Commitment to Safety & Quality

To overcome this challenge, patient safety surveillance and clinical decision support systems like Hospira’s TheraDoc™ Clinical Intelligence™ Platform and Infection Control Assistant™ software streamline the surveillance process. The TheraDoc system interfaces with a number of data sources within the hospital and provides real-time, actionable information that helps IPs identify more infections sooner, improves efficiency and workflow, and allows more time for interventions, improvements, and education. More than 300 institutions in the U.S. currently utilize TheraDoc for real-time monitoring, prevention, and reporting of HAIs and other infectious diseases.

As part of its commitment to improving patient safety and the quality of care, WakeMed Health & Hospitals implemented the TheraDoc Infection Control Assistant in February 2010. The healthcare system, made up of a flagship hospital, community hospital, and several other facilities, is already reaping results, with electronic surveillance helping the IP staff identify a greater number of cases for review, provide a more timely response to infections hospital-wide, and improve reporting.

The Fight for Electronic Surveillance

WakeMed began the process of selecting an electronic system in 2005. Director of Infection Prevention Robin Carver, RN, BSN, CIC, said the department wanted to take advantage of patient safety and workflow benefits offered by a computerized infection surveillance solution. Importantly, an automated system would enable WakeMed’s IPs to spend less time on data collection and analysis and focus more time on intervention, education, and prevention.

According to Carver, to find the most appropriate system, the Infection Prevention Department conducted a thorough review of the available technologies. “If we were going to dedicate our resources to this effort, we wanted to make sure we chose a system that would be able to grow with us and be robust enough to support all our daily operations,” Carver said.

Carver encountered several challenges in her quest to obtain the TheraDoc system. Initially, the idea to build an in-house solution instead of purchasing a third-party system was proposed. At the same time, the hospital was focused on implementing an electronic medical record system and decided it did not have the resources to simultaneously...
The ability to pull data from multiple sources and provide real-time information and alerts enables WakeMed to more quickly identify, track, and address infections.

TheraDoc Rises Above
Still convinced that an electronic patient safety surveillance system was the right solution for WakeMed, Carver submitted another proposal to acquire the TheraDoc Infection Control Assistant. Carver had selected TheraDoc for several reasons, including its comprehensive interfaces, real-time reporting capabilities, and the control clinicians retain over the decision-making process.

To be effective, computerized infection surveillance must capture information from as many hospital sources as possible to ensure accurate collection, analysis, and reporting of data. The Infection Control Assistant’s comprehensive interfaces include laboratory, pharmacy, admission/discharge/transfer (ADT), patient demographics and vital signs, and radiology. It also is unique in that it interfaces with surgery systems.

TheraDoc also provides reports and alerts in real-time, unlike other systems that batch results and report them periodically throughout the day, week, or month. Real-time information and alerts enable clinicians to quickly find and confirm infections, identify trends, and confidently initiate interventions to stem the spread of infections.

Carver said one of the TheraDoc system’s most meaningful features is that it allows clinicians to confirm infections rather than relying on mathematical modeling. “The TheraDoc system enables us to maintain control over the decision-making process,” she said. “Someone trained in the field who has done his or her review makes the determination, not the computer.”

Keys to Success
According to Carver, obtaining support from the IT Department was one of the key factors in getting the second proposal accepted. She invited a member of the IT Department to spend a day with one of WakeMed’s IPs. After witnessing the inefficient and labor-intensive process of manual infection surveillance, the IT colleague became an advocate for automated surveillance on behalf of the Infection Prevention Department.

“I tell anyone who is trying to obtain electronic surveillance to have a representative from the IT Department spend a day with them,” Carver said. “It was one of the most helpful things because that person was able to communicate to the IT Department and upper management that this was a vital project that would be very beneficial to the organization.”

Another factor that contributed to Carver’s success was the support of the vice president of quality and patient safety, who has a background in infectious diseases. The vice president understood the value of her proposal and was able to communicate that to other administrators. In addition, Carver credits her own persistence. “I truly believed an electronic infection surveillance system was what we needed to improve our outcomes and increase patient safety, so I continued to advocate for an electronic solution,” she said.

The process for implementing the TheraDoc Infection Control Assistant at WakeMed was a smooth one. TheraDoc provided a dedicated team for building WakeMed’s system. Weekly conference calls kept the action list and timeline on track. When implementation was almost complete, the TheraDoc team spent 3–4 days on site for in-depth training.

“We had an experienced team dedicated to building our system,” Carver said. “It was that focus that made the whole process go much more quickly.”

Working Smarter
The positive impact of TheraDoc’s Infection Control Assistant at WakeMed was immediate. The ability to pull data from multiple sources and provide real-time information and alerts enables WakeMed to more quickly identify, track, and address infections. In addition, because the flexible platform is easy to customize, WakeMed is able to program alerts for specific lab results, medication orders, or other data of interest. Now, as
soon as IPs become aware of parameters they need to monitor, an alert can be created, further improving the hospital’s infection surveillance capabilities and response to changing infectious disease threats.

According to Carver, some of WakeMed’s infection rates showed an increase after the adoption of TheraDoc—a fact she attributes to better surveillance, with fewer infections going undetected. “Within the first month, every IP commented that they were reviewing many patients who may have been overlooked if they were still doing manual surveillance,” Carver said. “For example, it was possible to miss patients or experience delays when we were only receiving lab reports every 24 hours. Patients with lab results generated while reports were being run could fall through the cracks, while those with positive lab results after that day’s report was released might not be identified until the following day, allowing time for infections to spread. In contrast, TheraDoc generates an alert as soon as information is available in the lab’s system.”

Carver added that TheraDoc’s ability to incorporate information from multiple data sources throughout the hospital enables IPs to address potential public health concerns, such as tuberculosis. In fact, Wake County has one of the highest rates of tuberculosis in North Carolina, and patients often are put on medication without having a culture run in-house. Carver said that in the past, these patients could go undetected. However, since TheraDoc automatically accesses pharmacy data and medication orders, WakeMed built a custom alert to notify IPs any time a patient is put on the four-drug TB regimen so they can take appropriate action.

According to Carver, the system also streamlines IP workflow and facilitates better coordination of infection control efforts throughout the hospital system. As system-wide director, she must be aware of the situation in every department within the WakeMed system and the activities of her eight-person infection prevention team, which includes IPs, a staff member who handles special projects and a public health epidemiologist.

“I have five IPs on the main campus, so it’s difficult to monitor what’s happening within all of their areas of responsibility,” she said. “From an administrative perspective, having all of the information I need electronically at the touch of a button is invaluable.”

Electronic infection surveillance also enabled her to broaden her department’s reach beyond just high-risk units. “Historically, we focused our infection prevention efforts on ICU patients, who are at the highest risk for infection, and fewer beds meant more opportunities for intervention,” Carver said. “However, we know that infections happen throughout the organization. TheraDoc allows us to see what is happening hospital-wide, so we are able to make more meaningful progress toward reducing infections.”

Tips for a Successful Transition to Electronic Infection Surveillance

Vendor Selection—As part of the research process, talk to other IPs who are using electronic surveillance software to find out how the systems are working for them and any issues they are having. Choose a system that is robust enough to meet your current daily operations and also will be able to grow with you. Make sure the system also facilitates collaboration with other key departments, such as pharmacy.

IT Cooperation—Getting the support of your IT Department is crucial. Inviting an IT staff member to spend a day working alongside an IP and observing the current process will open his or her eyes to the inefficiencies of manual surveillance, making them more likely to advocate on your behalf throughout the organization.

Implementation—Choose a vendor that offers an experienced implementation team, with a project manager focused on your institution. Discuss the implementation process in detail, asking about the team, schedule, process, and how they will keep the implementation on track. The TheraDoc team concentrated its efforts on WakeMed’s implementation, which moved the process along quickly and smoothly.

Enforce Change—It is important to set a stop date on all paper surveillance. Otherwise, IP staff members may try to hang on to the old method and end up doing double work. Carver said that now her staff members wonder how they ever functioned without an electronic system.

Persistence Pays—If your first proposal is rejected, don’t give up. Though it may take several years to sell the idea, the positive benefits an organization can experience overshadow the struggle it takes to get there.
Enhanced Screening & Reporting

WakeMed is performing active surveillance culturing for methicillin-resistant *Staphylococcus aureus* (MRSA) and analysis of screening compliance data. Though there are no state requirements in North Carolina for MRSA screening, WakeMed monitors patients in certain intensive care units, both upon admission, weekly, and upon discharge from the unit.

The current manual process for analysis of screening compliance requires the project specialist to match a spreadsheet containing lab results to a separate ADT spreadsheet. Screening is done only for four high-risk units, and generating reports is burdensome—-with the process requiring more than one full day. TheraDoc will hopefully facilitate more streamlined screening with its MDRO (Multi-Drug Resistant Organism) Compliance Manager™ tool, which provides immediate access to information about patients who require screening, the ability to select time frames for screening, and a reporting mechanism that shows whether the requirement has been met. This feature should reduce the burden on WakeMed’s project specialist, while enabling the facility to stay on top of important MRSA screening activities.

The electronic system also should help with the timely reporting of HAIs and other reportable infections. By streamlining the data-collection process, automated surveillance should enable WakeMed to report more information, both within the organization and to outside entities. Carver said TheraDoc should improve the quality and consistency of information reported by WakeMed’s IP staff, and it should facilitate benchmarking against other facilities.

WakeMed also participates in a regional MRSA collaborative, to which facilities regularly report their MRSA rates. Prior to electronic surveillance, IPs had to manually review a significant amount of data in order to submit infection rates. The automated system should provide instant access to the data, further improving IP workflow while enabling them to submit more timely reports.

TheraDoc also should facilitate easier and more thorough reporting to the National Healthcare Safety Network (NHSN). According to Carver, the ability to automatically collect data and electronically upload it to the NHSN should eliminate duplicated efforts and allow WakeMed to report even more information. For example, WakeMed currently does not report surgical data to the NHSN, as the process of manually gathering and entering the information is too time-consuming, particularly with its high volume of surgeries. TheraDoc—with its surgery interface—should simplify the process.

“This will help the national effort to reduce HAIs because more data reported will lead to better quality benchmarking numbers,” Carver said. “It’s additional information that we’re able to provide for the greater good.”

TheraDoc also should facilitate sharing of information with the hospital’s executive team. Carver currently provides reports to committees such as WakeMed’s Quality Council that track a variety of metrics, including MRSA infection rates, central line blood stream infections, and ventilator-associated pneumonia. TheraDoc should help streamline the existing manual reporting process and create reports that are more structured and comprehensive.

Evolving for the Future

WakeMed Health & Hospitals reflects a growing trend toward using information technology to positively impact patient safety and the quality and efficiency of care. As its experience grows, WakeMed plans to expand its use of TheraDoc, including documentation and trending of infection prevention interventions—and TheraDoc has the ability to evolve to address WakeMed’s future needs.

Carver said her hard work is paying off. Electronic infection surveillance is helping IPs at WakeMed refocus their efforts, making them better prepared to reduce and prevent HAIs throughout the system, manage outbreaks, and improve patient safety. TheraDoc also provides a means to document progress made in reducing infections, offering important feedback that demonstrates the impact and value of IP efforts toward improving patient safety. “We are looking forward to seeing the TheraDoc system’s continued impact on infection prevention at WakeMed,” she said.