Improving hand hygiene

A system for continuous monitoring of hand-washing helps a South Carolina hospital monitor compliance with its “wash in, wash out” policy for patient rooms.

Simple hand hygiene among clinicians is a highly effective way to prevent healthcare-acquired infections, which according to the Centers for Disease Control and Prevention affect about one in 20 hospitalized patients.

Summerville Medical Center in Charleston, SC, has successfully deployed a hand hygiene compliance program, using a real-time location system (RTLS) and other technologies to detect and report whether clinicians wash their hands upon entering and leaving patient rooms, as specified by hospital protocol.

The program began with a pilot study in the intensive care unit and has since been extended to all care areas. Initial results from the ICU show hand hygiene compliance increased from 52 percent to 81 percent in eight weeks.

“We haven’t had many hospital-associated infection events at Summerville, but our goal is zero infections,” says hospital CEO Lou Caputo. “Of course, hospitals aren’t controlled environments, and there will always be external factors that impact infections. But our belief is that this tracking technology will reinforce good behaviors and get us to our target of zero infections.”

Beyond “secret shopper”

Before looking to a technology solution, Summerville had monitored hand-washing with the traditional “secret shopper” process. Once per month, a staff member circulated through care areas, observed clinicians entering and leaving rooms and manually recorded whether they washed their hands. This method yielded about 700 observations per year, which the hospital viewed as an insufficient assessment of policy compliance. Today, the automated RTLS system records more than 5,000 hand-wash opportunities per day.

Summerville had used the AgileTrac™ RTLS technology from GE Healthcare to track mobile assets and patients to better manage hospital operations. The technology uses small sensor tags and a dedicated infrastructure to track the location and identify meaningful workflow events. The Summerville staff asked GE to expand the capabilities of the system to perform continuous, automated hand hygiene monitoring.

GE worked with the Summerville team to create a complete solution that tracks clinicians’ patient encounters and indicates whether corresponding hand hygiene events occurred. The team chose to pilot-test and confirm the system in the ICU—a high-traffic area with frequent interaction between clinicians and patient.
Expected accuracy

The system was designed to provide accurate measurement, requiring little or no change in workflow. Each caregiver wears a badge that counts room entries and exits and the use of soap or sanitizer dispensers. Data collected from the system is used to model and characterize clinician/patient interactions and create a detailed record of the patient experience.

High-value metrics including adherence to hand hygiene protocols are then provided on dashboards and customizable reports. The information has provided new insights into Summerville’s operational workflows, allowing healthcare leaders to see hand hygiene compliance results for individuals and departments as well as overall compliance trends.

Getting results

The team deployed the monitoring system for eight weeks starting on May 1, 2012, in the ICU, encompassing eight patient rooms with 25 soap dispensers served by 40 clinicians. During the pilot period, staff members manually observed and recorded hand-washing behavior as a check against the automated system’s accuracy.

With the automated monitoring in place, hand hygiene compliance improved from 52 percent to 81 percent in eight weeks. The significant improvement was noticeable to the Summerville clinicians.

Satisfied that the compliance reports from the pilot project were directionally correct and accurate, the Summerville team deployed the system throughout the hospital in September and October, covering 100 beds and 300 dispensers served by about 250 staff members.

“This hand hygiene tracking technology represents a huge step up from the ‘secret shopper’ method,” Caputo says. “Under that approach, hospitals typically get a very small sample size and there is often a Hawthorne effect, since people who know they’re being observed tend to do what they’re supposed to do. So the reality of hand hygiene compliance in hospitals is very different from what organizations have been reporting.”

Achieving buy-in

Anticipating some hesitancy among the staff about the monitoring system, the Summerville staff carefully communicated with clinicians about the technology and its purpose before starting the pilot and before rolling out the technology facility-wide.

The team was careful to frame the technology as a way to improve compliance with a policy critical to quality care and patient safety.

Individual clinicians’ compliance records appear on the dashboards so they can see how they are performing in comparison with their peers. “The tracking technology allows us to monitor and measure adherence to our policies and then use that data to modify behavior,” Caputo says.

“The data helps us hold our people accountable for their behaviors, and we’re able to tangibly show them their compliance rates and then watch them improve when we coach and counsel them. We’re continuing to see compliance improve.

“While it’s too early to tell the impact of our program on infection rates, that is one of the things we want to measure long term. We also want to measure the impact on reduced readmissions and the lost workdays of employees. Our hope is that if they’re washing their hands appropriately, there will be an impact on their health, as well.”

Hand Hygiene Compliance Monitoring Project
Summary of Results

<table>
<thead>
<tr>
<th>Pilot Project – ICU Only</th>
<th>Before Monitoring % Policy Compliance</th>
<th>After Monitoring (July-August 2012) % Policy Compliance</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>52%</td>
<td>81%</td>
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Exact training module availability differs by modality.
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