

# Blood Inventory Management Best Practices

## 2007

An effective hospital blood inventory management system can reduce the inventory that a hospital needs to keep on hand as well as contribute to lower blood outdate rates. Listed below are points gathered from several referenced sources that are considered part of an effective blood inventory system.

Note: Implementation of some of the following may require prior consultation with the transfusion service medical director and/or hospital transfusion committee.

- One** Determine the minimum and desired inventory levels that meet the needs of your patient population.<sup>1</sup>
- Two** Rotate your inventory ensuring the shortest outdate units in front of the refrigerator/freezer.<sup>1</sup>
- Three** Many hospital transfusion service computer systems can generate a daily report of “soon to outdate” blood components. Post this report on the front of the storage refrigerator/freezer to remind staff to utilize these components first.
- Four** Whenever possible, provide ABO-identical red blood cells and plasma products to patients for transfusion. This will conserve group O red blood cells and AB plasma products for emergency situations.
- Five** To minimize RBC outdates, consider transfusing “soon to outdate” (<5 days) Rh Negative RBCs to Rh Positive patients.
- Six** To minimize RBC outdates, smaller hospitals might consider an arrangement to transfer “soon to outdate” RBCs to a larger hospital with a higher demand for RBCs. This may occur between members of the same hospital corporation, or hospitals in close geographic proximity. Packing procedures must ensure the RBCs are maintained at the appropriate conditions during transport.
- Seven** A regular inventory count may assist with prompt resolution of inventory discrepancies.<sup>1</sup> For hospitals with a transfusion service computer system, this may involve comparing the computer inventory count to a manual inventory count.
- Eight** Establish a maximum surgical blood order schedule (MSBOS).<sup>1,2</sup> A MSBOS is based on a hospital's past surgical blood use and serves as a guideline for future surgical blood requests. Endorsement by a hospital's transfusion committee, communication of the MSBOS guidelines to your hospital's physicians and surgeons, and regular review of the MSBOS guidelines are critical to the success of a MSBOS. Crossmatch requests that exceed the MSBOS guidelines may require consultation with the ordering physician.
- Nine** Consider a “Group and Screen” policy for patients where red blood cells are ordered but are unlikely to be required for transfusion.<sup>1,2</sup> This will minimize the red blood cell inventory that is crossmatched/labeled for patients and unavailable for use by other patients.
- Ten** Consider a cancellation policy that returns red blood cells to an “available” inventory as soon as the potential need for a transfusion has passed. For surgical patients, this may be performed 24-48 hours post surgery. A review of the patient's blood usage during surgery, their most recent post-operative hemoglobin result, and presence of red blood cell alloantibodies may assist with the decision.
- Eleven** A review of the pre-admission and next day's surgical schedule, may assist with routine blood orders from Canadian Blood Services. Ordering an inventory of specific ABO/Rh group components (e.g. AB Rh Neg RBCs) in advance may reduce the need for “emergency” component orders.
- Twelve** Monitor crossmatch-to-transfusion (C:T) ratios.<sup>1</sup> A target C:T ratio of less than 2 is considered acceptable. Sorting the C:T ratio by physician or program/service may highlight transfusion practices that do not meet facility/published guidelines for transfusion.
- Thirteen** Consider establishing guidelines and a transfusion service medical director review/approval process for autologous blood donation requests.<sup>2</sup>
- Fourteen** If your hospital routinely transfuses platelets, consider maintaining an inventory of platelets on hand. This may assist with minimizing the need for orders outside of your scheduled deliveries.
- Fifteen** If your hospital is a significant distance (>1-2 hours drive) from the blood supplier, and your hospital's patient population includes patients that require platelets in urgent situations, it may be advisable to keep a dose of platelets on hand. To minimize platelet outdates, consider an arrangement to transfer “soon to outdate” platelets to a hospital that transfuses platelets on a routine basis. Packing procedures must ensure the platelets are maintained at the appropriate conditions during transport.

### References

1. Brecher ME, ed. Technical manual. Chapter 3, 15 ed. Bethesda: American Association of Blood Banks, 2005.
2. Clinical Guide to Transfusion, Canadian Blood Services, 2006.

### Suggested Reading

1. Circular of Information for the Use of Human Blood and Blood Components, Canadian Blood Services, latest edition.
2. Champion M. Delicate balance; hospital blood inventory management. AABB News, March/April 2004, 34-5.
3. Chapman JF, Hyam C, Hick R. Blood inventory management. Vox Sang 2004;87 (Suppl 2):143-5.
4. Callum JL, Pinkerton PH. Bloody Easy 2; Blood Transfusions, Blood Alternatives and Transfusion Reactions, 2<sup>nd</sup> ed. 2005.



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