A new tool for professional development:

# The ACS Case Log System

by Karen Sandrick, Chicago, IL

For busy surgeons, maintaining an up-to-date case log system is frustrating and time-consuming. Electronic practice-based systems for logging case data tend to be designed for internists to keep track of the medical care of patients, so the software does not include fields for reporting details about surgical procedures. Electronic medical record systems for hospitals tally procedure and complication rates, but they focus on the institution, not individual practitioners, and they collect data for purposes of peer review in a confidential, protected environment that does not easily allow surgeons to access and track their own data.

Surgeons, therefore, are left to fend for themselves. Many surgeons are relegated to conducting paper chases of hard copies of patient records, scanning scores of entries to find and extract relevant data items, and tabulating procedure, morbidity, and mortality rates by hand. Or, they are forced to engage programmers to generate their own database management systems.

After all that effort, surgeons often still have no clear picture of their clinical outcomes, how their outcomes compare with those of other surgeons, and where and how they may take advantage of educational opportunities to improve the surgical care of patients within the framework of their specific day-to-day practices—not to mention how they may meet new certification requirements of the American Board of Medical Specialties.

But these challenges are about to be made simpler. At the 2005 Clinical Congress, Fellows were introduced to the American College of Surgeons Case Log System, which will help them uncover clinical practice data now buried in office paper-based files and coalesce information that is scattered in several hospital information systems. Since that time, more than 200 surgeons have accessed the system, entering more than 6,500 cases. By providing a quick and easy mechanism for collecting patient and outcomes information, the Case Log System will allow surgeons to gather practice data in an ongoing and systematic way so they can begin to accurately monitor their treatment patterns, identify clinical and knowledge-related areas for improvement, and choose educational programs best suited for honing the skills they believe they need to acquire.

### *A mechanism to compare clinical outcomes*

The Case Log System will be a mechanism for addressing the first and last steps of the quality improvement cycle: discovering possible areas for improvement and how educational activities have led to improvement. "The Case Log System is groundbreaking," said M. Michael Shabot, MD, FACS, vice-chief of staff, director of the Surgical Intensive Care Unit, and director of Enterprise Information Services at Cedars-Sinai Medical Center, Los Angeles, CA, and member of the ACS Committee on Education. "All surgeons can do nowadays is compare their clinical outcomes to results from a study in the literature, but studies are different from normal surgical practice. This system will provide masses of de-identified data for individual surgeons to use to assess their outcomes in comparison with other surgeons in a pooled database," he added.

The system will capture information on a surgeon's patients and upload them into the surgeon's own private data store. The data will be processed to remove any information that may identify the patient or the surgeon, and they will be gathered in a central database that can be mined to analyze outcomes for a large group of surgeons. The system can be used by individual surgeons to discover how their practice or outcomes may differ from those of their anonymous peers.

The system will streamline the process of case log reporting for surgeons by generating simple reports about mortality and complication rates, including the percentage of deaths or cases that had complications organized by procedure and a breakdown of the procedures a surgeon performs by category.

"If half of our 25,000 to 30,000 general surgeons enter data about their gallbladder surgeries in the Case Log System, the College in a short period of time might accumulate data on 50,000 or 60,000 procedures," Dr. Shabot said. "Then, a surgeon who does 30 gallbladder operations in a year could compare his or her outcomes, such as the number of wound infections or the rate of complications adjusted for risk factors like cardiac disease, against a very large distribution of

de-identified patients in the College's database. They could also compare their mortality rates after cholecystectomy for all patients between the ages of 50 and 60 who had no cardiac disease. There is no other way to do that today."

Surgeons also may compare their caseloads against national trends. "Surgeons may look at their case logs and find they've done 100 colon resections in the past six months and many were open procedures, whereas nationally the trend is toward laparoscopic colon resection. They may then decide they don't have the skills or the confidence or both to do laparoscopic colon resection and feel the need to seek educational opportunities to fill that gap," Ajit K. Sachdeva, MD, FACS, FRCSC, Director of the Division of Education, said.

The system also can be used to determine changes in level of performance before and after participating in an educational program, Dr. Sachdeva explained: "Once surgeons apply new knowledge and skills to their practice, they could check for improvement with the Case Log System as part of the practice-based learning and improvement cycle. Surgeons would look at outcomes using the Case Log and determine whether they have improved, or, in the case of a new skill, what their new performance level is in comparison with national data."

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***A new type of education***

The Case Log System is the cornerstone of a four-part, practice-based learning and improvement cycle that supports the concept of just-in-time learning in the actual practice environment by (1) identifying areas for improvement, (2) engaging in learning, (3) applying new knowledge and skills to practice, and (4) checking for improvement.

"The key to all future surgical education for practicing surgeons is education in context, and the context is the clinical care they are providing their patients in their practice," Dr. Sachdeva said. "Learning for practicing surgeons begins and ends at the bedside with the patient. That is where the educational opportunities are identified and where new knowledge and skills are applied—at the front lines."

Rather than standard continuing medical education (CME)—which is episodic, directed at groups of individuals, and driven by teachers—continuous practice-based learning and improvement is a lifelong exercise that addresses the specific needs of each learner, and it is centered on and controlled by the learner, as explained by Dr. Sachdeva in an article in the *Archives of Surgery*.* Whereas CME focuses on clinical topics in formal lectures or conferences, continuous professional development covers issues in practice management, leadership, administration, and education as well as clinical concerns. Continuous professional development also makes use of a wide variety of educational media, including interactive large and small group exercises, discussions of actual cases in surgical care, and role-playing exercises. Instead of a single didactic CME course, continuous professional development engages in sequenced learning that continually applies and builds on new knowledge and skills. Practice-based learning and improvement

*Sachdeva AK. The new paradigm of continuing education in surgery. *Arch Surg*. 2004;140(3):264.

also offer academic detailing in which experts work individually with surgeons to promote desired changes in practice, meetings and discussions with opinion leaders in surgery, and audits of a surgeon's practice with feedback.

***Directed by surgeons***

The Case Log System is wholly surgeon-directed. Each surgeon will own his or her data. The participation agreement that a surgeon signs to become involved in the Case Log System clearly specifies that the surgeon controls all data that contain identifying information, in the same way every surgeon controls the data accumulated in his or her office. "The Case Log System has no identifying information to provide any legal agency or court; it has only bulk de-identified data from many surgeons," Dr. Shabot said.

Each surgeon will determine how he or she will use the information the Case Log System provides. "Following the principles of continuous professional development, we want the onus to be on the surgeon himself or herself," said Dr. Sachdeva. "Learning has to originate at the surgeon's level, so the surgeon has to decide where gaps may lie and what he or she needs to do to close them," he added.

Once surgeons identify an area for improvement, they will be able to seek out learning activities that match their personal practice concerns with targeted educational modules, including electronic learning programs on the Web, CD-

## Using the Case Log System

The Case Log System technology is straightforward, so it will be simple and easy to use. There are two options for entering cases: through a personal digital assistant (PDA), or through a Web site. Cases entered on a PDA are transmitted to the Web site during a "hot sync." Surgeons who don't have PDAs can use the Case Log System solely as a Web-based program.

With software or Internet access, surgeons will be ready to begin entering data elements, such as diagnoses, procedures, preoperative risk factors, comorbidities, complications, and outcomes.

The most difficult aspect of data entry—coding each case—has been simplified. As Howard Tanzman, Director of ACS Information Technology, pointed out, there are approximately 15,000 procedure codes and more than 10,000 diagnosis codes. "Although surgeons deal with only a small subset of diagnosis codes, each one deals with a different subset; we had to design a system that would be generic for everyone but didn't require any given surgeon to peruse 15,000 codes to find the one that's appropriate for a particular case," Mr. Tanzman said.

To address the problem, the Case Log System remembers the codes as the surgeon submits them. "After a surgeon enters 15 or 20 cases, the system will present a list of those codes as choices. That will make the initial processing of entering cases much easier," Mr. Tanzman said.

Case Log System software also allows surgeons to enter their own descriptions, or nicknames, along with specific codes. For example, if a particular Current Procedural Terminology (CPT)* code has a six-word technical description, Mr. Tanzman added, "The surgeon can just replace that description with user-friendly words, such as 'breast biopsy.'"

The actual data-entry process should take only a matter of minutes in the operating room, the recovery room, or the office. "Surgeons have a lot of waiting time in the operating room while cases turn over and patients are going under anesthesia. With the PDA they carry around in their pocket, surgeons can enter case data before they are ready to scrub or in the five to 10 minutes at the end of a case [while] waiting for the patient to wake up," Dr. Shabot explained. Or, they can enter the data from any computer with Internet access.

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*All specific references to CPT (Current Procedural Terminology) terminology and phraseology are © 2005 American Medical Association. All rights reserved.

ROMs, hands-on courses, proctoring and preceptoring, symposia, and self-study programs. "We are going to offer surgeons a range of educational options that would tie in with identified gaps in knowledge and skills and make them easily accessible, especially over the Web," Dr. Sachdeva said.

Proof of participation in these educational activities may be used by surgeons to maintain their certification with the American Board of Medical Specialties, which, as of July 1, 2005, now requires surgeons to demonstrate a commitment to lifelong learning and self-assessment by participating in CME and self-assessment evaluation through the Surgical Education and Self-Assessment Program (SESAP) and to evaluate their performance in practice. It is up to the individual surgeons to initiate the process, but the College will assist and facilitate surgeons toward that end. According to Dr. Sachdeva, "The American Board of Medical Specialties' role is to certify; our [ACS'] role is to support and encourage people to get to that level. Therefore, we will not funnel information directly to the board. We will provide surgeons with information and tools they can use for the maintenance of certification process as they deem appropriate."

### *Future applications*

Down the road, the College will work to identify databases that may be suitable for statistically significant benchmarking. Many of the current databases are not risk-adjusted, so even though they have outcomes information, they do not indicate the risk status of the patient and therefore cannot provide accurate benchmarking information. Databases that do adjust for patient risks are statistically valid only at the institutional or departmental level, not for individual surgeons. "We are going to explore a number of different databases that may provide benchmarking information, and some seem more promising than others. But a lot of work has to be done in the benchmarking area," Dr. Sachdeva said.

The College also will continue to build its repertoire of electronic learning programs. Over the last several years, the College has created a host of educational products. In about a year, it will be able to give surgeons more guidance about finding these products and other external educational opportunities and building them into their effort to improve knowledge and skills. The objective is to link surgeons with educational programs to address their specific practice concerns when they feel the need to learn. "The Case Log System technological platform and educational products are integrated; they cannot be separated. And they are designed to support surgeon's practice improvement efforts, not to set rules or regulations," Dr. Sachdeva said.

Further information about the ACS Case Log System may be obtained via e-mail at caselog@facs.org. Ω

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