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INSIDE THE CURRENT ISSUE July 2008

Infection Connection

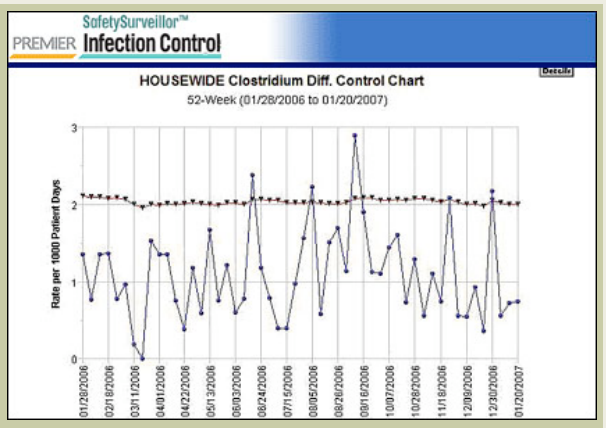
Hunting down HAI: Automated tracking technology

by Susan Cantrell, ELS

Automated surveillance technology is an amazing tool and certainly one whose time has come. Mandatory reporting of infections and the coming changes in reimbursement by Centers for Medicare and Medicaid Services (CMS) highlight the need for advanced, and timelier, tracking of infections. Automated surveillance of infections has so many advantages over manual tracking, advantages that can result in the two things we all want most: fewer medical errors and better care for patients.

Scott A. Walker, MBA, JD, vice president of strategic development, TheraDoc, Salt Lake City, UT, observed: "There's a lot of pressure in the industry to do things better. It's apparent that the required knowledge of what is happening in hospitals is a result of surveillance. The new message in the last few years is not so much about how your facility compares with other hospitals, but how to get to zero infections. The goals have been redefined by organizations such as the Joint Commission, CMS, and the Leapfrog Group. Automated surveillance will show you how far your organization has to go to reach that goal," said Walker."

Jeff Petry, vice president and general manager for Safety-Surveillor, Premier, Charlotte, NC, believes there are three fundamental reasons that healthcare facilities should track infections: (1) to provide better patient care and patient safety; (2) to avoid the financial implications of infection, such as increased lengths of stay, increased antibiotic use, reimbursement reductions by CMS and others who are following their lead; and (3) to comply with mandated reporting of hospital-acquired infections (HAIs).



Screenshot: Premier's SafetySurveillor showing a report based on Clostridium difficile, that users can access to help track infections

The whys and wherefores

The time factor

Switching from manual to automated surveillance allows ICPs to spend less time on administrative duties and more time on actively preventing infection. Who doesn't like the sound of that? Salah S. Qutaishat, PhD, CIC, FSHEA, epidemiologist, director of infection prevention and control, SafetySurveillor, Premier, Charlotte, NC, illustrated: "It's like using a typewriter versus a word-processing program. Many are still using manual methods to track infections, spending up to 80% of their time on it. SafetySurveillor allows them to switch to devoting 80% of their time to infection prevention."

Petry and Qutaishat told *Healthcare Purchasing News* that one of their customers, McLeod Regional (South Carolina), said that Premier's

INFECTION CONTROL UPDATE

ASGE issues updated infection control guidelines for gastrointestinal endoscopy

The American Society for Gastrointestinal Endoscopy (ASGE) has updated its infection control guidelines regarding gastrointestinal (GI) endoscopy. The guidelines note that endoscopy-related infections are a very rare event since the adoption of endoscope reprocessing (cleaning) guidelines. The ASGE infection control guidelines appear in the May issue of GIE: Gastrointestinal Endoscopy, the monthly peer-reviewed scientific journal of the ASGE.

ASGE is known as the profession's leader in setting standards of excellence in endoscopy and is committed to setting the highest-quality standards for GI endoscopy through its safety guidelines and the training of its members so that patients receive the best and safest care possible. The infection control guidelines were prepared by the ASGE Standards of Practice Committee.

The guidelines are issued to disseminate information to promote understanding, which leads to the prevention of infection as a result of a GI endoscopy. Circumstances in which an endoscopy-related infection might occur are discussed in the document, as are measures to prevent such infection, including endoscope reprocessing, antibiotic prophylaxis, and protection of endoscopy personnel.

The single best protection against patient-to-patient transmission of microorganisms by an endoscopy is stringent reprocessing of endoscopes after use, with careful adherence to the "Multi-Society Guidelines for Reprocessing Flexible Gastrointestinal Endoscopes" issued in 2003. The guidelines define and discuss key concepts in endoscope reprocessing.

Endoscopy personnel may facilitate transmission of infection from patient to patient if they fail to carefully adhere to general infection control principles. In particular, appropriate aseptic techniques and safe injection

SafetySurveillor is like having an additional, virtual employee who works 24 hours a day, seven days a week, whose surveillance findings can be accessed via any computer at any time. McLeod Regional also observed that "what once took the better part of a day can now be done in an hour."

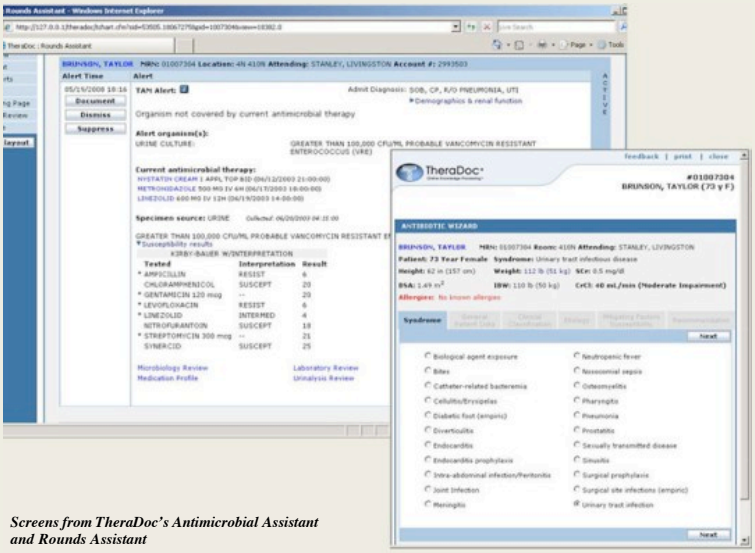
Patrick Hymel, MD, vice president, general manager, Cardinal Health, MedMined Services, Birmingham, AL, pointed out that automatic surveillance helps to direct infection control efforts where it's most needed, which can prevent a higher percentage of infections. "Automated surveillance can free up ICPs so that they're able to focus more of their time on teaching how to prevent infections. MedMined (Cardinal) can help to determine where in the hospital that education is needed. It identifies patterns and supplies solutions and approaches to the issues at hand."

"TheraDoc's Infection Control Assistant provides a set of tools to enhance the infection control practitioner's workflow," explained Walker. "On average, the ICP spends 2½ to 3 hours per day on tracking infections. Employing TheraDoc's tools allows the ICP more time to spend on other aspects of infection control such as education, compliance monitoring, and working with patients on the floors. The Infection Control Assistant helps ICPS survey patient data, establish baseline infection rates, identify patterns of infections and colonizations, recognize outbreaks, investigate and clinically confirm infections, track resistant pathogens, and implement control measures in real time."

The accountability factor

Another valuable aspect of automated surveillance of infections is that it can quickly pinpoint the source of infections and identify patterns of infection. Hymel explained how MedMined is a valuable tool for identifying problem areas: "The only way to know if a particular area of the hospital is contributing to risk of infection is to track the overall rate of infection. For hospitals to maximize the number of infections prevented and for the safety of patients, all infections should be tracked hospitalwide as well as postdischarge. Whole-house tracking exposes patterns in infections that are not otherwise known."

"Most hospitals not using a tracking system focus their manual tracking efforts on the ICU," stated Hymel. "Infections that manifest in the ICU may actually have started in another unit before transfer to the ICU. Data captured with whole-house surveillance can reveal in which department infections truly began. Infection control professionals can view lab results up through the current day and determine the likely department in which patients were residing when they were exposed. Whole-house tracking clarifies which department should be held accountable."



Screens from TheraDoc's Antimicrobial Assistant and Rounds Assistant

The money factor

No question about it, HAIs come with a price, but the cost may not always be clear, according to Hymel. "From an economic standpoint, hospitals sometimes are unaware of the losses due to infection. MedMined provides economic analyses, revealing a more accurate economic picture when infections are tracked whole house."

"Staff need resources to be successful in their efforts. Data mining can reveal their needs," said Hymel. "When one unit in the hospital experiences a 20% reduction in infection rates by using MedMined, it results in savings. The savings may be used to get more resources for the ICP."

We probably most often think of quality as being connected with high cost, but

practices should be followed. Improper reuse of syringes and the use of contaminated multiple dose drug vials have been linked to the transmission of hepatitis B and C between consecutive patients treated at health care facilities. Such practices should be avoided, and single use drug vials are recommended. Similarly, use of gloves by health care workers was shown to decrease the incidence of Clostridium difficile associated diarrhea and the point prevalence of asymptomatic C difficile carriage in inpatients.

See these ASGE Guidelines:

"Multi-Society Guidelines for Reprocessing Flexible Gastrointestinal Endoscopes"

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Petry (Premier) has a different view in this case. "There's a correlation between better quality, better safety, and lowering cost. We start with quality and patient safety, and that will drive lower cost." Qutaishat illustrated: "It's much like vaccinations: there's a cost involved in implementing a vaccination program, but it prevents or reduces costs, too."

The nuts and bolts

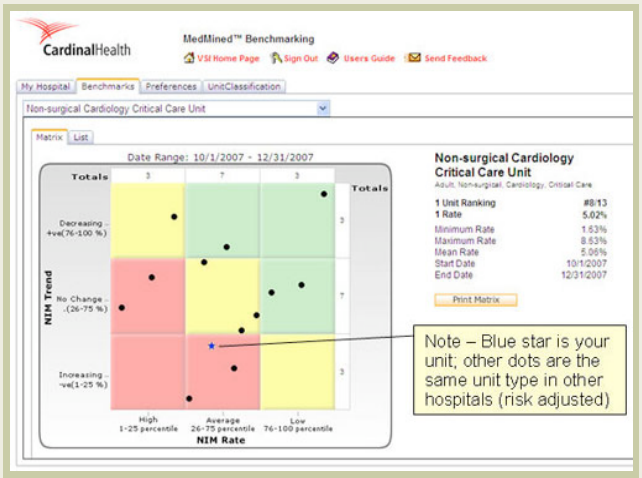
So, let's get down to nuts and bolts. Just exactly what kinds of information can automated surveillance programs capture, and what can they do with the information they've captured to make it worth your while to sit up and take notice?

Petry explained how SafetySurveillor works: "Automated surveillance captures electronic information from areas of the facility such as laboratories, pharmacy, radiology, and surgery and brings it together in a common view. It doesn't replace clinical intervention, but it helps to guide caregivers as to where it needs to occur." Qutaishat added: "It helps clinicians to make the best clinical judgment and to determine the most appropriate intervention in a timelier, more accurate way."

"Programs need to be targeted to specific communities within the hospital," continued Petry.

"SafetySurveillor allows flexibility in creating alerts, reports, surveillance, and epidemiology. It's scalable; you don't have to repeatedly key in certain info. It's also done in a secure environment, because patient information is sensitive. We don't want to create a burden for users, so we've tried to make it as streamlined as possible, but we also don't want a solution that's oversimplified."

Qutaishat believes that SafetySurveillor's strength is their clinical side. "We have on board clinicians who speak the same language as the users. We build software to improve patient outcomes, creating a safer environment for the patient. The purpose of automation in health care is to improve the environment for better patient outcomes."



MedMined (Cardinal Health) can compare your facility's infection rates to those at other similar hospitals

Hymel believes that one of the advantages of MedMined is that it can be implemented in a hospital within 60 days. "We've developed an advanced way of storing data that doesn't require the hospital to change how they work. It's essentially a plug 'n play server that listens to existing messages within the hospital. It captures data such as admission, discharge, transfer, laboratory, pharmacy orders, and more."

3M offers ClinTrac Infection Control Manager (ICM) software, an infection assessment and reporting application that automatically assembles case findings, identifying patients with pathogens, antibiograms, or antibiotics that need tracking. Patients who have been under surveillance during previous visits are added to work lists.

Because consistency in language is important to effective communication, 3M ClinTrac ICM uses infection definitions based on the Center for Disease Control (CDC)'s National Nosocomial Infections Surveillance (NNIS) system, as well as custom, hospital-defined criteria. It automatically identifies patients who meet criteria for infections. Other features and benefits include allowing providers to alert staff to spikes in infection rates and to identify locations of affected patients within the facility; identifying and targeting treatment, which may reduce
patient length of stay; streamlining resources by allowing data and documents to be linked from multiple facilities; providing the ability to export data to national infectious disease reporting registries, such as those managed by the CDC for cancer or HIV; tracking infections using NNIS or custom criteria of infections and comparative benchmarking; importing pharmacology and laboratory data for both antibiotics and pathogens; and automatically issuing

alerts when patients need to be isolated.

The antimicrobial connection

Some vendors also have a component built around antimicrobial use, because where there's infection there are antibiotics. They go together like a hand in a glove. Premier's SafetySurveillor assists clinicians and pharmacists with optimizing antimicrobial use, reducing both inappropriate use and costs. A University of Maryland study by McGregor et al1 concluded: "Use of the system facilitated the management of antimicrobial utilization by allowing the [antimicrobial management team] to intervene on more patients receiving inadequate antimicrobial therapy and to achieve substantial time and cost savings for the hospital."

The Antibiotic Assistant, TheraDoc's antibiotic management program, offers real-time access to patient-specific data and evidence-based medical knowledge that can help with decision-making. The Antibiotic Assistant is capable of monitoring and analyzing infectious diseases real-time; identifying "drug-bug" mismatches; monitoring renal dose; monitoring targeted drugs; assisting in selecting the correct antimicrobial for the circumstances, suggesting the dosage, duration, timing, and administration route of drugs and identifying opportunities to switch from infusion to oral administration; tracking drug levels; monitoring resistance patterns; and monitoring for adverse drug events.

MedMined also has an antibiotic management service. "Infection and antibiotics are tied together," said Hymel. MedMined's antibiotic management service promotes better stewardship of antibiotics by revealing the level of success a drug has had against a specific bug. "It can show whether any patients in the facility are currently on less-than-effective antibiotics for their situation," said Hymel. "Without electronic antibiotic management, most antibiotic choices are made empirically; yet they often can be incorrect. The antimicrobial management service gives faster, more accurate results in identifying the best antimicrobial for the conditions. It can show how use of a drug has changed over time. It can show a physician how much of a particular antibiotic he or she has used versus how many cases proved resistant to the drug. It can show physicians where they've prescribed the wrong drug and improve performance in that respect."

Advice on purchasing

When looking to purchase a surveillance system, Walker suggested making sure that the provider can do real-time surveillance, so that problems can be dealt with as they arise. "Ask how much experience the vendor has in real-time HL7 interface mapping. Ask about the amount and types of information collected. Tracking should consist of more than surveillance by positive cultures. Clinicians need easy access to data that can help them make decisions."

"Ask if the system has workflow tools," continued Walker. "Can tasks be done quickly and easily? Does the system comply with industry definition, messaging, and vocabulary standards? Is it capable of interoperability and comparability of data? Are they using CDC definitions? Also, if money is tight, ask about payment schemes and whether starting with the basics and adding on tools later is possible." HPN

References

1. McGregor JC, Weekes E, Forrest GN, Standiford HC, Perencevich EN, Furuno JP, et al. Impact of a computerized clinical decision support system on reducing inappropriate antimicrobial use: a randomized controlled trial. J Am Med Inform Assoc 2006;13:378–384.