

John Modlin: A high-profile post

By Laura Stephenson Carter

When infectious disease expert John Modlin, M.D., was named chair of pediatrics at Dartmouth a year ago, there was a price: he would have to sacrifice either his research or his public-policy activities. He just wouldn't have time for both anymore. He decided he wasn't willing to relinquish his role in the public policy arena, where he had spent years helping to establish national immunization guidelines. So he opted to let the research go. He figured he would be able to balance his new administrative responsibilities (which also include serving as co-medical director of the Children's Hospital at Dartmouth) with his longtime clinical and policy activities.

Then came the terrorist attacks of September 11, 2001, and the anthrax-by-mail attacks soon afterwards. Suddenly, Modlin was thrust into dealing with immunization issues the likes of which the country had never before seen. The national committee that he chairs—the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC)—found itself addressing anthrax vaccine questions and recommending smallpox vaccination policies to protect the nation in the event of a bioterrorist attack.

The world's last reported smallpox death was in 1978, and the World Health Organization declared the disease eradicated in 1979, so vaccination for it was stopped. The only known viral specimens were retained by the CDC and the former Soviet Union, though experts fear that some terrorists may have access to the virus, too.

In light of that fact, it was the job of the 15-member ACIP to recommend how many, if any, Americans should now get vaccinated. When the panel, made up of academic physicians and public health officials, proposed not giving the vaccine to everybody but only to 10,000 to 20,000 health and emergency workers on bioterrorism response teams, Modlin had to defend the controversial decision.

He has been carefully explaining to media outlets nationwide the panel's concern about the smallpox vaccine's potentially deadly side effects for people with immune systems weakened by AIDS, cancer treatments, or the drugs used after organ transplants. For every million people who are vaccinated, experts estimate that five would die and 20 would become seriously ill. In the U.S., with a population of 285 million, that translates into the vaccine killing 1,400 people and sickening nearly 6,000 others. Since the risk of a smallpox bioterrorist attack is low—at least that's what the CDC told the panel to assume—the vaccine's risks were judged to outweigh its benefits.

Others argue that the threat of a smallpox attack is high and that everyone should be vaccinated, or at least have a choice. Modlin counters that "a policy of individual choice will actually cause more

deaths and disability and incurs the risk of becoming counterproductive." He explains that "those who are vaccinated, whether by choice or not, can transmit vaccine virus to others, some of whom will be immunocompromised." Modlin concedes, however, that "should there be any evidence that the risk has changed, these recommendations can and should be revisited and revised accordingly."

The problem is that the smallpox vaccine, a live form of the vaccinia virus, is more dangerous than any of the standard immunizations administered nowadays. "Most of the vaccines we routinely use now, for both children and adults, carry such low risks that you can't measure them," says Modlin, whose expertise in infectious diseases and viral vaccines is what got him appointed to the ACIP. He's been a member of the panel since 1995 and has chaired it since 1997.

"John is an internationally recognized expert in enteroviruses, including polio and polio vaccines," says DHMC infectious disease chief Fordham von Reyn, M.D., who has been a friend and colleague of Modlin's since the 1970s, when they were both Epidemic Intelligence Service officers at the CDC. "John is a very modest person about his accomplishments," continues von Reyn. "He has served in various capacities over the years on national committees that have had a significant influence on infectious disease and public health policy."

Modlin's work some years ago at Johns Hopkins on polio vaccines actually led to a change in U.S. policy, von Reyn notes. Modlin was an early and articulate proponent of reducing the risk of vaccine-associated poliomyelitis by using killed instead of live polio vaccine. He led a Hopkins team that tested a new regimen, which was translated into public policy by the mid-1990s.

Modlin has been an established expert in infectious diseases for so long that it may be a surprise to learn he never intended to pursue the specialty. He did dream of becoming a doctor as he was growing up in Columbia, Mo., but had "every intention of being a surgeon" like his father, who was chair of surgery at the University of Missouri.

The younger Modlin's passion for infectious diseases was ignited at Duke, where he earned his A.B. in 1967 and M.D. in 1971. The 22-year-old medical student fell under the spell of two charismatic experts in pediatric infectious diseases—Samuel Katz, M.D., a 1950 graduate of DMS who was then Duke's chair of pediatrics, and his wife, Catherine Wilfert, M.D. Before joining the Duke faculty, Katz had worked at Harvard with Nobel Laureate virologist John Enders, Ph.D., and together they had developed the attenuated measles virus vaccine now used throughout the world.

"I, as a student, was able to see the passion that [Katz and Wilfert] had for infectious diseases, and that was very compelling," Modlin re-

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calls. But though the specialty had captured his fancy, he had trouble deciding whether to pursue it via internal medicine or pediatrics. "I took that indecisiveness right down to the wire," he admits. "I wanted to apply to [residency] programs in both pediatrics and medicine." But once he recognized, he says with a grin, that "pediatricians were a little more fun to be with," the choice was easy.

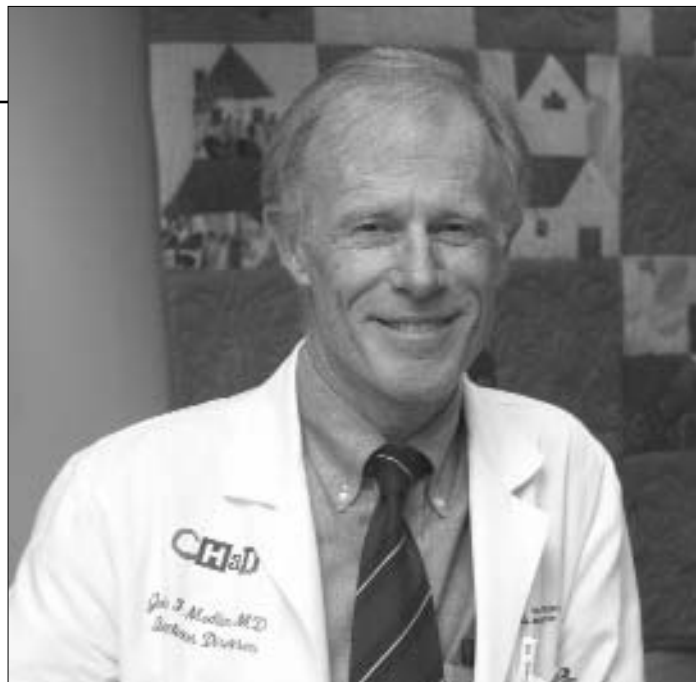
Katz and his wife were as impressed with Modlin as he was with them. "We were delighted when he showed an interest in pediatrics," says Katz, who has remained a lifelong friend. "He stayed on with us after his graduation, as a pediatric intern." But Modlin didn't stay at Duke much longer. "We encouraged him to go to Boston [Children's Hospital], where we had come from," Katz continues. "At that point we were a very young, new department—they had a lot more to offer."

After completing his residency in Boston, Modlin did a stint as a medical officer in the CDC's Epidemic Intelligence Service, where he met von Reyn. Modlin was assigned to CDC headquarters in Atlanta, while von Reyn was a field agent in New Mexico. "John would be a resource when I had to deal with a vaccine-related question that came up in New Mexico and I had to call back to Atlanta," von Reyn says. "He was always then, as he is now, an authoritative source on whatever vaccine question I might have." Today, Modlin gets calls about immunization issues from physicians all over the world.

"I think that all of us in infectious disease who have had contact with John over the years have always recognized that when you ask John a question or [for] an opinion you get a very thoughtful, scientifically based, authoritative answer," says von Reyn.

After Modlin completed his assignment at the CDC, he returned to Boston. He did a clinical fellowship in infectious diseases at Harvard and then joined the faculty there in 1978. "When I went back to Harvard," he says, "I got very interested in a group of viruses called enteroviruses." As Modlin's expertise in these neonatal infections grew, he discovered that "these viruses can be transmitted from mother to newborn infant."

"He really became the pioneer in this country trying to elucidate how infants became infected," says Katz. "He conducted . . . landmark studies in that whole area of neonatal or newborn enterovirus infections." Modlin's research also focused on rubella, measles, influenza,



JON GILBERT FOX

Dartmouth pediatrician John Modlin chairs the Advisory Committee on Immunization Practices of the national Centers for Disease Control.

and subacute sclerosing panencephalitis (a rare complication of measles), as well as other infectious diseases and vaccines.

In 1983, he was offered a job at Johns Hopkins. That was during the early years of the HIV epidemic, Modlin notes. Hopkins had a program for HIV-infected adults, but "there didn't seem to be anybody picking up the ball to take charge of HIV-infected children."

So he organized a pediatric AIDS service at Hopkins; played a role in the formation at the National Institutes of Health of the Pediatric AIDS Clinical Trials Group; and contributed to the design of the first study to

demonstrate that maternal-to-infant HIV transmission could be prevented by treating the mother with antiviral medication.

While Modlin was building his research and public-policy career, he was also building a family. He married advertising executive Sharyn Williamson in 1983, son Andrew was born in 1986, and daughter Chelsea came along in 1990. And that prompted thoughts of moving. "I loved Hopkins," Modlin says. But "raising children in downtown Baltimore [posed] all sorts of challenges." The family liked the idea of returning to New England. And von Reyn liked the idea of recruiting Modlin to Dartmouth. In 1991, Modlin joined the DMS faculty as a professor of pediatrics and of medicine, with an appointment in the infectious diseases section as well.

At that time, there were few HIV-infected children in northern New England, so Modlin returned to his enterovirus research. Now he could use molecular techniques developed over the intervening decade. He continued to see patients, participated in professional societies and committees, served on editorial boards, and remained active in the public-policy arena—nationally and regionally. In 1999, he was about to begin a mini-sabbatical to focus on his enterovirus research when he was asked to be acting chair of pediatrics. He agreed, feeling a sense of commitment to the department and to Dartmouth. Last year, the acting role became permanent.

Since 1999, Modlin has been shepherding the department through a period of tremendous growth, hiring new pediatric subspecialists in cardiology, neonatology, gastroenterology, and neurology at both DHMC's Lebanon, N.H., campus and the Dartmouth-Hitchcock
continued on page 62