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# The ROI of Viscoelastic Testing & Bleeding Management: Financial Benefits Explained

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## Introduction

Effective management of acute bleeding remains a critical challenge in surgical and critical care settings, where rapid decision-making can directly impact patient outcomes and resource utilization.

The ability to manage bleeding patients quickly and effectively depends on having reliable, accurate results that identify hemostatic deficiencies rapidly to guide transfusions. Although traditional coagulation tests are inexpensive and routine for the laboratorian to run, they can be slow, and don't effectively assess the cellular components of coagulation, which may lead to over- or under-transfusion.

**Viscoelastic testing (VET) offers a comprehensive, real-time insight into the clotting process, capturing initiation, propagation, and degradation, enabling clinicians to tailor transfusion strategies with greater accuracy to address the specific coagulopathy.**

As healthcare organizations face mounting pressure to balance clinical excellence with financial sustainability, investing in VET represents not only an advancement in patient care but also a strategic opportunity to reduce overall costs, optimize resource use, and align with evolving best practice guidelines.

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## Reduction in Blood Product Usage & Complications

The overuse of blood products can add avoidable costs for hospitals.

VET implemented at the point of care provides real-time, functional hemostasis data to support clinicians in providing goal directed transfusion therapy. This focus can reduce direct spending on blood products or pharmaceutical interventions and lower the risk of costly complications tied to unnecessary or inappropriate transfusions, such as extended ICU stays or readmissions. The result is a win-win: improved patient outcomes paired with lower overall treatment costs.

## Study: Cost Savings from a Blood Management Program<sup>1</sup>

A study from Johns Hopkins Medicine found that implementing a comprehensive patient blood management program can bring profound financial benefits without harming outcomes.

The multidisciplinary initiative optimized blood use across the health system, resulting in:

- **Financial Impact:**

- ~\$47.9 million savings generated
- Overall ROI for every dollar invested into the program was **16.6:1**

- **Patient Outcomes:**

- Lower adverse events **(5.2% vs 7.3% in standard care)**
- **Reduced** hospital-acquired infections

While viscoelastic testing can be an important component of a patient blood management (PBM) strategy, it represents only one part of a comprehensive, system-wide program. Results from full PBM initiatives are not directly comparable to implementing VET alone.

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## Optimizing Operating Room Efficiencies

Operating room (OR) time is a valuable and expensive resource.

**According to the Healthcare Financial Management Association (HFMA), operating rooms generate up to 70% of a hospital's revenue<sup>2</sup>. Just 1 minute of OR downtime can cost a hospital between \$30-\$38<sup>3</sup>. When bleeding causes delays, even brief interruptions extend procedure time and push back case turnover, which can directly impact revenue and overall OR efficiency.**

Shorter surgeries and anesthesia times directly reduce costs for hospitals, while faster case turnover creates capacity for more procedures per day.

With rapid and reliable results available at the point of care, VET speeds up coagulation assessments, which helps teams resolve bleeding issues faster. Streamlined analysis and interpretation of results can further enhance efficiency by reducing time spent on interpretation and decision-making.

## Study: Impact of Blood Use Initiative on Patient Outcomes<sup>4</sup>

Data from the Virginia Cardiac Surgery Quality Initiative demonstrate that implementation of a guideline-driven blood use initiative in cardiovascular surgery significantly improved patient outcomes and resource utilization.

Analysis of patients before and after guideline implementation showed that:

- **Financial Impact:**

- Intraoperative transfusions decreased from **24% to 18%**
- Postoperative transfusions decreased from **39% to 33%**
- Postoperative ventilation time was reduced from **26 to 22 hours**
- **Overall hospitalization costs decreased from \$261 million to \$212 million**
- **Median hospitalization costs were reduced by approximately \$4,000 per patient**

- **Patient Outcomes:**

- Major complications, including pneumonia, prolonged ventilation, and renal failure, were **reduced**
- Post-guideline operations were associated with a **47% reduction** in mortality odds

These findings show that targeted blood conservation and guideline implementation led to significant reductions in intraoperative and postoperative transfusion rates, which in turn contributed to lower costs.

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## Reputation and Competitive Advantage

Adopting VET can signal to patients, clinicians, and payers that a hospital prioritizes safety, outcomes, and efficiency. This reputation can not only attract new patients but also help recruit and retain top clinical staff. A strong reputation for quality and efficiency can further strengthen payer negotiations, creating long-term financial and strategic benefits.

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## Improved Reimbursement and Value-Based Care

Hospitals are increasingly reimbursed based on outcomes, efficiency, and practice of evidence-based care. **By minimizing complications, reducing readmission rate, and shortening length of stay<sup>5</sup>, VET directly supports these financial incentives.**

# The Value of VET Varies by Platform

Despite its documented benefits, as well as recommendations from national and international organizations' clinical guidelines<sup>6-8</sup>, full adoption of VET continues to lag. Four operational barriers have made it difficult to implement and standardize legacy VET technologies.

- 1. Slow time to results.** When acute bleeding occurs, clinicians must respond quickly, but legacy VET can take 40-60 minutes to achieve full results<sup>9</sup>.
- 2. Difficult to use.** Legacy VET devices have sub-optimal design for point of care use due to manual pipetting requirements, frequent quality controls which impact productivity and test times, and are prone to pre-analytical errors.
- 3. Difficulty to interpret.** Simple, actionable, and easy to read results are needed when time is critical, but interpreting curves requires extensive training and experience.
- 4. Limited clinical indications.** Today's cartridge-based VET devices have limited approved applications. This restricts where and when clinicians can use them, limiting their impact across diverse bleeding scenarios.

While viscoelastic testing clearly delivers clinical and financial value, it's important to recognize that these operational barriers can significantly impact how much benefit is realized.

The true ROI depends on how well the solution integrates into workflows, the quality and reliability of results, and the level of clinical adoption.

This is where the choice of technology matters.

# Driving Better Outcomes and Financial Performance

The Quantra<sup>®</sup> Hemostasis System is designed to capture the full value of viscoelastic testing by addressing many of the barriers that limit ROI with traditional devices. It uses proprietary ultrasound technology to deliver rapid, accurate assessments of hemostasis.

## Key Value Drivers Include:

Fast Time to Results	The Quantra System's proprietary ultrasound technology delivers initial results in 3-5 minutes <sup>10</sup> , and complete results typically in about 12.5 minutes <sup>11</sup> , allowing care teams to intervene promptly and confidently.
Easy to Use	The Quantra System is easy to use, with hands-on time of less than 1 minute and no sample transfers, no wait time after blood draw, no manual mixing of reagents, or pipetting needed <sup>12</sup> .
Easy to Interpret	Intuitive, easy-to-read screens with actionable results displayed in familiar yellow/green color coding makes interpreting results easier for clinicians <sup>13-14</sup> .
Strategic Advantage	The Quantra System has the broadest range of FDA-cleared clinical indications, including cardiovascular and major orthopedic surgery, trauma, liver transplantation, and peripartum obstetrics procedures. Its adoption by health systems signals a commitment to patient safety, operational excellence, and financial stewardship.

# Demonstrated Impact of The Quantra System

Hospitals implementing the Quantra System have reported significant reductions in blood product use, shorter hospital length of stays, and meaningful cost savings without compromising patient outcomes.



## Case Studies

	Overview	Impact
1	A 250-bed community hospital with an existing strong patient blood management program implemented the Quantra System and demonstrated reduced transfusions and published cost savings in cardiac surgery patients <sup>15</sup> . Retrospective study comparing 2 cohorts with similar baseline characteristics, pre- vs post-Quantra (n=64 each).	<ul style="list-style-type: none"> <li>• 15% decrease in surgical patients transfused</li> <li>• 50% decrease in the number of products utilized per patient</li> <li>• Published cost savings of \$40K in a sample size of 64 patients, representing a 41% decrease</li> <li>• Blood product utilization decreases included:               <ul style="list-style-type: none"> <li>◦ Packed Red Blood Cells: 10% decrease</li> <li>◦ Fresh Frozen Plasma: 97% decrease</li> <li>◦ Platelets: 26% decrease</li> <li>◦ Cryoprecipitate: 67% decrease</li> </ul> </li> </ul>
2	A 600-bed teaching hospital performing over 500 cardiac surgery cases annually utilized the Quantra System at the point-of-care intraoperatively, achieving substantial reductions in transfusions, associated costs, and in-hospital mortality <sup>16</sup> . Retrospective study comparing 2 cohorts with similar baseline characteristics, pre- vs post-Quantra (n=537 and 540, respectively).	<ul style="list-style-type: none"> <li>• Total units transfused dropped from 1,617 to 1,150 post-Quantra (↓467 units; p = 0.001), with the largest declines in FFP (↓302 units; p &lt; 0.001) and cryoprecipitate (↓68 units; p = 0.024)</li> <li>• Implementation of Quantra significantly reduced the risk of transfusion—any blood product IRR 0.74 (p &lt; 0.001), FFP IRR 0.49 (p &lt; 0.001), Cryo IRR 0.77 (p = 0.006)</li> <li>• In-hospital mortality rate decreased from 2.42% to 0.93%</li> </ul>

	Overview	Impact
3	A 1000-bed academic medical center with a Heart Transplant program, transitioned from a lab-based legacy VET protocol to point-of-care Quantra for intraoperative use in cardiac surgery, significantly improving intraoperative transfusion rates and product utilization efficiency <sup>17</sup> . Retrospective study comparing 2 cohorts comparing lab-based VET and clinical judgement with Quantra at point of care (n=596 and 252, respectively.)	<ul style="list-style-type: none"> <li>• Patients receiving an intraoperative transfusion decreased from 64% to 55%</li> <li>• The ratio of products ordered to products transfused improved from 2.5 to 1.3, resulting in an estimated cost savings of \$93K in wasted products alone</li> <li>• Blood product utilization decreases included: <ul style="list-style-type: none"> <li>◦ Packed Red Blood Cells: 25% decrease</li> <li>◦ Fresh Frozen Plasma: 96% decrease</li> <li>◦ Platelets: 9% decrease</li> </ul> </li> </ul>
4	A 500-bed community hospital recognized for high-quality cardiac care, implemented the Quantra System for intraoperative use, leading to reduced utilization of blood products, shorter lengths of stay, and the elimination of cardiovascular surgery re-operations <sup>17</sup> . Retrospective study comparing SLT and clinical judgement with Quantra at point of care (n=355 and 340, respectively.)	<ul style="list-style-type: none"> <li>• Overall decrease in blood product utilization</li> <li>• Statistically significant decrease in intraoperative transfusions</li> <li>• Shorter length of stay- post VET implementation</li> <li>• Cardiovascular surgery re-operations decreased from 5 to 0</li> </ul>

By standardizing evidence-based, point-of-care transfusion protocols, the Quantra System empowers clinical teams to optimize care, conserve blood product, and support both health economic goals and operational efficiency.

Viscoelastic testing represents a proven pathway to cost containment without compromising quality. Hospitals leveraging advanced systems such as the Quantra System can significantly reduce blood product utilization, optimize operating room efficiencies, and lower overall hospitalization costs. These measurable savings, combined with improved outcomes, position organizations to thrive under value-based reimbursement models and achieve long term sustainability.

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