



# Blood Stocks Management Scheme Annual Report – 2010/11 Summary Report

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The Blood Stocks Management Scheme was established in April 2001 with the aim of increasing understanding of the blood supply chain from blood service to hospital. Data from blood services and hospitals are entered into a database either automatically or by manual entry via the BSMS website. The data stored include issues, inventory, wastage and shelf life of red cells and platelets. Web deployment gives flexibility in terms of multiuser access for the input and extraction of data and information. Reports are generated automatically from the data in real time allowing the use of information on a day to day basis by participants.

Blood Services and hospitals from the UK and the Republic of Ireland participate in the BSMS providing a knowledge bank of information related to blood supply management. The BSMS has helped drive improvements in stock management through a number of initiatives including inventory practice surveys and reports, publications, meetings and training events.

The Blood Stocks Management Scheme has been producing annual reports since 2001/02 and this year's report demonstrates further progress in understanding and management of the blood supply chain.

## Participation in BSMS

Regular input of data to the BSMS by participants enables detailed analysis of the supply chain. Activity of participants is monitored bi-monthly with email reminders warning participants of missing data. Missing data can be entered retrospectively.

During 2009/10 the Irish Blood Transfusion Service (IBTS) and the IBTS served hospitals joined the BSMS. Given that a number of IBTS hospitals are still to join the BSMS this report will not reflect a complete dataset from IBTS.

The Scottish National Blood Transfusion Service (SNBTS) began submitting data to the BSMS from 5 SNBTS served hospital centres during 2010/11. Given that a number of SNBTS hospitals are still to join the BSMS this report will not reflect a complete dataset from SNBTS.

Hospital activity by blood service is shown in Table 1 and compares activity in March 2010 with March 2011.

<b>Table 1 Hospital Activity by supplying Blood Service</b>					
<b>Blood Service</b>	<b>Activity Status</b>	<b>Hospital count 2010</b>	<b>% 2010</b>	<b>Hospital count 2011</b>	<b>% 2011</b>
NHSBT	Regular	205	77%	207	80%
NHSBT	Partial	46	18%	45	17%
NHSBT	None	14	5%	6	2%
NIBTS	Regular	9	90%	6	60%
NIBTS	Partial	1	10%	4	40%
WBS	Regular	10	63%	8	50%
WBS	Partial	5	31%	7	44%
WBS	None	1	6%	1	6%
Irish BTS	Regular	-	-	8	21%
Irish BTS	Partial	-	-	17	44%
Irish BTS	None	-	-	14	36%
SNBTS	Regular	-	-	2	33%
SNBTS	Partial	-	-	3	50%
SNBTS	None	-	-	1	17%

BSMS activity is defined as regular if there are 16 or more entries per month of red cell stock, with at least 1 red cell wastage and 1 platelet wastage entry per month.

Partial activity is defined as less than 16 red cell stock entries per month or no data entry for red cell or platelet wastage.

No activity (none) means that no data has been entered during the month.

### 6.1 Red Cell Issues

- 1,838,500 adult red cells were issued by NHS Blood and Transplant (NHSBT), a decrease of 1.37% when compared to 2009/10 (cf. 1,864,000).
- 53,450 adult red cells were issued by Northern Ireland BTS, a decrease of 0.2% when compared to 2009/10 (cf. 53,557).
- 83,824 adult red cells were issued by the Welsh Blood Service, a decrease of 3.3% when compared to 2009/10 (cf. 86,654).
- 200,131 adult red cells were issued by SNBTS.
- 138,794 adult red cells were issued by Irish BTS.

### 6.2 Red Cell Wastage

- Total NHSBT wastage was 15,931 units. Wastage as a percentage of issues was 0.9% in 2010/11.
- Total NIBTS wastage was 3,153 units, a decrease of 16.7% when compared to 2009/10. Wastage as a percentage of issues was 5.8% in 2010/11.
- Total WBS wastage was 266 units, a decrease of 61% when compared to 2009/10. Wastage as a percentage of issues was 0.3% in 2010/11.
- Total IBTS wastage was 1,600 units. Wastage as a percentage of issues was 1.2% in 2010/11.
  
- Average wastage per NHSBT BSMS participant was 172 units, a decrease of 11 units per participant when compared to 2009/10.
- Total wastage for NHSBT BSMS participants as a percentage of issues was 2.4%.
- Average wastage per NIBTS BSMS participant was 256 units, an increase of 44 units per participant when compared to 2009/10.
- Total wastage for NIBTS BSMS participants as a percentage of issues was 4.8%.
- Average wastage per WBS BSMS participant was 107 units, a decrease of 27 units per participant when compared to 2009/10.
- Total wastage per WBS BSMS participant as a percentage of issues was 1.9%.
- Average wastage per SNBTS BSMS participant was 176 units (based on 5 hospitals).
- Average wastage per IBTS BSMS participant was 71 units (based on 25 hospitals).

### 6.3 Platelet Issues

- 242,400 adult platelet units were issued by NHSBT, an increase of 2.7% when compared to 2009/10 (cf. 236,000).
- 7,366 adult platelet units were issued by NIBTS, an increase of 12% when compared to 2009/10 (cf. 6,574).
- 26,467 adult platelet units were issued by SNBTS.
- 24,137 adult platelet units were issued by IBTS.
- Platelet data is not available from the WBS.

### 6.4 Platelet wastage

- 17,378 platelet units were wasted by NHSBT. Wastage as percentage of issues was 7.2% in 2010/11.
- 1,040 platelet units were wasted by the NIBTS, a decrease of 429 units (71%) from 2009/10. Wastage as a percentage of issues was 14.1% in 2010/11.
- 3,426 platelet units were wasted by the IBTS. Wastage as a percentage of issues was 14.2% in 2010/11.
  
- Average wastage per NHSBT BSMS participant was 54 units, a decrease of 2 units per participant when compared to 2009/10.
- Total wastage for NHSBT BSMS participants as a percentage of issues was 4.8%.
- Average wastage per NIBTS BSMS participant was 54 units, an increase of 8 units per participant when compared to 2009/10.
- Total wastage for NIBTS BSMS participants as a percentage of issues was 7.3%.
- Average wastage per SNBTS BSMS participant was 171 units.
- Average wastage per IBTS BSMS participant was 24 units.

### 6.5 O Negative Red Cells

- NHSBT O Neg issues as a percentage of total issues were 10.3%, 0.1 percentage points lower than in 2009/10 (10.4%).
- NIBTS O Neg issues as a percentage of total issues were 13.5%, 0.1 percentage points higher than in 2009/10 (13.4%).
- WBS O Neg issues as a percentage of total issues was 8.7%, 0.1 percentage points lower than in 2009/10 (8.8%).
- IBTS O Neg issues as a percentage of total issues was 15.8%.

### Red Cell Supply Chain

2010/11 is the first year for submission of BSMS data from the Republic of Ireland and Scotland. Currently not all hospitals are submitting data and hence the key findings will not reflect data from Republic of Ireland and Scotland.

Red cell issues to hospitals during 2010/11 have decreased slightly when compared to 2009/10. This trend is consistent across England, Wales and Northern Ireland. Red cell issues to hospitals appear to be in a period of stability showing small rises or falls in the last few years.

There are many factors affecting the amount of red cell stock held by the blood services. Comparing the number of days of stock held (Issuable Stock Index) in the blood services in 2010/11 with 2009/10 it is apparent that the high stock levels seen during 2009/10 when planning for the flu pandemic, have reduced during 2010/11 (Table 2). However adverse weather conditions were experienced across the UK during the winter period. This had an impact on red cell stocks, with stocks in all countries falling but recovering quickly due to the efforts of donors and staff.

Table 2 Average monthly Issuable Stock Index (ISI) for the Blood Services.

Blood Service	September 2010	November 2010	January 2011	March 2011
NHSBT	10.1	9.3	8.1	10.3
Northern Ireland	12.7	10.7	8.3	14.7
Wales	10.2	7.8	7.0	10.7
Blood Service	September 2009	November 2009	January 2010	March 2010
NHSBT	11.6	10.0	7.7	9.6
Northern Ireland	12.4	12.6	7.5	16.7
Wales	9.7	9.8	6.8	12.1

The BSMS continues to report the relationship between blood service red cell stock levels, days to expiry of red cell stock at issue to hospitals and the losses due to time expiry in hospitals. The levels of red cell stock held by blood services in 2010/11 have reduced when compared to 2009/10 leading to a decrease in time expiry losses in hospitals served by NHSBT and WBS. Hospitals served by NIBTS show a small increase in time expiry losses during 2010/11 when compared to 2009/10 (Table 4). The median days to expiry of red cells in the three blood services have remained relatively stable over the last two years (Table 3).

Table 3 Median days to expiry for 2009/10 and 2010/11 for the Blood Services.

Blood Service	2009/10	2010/11
NHSBT	20	20
Northern Ireland	21	20
Wales	23	24

Table 4 Time expiry wastage (as a percentage of issues) in hospitals

Hospitals served by	2008/09	2009/10	2010/11
NHSBT	1.5%	1.7%	1.6%
Northern Ireland	2.7%	3.1%	3.6%
Wales	1.2%	1.8%	1.6%

In 2009/10 the BSMS reported the rise in 'Out of temperature control outside the laboratory' (OTCOL) red cell losses in NHSBT served hospitals, contributing 23% of the total hospital wastage. Anecdotal evidence supported the introduction of information systems that monitor removal of red cells from the hospital issue fridge as the cause of the increase in OTCOL wastage. Losses of red cells due to OTCOL appear to have stabilised in 2010/11.

The National Comparative Audit looking at the use of O Negative red cells was reported during 2010/11. Provision of O Negative red cells can be a challenge for blood services especially at times of short supply or increased demand. In times of 'normal' demand blood service inventory will meet hospital demand. Table 5 shows the percentage of O Negative red cells wasted in hospitals. There have been slight falls in losses of O Negative red cells when compared with 2009/10 .

Table 5 % of O Negative red cells wasted in hospitals

Hospitals served by	2009/10	2010/11
NHSBT	4.4%	4.3%
Northern Ireland	5.8%	5.6%
Wales	2.8%	2.5%

### **Platelet Supply Chain**

Platelet issues to hospitals during 2010/11 show large increases when compared to 2009/10. This trend is consistent across England and Northern Ireland. Wales do not submit data to BSMS on platelets. These large increases in platelet use are a challenge to blood services in matching supply with increased demand.

The recently reported National Comparative Audit of Platelet Transfusions 2010 found that there was inappropriate use of platelet transfusions and made recommendations regarding the use of prophylactic platelet transfusions. The audit report can be viewed at [hospital.blood.co.uk/safe\\_use/clinical\\_audit/National\\_Comparative/NationalComparativeAuditReports/index.asp](http://hospital.blood.co.uk/safe_use/clinical_audit/National_Comparative/NationalComparativeAuditReports/index.asp)

In 2010/11 platelet wastage reduced in NHSBT hospitals but rose slightly in Northern Ireland hospitals. The highest proportion of these losses was due to platelets being ordered for medical patients and subsequently not used. The majority of hospitals order platelets on a per patient basis and do not hold platelet stocks. The BSMS have produced an algorithm to assist hospitals in making a decision on whether or not to hold stocks of platelets. The algorithm is available from the website [www.bloodstocks.co.uk](http://www.bloodstocks.co.uk)