

Direct from CDC

Environmental Health Services Branch

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Are We Really Saving Resources with Current Hiring Practices at Local Health Departments?

Editor's note: NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the Journal.

In this column, EHSB and guest authors from across CDC will highlight a variety of concerns, opportunities, challenges, and successes that we all share in environmental public health.

EHSB's objective is to strengthen the role of state, local, and national environmental health programs and professionals to anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures for human health. The services being developed through EHSB include access to topical, relevant, and scientific information; consultation; and assistance to environmental health specialists, sanitarians, and environmental health professionals and practitioners.

The conclusions in this article are those of the author and do not necessarily represent the views of CDC.

Guest columnist Jeffrey Neistadt is the director of education and training for the National Association of Local Boards of Health. Guest columnist Timothy Murphy is an associate professor at the University of Findlay in Findlay, Ohio. Jeff and Tim are graduates of CDC's Environmental Public Health Leadership Institute (EPH-LI) (cohort 2, 2006–2007).

Environmental public health has undoubtedly changed over time. Environmental health practitioners are on the front line of preserving our nation's health and safety. These professionals must be able to identify threats, mitigate or eliminate hazards, create innovative solutions, and offer assistance to those exposed or otherwise affected.

Yet at a time when the environmental health workforce is most needed, they are too few in number to meet traditional roles, let alone keep pace with mounting responsibilities and rapidly evolving technologies (National Association of County and City Health Officials, 2006). The future workforce must possess basic public health competencies including epidemiology, statistics, and communication skills, as well as critical thinking skills and training to anticipate, recognize, evaluate, and control increasingly complex threats to the public's health (Association of State and Territorial Health Officials, 2005).

In 2000, an estimated 19,431 people made up the environmental health workforce employed by local health departments. This workforce is a small percentage of the total public health workforce and it continues to shrink, further diminishing environmental health services delivery (Centers for Disease Control and Prevention, 2006). The small number of graduates (just over 300 per year [A. Tres, personal communication, 2006]) from academic programs accredited by the National Environmental Health Science and Protection Accreditation Council (EHAC) are in great demand in the private sector for their skills. This has led many local health departments to hire personnel from two- or

four-year colleges without a degree or educational training in environmental health or public health—in some cases, these personnel do not have any college degrees. This practice may be creating a new crisis, one in which local health departments hire entry-level employees who are more limited in the critical environmental health competencies because they lack necessary education and training (Murphy & Neistadt, 2007). Entry-level employees without basic training in epidemiology, food, water, waste, and sanitation will likely be more challenged to rapidly, capably, and effectively perform the same duties as entry-level employees who received training from an EHAC-accredited four-year program (Table 1) (Murphy & Neistadt, 2007).

Lowering hiring requirements to fill open environmental health positions requires significant additional training. New hires lacking environmental health educational training may not offer the same initial value and knowledge, skills, and abilities as graduates from EHAC-accredited academic programs. Therefore, more agency resources will likely be required to develop skills needed for the position. Although an agency may believe it is saving money by hiring less-expensive environmental health staff with limited experience and educational skills, it may in fact be losing funds over time because of the additional training required. Table 2 identifies areas and costs that may be required for new hires in addition to the required training noted in Table 1. EHAC graduates are trained in all of these areas.

In addition to the monetary cost of training, daily work still needs to be done during the training process. This usually increases

TABLE 1**Comparison of Graduates' Coursework and Competencies between EHAC-Accredited Programs and Non-Accredited Programs**

Competencies ¹	EHAC Accredited Program ¹	4 Year Environmental Degree ²	4 Year Science Degree ³	2 Year Science Degree ⁴
Separate courses in				
Epidemiology	Yes	No	No	No
Statistical methods	Yes	No	No	No
Toxicology	Yes	No	No	No
Basic scientific knowledge of				
Environmental economics	Yes	No	No	No
Environmental health management	Yes	20%	No	35%
Environmental law and public policy development	Yes	15%	No	No
Risk assessment and mitigation	Yes	No	No	No
Risk communication	Yes	15%	No	No
Environmental health programmatic areas such as				
Wastewater	5	6	Electives	15%
Water quality	5	6	Electives	No
Solid waste management	5	6	Electives	No
Food protection	5	6	Electives	No
Field experience and problem-based learning such as				
Field equipment, data collection, and interpretation	Yes – Internship	25%	55%	20%
Develop problem-solving skills	Yes	No	No	No
Learn to work as part of a team	Yes	No	No	No
Gain understanding of organizational dynamics	Yes	No	No	No

Note. From Murphy & Neistadt, 2007.

¹ EHAC-accredited four-year environmental health degree.

² Four-year non-EHAC accredited environmental health degree – data from a survey of 50 academic institutions.

³ Four-year general science degree (biology, chemistry, etc.) – data from a survey of 50 academic institutions.

⁴ Two-year general science degree – data from research of academic coursework at 50 institutions.

⁵ Completion of at least four courses.

⁶ Varies by program.

the overall workload of experienced employees who often do the training, potentially adding to job burnout and low morale for these employees.

From a public perspective, however, the greater consequence of hiring individuals with limited, if any, environmental health academic training is that this practice restricts the agency from its full capacity to move environmental health forward and maximize protection of the public's health. A highly trained and skilled environmental health workforce

can ultimately result in lower rates of death and disease and significantly reduced health care costs.

Local health departments must hire an environmental health workforce that is equipped to effectively work in the complex and diverse field of environmental public health. Graduates of EHAC-accredited programs possess the essential knowledge, skills, and abilities (Table 1) to advance local environmental health to the greatest extent possible (Murphy & Neistadt, 2007). In

addition, EHAC program graduates possess critical skills in the area of risk assessment and mitigation, environmental public policy, and environmental law.

What Is the Solution?

First, retain the skilled and experienced individuals currently working at health agencies. Retention will require that employees are satisfied with the work they perform, their working conditions, and their pay and benefits packages.

Second, whenever possible, hire individuals who have a minimum of a four-year degree from an EHAC-accredited academic program. Graduates' coursework provides them with the knowledge, skills, and abilities to "hit the ground running" and the flexibility to work in a world faced by an ever-growing number of threats to public health.

Third, we as a profession must not lower the standards to enter the field of environmental public health. By hiring the very best qualified professionals, we will be able to meet the many environmental health challenges ahead of us.

Hiring an environmental health workforce equipped to work in the complex and diverse field of environmental public health is essential for our success in meeting current and future challenges.

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TABLE 2

Estimated Cost of Educating New Employees with Missing Competencies

Missing Competencies	Training Program	Cost per Course
Basic science		
Biological with labs – 1 year	Course work	\$700
Chemistry with labs – 1 year	Course work	\$700
Physics – 1/2 year	Course work	\$700
Basic science – 1 1/2 years	Course work	\$700
Communication skills		
Speaking effectively to others and groups	16 contact hours	\$995
Writing skills to communicate clearly	16 contact hours	\$500
Computer skills		
Spreadsheets, databases, writing	24 contact hours	\$40
General education		
Understanding of values Historical perspective critical to self and society	Course work	\$700
Environmental critical thinking	Course work	\$700
Leadership development	40 contact hours	\$1,695
Environmental health program development	N/A	
Knowledge of OSHA/U.S. EPA laws and rules	80 contact hours	\$1,360
Ethical/moral decision making	Course work	\$700

Note. From Murphy & Neistadt, 2007.

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