



WITH SCIENTISTS CONCERNED ABOUT AN INFLUENZA EPIDEMIC, THE WORK OF RESEARCHER, IMMUNIZATION EXPERT AND PROFESSOR KRISTIN NICHOL '75 IS GAINING INTERNATIONAL ATTENTION.



CENTER FOR DISEASE CONTROL

By Jan Shaw-Flamm

In May 6, 2005, St. Olaf College hosted its Sixth Annual Science Symposium, “Emerging Infectious Diseases: The Unseen Threat.” There, three prominent speakers addressed the prospect of a future in which SARS, avian influenza and bioterrorism could create a genuine public health crisis.

That same week in Baltimore, the National Foundation for Infectious Diseases (NFID) awarded Dr. Kristin Anderson Nichol '75 the first-ever Mérieux Award, which recognizes excellence in research on infectious diseases and dedication to improving public health.

Nichol is chief of medicine at the Minneapolis VA Medical Center, a professor at the University of Minnesota Medical School and author of more than 100 publications, including multiple articles in *New England Journal of Medicine* and *Journal of the American Medical Association*. She consults with the World Health Organization and the Centers for Disease Control and Prevention

(CDC) and is a resource to media outlets worldwide.

Influenza kills at least 36,000 Americans and hospitalizes 200,000 annually, according to the CDC. But, as Nichol’s research has shown, immunizations can save thousands of lives, avoid lost wages and preserve health-care dollars for other care and research. “Immunizations represent one of the great public health achievements of the last century,” Nichols says, “and, potentially, one of the achievements of the 21st century.”

Nichol’s family tree has branches throughout St. Olaf. Her husband, Todd Nichol '74, is King Olav V Professor of Scandinavian American Studies and editor for the Norwegian-American Historical Association, which is based at St. Olaf. Their sons, John and Paul, are a St. Olaf senior and first-year student, respectively. In addition, Kristin Nichol’s four siblings, all Andersons, are St. Olaf graduates (John '67, Larry '69, Carol '72 and Daniel '80), as is her sister-in-law, Holly Hane Anderson '80.

Q: You have a Bachelor of Arts in religion, an M.D., a master's in public health and an M.B.A. How did you come to take that exceptional path?

My story is one of accident and chance. After I completed my internal medicine residency, I had originally planned on additional training in infectious diseases, but after the birth of our first child, I decided to work part time for a while. I became very interested in prevention, so I pursued my M.P.H. degree in epidemiology. As my career has evolved, I've taken on increasing administrative responsibilities and decided to take an M.B.A. program.

Q: You serve as a clinician, researcher, teacher and policy adviser. What are you working on now?

It's exciting to see where we're headed in how we organize and deliver clinical care to veterans. Along with the University of Minnesota, the VA is a major training institution, and I feel very responsible for the 650 employees for whom I am "the boss."

The broadest theme of my research is prevention, specifically adult immunizations and especially influenza. Some of our research has shown that if you immunize the elderly, deaths during the influenza season are reduced almost 50 percent. Immunizing the elderly reduces the risk of pneumonia, heart disease hospitalizations, stroke and death. That's *huge*. Nothing else in adult medicine provides such benefits over a single winter season.

Q: Why does a flu shot affect deaths from heart disease?

Influenza is typically a febrile disease. If people have a high fever, it stresses their cardiovascular system, but also, influenza might precipitate the release of certain substances in the body that harm blood vessels and contribute to heart disease and stroke. Influenza exacerbates underlying conditions.

Q: How do the rates of adult vaccination compare with what you would like to see?

Among the elderly, immunization rates have been at a plateau of 65 to 70 percent. Sometimes healthcare providers forget to recommend immunization. Or people may find it difficult to get to their healthcare provider. Others reasons might be cost or fear of side effects. There are a number of strategies to enhance immunization rates. At the VA we have immunization rates of all elderly at about 90 to 95 percent.

Q: How have you kept your immunization rates so high?

We have found that a multifaceted approach — including patient education and reminders, walk-in vaccination clinics to facilitate access and the removal of provider barriers through the use of standing orders for nurses to offer and administer vaccine — together have been effective and cost effective. Our program has become a model for others across the nation.

Q: Recent estimates suggest that an influenza pandemic could kill 500,000 in the United States alone.

In the worldwide influenza pandemic of 1918, some estimates say that as many as 100 million people died. With the number of people traveling internationally, the likelihood of a pandemic influenza virus is greater than ever before. We have seen a number of bird influenza viruses in Southeast Asia, but so far they have not undergone genetic alteration to be easily transmitted from birds to humans or from humans to humans. If that happens, we could see another pandemic.

We're especially concerned about the avian viruses because humans have no preexisting immunity, so the entire population could be susceptible. Fortunately, in this country and across the globe, there is a lot of research into developing vaccines against pandemic strains, particularly vaccines that might be oriented to different kinds of avian influenza viruses.

We also think that some antiviral medications would be effective against a pandemic influenza, and our country is building a relatively modest stockpile. From a policy perspective, it's important that we all support the public health and research infrastructures, so we can develop what we need to be prepared.

Q: What about the threat of bioterrorism?

Certainly preparations for what to do in the event of a pandemic are very similar to preparations for a potential bioterrorist attack. The population of the United States is closing in on 300 million. It's not easy to immunize that many people, but if you start immunizing lots of people every year then you have the know-how and capacity to do that.

Q: The issues you confront have a life-or-death impact. How do you deal with that?

I have a wonderful family and a strong faith, and my colleagues are very supportive, but there are limits to what I can do. Though I spend many hours at work, I try to keep my priorities straight, and I also take myself with a big grain of salt.

Q: Do you have a guiding principle for your career?

It is challenging to have a family be number one and pursue a career, especially with children. Faith is number one, but family is first outside of that. Pursuing a meaningful career has meant working hard to make sure that service and stewardship are the driving forces, and then taking advantage of the opportunities.

Q: Looking back, can you see how your St. Olaf education influenced your career?

The liberal arts education provides a good grounding for pursuing any kind of career, and St. Olaf certainly supported an orientation toward stewardship and service. After St. Olaf, I went to Luther Seminary for a year under a Rockefeller Theological Fellowship. Both experiences fostered an interest in trying to improve people's lives in direct, concrete ways. ■

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