



Better care
comes with
added benefits

For this New England Trauma Center, BloodTrack[®] software solved blood supply challenges and improved departmental relationships.



We have immediate availability of blood when every second counts.”

ED Trauma Nurse

Introduction

For years, one of the New England area's busiest trauma centers had been dealing with serious issues relating to blood supplies in the emergency department (ED). Some were of the life-threatening variety. Some revolved around inter-departmental disputes. All of them added up to a serious, seemingly intractable problem affecting a fundamental mission: saving lives.

In an environment where seconds count, the hospital, guided by a new Disaster Control Resuscitation (DCR) policy, sought to remedy these challenges by preparing blood supplies in advance of patient arrival. The hospital adopted a practice where each day, a blood bank technologist prepared, labeled and documented four trauma packs (four units of O-negative RBCs) and delivered them to the ED in a validated cooler.

Partial solution

The advance-preparation approach helped, but it only solved part of the problem. To obtain more trauma packs as needed, ED personnel still had to contact the blood bank and dispatch a staff member – often an essential clinical provider – to leave the ED, hustle through the buildings and physically collect the cooler. With the blood bank situated in a building connected to the ED by a sky bridge and two sets of stairs, it can take fourteen minutes or more to make the round trip – even at the most hurried pace.

That wasn't the only shortcoming. As many hospitals have come to realize, changing one practice often begets other complications. Beyond the logistics issues, staffing imbalances and traceability challenges, blood bank personnel often encountered complaints around turnaround times, requiring the devotion of staff time to study and resolve internal issues. These behind-the-scenes, inter-departmental tensions are familiar fixtures of many hospital environments. Differing perspectives on the proper management of supply safety and the urgency surrounding trauma care can breed distrust and animosity between ED and blood bank personnel.

A new solution

Dissatisfied with the interplay between the ED and blood bank, the hospital turned to a new solution: the BloodTrack® Emergency Blood Management System, which combines the BloodTrack Emerge software with a storage device. This new approach resolves a wide array of challenges the hospital faced by moving blood supplies physically closer to the point-of-care and by incorporating seamless, automated documentation and management techniques that save time and staff resources. Among the approaches empowering a new way to manage blood availability are:

- **Physical proximity.** All blood supplies for the ED are now stored in the BloodTrack Emergency Blood Management System located in the trauma bay. The impact is transformative. "We have immediate availability of blood when every second counts," says one ED trauma nurse.
- **Simplified identification.** The blood bank uses color-coded tags to make it easy for ED caregivers to identify O-positive (blue tags) and O-negative (pink tags) units to ensure transfusion guidelines are followed.
- **Supply alignment.** Now, the ED clinical staff obtains blood upon patient arrival. Nurses have praised the newfound ability to access blood when they need it – along with the ability to return it to the refrigerator (within the hospital's validated timeframe) if it goes unused.
- **Automated signaling.** Upon removing emergency blood, ED nurses scan each unit, triggering immediate audio and visual alerts to the blood bank notifying them of an emergency that may require massive transfusions.

For this large regional trauma center, the impact has been profound. "With the BloodTrack Emergency Blood Management System there is no undue burden on staff," commented a senior ED technologist. "They don't need to stop what they're doing to get blood ready for the ED."



This change allows trauma patients to go from getting transfused with massive quantities of RBCs to the trauma standard of a one-to-one ratio of RBCs to plasma, which is an ACS TQIP Guideline and part of our DCR process," the director commented. "This allows the trauma team to hemodynamically stabilize the patient faster."

Transfusion Medical Director

Departmental relationships

Staffers also laud the way the BloodTrack® software conveys data to the blood bank, enabling informed management of inventory levels and restocking needs. “This is a scheduled activity, not a stop-and-drop-everything one. Plus, what used to take up to five-minutes to prepare a cooler, now takes less than sixty-seconds – and happens in the ED without any additional work on our part,” says the technologist [Time referenced is the experience of one user- results may vary for other users]. Data visibility for tracing of blood supplies and proactive response in the event of emergency releases is also greatly improved.

That’s not all. The BloodTrack Emergency Blood Management System also has enabled the blood bank to provide a more balanced inventory. Instead of provisioning a pack of four units of O-negative RBCs, the blood bank now provides for twelve units of O-positive RBCs and eight units of O-negative. That leaves a greater supply of O-negative units for in-patient care. The blood bank also has transitioned from eight units of thawed plasma to five-day plasma, helping to reduce waste and ensure timely availability. According to the transfusion medical director, the transformation is significant. “This change allows trauma patients to go from getting transfused with massive quantities of RBCs to the trauma standard of a one-to-one ratio of RBCs to plasma, which is an ACS TQIP Guideline and part of our DCR process,” the director commented,¹ “This allows the trauma team to hemodynamically stabilize the patient faster.”

A final set of outcomes relates to internal dynamics. Maintaining inventory within the ED exposes blood bank staffers more intimately to an environment where oftentimes patients are fighting to survive. At the same time, ED nurses have expressed gratitude for greater visibility into blood inventory status, the simplified unit coding and associated training they’ve received from blood bank personnel. Together, these changes have helped to heal differences between the two departments. “The BloodTrack Emergency Blood Management System has improved our relationship with the ED,” says the team’s transfusion service manager. Commented another staffer: “This project has allowed us an opportunity to see a different perspective and refocus our energies on better outcomes for our patients.”

The outcomes experienced here aren’t entirely unique. Nor is the logistics situation – a physical separation between blood bank and ED – that preceded them. Many hospitals face similar situations, along with a reticence among dedicated blood bank staffers to embrace the concept of remote inventory storage. But the experience of this large New England facility, and others like it, reinforces the notion that implementation of co-located ED blood supplies and the systems that power them can have dramatic and positive impact on the practice of caring for patients. And saving lives.

Table 1

Time referenced is the experience of one user-results may vary for other users.

| | Pre-BloodTrack | Post-BloodTrack | Improvement |
|--|--|---|----------------|
| # of trips to the ED | Multiple times/day | 1/day and as needed | Daily activity |
| Average transport time | 14 minutes | < 1 minute | 93% |
| Turnaround time (TAT)* | 5 minutes | < 1 minute | 80% |
| Inventory savings and waste reduction | 25 units of O-neg* 8 units thawed plasma* | 8 units O-neg 12 units O-pos Conversion to 5-day plasma | \$20,760/ yr. |

*TAT = Time from the request into the blood bank until the units are issued and packed in a cooler
*Used industry standard costs of \$250/RBC unit and \$79 per unit of FFP



With BloodTrack Emergency Blood Management System there is no undue burden on staff. They don’t need to stop what they’re doing to get blood ready for the ED.”

Senior ED Blood Bank Technologist

1. The American College of Surgeons (ACS) Trauma Quality Improvement Program (TQIP) Guidelines recommends storing universally compatible blood products in the emergency department (ED) or resuscitation bay so that they are immediately available on patient arrival to support ratio-based transfusion.

The customer experience testimonial described here relates an account of a single institution’s experience using BloodTrack Software. The account is genuine and documented. There may be factors other than the use of BloodTrack that could affect the ultimate outcome this institution experienced. However, we do not make any representation that this institution’s experience is typical, and indeed it may not be typical. This institution’s experience does not provide any indication, guide, warranty, or guarantee as to the experience other institutions may have with BloodTrack Software. The experience other institutions or customers may have with the product could be different. Experiences managing blood supplies, with or without BloodTrack Software, can and do vary among institutions.

For a list of worldwide office locations and contact information, visit www.haemonetics.com/officelocations

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