Using BSMS Data to reduce stock and wastage – A Case Study; St Marys Hospital (London)

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The Blood Stocks Management Scheme (BSMS) was established in 2001 to improve blood inventory management across the blood supply chain. Hospitals and Blood Services from England, Wales and Northern Ireland participate in the scheme.

VANESA, a data management system, enables collection of data from hospitals and blood services which can be viewed in real-time.

Hospitals using VANESA can benchmark their data using appropriate categories based on their profile. The most common benchmarking categories used include hospital size (based on red blood cell (RBC) or platelet (PLT) usage category), geographical location (based on the Regional Transfusion Committee (RTC)) or the clinical specialities available within the hospital.

Blood stocks within England have been lower than ideal (Fig.1) and so appropriate inventory management is increasingly important to prevent wastage.

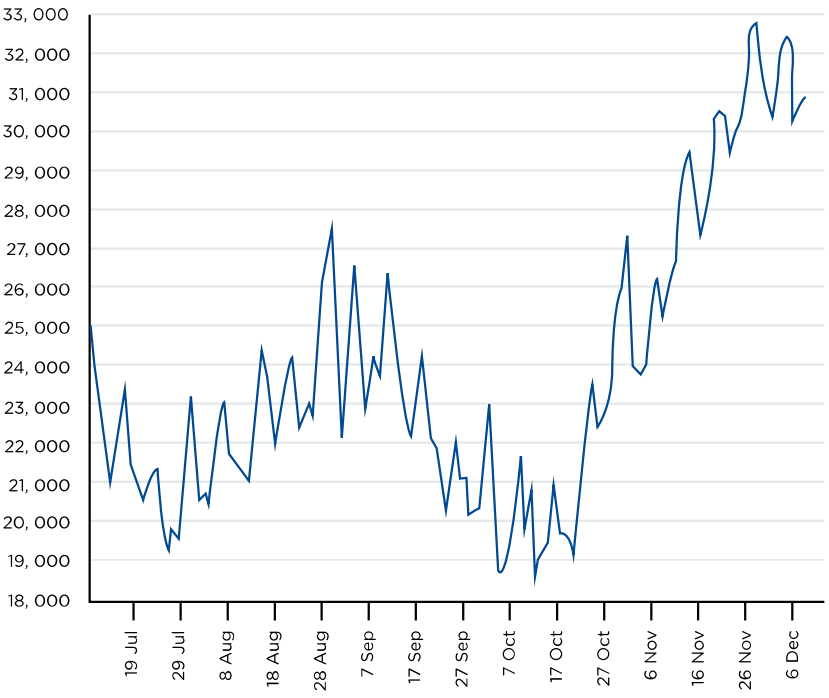

Fig. 1 Red Cell Stock Level - England

The NHS has also been under huge financial pressures over recent years. Blood component wastage is an important financial issue for all hospitals. To aid cost savings in this large NHS Trust housing high user specialties, we looked at the causes and extent of blood wastage within the laboratory to implement interventions to minimize wastage without compromising patient care.

A stock review meeting between the hospital transfusion team (HTT) at St Marys Hospital and a BSMS data analyst resulted in optimisation of blood stock ordering.

Prior to the meeting reports were produced from VANESA data for red cell stocks of A D Positive and O D Negative units (Fig.2). These reports included data related to the hospitals minimum, maximum, and average stock levels (calculated using data exported from VANESA into Microsoft Excel) over the previous two years. An explanation of the hospitals Nominal Stock data and Issuable Stock Index (ISI) in comparison to similar hospitals was also discussed.

The reports showed that although overall stock holding had reduced in total figures, there was an increase in the number of days' worth of stock (ISI) being held from 6.37 in 2015-16 to 6.38 in 2016-17 to 6.64 in the period April 2017 to September in 2017.

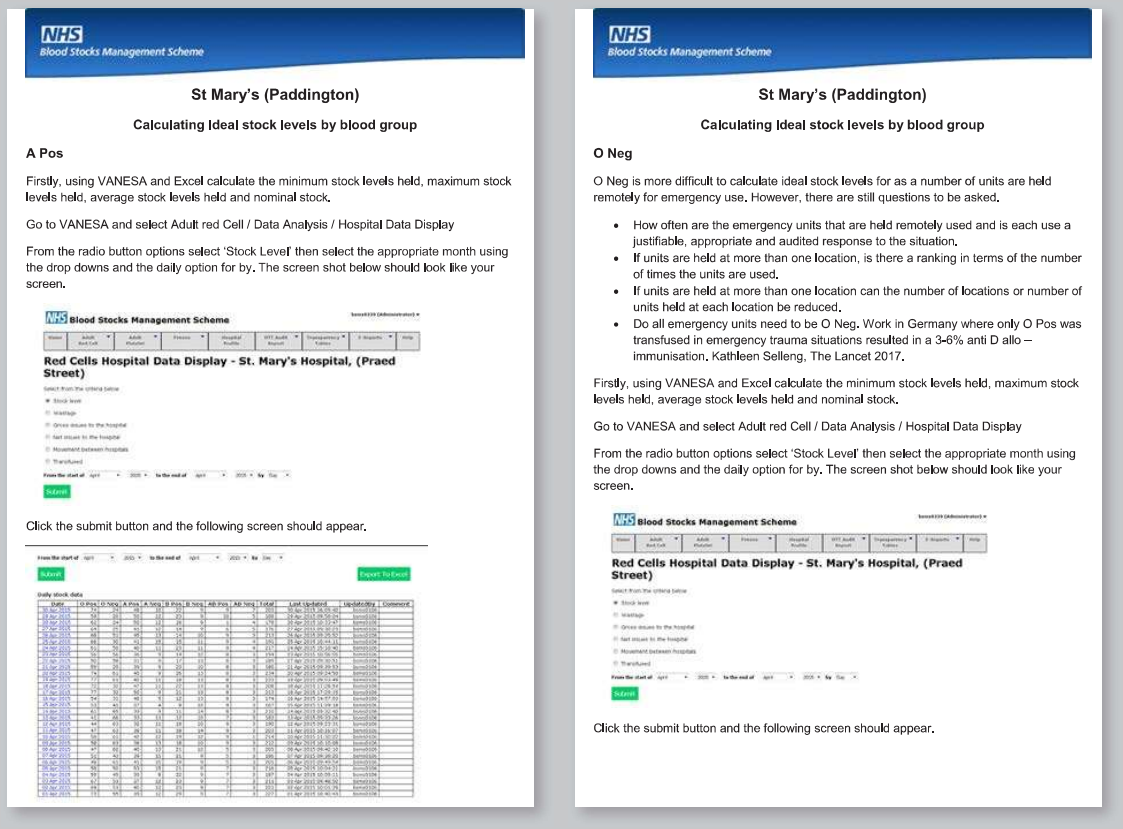

Fig. 2 Example of VANESA data for red cell stocks

Previous work undertaken by the BSMS has shown a direct link between red cell time expiry wastage and amount of stock held and the age of that stock and so these reports also contained wastage data for the same time period (Fig.3)

Following this meeting the hospital dramatically changed their RBC stock levels for all groups of RBCs (Fig. 4a and 4b).

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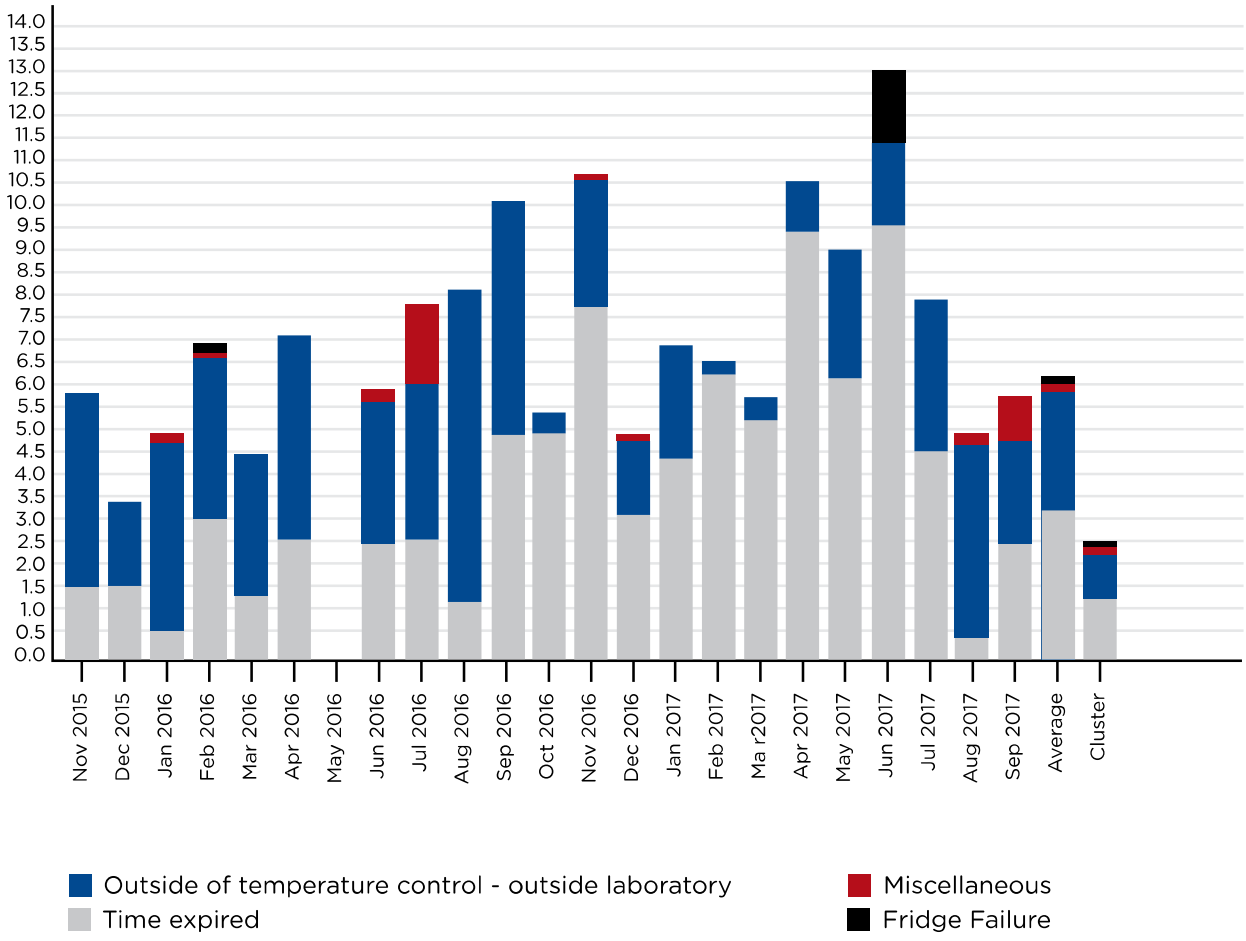

Figure 3 - **Fig. 3 St Marys Hospital (London) RBC wastage – Nov 2015-Sept 2017.** This chart shows RBC wastage for the period November 2015-Sept 2017. It highlights the significant amount of RBC wastage at St Marys hospital with a high proportion due to Time Expiry (green bars).

Location	O+	O-	A+	A-	B+	B-	AB+	Ab-	Paed Split O-
BT Stock Fridge	50	25	40	10	15	4	7	2	4
AE Fridge	6	6							
Clarence Labour Ward									2
Theatres Fridge									
Trauma Fridge									
Lindo Labour Fridge									
BT Issue Fridge									
Total Stock by ABO	56	31	40	10	15	4	7	2	6
Total Site Stock	165								

Fig. 4a and 4b St Marys Hospital Stock levels – pre (Fig.4a above) and post (Fig.4b below) BSMS review

Location	O+	O-	A+	A-	B+	B-	AB+	Ab-	Paed Split O-
BT Stock Fridge	28	14	20	4	8	4			10
AE Fridge	8	4							
Clarence Labour Ward		2							2
Theatres Fridge									
Trauma Fridge									
Lindo Labour Fridge									
BT Issue Fridge									
Total Stock by ABO	36	20	20	4	8	4			12
Total Site Stock	104								

Figure 4a shows the historic red cell stock levels held at St Marys Hospital prior to the review and Figure 4b shows the amended stock levels put into place following the BSMS review.

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Results

Comparing data after 10 weeks from implementing the change in stock levels with data for the same months from the previous 2 years showed a total fall of RBC stock of 42.25%. This equates to a reduction of 68 units in average daily stock holding, which is a £8500 one-off saving. Revising daily stock ordering based on information from VANESA on the previous 2 years' data resulted in a reduction of TIMEX (Fig 5.) units from an average of 43 units to 10 units monthly which is a potential on-going saving which equates to an excess of £4000 per month.

Effective blood stock management within the laboratory at St Marys Hospital has resulted in a reduction of time expired units and a cost saving of over £60K.

Conclusion – how can VANESA help your laboratory?

There is a plethora of data held within VANESA that can assist laboratories to review their own laboratories stock holding and amend this based on usage. This can help to reduce wastage and inappropriate use and therefore create cost savings that can benefit not only the blood transfusion laboratory but also the wider NHS.

Further information is available at **www.bloodstocks.co.uk**

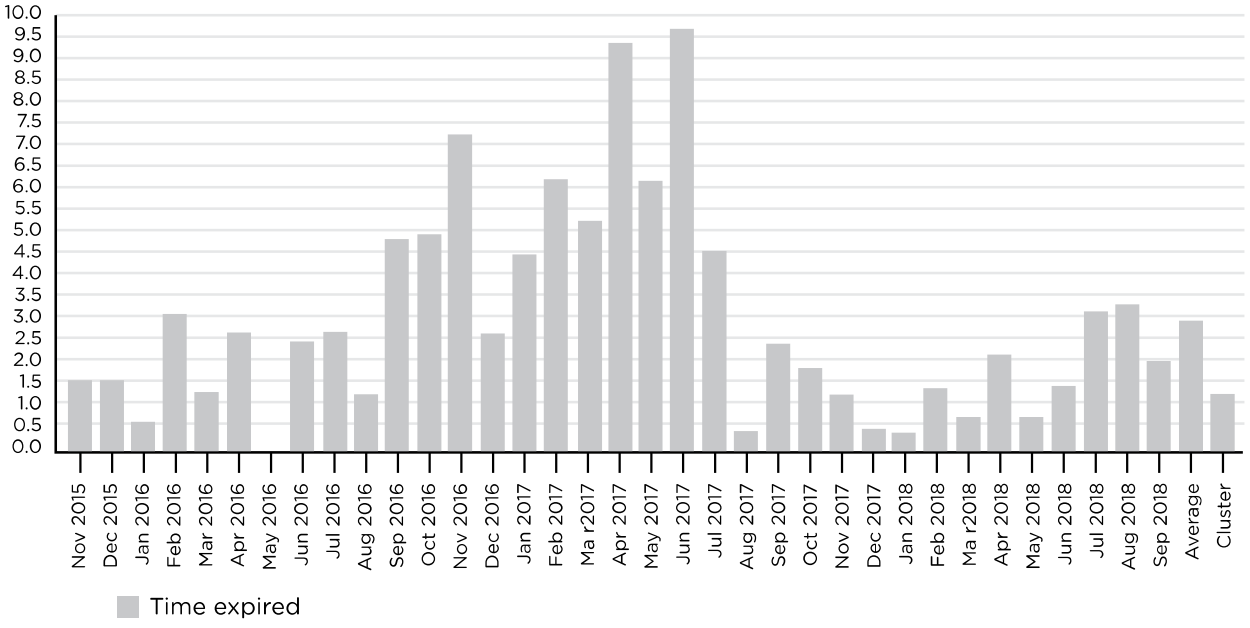

Fig 5. Reduction in TIMEX wastage of RBCs following BSMS data review using VANESA