

Inventory Practice Survey 2006 Report

“Stock Control & Training”

1 Headline Summary Top Ten

1. 30% of hospitals have a 24 hour reservation period.
2. Half of all hospitals have a person responsible for blood ordering, 22% of which are a BMS3/4.
3. Almost all hospitals have a SOP for blood ordering, which also includes ad-hoc ordering.
4. One in three hospitals *regularly* crossmatch more than 24 hours in advance. Only one in five never crossmatch in advance.
5. Most hospitals that regularly crossmatch more than 24 hours in advance do so for less than 30% of their workload.
6. Nearly half of all hospitals have a stock share relationship with another hospital.
7. 12% of respondents are planning to enter a stock share relationship in the next year.
8. 88% of hospitals have a blood transfusion session in their medical induction programme.
9. Two-thirds of hospitals include ‘appropriate use of blood’ on their medical induction programme.
10. Nearly half of all hospitals use both post-operative and intra-operative cell salvage.

2 Background

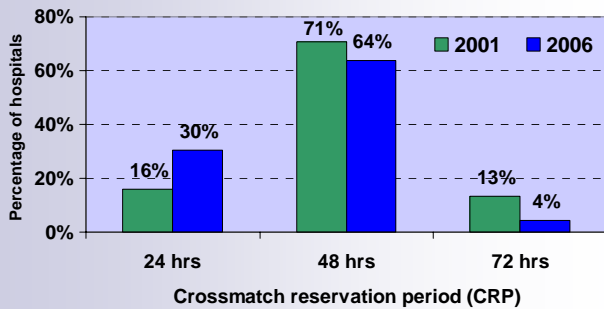
The BSMS Inventory Practice Survey 2006 was constructed to revisit some of the areas of blood supply management that have been surveyed over the last 5 years. The aim was to identify changes that have occurred to both practice and opinion. The survey included questions on stock control, blood ordering, stock sharing, training, and blood conservation. 263 questionnaires were returned this year, which is 86% of BSMS registered hospitals.

Year	Survey Title	Returned	Registered	Percentage
2001	Red cell ordering	76	120	63%
2002	Use of the BSMS	116	175	66%
2003	Working Practices	226	254	89%
2004	Blood Storage– Fridges & Alarms	234	289	81%
2006	Stock Control & Training	263	307	86%

All previous IPS reports are available on www.bloodstocks.co.uk/reports/inventorypracticesurveys/

The format of this year’s report is a change from previous publications. We have tried to make it more readable and interesting to everybody and we would like to welcome your feedback on the new format.

3 How long are units allocated for?



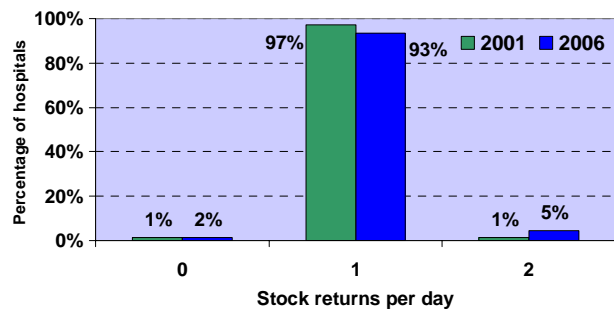
The length of the crossmatch reservation period has a direct impact on the amount of time expiry wastage. The shorter the period, the less time expiry wastage.

In 2006, a third of hospitals had a 24-hour crossmatch reservation period (CRP) and two out of three hospitals had a 48-hour. Only a few hospitals had a 72-hour CRP.

Encouragingly, there has been a noticeable shift in CRP towards 24-hours since 2001. During this time, the number of hospitals with a 24 hour CRP has almost doubled. In contrast there has been a three-fold decrease in hospitals with a 72 hour CRP.

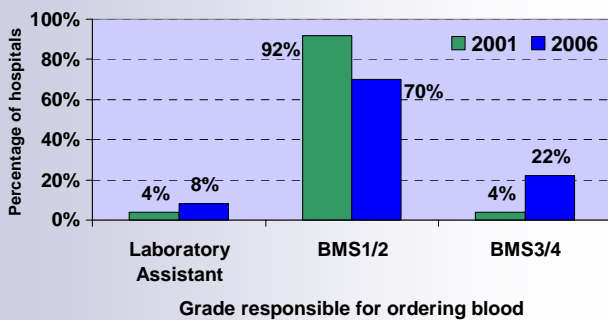
Along with the crossmatch reservation period, the number of times units are de-reserved each day (stock returns) is important in managing time expiry wastage.

Nearly all hospitals return units to stock once a day. This has remained fairly consistent since 2001 although a few more hospitals are de-reserving twice a day.



The majority of hospitals allocate units for 48-hours and return unused units to stock once a day.

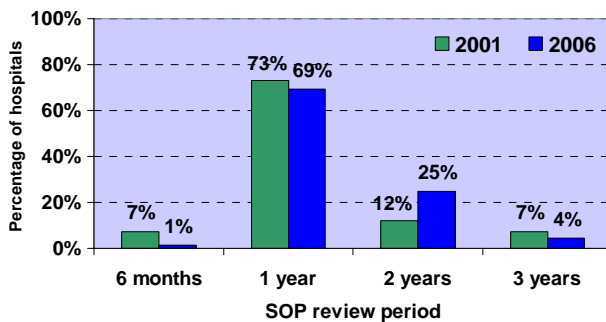
4 How do you order blood?



When a specific person is responsible for ordering blood, that person is able to keep a tight control over the amount of blood in stock, thus reducing the potential for time expiry wastage.

In 2006, half the hospitals had a specific person responsible, which represents a decrease of 10% on 2001.

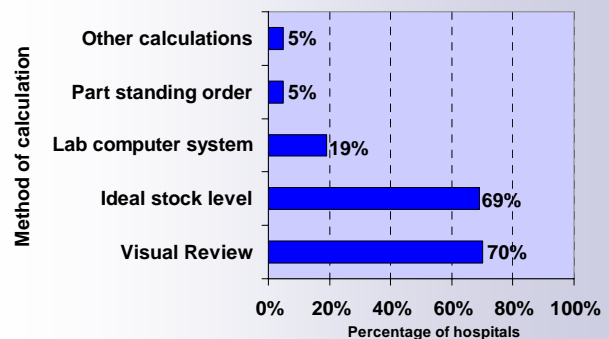
When a hospital does have a person responsible, it tends to be a BMS1/2 although the number of BMS3/4 staff responsible has risen steeply since 2001 from 4% to 22%. Similarly there has been a move towards a BMS3/4 providing training in red cell ordering; in 2006, 44% of training was given by a BMS3/4.



Most hospitals, over 87%, have a Standard Operating Procedure (SOP) to order blood. Encouragingly, this represents a 14% increase since 2001. In almost all cases (92%), the SOP also covers ordering of *ad-hoc* units. Having a SOP for blood ordering ensures a “uniformity of function to achieve maximum ... efficiency of blood transfusion” (DH guidelines). To ensure that standard

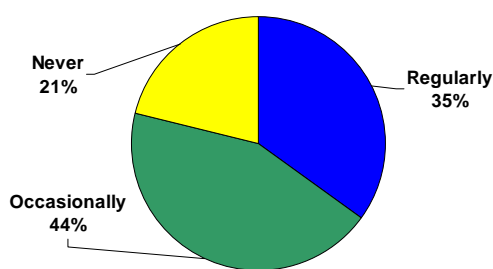
procedures keep pace with the changing environment, the SOPs need to be reviewed regularly. In 2006, more than two-thirds of hospitals reviewed their SOP every year, which is a similar proportion to 2001. The proportion of hospitals reviewing every 2 years, however, doubled to 25%.

In calculating the amount of blood to request for the main daily order, over two-thirds of hospitals employ ideal stock levels and a visual review of existing stock. One in five hospitals rely on their laboratory information management system (LIMS) to calculate the order.; the same proportion was reported in 2001 and 2006.



There has been a shift towards BMS3/4 staff being responsible for ordering blood.

5 Do you crossmatch in advance?

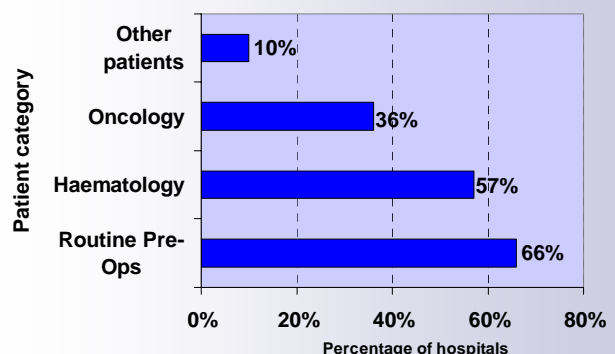


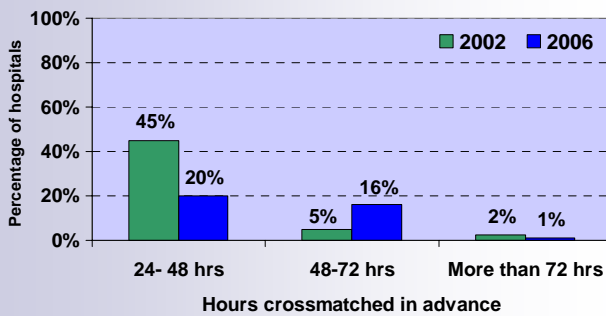
Do you crossmatch more than 24-hours in advance?

practice, the main ones being to spread out the workload and because the crossmatched unit is for a known patient with a planned transfusion.

Of those hospitals crossmatching in advance, around two-thirds do so for routine pre-ops. Just over half crossmatch in advance for haematology patients and a third for oncology patients.

The length of time that a unit is ‘locked’ in a crossmatch cycle is dictated by both the crossmatch reservation period and how long a unit is crossmatched in advance. If units tend to be locked for a long time, this increases the possibility for time expiry. From previous surveys, we know that some hospitals crossmatch more than 24-hours in advance. There are many reasons for this



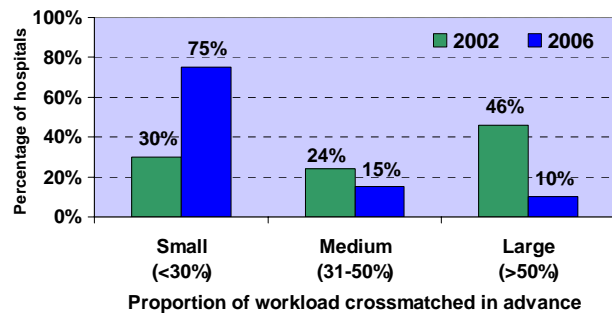


In 2006, a third of hospitals regularly (more than once per week) crossmatched more than 24-hours in advance. In contrast, one in five hospitals never crossmatch in advance.

Although there has been a 11% decrease in hospitals regularly crossmatching in advance since 2002, the number crossmatching 2-3 days in advance has more than tripled to

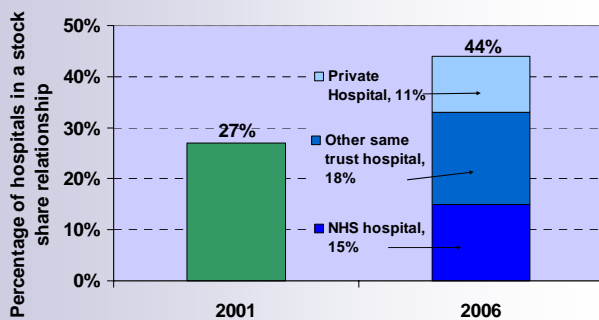
nearly 1 in 7. The number crossmatching 1-2 days in advance has correspondingly decreased. There are still a few hospitals that regularly crossmatch more than 3 days in advance. If this is associated with a 72-hour reservation period, the total crossmatch cycle will be more than 6 days long.

Encouragingly, although the number of hospitals crossmatching more than 2 days in advance has increased since 2002, three-quarters of these hospitals only crossmatch a small proportion (<30%) of their workload in advance. This is in contrast to 2002 when nearly half of hospitals crossmatching in advance did so for a large (>50%) proportion of their workload.



Most hospitals crossmatch more than 24 hours in advance for routine operations

6 Do you share stock with other hospitals?



Sharing stock allows smaller hospitals to manage their older stock more efficiently. If the smaller hospital has older units that it is unlikely to use they may be able to move them to their partner hospital. This helps the smaller hospital reduce wastage due to time expiry. In a similar way, stock share relationships may also help larger hospitals manage their rare unit stock more efficiently.

In 2001, just over a quarter of hospitals were in a stock share relationship; by 2006 this had risen to nearly half of all hospitals. Of the relationships existing in 2006, most involved two hospitals in the same trust (18% of all hospitals). 34 relationships involved private hospitals, which suggests that approximately one third of private hospitals that use blood are in a stock share relationship.

Of those hospitals that weren't in a stock share relationship, only 12% indicated that they had plans to enter a relationship in the future. In total, about 1 in 10 of all hospitals are intending to enter a new stock share relationship in the future.

Reason not to share stock	Count	Percent
No need to share stock	99	65%
Close to a Blood Centre	49	32%
Doubts over cold chain	48	31%
No suitable financial agreement	29	19%
No hospital close by	27	18%
Hospitals not sharing stock	153	100%

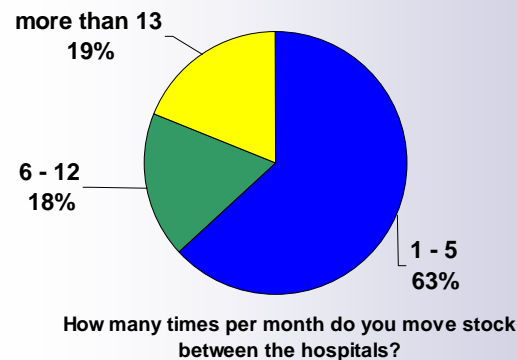
There are a variety of different reasons that hospitals gave, for not wanting to participate in a stock share relationship. Some of these can be categorised as ‘no need’ reasons and the others as ‘unable to’. The most common reason (65%) for not sharing stock was that the hospital felt it was not necessary.

However, this does indicate that about a third of hospitals can see the benefits of a stock

share but are ‘unable to’ for various reasons. The main ‘unable to’ reason was that the hospital would be unsure of the partner hospital’s cold chain. The main ‘no need’ reason was that the hospital is already close to a blood centre.

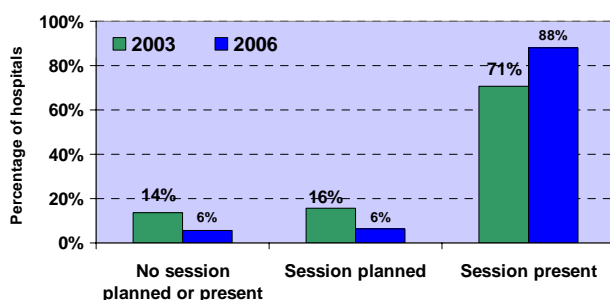
The majority of hospitals (63%) participating in a stock share relationship tend to move blood between the partners one to five times per month; approximately once each week.

However, about 1 in 5 hospitals in a relationship, which equates to approximately 10% of all hospitals, share stock more than 13 times per month, which is about 4 times per week. These ‘high frequency’ relationships tend to involve either a private hospitals or a hospital in the same trust.



About a half of all hospitals are in a stock share relationship which involves moving blood around once a week.

7 Do you have clinical transfusion training?



To ensure effective management of a hospital’s blood supply and the appropriate use of blood and blood products, it is important that transfusion is part of the medical induction programme. This gives an opportunity for clinicians to gain an understanding of policies and procedures.

In 2006 the vast majority of hospitals, 88%, had a transfusion session in their medical induction programme. Encouragingly, this is a 17 percentage point rise on 2003. Furthermore, the proportion of hospitals who have neither a session or have one planned has fallen to just 6%.

As important as having a session included is the content of that session. In general this should include details of both local policies governing ordering and administration, and current national guidelines around the use of blood and blood components.

Topics included in session	2003	2006
Sample labelling requirements	66%	87%
Positive patient identification at phlebotomy	62%	86%
Positive patient identification at transfusion	N/A	80%
Transfusion documentation.	48%	76%
Prescribing, storage & administration of Blood components	37%	72%
Prescribing, storage & administration of red cells	33%	71%
Appropriate use of blood and components	19%	67%
Cut-off times for ordering of blood and components	28%	44%
Alternatives to transfusion	56%	39%
Appropriate use of cell salvage	N/A	33%

The most common topic included in the session in 2006 was the ‘requirements for sample labelling’, as was the case in 2003. ‘Positive patient identification’ for both phlebotomy and transfusion were also common, appearing in over 80% of sessions. Encouragingly, when compared to 2003, the proportion of sessions involving ‘prescribing, storage and administration’ has doubled to about three-quarters. Similarly, ‘appropriate use of blood’ has tripled since 2003, although it is still not included in a third of sessions.

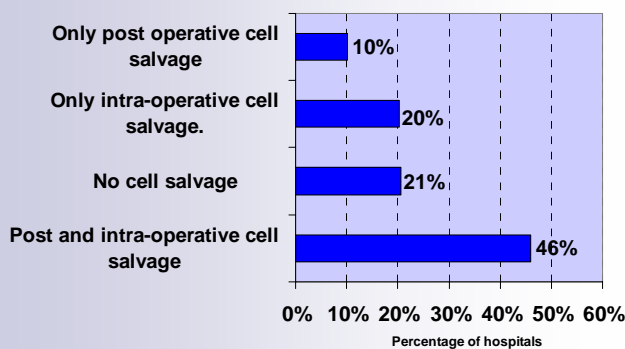
‘Cut-off times for ordering’ are only included in about half of all sessions. It is worth noting that adherence to ordering cut-off times can greatly facilitate the management of blood ordering and therefore blood stocks.

Unfortunately, the two least common topics included in sessions were related to appropriate use. ‘Alternatives to transfusion’ has actually decreased in prevalence from 56% in 2003 to 39% in 2006, the only topic to do so. Cell salvage, which was only surveyed in 2006, is not included in two-third of sessions.

In the transfusion laboratory, 84% of hospitals reported that the majority of their lab staff have received specific operational training in blood stock management. This is a rise of about 10 percentage points on 2001.

Nearly every hospital has a transfusion session in the medical induction programme

8 Who’s doing cell salvage?



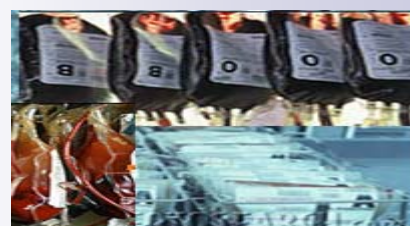
When successfully implemented, cell salvage is a cost-effective alternative to transfusion. This is of benefit to patients who are unsure about allogeneic transfusion and to hospitals seeking to reduce their red cell usage.

Eight out of ten hospitals employ either post-operative or intra-operative cell salvage or both; in fact nearly half of all hospitals use both. The majority of hospitals support cell

salvage during routine and out-of-hours. Specifically, intra-operative cell salvage was supported out-of hours in 62% of hospitals using and slightly more (77%) supported post-operative cell salvage.

9 How have things changed?

- ◆ Hospitals tend to have shorter reservation periods since 2001, with a fall in 48-hour and 72-hour periods and an increase in 24-hour periods.
- ◆ A smaller percentage of hospitals have a specific person responsible for assessing blood orders; a 10 percentage point fall since 2001.
- ◆ More BMS3/4 staff are now assessing red cell routine orders; a five-fold increase since 2001.
- ◆ More BMS3/4 staff are involved in training for red cell blood ordering; a 10 percentage point increase since 2001.
- ◆ Almost all hospitals tend to have a documented SOP for placing blood orders; a 14 percentage point increase since 2001.
- ◆ The majority of hospitals still review SOPs every year, however, a two-fold increase was observed in two year review periods since 2001.
- ◆ The percentage of hospitals that perform crossmatches more than 24 hours in advance has fallen by 15 percentage points since 2002.
- ◆ The overall proportion of a hospital's workload performed more than 24 hours in advance has also decreased since 2002. Most hospitals now crossmatch less than 30% of their total workload in advance.
- ◆ The number of hospitals with stock share relationships has risen by 17 percentage points since 2001.
- ◆ More hospitals are interested in sharing stock in the future with 12% planning to enter stock share relationships in the next year, compared to 5% in 2003.



- ◆ Nearly all hospitals reported that the majority of lab staff had received operational training in blood stock management, a 10 percentage point increase since 2001.
- ◆ Most hospitals have a blood transfusion session in their medical induction programme, a 17 percentage point increase since 2003.
- ◆ More hospitals have 'appropriate blood and blood component' sessions in their medical induction programme, a three-fold increase since 2003. However, only one in three hospitals have topics on 'alternatives to transfusion', a 17 percentage point decrease since 2003.

10 Further Reading

Blood Transfusion Guidelines - www.transfusionguidelines.org.uk

Better Blood Transfusion Tool Kit - www.transfusionguidelines.org/index.asp?Publication=BBT

Guidelines for the Blood Transfusion Services in the United Kingdom (Red Book), Published by TSO

A Manual for Blood Conservation, Edited by Dafydd Thomas, John Thompson and Biddy Ridler, 2005 edition, tfm Publishing Ltd.

Handbook of Transfusion Medicine, Edited by DBL McClelland, 4th Edition. Published by TSO

11 Manager's Summary

Over the years, myself and the BSMS team have promoted a number of key ingredients for improved stock management; particularly these have included:

- ◆ a 24-hour reservation period
- ◆ the presence of a SOP for blood ordering
- ◆ stock sharing
- ◆ a specific person responsible for ordering

This survey has shown an improvement in the first three ingredients, which demonstrates some success in our promotional activities. It is however disappointing that fewer hospitals now have a specific person responsible for blood ordering.

There is significant evidence to show that a 24-hour reservation period allows for a lower inventory and that concerns over cold chain validation can be addressed through compliance with the UK Blood Safety and Quality Regulations.

It is also interesting to note that appropriate use initiatives such as 'alternatives to transfusion' are not always included in medical induction training programmes and in particular, that cell salvage is only included in one third of sessions.

Overall, the Inventory Practice Survey 2006 shows some encouraging changes in relation to blood inventory management and highlights some important opportunities for further improvements in the future. I look forward to leading further improvements in inventory management.

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For more information on blood inventory management, visit our website at www.bloodstocks.co.uk