

Kathryn Kirkland, M.D.: Infectious enthusiasm

By Rosemary Lunardini

Health care is a culture. Physicians, nurses, and other caregivers have familiar, established ways of doing things, and, like members of any culture, they're often resistant to change. They might occasionally examine what they're doing, see that they're not getting the desired result, and search for a better way of doing things. But more likely, perhaps, is that they keep doing things the way they've always done them until someone comes along who can provide a new perspective on old habits—someone like Kathryn Kirkland.

Kirkland is the hospital epidemiologist at DHMC. "My role is to reduce the risk that patients are going to get an infection during the time they receive health care anywhere in our medical center," Kirkland says. To do that, she has to study—and try to change—the health-care culture.

Kirkland's approach to reducing hospital-associated infections—nasty bugs like staphylococcus, norovirus, clostridium, and streptococcus—comes from her life experiences and personal inclinations. She has a tireless commitment to gathering the best possible data before making decisions that affect the way the institution operates. She also tries to work with others—listening to their stories, complaints, and ideas—to help them get "unstuck," as she puts it, from whatever is not working.

As a fourth-year medical student at DMS in the mid-1980s, Kirkland was planning to go into obstetrics and gynecology. Then a rotation in infectious disease changed her career path. She found herself fascinated by the field, and so instead chose to do her residency in internal medicine. Later, as chief resident in medicine at Columbia-Presbyterian Medical Center, she reviewed the care of patients who had died. "I really enjoyed going back through, seeing how the process went, where the gaps were, and what we could learn to make it better the next time," she says. "It's the same thing I do now."

After her residency and a fellowship in infectious disease at Duke, Kirkland spent two years in the Epidemiological Intelligence Service (EIS) at the Centers for Disease Control (CDC), where she was a sort of disease detective. There she compiled mounds of data. But, she says,

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Born: Durham, N.C.

Education: Mount Holyoke College '81 (B.A. in English); Dartmouth Medical School '86 (M.D.)

Recent award: Department of Medicine Excellence in Teaching Award (2009)

Where she lives: Norwich, Vt.

Hobbies: Reading poetry and novels, fly-fishing, and watching her three teenagers—Will, Kate, and Sam—play basketball

What she is currently reading (and why): *The New Drawing on the Right Side of the Brain* ("A lot of medicine can become very left-brain, and I think there's a place that the right brain may be able to serve in an important supporting role. So I'm just kind of exploring that, having fun with it.")

Kirkland is the one behind the hand-washing posters and the convenient Purell dispensers throughout the hospital.

"part of what I learned in the EIS was that surveillance—gathering of information—is only useful to the extent that it drives decision-making and action."

When her CDC fellowship ended, Kirkland returned to Duke as an assistant professor of medicine, but she always hoped to get back to Dartmouth. In 1999, she took a part-time job at DHMC, and, two years later, she began working full-time there in infection prevention.

Kirkland has led hospital-wide efforts on a number of fronts, but one of the most significant sounds like the simplest: hand hygiene. The CDC has deemed hand hygiene—just washing one's hands regularly—the single most important procedure

for preventing hospital-based infections. "Hand hygiene brings out all the challenges to what change is all about, which is behavior—getting people to do things differently," Kirkland says.

Kirkland's campaign to improve hand hygiene at DHMC grew out of advising a resident on a research project. "The resident went into this chaotic unit and mapped their process of care," Kirkland says. Nurses in the unit would check a patient's chart located on a table outside the patient's room, go into the room, put in an IV, do an exam, go back to the chart, and then move on. So the resident took a container of the hand sanitizer Purell, put Velcro on the bottom, and stuck it to the chart on the tables. Within a month, hand hygiene compliance in the unit went from 10% to 60%, and it later reached 80%. "That taught me that you can do a lot by going in, observing, and understanding how people do their work," Kirkland says.

The next step in the campaign was to send staff out to count hand washings in each unit. Since that time, the rate at which nurses comply with hand-hygiene guidelines has improved to 95% (up from 46%). Hand-washing among physicians has not yet been studied as thoroughly, and their compliance is more variable, but it has also improved. Kirkland's approach helped bring hospital-associated infections at DHMC to a new low, which has been sustained now for several years, even through the recent H1N1 pandemic.

Nurses and physicians know that Kirkland means what she says. She is the one behind the hand-washing campaign posters and the convenient Purell dispensers located throughout the hospital, and she

is known in her field for her persistence in fighting to lower infection rates. Her frequent talks and articles bear amusing titles like “Making It Stick Using Velcro,” “Surgeons or Barbers? Dealing with Hair in the Operating Room,” and “What If the Chicken Crosses the Road? Are We Ready for Avian Flu?” In a recent commentary, she gently chided colleagues at another institution for lauding their improvement in hand hygiene compliance from 32% to 47%. That is a statistically significant change, she wrote, but patients “presumably would elect to be cared for by the half of health-care workers who were compliant.”

While Kirkland continues to work on improving hand hygiene, it’s only one part of a larger plan to prevent hospital-associated infections. “I think the H1N1 pandemic has given us an opportunity to test our readiness,” Kirkland says. “It could be the pinnacle of [an] infectious disease career, since pandemics only come around once or twice every century.”

The scare over SARS (severe acute respiratory syndrome) seven years ago gave Kirkland and her colleagues a head start on dealing with H1N1. “We had the opportunity seven years ago, when SARS emerged,” she observes, “to get together and say, ‘What would it take to be ready for something like that?’”

The answer led to another culture-changing initiative, the “Ask for a Mask” campaign. At all DHMC outpatient areas, people arriving for appointments were asked if they had developed a new cough in the previous 10 days. If so, the receptionist handed them a mask to wear until they could be evaluated. Meanwhile, Kirkland and her staff kept track of the number of cases of new coughs.

“By the time H1N1 came around, we had several years of data on our new cough percentages and our seasonal variations,” Kirkland says. “We were able to detect when H1N1 first emerged in April, and then in the fall we were waiting to see when we were going to be infected.” The campaign did, indeed, help Kirkland recognize the arrival of H1N1. “We detected it,” she says. “We were looking at daily reports of cough, and it jumped up recognizably. So it served as a detection system, and it got people masked at the moment of their first contact



In her battle against infection, Kirkland deploys colorful hand-washing posters like these, and talks and papers with amusing titles like “Making It Stick Using Velcro.”

with our system.” As a result of the “Ask for a Mask” initiative, although many more patients than usual arrived at DHMC last fall with flu symptoms, there were no cases of patients acquiring the flu as a result of a visit to the medical center.

Just as with hand hygiene, the remedy seemed simple. But because it is in place all the time, the hospital is always prepared for the next crisis. The system, Kirkland says, “didn’t require us to do something new when everyone was under stress because of the pandemic. So all of that work from 2003 to 2009 put us in a good position to be able to respond to a pandemic.”

Despite spending her workdays dealing with infectious diseases and pandemics, Kirkland exudes a calm intensity. Perhaps it’s the result of the relaxation that she finds outside of work

when she goes fly-fishing with her husband, David Evancich, the vice president of public affairs, marketing, and planning for DHMC. A fishing camp in Maine is their getaway spot twice a year.

“Fly-fishing requires just enough concentration, but not too much,” explains Kirkland, “and it creates an alignment of body and brain in a nice way.” She adds that she uses barbless hooks and releases all the fish that she catches.

Not surprisingly, this former English major also loves to read. “I really believe that writing and being able to speak articulately are important parts of my profession and my life,” she says. “I think a lot of how you learn to do that well is by reading.”

Kirkland’s work has often led her back to one basic question: How do you change human behavior? One observation from a survey intrigues her—nurses changed their hand hygiene practices because it was “the right thing to do,” whereas physicians did so because of the measured reduction in infections. She hopes to get further insight into that question from a Dartmouth medical anthropologist, something that could help her better understand—and thus change—the culture of physicians. “I think it’s an uncharted frontier,” she says.

Changing a culture is never easy, but, as Kirkland knows, sometimes it’s as simple as washing your hands. ■