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With Money at Risk, Hospitals Push Staff to Wash Hands

By ANEMONA HARTOCOLLIS

At [North Shore University Hospital](#) on Long Island, motion sensors, like those used for burglar alarms, go off every time someone enters an intensive care room. The sensor triggers a video camera, which transmits its images halfway around the world to India, where workers are checking to see if doctors and nurses are performing a critical procedure: [washing their hands](#).

This Big Brother-ish approach is one of a [panoply of efforts](#) to promote a basic tenet of infection prevention, hand-washing, or as it is more clinically known in the hospital industry, [hand-hygiene](#). With [drug-resistant superbugs on the rise](#), according to a recent report by the federal [Centers for Disease Control and Prevention](#), and with hospital-acquired infections costing \$30 billion and leading to nearly 100,000 patient deaths a year, hospitals are willing to try almost anything to [reduce the risk](#) of transmission.

Studies have shown that without encouragement, hospital workers wash their hands as little as 30 percent of the time that they interact with patients. So in addition to the video snooping, hospitals across the country are training hand-washing coaches, handing out rewards like free pizza and coffee coupons, and admonishing with “red cards.” They are using radio-frequency ID chips that note when a doctor has passed by a sink, and undercover monitors, who blend in with the other white coats, to watch whether their colleagues are washing their hands for the requisite 15 seconds, as long as it takes to sing the “Happy Birthday” song.

All this effort is to coax workers into using more soap and water, or alcohol-based sanitizers like Purell.

“This is not a quick fix; this is a war,” said Dr. Bruce Farber, chief of infectious disease at North Shore.

But the incentive to do something is strong: under new federal rules, hospitals will lose [Medicare](#) money when patients get preventable infections.

One puzzle is why health care workers are so bad at it. Among the explanations studies have offered are complaints about [dry skin](#), the pressures of an emergency environment, the tedium of hand washing and resistance to authority (doctors, who have the most authority, tend to be

the most resistant, studies have found).

“There are still staff out there who say, ‘How dare they!’ ” said Elaine Larson, a professor in Columbia University’s school of nursing who has made a career out of studying hand-washing.

Philip Liang, who founded a company, [General Sensing](#), that outfits hospital workers with electronic badges that track hand-washing, attributes low compliance to “high cognitive load.”

“Nurses have to remember hundreds — thousands — of procedures,” Mr. Liang said. “Take out the catheter; change four medications. It’s really easy to forget the basic tasks. You’re really concentrating on what’s difficult, not on what’s simple.”

His company uses a technology similar to Wi-Fi or Bluetooth. The badge communicates with a sensor on every sanitizer and soap dispenser, and with a beacon behind the patient’s bed. If the wearer’s hands are not cleaned, the badge vibrates, like a cellphone, so that the health care worker is reminded but not humiliated in front of the patient.

Just waving one’s hands under the dispenser is not enough. “We know if you took a swig of soap,” Mr. Liang said.

The program uses a frequent-flier model to reward workers with incentives, sometimes cash bonuses, the more they wash their hands.

[Gojo Industries](#), which manufactures the ubiquitous Purell, has also developed technology that can be snapped into any of its soap or sanitizer dispensers to track hand-hygiene.

At North Shore, the video monitoring program, run by a company called Arrowsight, has been adapted from the meat industry, where cameras track whether workers who skin animals — the hide can contaminate the meat — wash their hands, knives and electric cutters.

Adam Aronson, the chief executive of [Arrowsight](#), said he was inspired to go from slaughterhouses to hospitals by his father, Dr. Mark Aronson, vice chairman for quality at Beth Israel Deaconess Medical Center in Boston and a professor at Harvard Medical School.

“Nobody would do a free test — they talked about Big Brother, patient privacy — nobody wanted to touch it,” Mr. Aronson said.

He finally got a trial at a small surgery center in Macon, Ga., and in 2008, North Shore also agreed to a trial in its intensive care unit. The medical center at the University of California, San Francisco, is also using Arrowsight’s video system, and Mr. Aronson said eight more hospitals in the United States, Britain, the Netherlands and Pakistan had agreed to test the cameras.

North Shore's study, published in the journal *Clinical Infectious Diseases*, found that during a 16-week preliminary period when workers were being filmed but were not informed of the results, hand-hygiene rates were less than 10 percent. When they started getting reports on their filmed behavior, through electronic scoreboards and e-mails, the rates rose to 88 percent. The hospital kept the system, but because of the expense, it has limited it to the intensive care unit, where the payoff is greatest because the patients are sickest.

To get a passing score, workers have to wash their hands within 10 seconds of entering a patient's room. Only workers who stay in the room for at least a minute are counted, and the quality of their washing is not rated. Scores for each shift are broadcast on hallway scoreboards, which read "Great Shift" for those that top 90 percent compliance.

Technology is not the only means of coercion. The Greater New York Hospital Association, a trade group, and the health care workers union, 1199 S.E.I.U., train employees to be "infection coaches" for other employees.

In a technique borrowed from soccer, hospital workers hand red cards to colleagues who do not wash, said Dr. Brian Koll, chief of infection prevention for [Beth Israel Medical Center](#) in Manhattan, who trains coaches. (Unlike soccer players, however, workers do not have to leave.) "It's a way to communicate in a nonconfrontational way that also builds teamwork," Dr. Koll said.

"You do not want to say, 'You did not wash your hands.' "

Doctors, nurses and others at Beth Israel who consistently refuse to wash their hands may be forced to take a four-hour remedial infection prevention course, Dr. Koll said. But to turn that into something positive, they are then asked to teach infection prevention to others.

Dr. Koll said that he was not aware of malpractice suits based on hand-washing, but that hand-washing compliance rates often become part of the information used when suing hospitals for infections.

A hospital in the Bronx gave out tickets — sort of like traffic tickets — to workers who did not wash their hands, he said. "That did not work in our institution," he said. "People made it a negative connotation." Beth Israel finds that positive reinforcement works better, Dr. Koll said.

Like other hospitals, Beth Israel also uses what it calls secret shoppers — staff members, often medical students, in white coats whose job is to observe whether people are washing their hands. Beth Israel gives high-scoring workers gold stars to wear on their lapels, "hokey as this sounds," he said; after five gold stars they get a platinum star, or perhaps a coupon for free coffee. "Health care workers like caffeine," Dr. Koll said.

There are buttons saying, “Ask me if I’ve washed my hands,” and Dr. Koll said that patients’ families did ask because they understood the risks. Especially in pediatrics, he said, “parents do not have a problem at all asking.”

To avoid slogan fatigue, Beth Israel has at least five buttons, including “Got Gel?” and “Hand Hygiene First.”

Dr. Larson, the hand-washing expert, supports the electronic systems being developed, but says none are perfect yet. “People learn to game the system,” she said. “There was one system where the monitoring was waist high, and they learned to crawl under that. Or there are people who will swipe their badges and turn on the water, but not wash their hands. It’s just amazing.”