

# **The Future of the Environmental Health Revisited: Past Recommendations and Future Challenges**

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## **REVISITING THE PAST: RECENT RELEVANT NEWS**

An editorial titled “W h o W ill M anage the E n v i r o n m e n t” was recently published in the American Journal of Public Health.

The editorial stated, in part:

**It is no longer a question of *whether* our environment will be managed, but rather *how* and by *whom*. The *by whom* is at least as important as the *how*, since the priorities and methodologies of the *how* are largely determined by the nature and quality of the environmental health workforce.**

**The editorial also noted that the United States is spending billions to deal with environmental health issues, but there are not nearly enough public health trained practitioners to implement these programs.**

**And the editorial discussed the fact that past and current abrogation of public health leadership for educating environmental health practitioners has contributed to the widespread deficits of properly trained personnel. Individuals with little knowledge of epidemiology, biostatistics, toxicology, and risk assessment are filling key environmental health agency positions that would benefit from such knowledge.**

**The editorial further noted that: accredited schools and programs**

are not currently adequately addressing the need and potential market for undergraduate or graduate practitioners. Schools of public health, once the prime incubators for public health practitioners, have gravitated away from developing environmental health practitioners as they follow the money trail toward emphasizing basic science research and health care rather than environmental health practice.

And, a recent report developed for the Association of Schools of Public Health includes draft legislation designed to significantly increase funding for accredited schools and programs educating environmental health graduate and undergraduate practitioners.

Closely related to the foregoing, a recent Bureau of Health Professions report indicates shortages in a number of program areas, and estimates a need for 120,000 more professionals to address problems in several key program areas.

And the EPA Science Advisory Board has just released the following statement: The nation is facing a shortage of environmental scientists and engineers needed to cope with environmental problems today and in the future. Moreover, professionals today need continuing education and training to help them understand the complex control technologies and pollution prevention strategies needed to reduce environmental risks more effectively. ....Most environmental officials have been trained in a subset of environmental problems, such as air pollution, water pollution, or waste disposal. But they have not been trained to assess and respond to environmental problems in an integrated and comprehensive way. Moreover, few have been taught to anticipate and prevent pollution from occurring or to utilize risk

reduction tools beyond command-and-control regulations. This narrow focus is not very effective in the face of the intermedia problems that have emerged over the past two decades and that are projected for the future.

**And more recent news:** The Department of Defense Deputy Assistant Secretary for Environment stated that the shortage of properly qualified and trained environmental health professionals constituted a major impediment to DOD's world-wide mission of environmental problem prevention and clean-up.

**And:** The Department of Energy (DOE) Secretary just announced that DOE has charted a new course for DOE toward full accountability in the areas of environment, safety, and health to demonstrate that DOE is committed to complying with the nation's environmental laws and discharging its many responsibilities, which include protecting public health and safety. This requires strengthening the environmental, safety and health technical capabilities of line managers within DOE; to do this, DOE officials needed sufficient numbers of appropriately skilled DOE line managers to support them. The DOE Secretary also greatly expanded emphasis on comprehensive epidemiological data on DOE and contractor employees.

**And,** The Congressional Office of Technology Assessment (OTA) just concluded that a shortage of experienced and technical experts was a factor in the lack of quality performance and caused a bottleneck in an expanded Superfund program. The OTA report also suggested that current educational programs are unable to prepare some professionals in sufficient numbers.

**And, the recent “Report of the Committee on the Future of Environmental Health” recommended that: --- schools of public health, other environmental health science and protection programs, academic accrediting bodies, and funding agencies should evaluate their efforts and the proven competencies of graduates.**

**The dearth of effective environmental health and protection leadership must be addressed. Properly designed, targeted and effective education and training are not adequate to meet needs.**

**A March 3 recommendation received by the Association of Schools of Public Health recommended that: Schools should be preparing students as practitioners in all environmental health roles including not only health departments, but all environmental health agencies ---.**

**Schools of public health should be encouraged to provide continuing education opportunities that are currently in extremely short supply. Personnel who do not take affirmative steps to remain current are soon out-of-date and ineffective. Operating agencies should require continuing education for their personnel.**

**And finally, the Report of the “Crossroads Colloquium” published in the Journal of Public Health Management Practice stated that: --- a dramatic need exists for improving the environmental health education and training of the health and environmental agency workforces. From field workers to decision makers, from secondary schools to postdoctoral education, improvements in education and training are critical to the continued success of the nation's**

## **environmental health programs.**

**Well, we have now “revisited” the “future of environmental health” as I was charged with discussing for this workshop. But as many of you observed, like a politician, I lied. Instead of “recently” as stated, all the foregoing recommendations and observations actually occurred anywhere from 7 to 16 years ago with zero impact on the need to educate increased numbers of students for roles as environmental health professionals.**

**The leadership workforce is aging and the pool of professional environmental health replacements is inadequate. There may not be a shortage of environmental health practitioners, as positions are being filled. But key leadership and policy roles are increasingly being filled by practitioners lacking public health training. Following years of inattention, it would now require years to develop the funding, faculty and facilities to commence the necessary education. I have no illusions and see no hope for such action at this point. The situation that should and could have been averted is now playing out in slow motion.**

**Have public health leaders been remiss in influencing public policy by failure to market the comprehensive benefits of environmental health and the value of a workforce inculcated with the basic public health sciences?**

**If the past is prologue, I have little reason to continue. But I continue to search for a glimmer of hope that the future will be different. Believing that, I will now turn to the more important aspect of the title of this presentation, which is:**

## **FUTURE CHALLENGES FOR THE WORKFORCE**

**A small percentage of today's environmental health practitioners are being trained in accredited environmental health programs, but the vast majority are, and will continue to be, products of other essential disciplines and professions such as geology, chemistry, biology, law, administration, political science, toxicology, engineering, social science, and economics.**

**The environmental health workforce will continue to require a spectrum of practitioners ranging from sub-baccalaureate surveillance and inspectional personnel through masters and doctoral levels. Most leadership and policy positions will continue to be filled by individuals possessing graduate academic credentials.**

**I have been requested to list a few of the scores of workforce development challenges facing practitioners, agencies, and educational institutions. Within the time allocated for this presentation, I offer the following:**

### **CHALLENGE: GROWING AS LONG AS YOU ARE GREEN**

**Lifelong learning should be available and promoted for the environmental health workforce, no matter the agencies involved. Such learning should take many forms, and the continuing education content will vary considerably, depending on the audience. Some need training in the public health sciences; others in leadership, management, planning, marketing, policy and politics, and finance. Such training should be a cooperative venture between major federal agencies having environmental health responsibilities.**

## **CHALLENGE: DEVELOPING A COMPREHENSIVE VISION**

**Developing and pursuing a meaningful vision for environmental health that is more than blurred imagination would also help to invoke support of those charged with financing and educating the workforce. As an important part of a comprehensive vision, educational programs should be developed in which students learn that environmental health contributes substantially not only to**

- ▶ **reduced disease and disability, but also to:**
- ▶ **enhanced community educational achievement,**
- ▶ **fewer social problems,**
- ▶ **enhanced quality of life in a more livable environment,**
- ▶ **lower health care costs,**
- ▶ **enhanced community economic vitality, and**
- ▶ **enhanced productivity.**

**If educational programs embrace the foregoing benefits as important components of a vision for environmental health, then education for environmental health practitioners will be developed to achieve the vision.**

## **CHALLENGE: ACCURATELY ENUMERATING THE WORKFORCE**

**Understanding the size, complexity and importance of the**

**environmental health workforce is basic to ensuring a qualified workforce. The magnitude of the environmental health workforce has been consistently under-reported by every major public health workforce enumeration study for at least the past 30 years. The results portray only a fraction, perhaps only five percent, of the total environmental health workforce rather than accurately portraying it as the largest single component of public health. There is no valid reason for this misleading and damaging reporting. The annual public health enumeration reports are funded by the CDC, the problem should be rectified by the CDC, and I understand preliminary steps are finally being taken after all these years of criticism and prodding. Damaging under-reporting has resulted in negative ramifications for environmental health in workforce development as well as inadequate emphasis and recognition of the field of practice. Enumeration of resources and personnel involved in the practice of environmental health has been misrepresented to practitioners, professionals associations, elected officials, official agencies and academic entities. Correcting this reporting bias ranks high among important educational policy challenges.**

## **CHALLENGE: EMBRACING THE COMPREHENSIVE FIELD OF PRACTICE<sup>2</sup>**

**Another important challenge for the future of environmental health is to embrace the comprehensive field of practice. Many educational programs, agencies, associations and practitioners have tunnel vision with regard to the breadth, depth and benefits of the field**

of practice. Too many feel it begins and ends in health departments and the Public Health Service, and self-serving definitions are disturbingly narrow. Environmental health is practiced in scores of local, state and federal agencies; voluntary and professional agencies, as well as in the private sector. Academicians and practitioners should expand their horizons and stretch their imaginations.

#### **CHALLENGE: PRACTICING THE PRIMACY OF PREVENTION**

Environmental health practitioners should be educated to become involved in prevention when initial decisions are made regarding land use, resource utilization, energy alternatives, global environmental health problems, transportation methodologies, economic development and public education. To do this, requires that public health trained personnel should seek leadership and policy roles in a wide variety of environmental health agencies, as well as in the private sector.

#### **CHALLENGE: DEVELOPING MARKETING RESEARCH AND ANALYSIS<sup>1</sup>**

Marketing research and analysis would significantly improve the practice of environmental health. Marketing research and analysis are universally utilized by the private sector, but have been ignored as essential tools to achieve the objectives of environmental health.

Environmental health is valuable, environmental health is essential and environmental health is marketable. However, effective marketing research and analysis have not been conducted for the field of environmental health. The market has not been analyzed and

**understood, and marketing efforts have been launched with no defined targets in sight and have failed to reach and effectively impact the market.**

**Many practitioners view marketing and market research and analysis research tools with disdain. Many confuse marketing with public information. News releases, pamphlets, leaflets, media appearances and other similar tools are valuable, but are only small pieces of well designed, targeted marketing efforts.**

**And finally,**

#### **CHALLENGE: LEADING INTO THE FUTURE**

**Environmental health will continue to increase in complexity, and the public will increasingly deserve, expect and demand problem prevention and amelioration. Demographic changes, resource development and consumption, product and materials manufacturing and utilization, wastes, global environmental deterioration, technological development, international terrorism, evolving disease patterns, changing patterns of land use, transportation methodologies, resource development and utilization, and continuing organizational diversification of environmental health services will create unanticipated challenges. Environmental health will continue to be basic to the health of the public and the quality of our environment. Environmental health problems, programs, service delivery organizations, and educational needs will evolve in ways that are unforeseen. Ensuring an adequate supply of environmental health**

**practitioners qualified to handle the policy, leadership, managerial and scientific issues of the future should be of the highest priority.**

### **Better Living through Environmental Health**

<sup>1</sup> *Marketing analysis and research are the functions that link the public to the marketer through information designed to identify and define marketing opportunities and problems; that generates, refines and evaluates marketing actions; and that improves marketing as a process.*

A simple definition of marketing for the field of environmental health is:

*The process of planning and executing the conception, the promotion, and the distribution of ideas and services that satisfy environmental health objectives.*

<sup>2</sup> **Environmental health** *is the art and science of protecting against environmental factors that may adversely impact human health or the ecological balances essential to long-term human health and environmental quality. Such factors include, but are not limited to: air, food and water contaminants; radiation; toxic chemicals; disease vectors; safety hazards; and habitat alterations.*