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Minimally Invasive Techniques Can Be Used for Up to 80 percent of High-Volume General Surgery

The first laparoscopic cholecystectomy was performed in 1987; today experts estimate that 70 to 80 percent of high-volume general surgeries can be performed using minimally invasive techniques. In recent years, technological advances including improved magnification, robotics, more flexible instruments, and extremely high-resolution digital cameras have enabled minimally invasive techniques to be used in much more complex procedures such as organ transplantation and cardiothoracic and spine surgeries. In 1999, an estimated 18 to 20 percent of coronary artery bypass procedures in the United States were performed using minimally invasive approaches; by 2002, it is expected to be almost 30 percent.

Growth and Revenue Opportunities: Minimally Invasive Surgery

Minimally invasive surgery (MIS) involves using videoscopes and specialized equipment to perform increasingly complex procedures through small incisions in the body. Studies show that MIS, although often more costly for the actual procedure due to equipment costs, offers significant benefits including reduced lengths of stay, less post-operative pain, minimal scarring, decreased infection rates, and fewer missed work hours. A hospital in the Midwest was able to reduce costs for anti-reflux surgery by more than \$8,000 per patient hospitalization through use of minimally invasive techniques. Two independent studies found that employer costs for hernia surgery were 400 to 600 percent higher with traditional surgery than laparoscopic surgery.

As the knowledge base for MIS and its benefits expands among clinicians and educated consumers, there is increasing demand for training programs and clinical offerings. Approximately a dozen academic medical centers have developed MIS training programs for surgeons and OR staff to speed up the transfer of knowledge regarding cutting-edge MIS techniques. The leading manufacturer of MIS equipment has donated significant start-up dollars to establish and maintain connections to several of these training programs. Futurist operating rooms or "endosuites" are emerging to support MIS,

complete with voice-activated instrumentation, robotics, ceiling-mounted lighting booms, ultramodern surgical tools, and surgical controls designed in a "cockpit" fashion to meet a surgeon's ergonomic needs. One program spent \$500,000 per OR to develop dedicated, state-of-the-art MIS suites and realized \$100,000 per year per OR in savings due to decreased equipment wear and tear, increased patient safety, and more efficient utilization of staff.

Organizations outside the academic setting are starting to focus on advanced

minimally invasive surgical capabilities. A multihospital system in the Northwest experienced 10 to 15 percent annual growth in MIS volume since establishing a formal program in 1993. The program currently performs 4,200 basic and advanced MIS procedures per year and generates a \$4 million contribution margin. Presently, 28 percent of the organization's gynecology and general surgical procedures are performed using MIS (several other specialties also perform MIS but are not formally part of

Examples of Minimally Invasive Surgery Procedures

Basic

Hernia repair
Gallbladder surgery
Appendectomy

Advanced

Anti-reflux surgery
Colon resections
Hysterectomy
Urologic surgery

Emerging

Cardiac surgery
Endovascular grafts
Spine surgery



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the department); the program expects to reach 50 percent within the next five years.

While most hospitals currently perform basic laparoscopic surgery, incorporation of advanced techniques for complex procedures requires

- Ongoing continuing education for physicians, OR nurses, and technical staff as new procedures are developed
- Appropriate credentialing of medical staff for privileges in advanced laparoscopic procedures
- Organizational commitment to capital/technology investment
- Focus on outcomes measurement
- Commitment to research and education
- MIS consideration in design of future surgical facilities

At the beginning of the 21st century, the surgical discipline is at a crossroad. Developing advanced minimally invasive surgery capabilities presents an opportunity for an organization to advance its clinical services and differentiate itself from other providers in its market.



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Health Strategies & Solutions, Inc., is a national management consulting firm dedicated to helping organizations discover innovative strategies and solutions for today's complex health care challenges. Our staff has enabled hundreds of health care organizations across the country to address complex issues, make decisions that achieve lasting results, and set courses for success in the new millennium.

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