

Optimising O RhD Positive Red Cell Use in Emergencies: Treating Major Haemorrhages in Adult Males Over 18 and Females Over 60years

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Introduction

In July 2022, Barnet Hospital successfully implemented the Remote Electronic Issue (REI) blood fridge system to enhance blood management within the Trust. Despite these advancements, usage of O RhD Negative blood from May 2022 to March 2023 exceeded the national target of 12.5%. An audit conducted between December 2022 and March 2023 identified significant inappropriate use of O RhD Negative blood. To address this issue, a pilot project was initiated to better manage O RhD Negative blood. This project focused on using O RhD Positive red blood cells in specific patient groups—adult males over 18 and females over 60—during emergencies, especially within the Emergency Department (ED).

Barnet & Chase Farm O-Negative Issue & Wastage 2022-2023

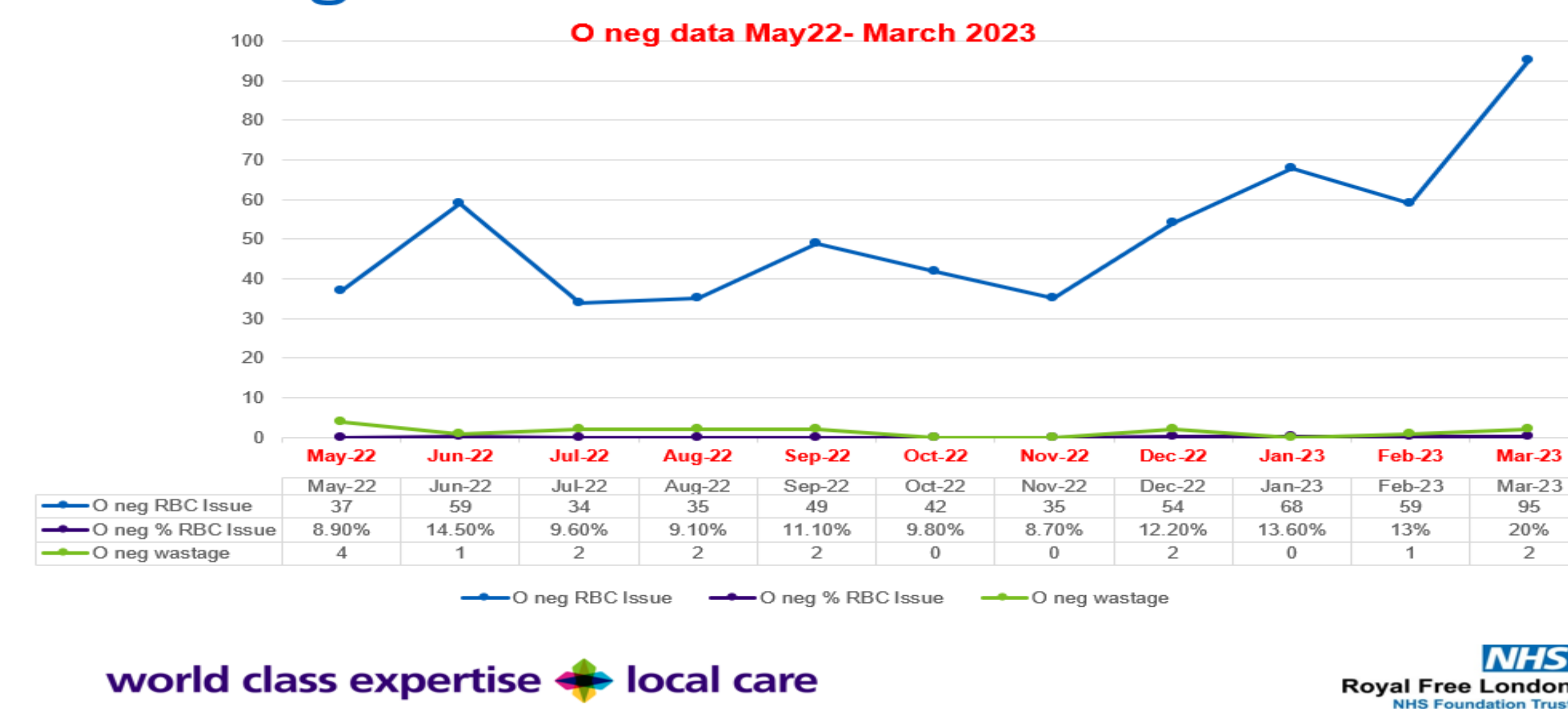


Figure 1

Methods

Audit Objectives

The audit aimed to assess and improve the utilisation of O RhD Negative red blood cell units in emergency situations at Barnet Hospital. The specific objectives were to:

1. Determine Usage in Major Haemorrhage (MH) and Massive Obstetric Haemorrhage (MOH): Analyse the proportion of O RhD Negative red cell units transfused in MH and MOH scenarios to understand current practices.
2. Identify Inappropriate Transfusions: Identify inappropriate O RhD Negative blood transfusions to ensure compliance with national guidelines and optimal resource use.
3. Propose Use of O RhD Positive Blood: Evaluate the feasibility and safety of using O RhD Positive blood for patients who are not O RhD negative, especially in emergency settings.

Pilot Study

The pilot study was conducted at Barnet Hospital's ED to implement and assess the proposed changes in transfusion practices.

Study Duration

The pilot study took place from September to December 2023. Effective communication strategies ensured all staff were informed and prepared.

Results

During the audit period, significant data were gathered to assess the use of O RhD Negative blood in emergency scenarios at Barnet Hospital:

Emergency Calls Recorded: A total of 45 Major Haemorrhage (MH) and 5 Massive Obstetric Haemorrhage (MOH) calls were reported, 28 of which were from the ED.

Blood Unit Issue: 57 O RhD Negative units were issued during these emergencies.

Patient Demographics: Only 2 O RhD negative units were issued to patients typed as O Negative. 28 units were issued to adult male patients, and 10 units were issued to women over the age of 55. A total of 31 transfusions could have used O RhD Positive blood. Based on this audit the Haemobanks at Barnet & Chase Farm were configured to release emergency O RhD Positive blood to adult male patients over 18, female patients over 60, and patient-specific blood first in an emergency situation.

Discussion

The initiative to address the inappropriate use of O RhD Negative blood at Barnet Hospital yielded promising results and offers a viable strategy for optimising blood management practices in emergency settings

Feasibility and Effectiveness of O Positive Blood Use

- Targeted Use of O Positive Blood: The initiative demonstrated that using O positive blood for specific patient groups—such as adult males over 18 and females over 60—during emergencies is both feasible and effective. This approach significantly reduced the demand for O RhD Negative blood in ED to 0%, alleviating pressure on its limited supply.
- Patient Safety and Outcomes: Patients were closely monitored for transfusion reactions throughout the pilot study. The successful transfusion of O RhD Positive units without adverse effects underscores the safety of this strategy in targeted patient groups.

Conclusion

The implementation of using O RhD Positive red cells in specific emergency situations has proven to be an effective strategy for reducing the demand for O RhD Negative blood. This approach offers a practical solution to challenges posed by O RhD Negative blood shortages and provides valuable insights into optimising blood management practices.

Key Findings

Viability of O Positive Red Cells: The project demonstrated that utilising O RhD Positive red cells in targeted patient groups is feasible and effective. This strategy successfully reduced pressure on O RhD Negative blood supplies without compromising patient safety.

Model for Other Institutions: The project's success at Barnet Hospital serves as a model for other healthcare institutions facing similar challenges with the inappropriate use of O RhD Negative red cells. By adopting similar practices, hospitals can improve their blood management protocols and ensure the availability of critical blood resources for patients in need.

Figure 2.

BCF-O negative Issue & Wastage 2023-2024

