TestStream®
Blood Bank Validation Solution for Cerner Millennium™
Quality assurance for your blood bank system
**Frequent testing of your blood bank** transfusion or donor systems is critical to patient safety. But it can take a heavy toll on your organization’s resources—especially given the growing complexity of blood bank applications.

TestStream's solution for validating blood bank transfusion or donor systems is designed for unparalleled ease, coverage and speed of validation testing. The benefits: vastly improved cost-efficiency and truly comprehensive assurance of patient safety.

Featuring a revolutionary Scenario Definitions solution and a library of client-specific workflow scenarios developed by specialists highly experienced in FDA, AABB and CAP procedures, TestStream frees you from having to wait on consultants for validation or pay exorbitant recurring fees. TestStream's intelligent technology adapts automatically to updates and enhancements to your system, so there's no need for ongoing programming or scripting.

Our Blood Bank Validation conforms with the validation testing elements required under FDA, ISBT, AABB, EU and Australian guidelines, and is packed with useful features.

**Our features include:**

- ✔ Full digital signature capabilities
- ✔ Test-case cross reference for Pass and Fail reports
- ✔ Error causal analysis and remediation guidance
- ✔ Comparison of database build and test result data
- ✔ Build content comparison through migration between Domains
- ✔ Enterprise-wide result set access, management and defect tracking
- ✔ Patient-safety assessment of your system
The Challenge
Managing the risk that comes with giving blood products to patients requires setting up patient/unit compatibility rules, a process that’s complex and labor-intensive. A single setup error along the way can corrupt the accuracy of the rule processing—and compromise patient safety.

How We Help
TestStream can help your organization make sure that only appropriate blood products are dispensed. It can quickly, automatically test thousands of patient/product rules, identifying every combination of blood product type and patient type. After each rule has been reviewed and accepted, TestStream compares the application response for every combination of each blood product against all patient ABO/Rh types, including the emergency dispense.

TestStream automatically processes the product receive, unit confirmation testing and, if necessary, the ordering and resulting of the appropriate crossmatch procedure. At the end, you get a Pass and Fail report showing which combinations matched the expected response and which didn’t.
**The Challenge**

Resulting tests within the blood bank system is done using interpretations through the blood bank result entry application. Testing the accuracy and reliability of these interpretations is a laborious and complicated process, but one that’s essential to patient safety—and mandated by regulatory agencies accordingly. But due to the size and complexity of the interpretations setup, performing ample testing manually is next to impossible.

**How We Help**

TestStream can easily test thousands of interpretation combinations in the blood bank system. It can compare the system response for every combination of all individual reaction results against the expected interpretation, verifying the application warnings as necessary. Due to the sheer magnitude of combinations available, TestStream allows individual procedures, groups of procedures or combinations of procedures to be processed.

As TestStream reviews the system, it will determine the valid responses and then determine what types of mistakes are possible when reaction results are entered. From this it determines the expected response in every case. TestStream then processes each interpretation combination through the blood bank result entry application, entering the appropriate response for each part of the results reaction, and continually evaluates the application's response to see if it's correctly matching valid interpretations. Any unexpected outcomes are reported.
TestStream’s flexible Scenario Definition System and robust Defect Tracking and Risk Management features are designed to help you improve the quality and safety of your systems over time.

Scenario Definitions System
The TestStream Scenario Definitions system can build flexible process flows that replicate actual processes in the Cerner Millennium system. For example, a process flow could include pre-admitting a patient, registering the patient, placing an order, canceling the order and discharging the patient. Many areas outside of blood bank, such as the (Patient Administration System) PAS can be tested in this manner, since these areas do not follow rigid workflow rules. All areas within the Cerner Millennium system can be tested in this manner to perform any type of workflow.
Included Defect Tracking
The Vedant Defect Tracking system ensures that any issues encountered can be tracked from testing right through to resolution—and never get lost along the way. The Defect Tracking system is integrated with the TestStream test results sets, so any issues in any test can be easily added to the defect system. Manual testing results can also be submitted, so all testing can be recorded and tracked in one place.

Seamless Defect Tracking
Both manual and TestStream results can be easily tracked through all test cycles.

Risk-Based Quality Management
TestStream’s Risk-based Quality Management module, included with every TestStream installation, provides a straightforward and comprehensive way to prioritize testing and error remediation according to the level of safety risk. Each error encountered during testing is thoroughly analyzed and assigned a specific risk level, ranging from critical patient safety down to nominal. Testing cycle activity can then be prioritized based on level of risk, and protocols established for re-testing to verify that errors have been remediated.

Comprehensive Risk Management
TestStream analyzes and classifies the patient safety risk of each error, so you can prioritize error remediation.
Comprehensive, Efficient Blood Bank Validation Services
If you don’t have the internal resources to run regular system validations with TestStream, our expert team can help. Our Blood Bank Validation service extensively covers all areas of the blood bank system—doing more than just “checking the box”—and conforms with the validation testing elements required under FDA, ISBT, AABB, EU and Australian guidelines. We provide comprehensive documentation with each test.

Our features include:

- Screen image captures for every validation workflow action.
- Digital signature support for test results review.
- Large scale validation and verification of the scenario patient workflows, Patient/Unit Compatibility rules and Interpretations (result reactions), covering thousands of combinations.
- The operational qualification validation scenario workflows are mapped directly to compliance requirements, so a regulatory inspector can identify exactly where and when specific functionality was validated.

Regression Testing
Organizations can also use TestStream on an ongoing basis for service pack regression testing as well as re-testing and re-validation cycles at a fraction of the cost of other options.

Results Mapped to AABB Requirements
The spreadsheets provided after each test show exactly where each and every AABB requirement has been tested.
Put TestStream to work for your organization

We look forward to helping you ensure that your Blood Bank systems are at their best, so you can deliver care with confidence.

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Vedant Health: Your true partner in improving patient care
Testing and validation technology is what we do at Vedant Health. But what’s at the heart of our mission—and always has been—is a passion for helping healthcare organizations save and improve their patients’ lives.

For three decades, Vedant Health has provided quality assurance solutions for organizations around the world. We’re a large but close-knit team, with deep and extensive experience in the testing technology and healthcare worlds. We look forward to talking with you about your quality assurance needs, and how we can help.

Our History of Innovation

1986  We created the first of a new generation of test tools with the award-winning V-TEST product set. The V-TEST innovation continues today under the OpenSTA open-source product.

1996  We started testing healthcare systems and found that the typical test tool and script approach could not handle the complexities of healthcare systems. TestStream and its revolutionary intelligence system launched.

2005  Moving on from validating airline, banking, insurance, government and space destined systems, we made the commitment to concentrate solely on healthcare.

2014  Vedant Health is reborn, bringing a fresh approach to quality management. TestStream continues to validate healthcare systems throughout the world.