

**The Business Case for  
Integrated Patient Communication Systems**

**An ROI White Paper**

Hobson & Company

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Using SIS Com, “the sample hospital performed one additional case per week plus reduced its overtime by 5 hour per week” resulting in “\$287,000 annual incremental revenue”.

– Hobson & Co. June 2009

## Introduction

Each year in hospitals literally thousands of valuable hours of clinician time are spent tracking down patients to identify their location in the perioperative process from admission to discharge. Not only does this waste valuable clinician time but leaves open the possibility of medical error due to unnecessary delays and miscommunications. New automated solutions are now available to take the place of largely manual processes which until recently characterized the patient flow process in many hospitals.

## Executive Summary

Good communication is critical to any successful organization and is of particular importance for hospitals. Tracking patients as they move throughout the perioperative environment, understanding and meeting patients' unique needs and ensuring that schedules are met requires extensive communication. Often times, the hurried staff members moving through the perioperative department are not responding to critical care issues, but are instead just trying to find out where patients are in the process. Manually locating patients can impede efficiency and reduce case load optimization while also putting patients at risk.

### Key communication challenges facing the perioperative environment:

1. Inefficient communication within the perioperative environment reduces case load optimization and increases overtime
2. Penalties and compliance fines can occur if patients' needs are not met
3. Tracking patients as they move through the perioperative process is extremely time consuming

The value of an integrated patient communication system is immediate and demonstrable. A sample hospital with 8,000 procedures per year can experience over \$380,000 per year in incremental revenue 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 Communication Challenges Facing Perioperative Environments

After interviewing Anesthesiologists, 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:** Inefficient communication within the perioperative environment reduces case load optimization and increases overtime.

Late starts and case cancellations are a common by-product of a busy perioperative department. A widespread observation by the interviewees was that on the day of surgery, patients are often seen in the order they arrive to the hospital without regard to the timing of the surgical schedule. As a result, patients may be late for surgery (as Pre-Op works on patients scheduled for later in the day) and cause a delay in the procedure start time. Pushing the whole process back by just a few minutes can wreak havoc on the entire day's schedule, forcing unplanned overtime for the nursing and technical staff.

Inefficient communication affects the entire perioperative team. Nurses interviewed remarked that when Central Processing & Sterilization (also referred to as Central Supply) prepares case carts for the day, they do so based on an existing schedule. If they are not notified about schedule changes this can lead to late start times as well.

*“Often times, the wrong patient was sent to the OR (in the wrong order) and the surgical team was not ready for them yet. Or, a patient wasn't in the OR when the surgical team was ready since they were still being process by Pre-Op.”*

- IS Manager

**Challenge 2:** Penalties and compliance fines can occur if patients' needs are not met.

Vital patient information is captured with the history and physical during Pre-Op. This information then is recorded in the patient's chart. What happens, though, if a nurse or a physician overlooks this critical information? When patient's general allergies or antibiotic administration data is not followed it could result in unpredicted infections and extra hospital stays. Regulators and insurance companies view these scenarios as human error and will not reimburse a hospital for the extra expenses of treating or housing a patient.

*“Like ‘a picture is worth a thousand words’, SIS Com allows all providers to understand what is going on with every patient.”*

- Perioperative Resource Coordinator

**Challenge 3:** Tracking patients as they move through the perioperative process is time consuming.

Nursing and administrative staff spend much of their time keeping tabs on patients. Calls such as “did a patient get here”, “did the anesthesiologist see the patient yet”, and “is the H&P completed yet” are made multiple times per each case. All interviewees cited similar experiences about trying to locate a patient: nurses from Pre-Op, to Intra-Op to PACU making numerous calls during the day to the Front Desk, too much time spent tracking patients instead of caring for patients, and “bazillions” of phone calls between surgery administration and the OR, and between the OR and the floor. In some cases, to avoid so many phone calls, nurses would physically walk between departments to check on patients.

*“SIS Com is used throughout the entire perioperative process and has resulted in increased efficiencies for the staff and improved customer satisfaction for the hospital.”*

- IS Manager

## Key Sources of Value

The value of an integrated patient communication system such as SIS Com is immediate and significant. This analysis focuses solely on the bottom-line benefits expressed in customer interviews. Other important qualitative values, such as reducing physician and nursing staff idle time, preparing the PACU for incoming patients and keeping family members informed, have not been included.

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
  - Increase case load and reduce overtime
  - Improve compliance and reduce penalties
2. Increase Operational Efficiencies
  - Reduce time tracking patients

The following ROI example illustrates the potential value of SIS Com for a representative hospital with 8,000 procedures per year:

### Value Source #1: Optimize Financial Performance

1. **Increase case load and decrease overtime with increased efficiencies.** Patient charting is a time consuming manual process. CRNAs can spend at least 30 minutes per patient in Pre-Op and PACU documenting anesthesia related information. Automated anesthesia software with pre-defined wizards for each procedure prompts CRNAs to enter only the necessary data and pre-populates common fields, speeding up the information gathering and ensuring that patients' charts are complete.

*"If a patient comes to the hospital early, but isn't scheduled for surgery until later in the day, the nurses will consult SIS Com to determine if there is another patient scheduled for an earlier surgery that needs to be prepped so that the surgery isn't delayed."*

- IS Manager

The sample hospital performed one additional case per week plus reduced its overtime by 5 hours per week.

**Impact for sample hospital: \$287,000 annual incremental revenue**

2. **Improve compliance and reduce penalties.** A SIS Com board highlights all patient specific information such as allergies or antibiotic requirements so that all care givers are easily alerted to potential issues. Using this information can improve compliance with external regulators and reduce infections that result in extended stays not covered by insurance. These health-care acquired infections are a drain on a hospital's resources. Available data from the healthcare industry puts the cost of each health-care acquired infection at \$50,000.

*"Using the SIS Com board has helped us reduce the number of infections due to allergies or patients requirement antibiotics."*

- Anesthesiologist

The sample hospital reduced its health-care acquired infections by 2 per year.

**Impact for sample hospital: \$100,000 annual incremental value**

**Value Source 2: Increase Operational Efficiencies**

1. **Reduce the time to track patients.** SIS Com improves communication with standalone boards that provide easy access to patient information for every phase of every patient event. The nurses can track what remains to be done such as H&P, IV, and blood work. The representative hospital described that using SIS Com reduced the number of phone calls between nurses and administrative staff by half.

*“Now, all interested people can check the SIS Com board and instantly know what is going on.”*

- Perioperative Resource Coordinator

Reducing the number of phone calls to track patients resulted in 800 hours of productivity savings.

**Impact for sample hospital: \$36,000 productivity efficiency gains**

VALUE	SPECIFIC BENEFITS	ANNUALIZED FINANCIAL BENEFITS FOR A SAMPLE HOSPITAL
<b>Optimized Financial Performance</b>	• Increase case load and decrease overtime with increased efficiencies	\$287,000 annual incremental revenue
	• Improve compliance and reduce penalties	\$100,000 annual incremental revenue
<b>Increase Operational Efficiencies</b>	• Reduce time to track patients	\$36,000 annual productivity gains
		<b>Total Annualized Savings: \$423,000</b>

**Overall Value**

For the sample hospital, the three benefits add up to an annualized value of \$423,000 to deliver a 4:1 ROI. Additional benefits contribute additional value. The Provider’s three year investment of \$284,000 generates a positive return in **5.1 months**. The three year net present value (NPV) and return on investment (ROI) are strong at **\$856,000** and **332%**, 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.

<b>FINANCIAL METRIC</b>	<b>3-YEAR VALUE</b>
<b>Payback (months)</b>	5.1
<b>NPV</b>	\$856,000
<b>ROI</b>	332%

### **Conclusion**

An integrated patient communication system such as SIS Com provides a window into patient care. The reader boards and monitors allow all care providers instant access to the status of each patient allowing for more efficient scheduling and improved patient care.

### **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.

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