



A Workforce “Crisis” in Environmental Health

7/19/2007

Public health professionals know that improvements in environmental health have been even more important in increasing Americans' lifespan over the past century than improvements in medicine or hospital care. But while the exploits of heroic doctors and nurses are featured in TV shows like “Gray’s Anatomy,” there’s no such show about the men and women who strive to keep our air, food and water clean.

So perhaps it’s no surprise that while the nationwide shortage in nurses received extensive media coverage and attention from politicians, a “similar, if not equally sizeable shortage” of environmental health professionals has gone largely ignored, notes Michael Herring, REHS, MPH (Capt, USPHS), Senior Environmental Health Scientist, Environmental Health Services Branch (EHSB), NCEH.

The workforce crisis plaguing environmental health goes beyond a shortage of personnel, Herring says. It’s also a dearth of leadership, training and education—factors that are becoming even more important as demands on environmental health practitioners grow.

To change this trend, Herring and his colleagues are at work on [programs and publications](#) designed to improve both the number and the quality of environmental health practitioners at the tribal, state and local level. Their ambitious agenda extends to improving the way environmental health is practiced on the front line.

A Starved Workforce

Herring estimates that between 40 percent and 50 percent of the environmental health workforce will be eligible to retire within the next five years. As these employees near retirement, a gap has formed, Herring says, as new employees are not adequately prepared to step in.



Environmental health is more demanding than ever, but there are fewer people to do the work, says Hugh Mainzer. *Photo by Jim Gathany*

A major reason for this is that not enough young professional are making a career in local environmental health. “They work hard for a few years; their workload is fairly intense, and the pay is abysmal,” Herring says. “They get burned out, but they have good solid training, and they’re hired away by private industry.”

The workforce is also inadequately trained. Herring estimates that more than 90 percent of the current workforce has no formal degree in public health or environmental health. The result is a workforce that is poorly prepared for some of its emerging responsibilities, such as disaster and terrorism response. “We’re asking a lot of our environmental health practitioners, and requiring more technical expertise,” Hugh Mainzer, MS, DVM, (Capt., USPHS) acting chief of the EHSB. “But there aren’t a lot of people to do the work.”



Today’s environmental health workforce crisis has not gotten enough attention, says Michael Herring, seen here on a rodent-control project on the island of Palau (right). *Photo by Michael Herring*

Increasingly, today's new environmental health practice professionals lack a range of skills, instead specializing in a single area such as food safety. But "in a disaster environment, broadly trained and experienced generalists are critical during public health response and recovery activities when impacted populations need safe water, food, sanitation, and shelter," says Herring, who was an environmental health team lead during the response to Hurricane Katrina.

Revitalizing Environmental Health Services

The low pay and inadequate training of environmental health practitioners grow in part out of the limited view of environmental health held by some policymakers. "Environmental health has taken a major shift in the last couple of decades to a fee-for-service structure," says Herring. Cash-strapped local and state governments are hungry for the revenues that come from restaurants permits, septic tanks permits, well permits and the like. As a result, many agencies pour their attention into inspections. They adopt what Herring calls a "checkbox mentality."

"When policymakers think of environmental health specialists, they think those people are just checking boxes on a sheet," Herring says. "Environmental health specialists are problem solvers, yet they're paid based on that checkbox mentality."

Enforcing laws and regulations, notes Herring, fulfills only one of the Ten Essential Public Health Services. Instead, practitioners must take a more systematic approach to prevention—monitoring environmental health, diagnosing and solving problems, educating and empowering communities.

One local environmental health manager, Dwayne Roadcap, recently found that his agency was in danger of succumbing to that checkbox mentality. Roadcap is program manager of the Virginia Department of Health's Division of Onsite Sewage and Water Services. His agency was understaffed and inundated with septic tank permit requests. The result was a backlog that affected staff morale and drew criticism from applicants.

Roadcap discovered the solution to his problem when he became a fellow at the [Environmental Public Health Leadership Institute](#), which is sponsored by CDC.

Training the Next Wave of Leaders

Now in its third year, EPHLI is a year-long fellowship for environmental health practitioners at the state and local level, says program coordinator John Sarisky, RS, MPH (Capt, USPHS), also a Senior Environmental Health scientist in the EHSB. With a current cohort of 40, the program also takes fellows from academia and non-profits.



John Sarisky is coordinator of the year-long Environmental Public Health Leadership Institute. *Photo by Jim Gathany*

The program includes three weeklong educational sessions and a final project designed to apply systems thinking to a real-world problem at home, all under the supervision of a CDC mentor. It was at EPHLI that Roadcap found a way forward for his organization, says Roadcap's mentor, Brian Hubbard, MPH, Environmental Health Scientist at EHSB.

"Using systems thinking, Dwayne eloquently defined the problem," Hubbard says. "He said we're becoming a permitting organization, not even doing public health. He said we should change our paradigm, get out of the permitting business and develop a public health program." Roadcap developed a plan



Brian Hubbard mentors fellows at the Environmental Public Health Leadership Institute. *Photo by Jim Gathany*

to outsource inspections to private firms, freeing up staff to focus on minimizing risk and achieving public health goals.

CDC is involved in several other initiatives to build the capacity of the environmental health workforce. Here are just a few:

Establishing new academic programs. In the mid-1990s, the number of graduates of undergraduate environmental health programs began to decline, plummeting by nearly half to about 300 a year by 2003, Herring says. A new program had not been accredited in more than 20 years. But thanks to an agreement between CDC and the Association of Environmental Health Academic Programs (www.aehap.org), eight new undergraduate programs and four new graduate programs have been accredited in the last four years. Student enrollment and graduation in environmental health programs have also started climbing. AEHAP provides funding for schools to enhance their student recruitment programs, especially among minorities. "They do a magnificent job with a small amount of money," says Herring.

Attracting former military. The uniformed services of the United States employ about 7,000 active duty environmental health practitioners. Their experience, training and leadership skills are sorely needed by local environmental health departments. But many who leave the uniformed services are not even aware that job opportunities exist in local or state agencies, Herring says. To raise awareness, CDC produced the [Career Resource Guide for Uniformed Services Environmental Health Practitioners](#), with support from CDC's Uniformed Services Environmental Public Health Careers Work Group. The document gives details on career paths, salaries, and education. It also highlights several success stories of veterans now working in environmental health.

Promoting standards. A major push to improve standards for the practice of environmental health was launched with the publication of "[A National Strategy to Revitalize Environmental Public Health Services](#)" in 2003. Produced by CDC with broad stakeholder input, the report laid the foundation for other efforts such as the development of the Ten Essential Environmental Health Services (an outgrowth of the Ten Essential Public Health Services) and the [National Environmental Health Performance Standards](#), which is designed for use by parishioners in the field as a gold standard for building environmental health services capacity based on the Ten Essential Services. The Environmental Health Services Branch has organized and continues to participate in efforts to identify [core competencies](#), best practices and essential services of environmental health practitioners.

By focusing on the links between factors in the environment and adverse health outcomes, systems-based environmental health assessments and interventions also help to highlight prevention strategies designed to ensure the proper functioning of critical community infrastructure (such as food or water safety programs) that prevent human disease.

The objective of NCEH's [Environmental Health Services](#) activity is to strengthen the role of state, local, and national environmental health programs and professionals to better anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures to human health.

The EHSB provides access to topical, relevant, scientific information, consultation, and field assistance to environmental health specialists, sanitarians, environmental health professionals and practitioners.

The EHSB is committed to developing and reinforcing an awareness of the important role environmental health and its workforce plays within the public health practice community.

This *Inside Story* by Richard Sine