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Welch WANDERINGS

Mobilizing Public Health

Turning Terror's Tide with Science

Responding to the September outbreak of terrorism in America, senior School leadership launched in late October a new comprehensive public health initiative to tackle the complex scientific, social, and governmental issues raised by bioterrorism.



Public Health Scientists Working to Address Terrorism Steering Committee (left to right): Ron Brookmeyer, Don Burke, Lynn Goldman, and Thomas Burke (not pictured: Tara O'Toole)

"The School recognizes that this is a national public health emergency. The School has, in many ways, unequalled expertise in the issues related to the acute and urgent problem of anthrax bioterrorism and the longer range strategic issues related to all manner of terrorism," says Dean Al Sommer, MD, MHS '73. "Whether it comes through letters or aerosol sprays or poisoning of water or the food system, it's the responsibility of the School to come to our nation's defense."

In the coming months, more than 60 faculty members will work on bioterrorism preparedness, devise new technologies for detecting anthrax, determine the best therapies, study available antibiotics, and recommend how to best contain outbreaks of anthrax and other biologic, chemical, and nuclear hazards.

The School has a three-pronged goal of providing a scientific basis for rational action, timely and accurate advice for the public and professionals, and training modules for targeted audiences, delivered by the Web, simulcasts, and CD-ROMs.

The new initiative, called Public Health Scientists Working to Address Terrorism (SWAT), will work closely with a related University-wide effort. Thomas Burke, PhD, MPH, an associate professor in Health Policy and Management, is the initiative's director. Other steering committee members include Biostatistics professor Ron Brookmeyer, PhD; International Health professor Don Burke, MD; Environmental Health Sciences professor Lynn Goldman, MD, MPH '81; and Tara O'Toole, MD, MPH '88, the director of the Center for Civilian Biodefense Strategies. Two to four faculty members from each of the School's nine departments have been asked to devote the next month or two to providing immediate input to the effort. The initiative will draw on the broad spectrum of the School's expertise, including surveillance, environmental assessment and clean-up, infectious disease and antimicrobial resistance, vaccine development and testing, legal issues, disaster management, and communication.

The short-term efforts do not mean abandoning the School's long-standing research and teaching priorities, according to Sommer. Rather, the short-term work is a "unique activity in the history of the School in response to an urgent national need," he says. "I don't know of any time in the School's history that this has been done."

Thomas Burke envisions teams of public health researchers, focusing on specific areas and providing technical assistance and guidance and help with communication between the government, public health professionals, and the public. The teams would also bring public health risk assessment, epidemiology, and other tools to provide advice on treatment and management of both patients and the "worried well."

Front-line professionals from across the nation will come to the School for seminars on the latest knowledge in public health preparedness. "You bring in the best and brightest to help them understand the threats and how to attack and ultimately manage them," Burke says.

A former deputy commissioner of health in New Jersey, Burke has seen firsthand the decay in the public health infrastructure through his work and research for reports by the Pew Environmental Health Commission and the Institute of Medicine. He recently secured a \$1 million grant from the Centers for Disease Control and Prevention to design a center of excellence in environmental health practice.

"Right now, the School has all these pockets of expertise," Burke says. "The task is to pull them all together." - *Brian W. Simpson*

Danger in the Dust

It is 4 a.m. in New York City as four researchers from the School enter the site of the World Trade Center disaster on foot. Each is lugging from 50 to 90 pounds of air-monitoring equipment onto Ground Zero. In the dark, the tangled pile of wreckage takes on a distinctly hellish cast.

"Fires are still actively burning and the smoke is very intense," reports Alison Geyh, PhD. "In some pockets now being uncovered, they are finding molten steel."



Julie Herbstman, MSc student in Epidemiology, attaches an air monitor to a Ground Zero worker.

Geyh, an assistant scientist with the School's Department of Environmental Health Sciences (EHS), heads the team of scientists sent by the School in response to a request by the National Institute of Environmental Health Sciences for a coordinated study of the disaster's potential health effects to those in the immediate environment. By attaching personal air monitors to the workers and by placing stationary air sampling pumps outside the periphery of Ground Zero, Geyh (pronounced "Guy") and her colleagues can determine the density of the particulate matter in the air, the size of those particles, and any short-term health effects to those at and around the site.

"This is an incredible situation," she reports. "The recovery and clean-up efforts are going on around the clock. Hundreds of people are at the site every day; and many of them have been there since Sept. 11. Workers at the site want to know what they are breathing and what to do to protect themselves."

This project is "clearly among the most energy-draining experiences of their lives."

Since the drivers and equipment operators are working in two 12-hour shifts, the researchers must start early and stay late. "None of the monitors can be left out overnight," says Geyh, "so around midnight we retrieve everything and take the

- John Groopman

equipment back to the hotel, where we recalibrate it before going to bed." The whole thing recommences at 4 a.m.

"People have been coming back really frazzled," says John Groopman, PhD. "It's clearly among the most energy-draining experiences of their lives." Groopman, Anna Baetjer Professor and chair of EHS, knows of no analogous research situation. "The fact that thousands of bodies are still hidden in the rubble makes the work very tense [and] changes the tenor of everything."

At every stage of the clean-up operation, plumes of dust and smoke are sent skyward. The Hopkins scientists are also gearing up to measure air quality in the nearby neighborhoods and to enter residences around Ground Zero to collect and study samples of the dust originally produced by the collapse, which has sifted into buildings throughout lower Manhattan. - *Rod Graham*

Henderson to Lead Public Health Response to Anthrax Attacks

Drawing on the School's public health expertise, Health and Human Services (HHS) Secretary Tommy Thompson recruited D.A. Henderson to coordinate the national public health response to the anthrax mail attacks and chose Phillip Russell, MD, to be a key vaccine adviser.



On Nov. 1, Henderson, MD, MPH '60, was named director of the Office of Public Health Preparedness, which will coordinate the HHS responses to public health emergencies. In taking the job, Henderson leaves his position as director of the School's Center for Civilian Biodefense Studies. (See Center story on page 10.)

Henderson, who served as dean of the School from 1977 to 1990 and directed the global smallpox eradication campaign prior to that, will coordinate HHS agencies' response to the anthrax attacks and any possible events in the future. He will continue to lead a national advisory council on public health preparedness, to which he was appointed in October.

Russell was named by Thompson to be special adviser on vaccine development and production at HHS. Russell is a professor at the School's Center for Immunization Research and has a joint appointment in the School's Department of Molecular Microbiology and Immunology.

Tara O'Toole, MD, MPH '88, formerly deputy director of the Center, has been named to succeed Henderson as director of the Center for Civilian Biodefense Studies. Thomas V. Inglesby, MD, was promoted from senior fellow to deputy director of the Center. - *BWS*

The New Preparedness

As director of New York City's Office of Emergency Management until last year, Jerry Hauer spent four years preparing the city for a panoply of natural and man-made disasters.

But the World Trade Center attacks that killed thousands created a horror that few could ever have envisioned. "A disaster of this magnitude is a daunting task, no matter what you do in preparation, no matter what city it is, what the location is," says Hauer, MHS '78.

Hauer has seen much of the preparedness work he did help the city through the Sept. 11 crisis. Mutual aid agreements he designed with neighboring cities and states brought in ambulances from four states and firefighters from all over.

Currently a senior adviser to Health and Human Services Secretary Tommy Thompson, Hauer has spent the last few weeks in meetings, and working on national plans for responding to terrorism involving biological, chemical, or conventional weapons.

While many in the post-Sept. 11 world have recognized that the nation's hospitals are ill-equipped to deal with a sudden surge of sick and injured, more is needed than just additional hospital beds, according to Hauer. "Beds are great, but if you don't have a surge in medical staff, how are you going to treat all these people?" he says. "Surging medical care staff and surging logistics and infrastructure are bigger components." - *BWS*

The Ultimate Midterm

In early October, John Agwunobi, MD, MBA, a student in the School's Web-based MPH (iMPH) program, e-mailed his professors to request a slight extension on a midterm examination. Considering that he had been newly appointed as the secretary of health for the state of Florida — and was busy forming a health response to the nation's first anthrax case since 1974, Agwunobi's request was granted.

Florida's acting secretary of health since Sept. 1, Agwunobi spent his first official day as secretary on Oct. 4, which was his birthday as well. It was also the day he received a call about a "suspicious" case involving Robert Stevens, a photo editor at a Florida tabloid. Stevens eventually died as a result of inhalation anthrax, which catapulted the nation into a frenzy of concern about bioterrorism.

In the midst of organizing Centers for Disease Control and Prevention teams and collaborating with federal health officials, Agwunobi has had to keep up with schoolwork. "My classes keep me up most nights, studying and reading," he says, "but I'm determined to finish my degree, despite these challenges, because it's so important — more than ever — to have the formal tools of public health.

"Public health training gives me a whole new perspective on analysis and problem solving, which is essential in my role here at the health department," Agwunobi says. "Many of the principles I'm currently studying, I'm using every day." - *Susan Muaddi Darraj*

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