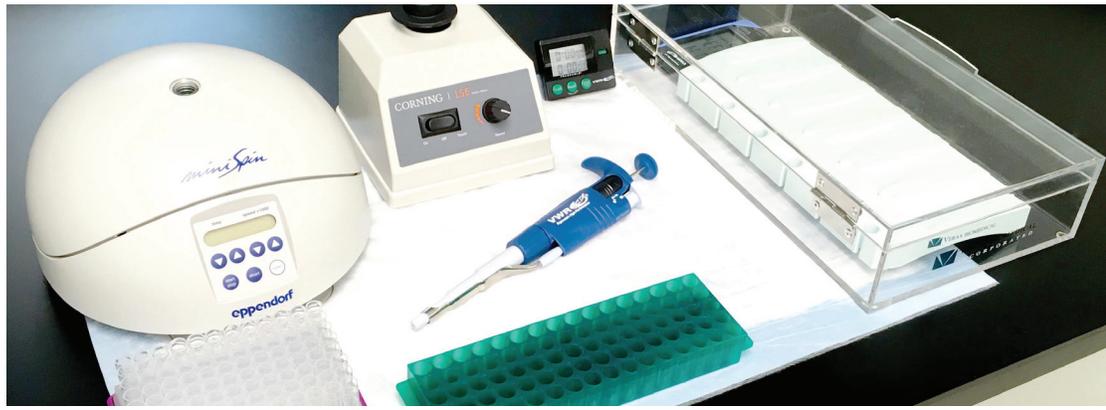
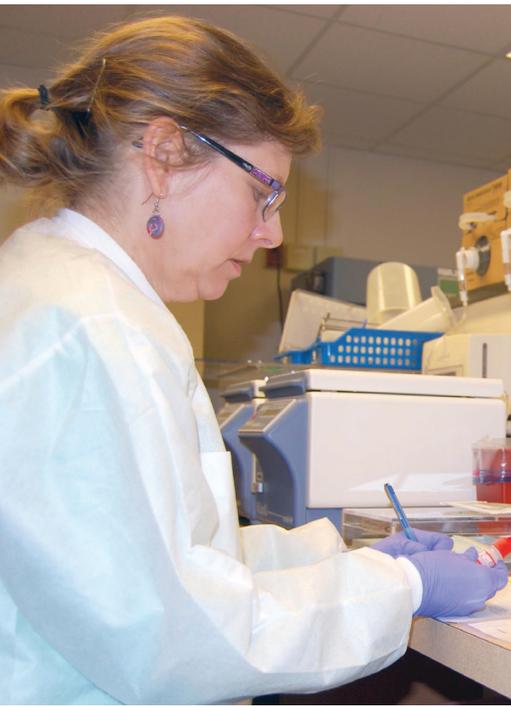


VERAX BIOMEDICAL

Extending the life of platelets and protecting the lives of patients at WellSpan Health



CHALLENGE:

Like many health systems, WellSpan Health experienced frequent fluctuations in demand for platelet transfusions. Sudden increases required emergency shipments, while decreases led to waste. Lab leadership needed an easier way to ensure the availability of safe platelet transfusions at all times.

SOLUTION:

The Pennsylvania-based integrated health system implemented the Platelet PGD test in 2016 at its largest acute care facility, WellSpan York Hospital. The testing enables the hospital to extend platelets to day six or seven by PGD testing for bacterial contamination. In turn, this extended dating allows the hospital to stabilize inventory and generate cost savings by significantly reducing wastage.

Seven-day platelet dating enables WellSpan Health to maximize platelet supply for greater safety and savings



WELLSPAN YORK HOSPITAL: FAST FACTS

- 580-bed community teaching hospital in York, PA
- Part of an integrated health system comprising a multispecialty medical group of 1,200+ physicians and advanced practice clinicians, six hospitals, 140 patient care locations, and 15,000 employees
- Receives more than 95% of its platelet supply through its onsite blood donor center
- Performs approximately 1,200 platelet transfusions per year
- Platelet demand most frequently comes from the hospital's:
 - » Level 1 Regional Resource Trauma Center
 - » Full-service cancer care center
 - » Growing cardiovascular service line
 - » Maternity/birthing center
 - » Neonatal intensive care unit

THE CONFIDENCE TO SAFELY TRANSFUSE PLATELETS AFTER DAY FIVE

Bacterial contamination of platelet products is the greatest infectious risk in transfusion medicine,¹ so the ability to safely transfuse platelet products after day five is the most important benefit for WellSpan Health's transfusion service. The Platelet PGD test provides a reliable, FDA-cleared safety measure* that WellSpan York Hospital uses to test platelets within 24 hours of transfusion, which allows them to extend platelet dating to day six and/or day seven with assurance they are transfusing a safer product.

"We always think about patient safety first," says Charles J. DiComo, PhD, Administrative Director of Lab Integration and Planning at WellSpan Health. He and his colleagues see the increased stability in platelet supply as a primary safety enhancement because it helps ensure patients have access to safe platelet transfusions at all times. "The Platelet PGD test helps protect our patients because it protects our product. We have peace of mind that we are keeping our patients safe."

Michelle Erickson, MD, MBA, agrees. As Medical Director of Laboratory Services and Department Chair of Pathology and Laboratory Services at WellSpan York Hospital, Dr. Erickson says, "We're seeing patients respond very well to these platelets on days six and seven."



Charles J. DiComo, PhD, Administrative Director of Lab Integration and Planning; Michelle Erickson, MD, MBA, Medical Director of Laboratory Services and Department Chair of Pathology and Laboratory Services; Lisa Schaeffer, MT(ASCP), Transfusion Service Manager

CREATING STABLE SUPPLY DESPITE UNSTEADY DEMAND

As a Level 1 Trauma Center with growing cardiovascular, cancer, neonatology and obstetrics service lines, WellSpan York Hospital experiences regular—but often unpredictable—fluctuations in demand for platelet transfusions. When limited to five-day dating, sudden changes in demand could stretch inventory to the point of shortage, while other times excess inventory led to wastage. Transfusion leaders at WellSpan Health say the Platelet PGD test has helped strike a sustainable balance in platelet product supply.

"Before we implemented seven-day platelet dating, we frequently had both surpluses and deficits of platelets over time," says Dr. Erickson. "We wanted a more steady, reliable supply of platelets, and the two-day window of extra time was a huge motivator for us." Seven-day platelet dating at WellSpan Health has led to the following gains in inventory control:

- Reduced or eliminated platelet shortages, resulting in fewer emergency shipments and significantly decreased need to purchase platelets
- Fewer postponements of transfusions
- Less platelet rationing and real-time supply coordination, which eases burdens and stress on blood bank staff

"We no longer have to worry about demand outweighing supply," says Dr. Erickson. "Now, we have enough platelets to safely and quickly treat sudden traumas, vascular events during surgery, postpartum hemorrhages, NICU patients and anyone else who needs it."

In addition, with the ability to keep platelets on the shelf longer, WellSpan York Hospital has "gone from a consumer of community platelets to a supplier," explains Dr. Erickson. "We're in a position now to share platelets with neighboring hospitals who need it."

SIGNIFICANT SAVINGS THROUGH IMPROVED STEWARDSHIP

Extended dating empowers the blood bank at WellSpan York Hospital to serve as a better steward of donated platelets, as demonstrated through significantly reduced wastage. In 2017, 32% of all platelet transfusions performed at WellSpan York Hospital involved platelets older than five days. That's up from 0%—because it all had to be discarded—prior to Verax Platelet PGD testing.

"Throwing away a precious resource like platelets is very hard—no one wants to discard something that was given selflessly by our blood donors. We are very happy we could do something to extend the life of our platelet supply," says Lisa Schaeffer, MT(ASCP), Transfusion Service Manager at WellSpan York Hospital.

Reduced outdates and discards translate to savings that offset testing costs, and then some. In the 16-month period from September 2016 through December 2017, seven-day platelet dating saved WellSpan Health just over \$205,000 through reduced wastage.

"All hospitals are under pressure to find savings wherever they can, and the savings we've seen from extended platelet dating has been fantastic," says Dr. Erickson. "It has allowed us to purchase other equipment—all from the savings we've achieved by using more of our own product supply."

DESIGNED FOR STREAMLINED IMPLEMENTATION AND USE

Like most blood banks, space and time are at a premium at WellSpan York Hospital. Fortunately, according to Schaeffer, the Platelet PGD test is simple to perform, takes very little physical space and requires only about 45 minutes from start to finish per test batch (much of which is unattended labor). There was no need to hire additional personnel to accommodate the new test, and with the comprehensive training support provided by Verax Biomedical during the initial launch, Schaeffer says she has all materials needed to roll the test out to second-shift operations.

In addition to conducting group and one-on-one training with customized materials, Schaeffer says Verax Biomedical provided helpful support throughout the implementation process (which was completed in just two months). From support on the development of new policies and procedures to recommending resources for reliable competency testing, Verax Biomedical worked closely with WellSpan to ensure a smooth and seamless implementation.

Maximizing platelet supply

Comparative data from before and after Platelet PGD Testing show significant reduction in platelet wastage:

TOTAL PLATELET TRANSFUSIONS

BEFORE	1,136
AFTER	1,208

TRANSFUSIONS WITH PLATELETS OLDER THAN FIVE DAYS

BEFORE	0
AFTER	387

TOTAL PLATELETS OUTDATED

BEFORE	315
AFTER	31

WASTAGE DUE TO OUTDATING

BEFORE	27.7%
AFTER	2.6% (average)

90% improvement in outdate rate and reduced wastage

BEFORE data:
07/01/15 to 06/30/16

AFTER data:
7/01/16 to 6/30/17



BUILDING ON SUCCESS

According to Dr. DiComo, “We now have a best practice for ensuring patient safety and extending platelets to days six and seven, which provides better resource management, saves money and supports us in delivering exceptional patient care.”

Dr. DiComo projects continued growth in cost-savings as WellSpan Health expands Platelet PGD testing across the system and furthers its ability to share product with other providers. Plans are underway to utilize the system-wide lab courier system

to ensure rapid delivery of six- and seven-day-old platelets to WellSpan Ephrata Community Hospital, WellSpan Gettysburg Hospital and WellSpan Good Samaritan Hospital. “It comes down to patient safety and reducing wastage by using platelets beyond day five,” he says. “What we saw in the Platelet PGD test was an easy-to-implement process that makes a meaningful difference in the way we care for our transfusion patients and our platelet donors.”

*** Published data demonstrate that platelets can be safe and effective for use up to day seven.**² FDA clearances of Fenwal and Terumo platelet containers in 2015 allowed the shelf life of apheresis platelets in plasma to be extended from five days to seven days, but only when tested with a safety measure. The Platelet PGD test from Verax Biomedical, Incorporated is an FDA-cleared safety measure for bacteria in platelets.

¹ Hillyer, C. et al. *Bacterial Contamination of Blood Components: Risks, Strategies, and Regulation. Joint ASH and AABB Educational Session in Transfusion Medicine. Hematology. 2003 Jan;2003(1):575-89.*

² MacLennan, S. et al. *A randomized noninferiority crossover trial of corrected count increments and bleeding in thrombocytopenic hematology patients receiving 2- to 5- versus 6- or 7-day-stored platelets. Transfusion. 2015 Aug;55(8):1856-65.*



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About Verax Biomedical

Verax Biomedical was founded in 1999 upon the singular vision of detecting bacterial contamination in cells and tissues intended for transfusion and transplantation. The company's vision is to create rapid tests that are practical to implement as close to the time of transfusion or transplantation as possible, thus enabling the detection and elimination of these contaminated materials from the inventory prior to their use.