit Transfusion Policy Template
- Example Training PowerPoint Presentations
- Laboratory algorithm to support request review and referral
- Single Unit Transfusion Newsletter
- Audit Template

If you develop any new resources please do share them for others to use, your PBM Practitioner will be able support this.

2.7. Write a policy

The single unit recommendation can either be a full stand-alone policy or can be incorporated into the Trust transfusion policy.

Review your current blood transfusion policy to see if this is already included, you maybe able to promote that section of the policy for engagement and marketing of the roll out.

2.8. Collect more data!

The only way to determine if a change in practice has been achieved is to use audit. Collecting the same data fields as the 6 months retrospective period allows for comparison of practice before and after implementation. This can be used to establish the average pre and post Hb results, how many single unit transfusion episodes there were and also the reduction in blood usage. From this data case studies can be taken to support implementation and give at training updates.

2.9. Report incidents of over/under transfusion

What gets reported and how over-transfusion is determined should be based on the transfusion policy and with discussion with the HTC. Reporting may allow trends of practice to be reviewed and this may also be a way to report these to Trust governance.

Each unit transfused is an independent clinical decision

Clinically re-assess your patient after each unit is transfused.

- ✓ Is your patient still symptomatic?
- ✓ Is further transfusion appropriate?

Only order one unit at a time for non-bleeding patients.

Document the reason for the transfusion.¹

2.10. Spread the word

Report the results of the audit to the HTC and RTC. Also tell the staff involved in the initial stages of training and any staff that have supported this policy change. Publicising the results to other areas of the hospital will help to spread the policy as best practice, increase the number of single unit transfusions and decrease the number of patients receiving inappropriate transfusions. Use your internal hospital communications team to help gain momentum for rollout to other areas. Use your Business and Innovations department to support promotion and further high level awareness.

2.11. Plan your next steps

Once you have successfully implemented this in one clinical area, carry out a review of implementation and share results. See if it can be rolled out to other areas and/or if you can acquire more resources to support PBM implementation. If you have successfully implemented this in the whole hospital, plan your next PBM implementation project. Your local PBM Practitioner will be able to help and provide resources to support you with this.

3. Considerations during implementation

This section provides some tips to consider when implementing the change and some limitations and resolutions

3.1. Data collection

This is a big challenge and you will probably need support from pathology IT and/or your Trust Business Intelligence Unit to write new queries or support with data mining/pulls. Early engagement and agreement as to what is needed will be beneficial.

The data collected to determine transfusion practice was taken directly from the laboratory information management system (LIMS). Due to the set up of the LIMS there was no way of linking both the haematology and transfusion records together. Using the transfusion records it was possible to manually collect the Hb results and look at the patients haematinics investigations. This required manual entry and can be time consuming if there are many patients to review.

The data provided gave the issue date of the red cell unit but in order to ensure the accuracy of the pre and post transfusion Hb, the date and time the unit was removed from the transfusion fridge was collected. At Kings College Hospital this information was taken from the electronic blood collection system and at University Lewisham Hospital this was found on the paper laboratory records. For audit purposes the assumption was made that the red cell unit was transfused within 4 hours of the unit leaving the fridge.

Length of stay (LOS) and readmission data was provided from the business intelligence unit.



Don't give two without review

THINK!

- Is your patient symptomatic?
- Is the transfusion appropriate?
- What is the haemoglobin trigger level?
- What is the patient's target haemoglobin level?

3.2. Staff requirements

Forming a small project group can help to drive through change. Including staff from the clinical area where the change in practice is to be implemented can get early buy-in from the staff on these wards and help instigate change.

The laboratory can provide support and help challenge requests that are deemed outside of guidelines. Involving all members of the laboratory meant that a standard message could be given to requesters.

The haematology registrars also need to be trained and engaged with the work and be prepared to supply expert advice on PBM.

4. Resources and implementation support

The resources developed during this project are available to use and adapt to suit local practice and policy. These are available at the following location <http://hospital.blood.co.uk/patient-services/patient-blood-management/single-unit-blood-transfusions/>

As the pilot progress we will continue to update these. For more information and support please contact your local Patient Blood Management Practitioner.

Each unit transfused is an independent clinical decision

DO!

- ✓ Clinically re-assess the patient after each unit transfused.
- ✓ Only one unit should be ordered for non-bleeding patients.
- ✓ Document the reason for Transfusion.

5. Contact Us

The NHSBT's Patient Blood Management team is made up of practitioners and consultants. You will have a local contact who will be able to support you to implement this and other PBM initiatives into your hospital.

To find out who your local contact is or if you would like to discuss your requirements and plans further please contact our office on the details below.

NHSBT Customer Services Office

E-mail: NHSBT.CustomerServices@nhsbt.nhs.uk

Telephone: 01865 381010

6. References

1. Hebert, M. D. et al. (1999) 'A multicenter, randomized, controlled clinical trial of transfusion requirements in critical care. Transfusion Requirements in Critical Care Investigators, Canadian Critical Care Trials Group.' *N Engl J Med*, 340(6) pp. 409-17.
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3. Ma, M. et al. (2005) 'A retrospective study evaluating single-unit red blood cell transfusions in reducing allogeneic blood exposure.' *Transfus Med*, 15(4) pp. 307-12.
4. National Blood Transfusion Committee (2014) *Patient Blood Management, An evidence-based approach to patient care*. [Online] [Accessed on 15th January 2016] <http://www.transfusionguidelines.org/uk-transfusion-committees/national-blood-transfusion-committee/patient-blood-management>

