

**The Business Case for  
Integrated Tissue Tracking Systems**

**An ROI White Paper**

Hobson & Company

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**– Hobson & Co. June 2009**

## **Introduction**

The tracking of tissues and other biologics used in many surgical procedures has traditionally been conducted in a random manner in many hospitals relying on manual or largely manual systems to track, manage, and record these important components. Such manual systems have not only endangered patient safety but have resulted in significant additional expenses to hospitals to replace expired or lost biologics. New reporting requirements from hospital regulatory organizations mandate that improved automated systems be used by hospitals to better track, manage, and recall information related to biologic implants.

## **Executive Summary**

Tracking tissue either manually or with an automated tracking system requires much integration with scheduling to be completely effective. Knowing what's on hand and what's about to expire, reducing wasted tissue and reordering on time all contribute to the complicated process. On the other hand, a fully integrated solution addresses the entire lifecycle of tissue - when it is first received, implantation, tracking potential recalls – to minimize costs and ensure patient safety.

### **Key tissue tracking challenges facing the perioperative environment:**

1. Difficulty tracking tissue expiration dates can lead to costly wasted tissue
2. Expensive overnight shipping charges are incurred if needed tissues are not in inventory
3. Manual tissue documentation is time consuming

The value of an integrated tissue tracking system such as SIS Trax is immediate and demonstrable. A sample hospital receiving 1,500 tissues per year can experience over \$30,000 per year in incremental benefits as a result of implementing this type of software solution.

## **Methodology**

This study, conducted by Hobson & Company, a leading research organization specializing in objectively determining the value of new technologies for end users, was conducted in 2009 with hospital OR managers, physicians, other clinicians, and IT staff. The purpose of the study was to specifically identify areas of value these hospitals had derived from their perioperative information system, quantifying these benefits whenever possible to establish a financial ROI.

## Key Tissue Management Challenges Facing Perioperative Environments

After interviewing Directors of Surgical Services, RNs, and IT/IS Project Managers at a number of hospitals across the United States and Canada, three key business challenges were universally described:

**Challenge 1:** Difficulty tracking tissue expiration dates can lead to costly wasted tissue.

Depending on how the tissue is preserved, tissue can expire within a few months to a few years. According to experts, poor tracking costs hundreds of thousands of dollars in wasted tissue, with a 3-inch tissue costing as much as \$15,000. Materials managers, nurses and other administrative staff try to stay on top of tissue inventory, and many of the interviewees described using manual log books to monitor tissue expiration dates. While most try to use the soon-to-be expired tissue first, tissue may still be wasted a couple times a year. Often times, if a tissue is close to the expiration date, the materials manager will work with the manufacturer to replace it with tissue with a later expiration date. But, if the tissue cannot be returned, it is wasted and discarded.

*"If a tissue does expire, 9 times out of 10 it is 'wasted' and not used."*

- Director, Surgical Services

**Challenge 2:** Expensive overnight shipping charges are incurred if needed tissues are not in inventory.

Using overnight shipping is a common, but expensive practice to ensure that the right tissue inventory is on hand for a particular procedure. The worst case scenario is when a patient and the surgical team are all ready for a procedure and the needed tissue is not in inventory. Nurses interviewed cited times in which the surgical schedule was not viewed until the day or two prior to the procedure. It was at this point that the tissue inventory was checked. If the required tissue was not on site, expensive overnight shipping was required.

*"We definitely incur overnight charges for tissues we do not have in inventory."*

- Charge Nurse

**Challenge 3:** Manual tissue documentation is time consuming.

Federal and industry regulations require that all tissue be tracked and logged. Once the appropriate log book is located, the nursing or materials staff documents: time, date, integrity of the tissue, lot number, size, manufacturer, and expiration date, and other important information. This documentation occurs numerous times throughout the perioperative process including: when tissue is first received, daily monitoring of temperature, and when tissue is used.

*"Erroneous information is entered on occasion."*

- Charge Nurse

## Key Sources of Value

The value of an integrated tissue tracking system such as SIS Trax is immediate and significant. This analysis focuses solely on the bottom-line benefits expressed in customer interviews. Other important qualitative values, such as reporting, tracking recalled tissues and inventory consolidation are not included in this analysis.

Based on the interviews with both clinical and business leaders at a number of hospitals in the US and Canada, the value falls into two main categories:

1. Optimize Financial Performance
  - Reduce the amount of expired tissues
  - Decrease overnight shipping charges
2. Increase Operational Efficiencies
  - Reduce tissue documentation time

The following ROI example illustrates the potential value of SIS Trax for a representative hospital that receives 1,500 tissues per year, of which \$50,000 worth of tissue is wasted per year.

### **Value Source #1: Optimize Financial Performance**

1. **Reduce the amount of expired tissues.** SIS Trax's integration with the pick list manager assigns tissues to specific cases and assigns stock closest to expiration. The reporting and management tools allow all administrators to see which inventory may be expiring soon and determine if it will be used or should be sent back to the manufacturer.

*"We expect SIS Trax to alert us about upcoming expirations dates to reduce wasted tissue."*

- Director, Surgical Services

Using SIS Trax, the sample hospital reduced its wasted tissue by 50%.

**Impact for sample hospital: \$25,000 annual incremental revenue**

2. **Reduce overnight shipping charges.** SIS Trax tracks inventory so that staff is aware of needs in advance and can order replacement tissue in a timely way without incurring last minute shipping charges.

The sample hospital reduced its perioperative overnight shipping charges by 5%.

**Impact for sample hospital: \$1,250 annual incremental value**

### **Value Source 2: Increase Operational Efficiencies**

1. **Reduce tissue documentation time.** SIS Trax uses a bar code to automatically scan and store all pertinent tissue information. Documentation includes integrity of specimen, date and time used, who took it out, patient who received implant, DOB of patient, surgeon, and procedure. The information is then stored in a database which can be accessed when needed for recalls, regulatory and compliance questions or for inventory management.

The sample hospital saved 5 minutes of documentation time for each tissue on hand resulting in 250 hours saved per year.

**Impact for sample hospital: \$4,300 productivity efficiency gains**

VALUE	SPECIFIC BENEFITS	ANNUALIZED FINANCIAL BENEFITS FOR A SAMPLE HOSPITAL
<b>Optimized Financial Performance</b>	• Reduce amount of expired tissues	\$25,000 annual incremental revenue
	• Reduce (by 5%) the amount of overnight shipping charges	\$1,250 annual incremental revenue
<b>Increase Operational Efficiencies</b>	• Reduce tissue documentation time	\$4,300 annual productivity gains
		<b>Total Annualized Savings: \$30,550</b>

### Overall Value

For the sample hospital, the three benefits add up to an annualized value of \$31,000. Additional benefits contribute additional value. The Provider's three year investment of \$50,000 generates a positive return in **8.8 months**. The three year net present value (NPV) and return on investment (ROI) are strong at **\$35,000** and **78%**, respectively. The key financial metrics for the sample Provider were calculated by standard methods and are shown below. The NPV calculation assumes a 10% cost of capital.

FINANCIAL METRIC	3-YEAR VALUE
<b>Payback (months)</b>	8.8
<b>NPV</b>	\$35,000
<b>ROI</b>	78%

### Conclusion

An integrated tissue tracking system such as SIS Trax facilitates the documentation and management system. It improves inventory accuracy, reduces costs and ensures patient safety while providing an easily accessible historical archive to assist in recall notification.

### **About SIS**

SIS provides software solutions that are uniquely designed to add value at every point of the perioperative process. Developed specifically for the complex surgical environments, all SIS solutions – including anesthesia – are architected on a single database and integrate easily with other hospital systems. SIS offers the only surgical scheduling system endorsed by the American Hospital Association (AHA), and a rules-based charging system that has been granted Peer Reviewed status by the Healthcare Financial Management Association (HFMA).

For more information, please visit [www.sisfirst.com](http://www.sisfirst.com)

### **About Hobson & Company**

Hobson & Company helps early stage technology vendors and purchasers uncover, quantify and validate the key sources of value driving the adoption of new and emerging technologies. Our focus on robust validation has helped many technology purchasers more objectively evaluate the underlying business case of a new technology, while better understanding which vendors best deliver against the key value drivers. Our well researched, yet easy-to-use ROI and TCO tools have also helped many technology companies better position and justify their unique value proposition.

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