SETTING THE CONTEXT:
ENVIRONMENTAL HEALTH PRACTITIONER COMPETENCIES

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Important change requires time and persistence. Inasmuch as I have articulated many of the observations and recommendations that I am making today for a number of years, I offer the following quotation attributed to Albert Schweitzer:

> ***No ray of sunshine is ever lost, but the green which it awakes into existence needs time to sprout, and is not always granted to the sower to see the harvest. All that is worth anything is done in faith.***

CURRENT STATE OF AFFAIRS

- Environmental health and protection is a high priority issue in our society. It is demanded by the public, the media and political leaders, and is widely considered to be an entitlement.

- Environmental health and protection is a profoundly complex, multifaceted, multidisciplinary, and interdisciplinary field of endeavor engaged in by a wide spectrum of disciplines, professions and others within a complex array of public and private organizations.

- The field of public health practice has evolved into at least **two major systems** for the delivery of comprehensive public health services at the state and federal levels, the major areas being personal public health and environmental health and protection.

- Environmental health and protection is the responsibility of numerous agencies at the federal, state and local levels, as well as in the private sector.

- At the state level, 90 to 95% of environmental health and protection activities are assigned to agencies other than health departments, and there appears to be a similar trend at the local level.

- Expenditures and numbers of personnel for environmental health and protection account for roughly 50% of the field of public health practice and is, therefore, the **largest single component of the field of public health**. Few public health leaders acknowledge this because the annual reports of the Public Health Foundation do not include the expenditures of the 90 to 95% of environmental health and protection

activities that are not in health departments. This under-representation of environmental health and protection expenditures continues to make environmental health and protection appear to be but a bit player in the field of public health.

Definitions are essential. In the absence of standard definitions, every group confuses and garbles the issues by re-inventing the wheel. **A product cannot be uniformly understood or marketed if we don't know whether we're dealing with a buggy whip or a rocket ship**. Therefore, I will define and comment on a few key terms.

The standard definition for **environmental health and protection** was developed for the widely peer reviewed "Report on the Future of Environmental Health", and was used in the primary reference document for this meeting. This definition should provide a framework for our discussions.

> ***Environmental health and protection*** *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; wastes; disease vectors; safety hazards; and habitat alterations.*

Most environmental health and protection practitioners may be classified as **environmental health and protection professionals**, or as **professionals in environmental health and protection.** All are essential components of any comprehensive effort.

> ***Environmental health and protection professionals*** *are those who have been adequately educated in the various environmental health and protection technical (programmatic) components, as well as in epidemiology, biostatistics, toxicology, management, public policy, risk assessment and reduction, risk communication, environmental law, social dynamics and environmental economics.*
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> ***Professionals in environmental health and protection*** *include other essential personnel such as chemists, geologists, biologists, meteorologists, physicists, physicians, economists, engineers, attorneys, planners, epidemiologists, social scientists, public administrators and planners.*

Probably less than 5% of the workforce are environmental health professionals. Few **environmental health professionals** are utilized by agencies other than health departments. But even in health departments, most environmental health and protection personnel are **professionals in environmental health** rather than environmental health professionals.

It is not necessary that all environmental health and protection personnel be educated as **environmental health professionals**. Many essential roles are best filled by **professionals in environmental health** such as those previously iterated. However,

personnel other than environmental health professionals would benefit from continuing education in key environmental health competencies such as epidemiology, toxicology, risk assessment, risk communication, risk management, as well as an inculcation of an environmental health vision and philosophy. The philosophy must include an understanding of the scope, values, goals and potential of environmental health and protection. Whatever disciplines and professions are involved, they must be competent to do a public health job.

Many environmental health and protection professionals appear reluctant to incur the controversies and risks inherent in top policy and leadership roles. Leadership positions do not offer career protection beyond the ability of an individual to earn the respect and support of peers, subordinates, the public, the media and elected officials. Leadership belongs to no group by divine right or genetic proclivity.

While there are differences in the programmatic responsibilities assigned local, state and federal environmental health and protection agencies, the basic competencies necessary to engage effectively in the various programs are the same, varying only in degree of emphasis. Practitioners should be competent to practice in the **field** of environmental health and protection rather than any specific type or level of agencies in the public **or** private sectors so that they may achieve career flexibility, effectiveness and success. Many practitioners have worked at the local **and** state levels, some at the local, state **and** federal levels, and others in the private sector as well. State level practitioners benefit by having had **prior** local experience, federal practitioners benefit by having had prior state and/or local experience, and all would benefit from experience in the private sector.

Public health is not in disarray as the Institute of Medicine suggested. It is far more diverse and complex than the public health agency model the IOM would create. Environmental health and protection goals are increasingly being addressed by agencies other than the evolving type of health departments. The practice of public health other than environmental health and protection is gravitating closer to a partnership with health care, while environmental health and protection is aligning more closely with environmental quality and conservation agencies.

Accredited schools and programs are not adequately addressing the need and potential market for undergraduate or graduate practitioners. Environmental health and protection policies and priorities are the responsibility of those engaged at the more rarefied administrative and policy levels of the public and private sector. Until such personnel are made available by our nation's schools of public health and environmental health science and protection programs, most leadership and policy positions will continue to be filled by individuals possessing other credentials. This leadership and policy niche is no longer being addressed by schools of public health. Schools of public health, once the incubators for public health practitioners, have been gravitating away from developing environmental health and protection practitioners as they follow the money trail toward emphasizing basic science research and health care rather than public health practice. Courses in health law are usually health care law, courses in health administration are usually health care administration, courses in health policy are usually health care policy, and courses in

health financing and economics are usually health care financing and economics. Competencies necessary for the field of environmental health and protection **practice** have not been an important consideration, and course content in environmental health and protection finance, policy, law, administration, and a philosophy and vision of environmental health is somewhere between rare and non-existent.

Most environmental health faculty members in schools of public health are narrowly oriented basic science researchers rather than academically qualified generalists or practitioners. This change is reflected by the type of graduates, their competencies, and the nature of their careers. Academicians become mentors and role models, and most schools of public health are not providing role models and mentors for those who might otherwise enter the field of practice rather than narrow basic science fields, teaching and research.

Additionally, the Council on Education for Public Health has not addressed relevant competencies for environmental health practitioners even though specific recommendations have been offered repeatedly.

Accreditation criteria of the National Environmental Health Science and Protection Accreditation Council are more relevant to the field of practice than are those of the Council on Education for Public Health. Undergraduates produced by NEHSPAC accredited programs generally possess the competencies needed for practice at the entrance and journeyman levels. Unfortunately, there are only three NEHSPAC accredited graduate programs.

Do you ever wonder why institutions such as the Kennedy School rather than schools of public health and accredited environmental health science and protection programs are preparing students for environmental health and protection policy and leadership roles?

SOME PERSONAL COMMENTS

I have enjoyed a rewarding career in public and environmental health, commencing as an entrance grade sanitarian and retiring as a state Cabinet Secretary for Health and Environment. But more significant than having titles; creating agencies, laws, ordinances; holding offices and receiving recognition, I am most proud of my successes in mentoring scores of professionals who went on to significant roles and achievements. By placing a high value on competency, I encouraged dozens of personnel to earn graduate degrees in public or environmental health. At one time, I was in the enviable position of having individuals with such graduate credentials as Director of the State Environmental Agency, Director of the State Public Health Agency, and Director of the State Scientific Laboratory System. Importantly, all had started at the local level. In the state environmental agency, the Director as well as every division director and district manager had an MPH or closely related degree. I also developed and gained passage of a state law requiring that directors of local health departments have an MPH. For me, those were days of Camelot.

That was at a time when schools of public health produced professionals for the **field** of practice. I owe much of any success I may have had to the basic competencies, vision and philosophy I acquired at a school of public health many years ago. Most of my personnel went on to greener pastures. Last month, two of these long ago protégés called me for lunch. I want to tell you a little about these two as examples of the potential of individuals having the necessary competencies for the **field** of practice.

I hired both right out of college as entrance grade sanitarians when I was Director of the Albuquerque Health Department. Both worked in food protection. I admonished that everyone should be re-potted every few years so as not to become root bound. I encouraged both to earn their MPHs. I recruited both back to New Mexico while I was Director of the New Mexico Environmental Improvement Agency. One became Director of Field Operations, one became Director of OSHA. At later dates, both became Director of the Environmental Improvement Agency. A new Governor eventually left both with the need to seek greener pastures --- the potential price of leadership ventures.

One subsequently became Santa Fe City Manager, Vice President of the University of Arizona, Deputy Assistant Secretary of Defense for Environment, a key position with BDM International, Director of Environmental Management for Los Alamos National Laboratories, and was recently recruited to become Vice President for Material Stewardship for Kaiser-Hill -- the contractor responsible for cleaning up Rocky Flats because he has the competency and confidence to get the job done. Tom Baca can't resist a challenge.

The other was subsequently appointed Regional EPA Director of Environmental Services, resigned to become Director of Environmental Quality for the State of Arizona, a new Governor intervened, and Russell Rhodes is now Director of Environmental Affairs for Public Service Company of New Mexico.

Both practitioners continue to achieve and enjoy their careers utilizing competencies gained while earning an MPH during the days when schools of public health were professional schools rather than research institutions and had a priority of educating practitioners and emphasizing environmental health.

I could cite numerous similar examples, but I have mentioned Tom Baca and Russell Rhoades to emphasize the benefits of being competent to practice in the **field** of environmental health and protection, and to stress the importance of mentoring as a leadership responsibility.

SOME COMPETENCY ASSURANCE RECOMMENDATIONS

- Enactment of a federal **"Environmental Health Science and Protection Education and Training Act**" such as that included in the HRSA report *Educating Environmental Health Science and Protection Professionals.*

- An effective **education and training coordinating mechanism** involving appropriate federal agencies.

- Ensure that environmental health **data collected by the Public Health Foundation include expenditures of environmental health and protection** agencies in addition to health departments so as to accurately reflect the size and importance of the field of practice.

- Admonish that practitioners be competent to practice in the **field of environmental health and protection** to ensure career mobility, effectiveness and success.

- **Ensure competencies in ecological and global environmental** issues because these problems will determine the future of public health.

- Ensure competencies in the complex and essential mix of **regulatory methodologies** in addition to the better accepted competencies in epidemiology, risk assessment, risk communication, risk management, and toxicology.

- Ensure that accredited schools **and programs** produce qualified **graduate** level personnel who are competent, willing and available to vie for top level **managerial and policy positions** in the complex spectrum of possible roles if we are to again establish leadership in the field of environmental health and protection. Students aspiring to **leadership roles** must be inculcated with such skills as management, public policy, planning, political science, public finance, organizational behavior, interpersonal and public relations, and marketing, as well as a vision and philosophy of environmental health and protection.

- Ensure that **schools and programs** utilize **academically qualified environmental health practitioners** who will serve as role models and mentors among their mix of faculty.

- Schools of public health could begin regaining environmental health leadership by changing school titles and emphases to **schools of public and environmental health.** The advantages would be manifold in terms of attracting money, students and political support.

- Create a **Division of Environmental Health within HRSA** as a step toward emphasizing the size and importance of environmental health and providing necessary training funds.

- The Council on Education for Public Health should **strengthen environmental health and protection accreditation** requirements.

- Ensure that **continuing education** needs of our nation's environmental health and protection workforce is a priority at all levels of the public and private sectors, as well

as in academia. Formal education is inadequate by itself, and does not provide personnel all the evolving knowledge and skills required.

And finally,

- Encourage **mentoring** by those in leadership positions to build on the competencies inculcated in formal education. **Personnel must be encouraged, supported, and counseled to achieve, and to be all they can be.**

Environmental health leaders must take the **lead** not only in specifying the competencies of the environmental health and protection workforce, **but more importantly**, taking steps to **ensure the necessary measures to make it all happen such as suggested above!** Otherwise, we will **continue** talking to each other, **continue** believing that talking to each other is accomplishing something, and **continue to be shackled by inaction** Do not assume that others will look after the competency needs of the workforce. Achieving competency goals will depend on environmental health and protection leaders fulfilling their responsibilities.