Streamlining preoperative care: Role of software

A 65-year-old man with heart disease schedules a knee arthroscopy with his orthopedic surgeon. Thirty miles away, a note pops up to notify the hospital’s presurgical clinic of the impending surgery. A nurse practitioner pulls up the patient’s electronic health record (EHR), where she reviews the patient’s history. Comparing the history with the preop screening criteria, she can see the patient needs to be seen in person before the day of surgery. An appointment is scheduled and preop tests ordered using the clinic’s standing order set.

At Geisinger Medical Center, part of an integrated health system based in Danville, Pennsylvania, named 9 times to Hospitals & Health Networks Most Wired list, the preop preparation is largely paperless.

“All of the clinics are up on Epic [the software platform], and we can exchange information in real time,” says Cindy Bird, BSN, RN, clinical director of the 28-OR main surgical suite.

Even from medical clinics in neighboring cities, “we can pull up the patient information and see what was done during the clinic visit.”

The result: a more accurate record at clinicians’ finger tips, huge time savings, and powerful capabilities for reporting data on case delays, cancellations, and other metrics.

Once hospitals and physicians’ offices share compatible EHRs, many cumbersome steps in the preop process−gathering faxes, rounding up lab results, and chasing down missing consents−will go away.

Most organizations aren’t there yet. Less than half (43%) of respondents in the 2011 Most Wired survey could share a continuity-of-care document across MD offices, hospitals, and other providers.

The government’s health IT initiative and the trend toward health systems’ acquisition of physician practices are helping to move these initiatives forward.

Single platform is trend
The trend, says David Young, MD, an anesthesiologist with a long interest in preop automation, is to have a single IT platform that enables patient information to flow seamlessly from physicians’ offices and clinics to the hospital, where the patient’s entire EHR is available in real time to any clinician treating the patient.

“In a community, if you have a continuously shared EHR, it is an immense advantage,” he says.

“Being able to see the whole continuum, the patient’s history and all of their labs, just makes sense.”

That’s why, he says, a number of organizations are adopting EHRs from Epic Systems, which offers a single outpatient-inpatient platform. Epic was rated the top overall health care software vendor in the 2011 Annual Best in KLAS Awards from KLAS Enterprises, a firm that reports on users’ experience with health care software.
At Dr Young’s institution, Advocate Lutheran General in Park Ridge, Illinois, nurses in the preop testing center can view some portions of outpatient records entered in Allscripts, the EHR used by employed physicians’ offices, through a portal in Cerner, the hospital’s information system, though it is not a seamless connection. “If the patient has recently seen a primary care provider, all of the information comes over preoperatively, but it does not populate the patient record,” says Dr Young. He was developer of an automated preop questionnaire and scoring system acquired by DocuSys and now owned by Merge Healthcare.

Patient interface
To aid preop preparation, Surgical Information Systems (SIS) is working on an upcoming version that would offer more support for a patient to enter preop information either at the physician’s office or from home via the Internet. The information would then be integrated into the patient’s record to support the nurse’s workflow, notes Marion McCall, BBA, RN, CNOR, CPHIT, director for SIS’s client solutions group.

Another trend she sees is the ability to track and manage the status of patients’ preop preparation. Has the phone assessment been completed? Have tests been scheduled? Will the patient be seen in person before the day of surgery? The data can be analyzed later to determine how the preop process affects delays and cancellations.

For example, which types of patients should have testing scheduled further in advance?

Advances in automation will have a number of advantages for clinicians, she says:

• less redundancy in collecting patient information
• information available to all perioperative disciplines without the need to re-enter data
• ability to set up alerts about patient conditions like sleep apnea or a difficult airway.

Software to bridge the gap
As health systems work toward more integrated electronic health records (EHRs), here’s a look at software currently available to aid the preop process.

ePREOP
Intended to bridge the gap between the physician’s office and surgical facility, this software is available as a stand-alone product and is exclusively marketed through Picis as part of its perioperative suite.

ePREOP can function as a patient portal, allowing the patient to enter information from home, the surgeon’s office, or a preop assessment area, the company says.

ePREOP can take information from the patient’s EHR, personal health record, or nursing assessment and run it through algorithms based on evidence and consensus-based guidelines and the facility’s own protocols to generate preop testing and assessment recommendations.

If the hospital lacks an EHR, a freestanding preop record is available that a patient can access from a kiosk, tablet, or personal computer. The data is sent to the physician’s office and surgical facility, along with the testing recommendations and personalized preop instructions.

“There is always a nursing review of the patient,” stresses David Bergman, DO, the anesthesiologist who developed ePREOP. The advantage, he says, is that the

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nurse doesn’t have to re-enter information already in the EHR.

The nurse can review the personalized preop instructions with the patient. For example, does the patient need to bring a sleep apnea machine on the day of surgery? Which medications should be continued or discontinued?

Information from ePREOP can flow to the OR information system and anesthesia information management system, where clinicians can review it.

Dr. Bergman says he developed the program because he noticed inconsistent testing patterns at his hospital.

“We would have a healthy 18-year-old coming in for a knee arthroscopy who would end up getting all of these unnecessary tests,” he says. “Then we would have an 80-year-old with renal failure and no EKG on the chart.”

He found his institution was spending $98 per patient in unnecessary tests.

An added advantage of capturing preop information electronically as part of Picis software is that it can be integrated with other data collected on the day of surgery, says Joe Smith of Picis. Analytics tools can be applied to provide reports useful for improving care.


**Merge Presurgical**

This software, formerly DocuSys PCM, and now an optional module of Merge Healthcare’s anesthesia information management system (AIMS), uses algorithms to score a patient’s risks based on the health history and complexity of surgery.

Patients enter their histories using an automated questionnaire, either in the physicians’ office or by password using their own computer. Once the information is verified by a nurse, the software uses algorithms based on earlier work by the Cleveland Clinic to generate risk scores and recommend lab tests and any further evaluation needed. The questionnaire focuses mainly on pulmonary, diabetic, and cardiac issues. Questions are phrased in laymen’s terms. For example, “Do you have shortness of breath at night that requires sleeping on more than 2 pillows?”

The company is working on enhancements that will allow customers to customize the patient questionnaire and the risk-scoring algorithm, says Bob Schallhorn, vice president of Merge Healthcare.

Patient information gathered through Merge Presurgical can be used to populate Merge’s preanesthesia evaluation module or similar modules in other AIMS, he says. www.merge.com/Solutions/Perioperative/Merge-Presurgical.aspx

**My Medical Files**

My Medical Files from MMF Systems, Inc, provides a preoperative patient information management service and free web-based preoperative questionnaire service. Here’s how the process works:

- Physicians submit preop information by fax, MMF’s physician portal, or other electronic medical records.
- Patients submit preop questionnaires by fax or using MMF’s online questionnaire.
- MMF collects, tracks, and reports on all preop patient information. For missing information, MMF conducts outreach with physicians’ office staff.
- Authorized hospital and physicians’ office staff access information via the MMF portal.

The latest version, MMF 3.0, can interface with systems using the HL7 protocol, allowing information to flow into an EHR. Physician orders can be entered electronically rather than faxed.

Patients can log in and fill out preop information from their homes or offices.
“This helps to streamline insurance preauthorizations plus reduces delays on the day of surgery,” says Leor Feder, vice president of marketing and sales.

He says MMF is also teaming up with Quest and Labcorp to retrieve lab results electronically.

A patient portal that will include preop educational material is in development.

The company says it can provide an entire patient folder within 15 to 30 minutes of receiving a patient’s faxed documents and in a shorter time for electronic documents.

MMF says its service is used by about 70 hospitals and 7,000 surgeons. The patient questionnaire is free. Cost of the preop patient information management service per surgical patient admission includes:

- information centralization and indexing: $4
- tracking and report generation: $2
- compliance and surgeon office outreach: $2.

One Medical Passport

One Medical Passport from Medical Web Technologies is intended to connect patients, surgical facilities, and physician offices using web-based software to gather patients’ health histories in advance of a procedure.

When patients are scheduled for surgery, they are instructed by the surgeon’s office to create a Medical Passport, or they automatically receive an e-mail or phone message (HIPAA compliant) encouraging them to create a passport.

Once they log on, patients submit their demographic, insurance, and health history, which are stored in a secure data center. The software tailors questions to the patient and automatically asks follow-up questions for specific conditions. Patients can’t advance until they complete the required questions in each section.

Once complete, the Medical Passport information is immediately available for download by the surgical facility and physician. A personal health record is also created for the patient’s own use.

The service has 3 advantages, notes Stephen Punzak, MD, an anesthesiologist who is the company’s founder and CEO.

First, having a patient’s history well in advance of surgery allows the facility to perform “triage” so the preop clinic sees only patients with conditions that merit an in-person visit. Second, the software automatically screens for patients with issues such as a recent myocardial infarction, increased body mass index, or sleep apnea so these issues can be managed before surgery. Finally, the system provides a uniform set of data to the nursing staff, anesthesia providers, and surgeons.

One Medical Passport can be accessed on the iPad, with plans to extend access to smartphones in 2012.

One Medical Passport is used by about 300 facilities. Pricing is geared to facility size. A typical community hospital can expect to pay about $1,000 to $2,000 a month, whereas an ambulatory surgery center might pay less than $500.