

KEYNOTE PRESENTATION

**LEADING CHANGE, OR BEING LEFT BEHIND?**

by

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I am usually introduced indicating positions I held following promotion into management and policy roles in environmental health and protection and the broader field of public health. While I am proud of these leadership roles, I am equally proud of earlier positions, which included county sanitarian, district sanitarian, state food sanitarian, and chief sanitarian in a metropolitan health department. My first job in public health was as a county sanitarian at \$225 per month, which I received in seven separate checks from three counties, three municipalities, and the state. Since my apartment rent and car payment exceeded the amount of my take home pay, I solved the problem by taking along sandwiches and sleeping in my car when away from headquarters overnight, cleaning up at a local service station; and using the \$6 per diem for rent, clothing, and groceries.

While I commenced my career in public health as a sanitarian, it was not the end of a professional journey. Experience as a sanitarian is an excellent route to pursue leadership roles in environmental health and protection, or in other components of the field of public health. Sanitarians deal with a wide variety of environmental problems, as well as becoming involved in issues of epidemiology, risk assessment, risk communication, risk management, public relations, community planning, regulation, inter-personal relations, technical reports, sampling and surveillance, analyses and interpretation of analyses, developing priorities, and program evaluation. Had I not served as a sanitarian, I would not be comfortable visiting with you regarding the current and future roles of individuals working as sanitarians or related positions in the field of environmental health and protection.

Early day sanitarians included such public health leaders as William Thompson Sedgwick, after whom the American Public Health Association named its oldest and most distinguished award. Sedgwick was one of many early day public health leaders who were respectfully referred to as "sanitarians." These men were the leading distinguished scientists, educators, and researchers in the field of sanitary science as environmental health was then titled.

In the 1930's, a move began in California to upgrade the competencies, status, recognition, and salaries of health department personnel known as sanitary inspectors. The title sanitarian was chosen to apply to such personnel. These sanitarians, unlike their distinguished predecessors, were inspectional personnel who worked under the supervision of sanitary engineers and physicians. The use of the job title sanitarian to describe an individual having a minimum of a bachelors degree who worked in a health department gradually spread to other parts of the country and became the title of choice by the mid 1940's.

A number of changes occurred which allowed sanitarians and similar personnel with different job titles to assume roles of greater responsibility and programmatic scope. These changes included the following:

1. Engineers came to be in such demand in other endeavors that most were priced out of the public health market.
2. Sanitarians and similar personnel became better inculcated with the competencies necessary for the effective practice of environmental health, as well as the broader aspects of public health.
3. Public policy in many states was changed to recognize that directors of state and health departments needed basic public health competencies. Well educated and motivated environmental health personnel

were naturals for such leadership positions. Environmental health and protection professionals are as well or better qualified to lead public health agencies as any other group of professionals. At one time, I had promoted or appointed environmental health and protection professionals who had graduate degrees in environmental health to such leadership and policy positions as Director, State Public Health Division; Director, State Scientific Laboratory; Director, State Environmental Improvement Division, and as Managers of every Bureau and District office within the State Environmental Improvement Agency.

4. New environmental health and protection agencies were developed which did not have the same organizational culture and caste system that had existed in health departments, thus affording environmental health and protection personnel additional opportunities for roles of greater responsibility.

## **DEFINITIONS**

As health departments have moved toward health care, public health itself has become a blurred vision, or a cause without an identity. Therefore, it is important to understand and be able to define public health, health care, and environmental health and protection. Public health leaders throughout the nation continue to express their frustration in marketing their product. No wonder, considering that many of them do not know whether they are marketing a buggy whip or a rocket ship. Definitions are essential!

But before articulating some essential definitions, it is important to note some examples of the health services continuum, of which environmental health and protection, health promotion, disease prevention, and health care are essential components.

## Health Services Continuum

ENVIRONMENTAL HEALTH AND PROTECTION	HEALTH PROMOTION	DISEASE PREVENTION	HEALTH CARE
Examples of Issues	Examples of Issues	Examples of Issues	Examples of Issues
Clean Air	Substance Abuse	Infectious Diseases	Diagnosis
Clean Water	Family Planning	Clinical Prevention	Primary Care
Toxic Chemicals	Nutrition	PKU Screening	Case Management
Safe Food	Health Education	Glaucoma	Outpatient Services
Radiation	Violence	Diabetes	Clinics
Solid Wastes	Obesity	Osteoporosis	Treatment
Occupational Health	Tobacco	Cancer	Surgery
Hazardous Wastes	Mental Health	Suicides	Long Term Care
Risk Assessment	Physical Activity and Fitness	Oral Health	Acute Care
Risk Communication	Access	Heart Disease and Stroke	Rehabilitation
Risk Management		Maternal and Child Health	Cost Containment
Global Degradation		Access	Health Insurance
Land Use			Mental Health and Treatment
Noise			Developmental Disabilities
Disease Vectors			Alcohol and Drug Treatment
Housing			Access
Ecological Dysfunction			
Unintentional Injuries			
Access			

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*Public health is the art and science of preventing disease and disability, prolonging life, promoting the health and efficiency of populations, and insuring a healthful environment through organized community effort.*

You will note that the foregoing definition of public health specifically includes a healthful environment. Many definitions of public health assume that environmental health is subsumed by the term disease prevention.

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*Health care is the diagnosis, treatment or rehabilitation of a patient under care and is practiced on a one-on-one basis.*

In his 1995 convocation address at the University of Michigan School of Public Health, Dr. Caswell Evans, Director of Public Health for Los Angeles County and President of the American Public Health Association stated:

*Public health is not health care. Despite the temptations to be blinded by the flash of primary care issues, remember your mission: prevent disease, and promote health. Anything else is not public health. Always be clear in your mind that primary care is what happens at doctor visits; public health is what occurs between doctor visits.*

The "Report on the Future of Environmental Health," which was peer reviewed and edited by some 75 leaders in operating agencies and universities throughout the nation, defines environmental health and protection as:

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*.....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.*

By now, some of you are wondering why I use the terminology "environmental health and protection" rather than simply "environmental health." I do this because both environmental health and environmental protection have public health goals and would not exist except for their public health rationale. Strangely, programs are called environmental health if they are the responsibility of a health department, but they are suddenly labeled environmental protection when transferred to another agency. Differences are in organizational location, and it is essential that we build effective communication bridges between various environmental health and protection agencies rather than fomenting walls and continuing territorial misunderstandings.

It may be useful to be reminded of some of the programs comprising the field of environmental health and protection.

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Ambient Air Quality  
Water Pollution Control  
Safe Drinking Water  
Indoor Air Pollution  
Noise Pollution Control  
Radiation Protection  
Sanitation of Eating and Drinking Establishments  
Sanitation of Food Processing Establishments  
Occupational Health and Safety  
Thermal Pollution  
Childhood Lead Poisoning  
Acid Deposition

Meat Inspection  
Disaster Planning and Response  
Cross-Connection Control  
Shellfish Sanitation  
Institutional Environmental Control  
Pure Food Control  
Housing Conditions  
Recreational Area Environmental Control  
Poultry Inspection  
Solid Waste Management  
Hazardous Waste Management  
Vector Control  
Pesticide Control  
On-Site Liquid Waste Disposal  
Land Use  
Milk Sanitation  
Toxic Chemical Control  
Unintentional Injury Prevention, and  
Global Environmental Issues such as:  
    Ecological Dysfunction  
    Habitat Destruction  
    Possible Global Warming  
    Possible Stratospheric Ozone Depletion  
    Planetary Toxicification  
    Desertification  
    Deforestation  
    Non-Renewable Resource Consumption, and  
    Over-Population

#### **ENVIRONMENTAL HEALTH AND PROTECTION CHANGES.**

New problems associated with increased urbanization, technology, population pressures, resource consumption and wastes, and ecological impacts have created additional complex environmental health and protection challenges. Environmental health and protection continues to be a high priority issue for individuals, citizen groups, the public sector, the private sector, and political leaders at all levels of government.

Following Earth Day, political leaders perceived that traditional health departments were not effectively addressing environmental problems. Therefore, new environmental health and protection agencies were created at the federal and state levels, and to some extent at the local levels. Letters and articles which I wrote in the mid 1960's reveal that I was already predicting that the emphasis of health departments on health care would lead to the diversification of environmental health and protection from health departments.

Environmental health and protection is the single largest component of the field of public health. However, studies have shown that some 85 to 90% of state level environmental health and protection activities are administered by agencies other than health departments.

Many health departments now suffer blurred vision syndrome, have lost sight of the meaning and primacy of public health, and have followed the money trail which leads away from an emphasis on disease prevention, health promotion and environmental health and protection toward the field of health care. Concurrently, health department understanding, vision, and leadership for environmental health and protection suffer inasmuch as there is little if any programmatic relationship between health care and environmental health and protection. Therefore, the movement of health departments toward subsuming, or being subsumed by, health care will continue to lead to further fragmentation of environmental health and protection from the evolving type of health departments.

The separate environmental health and protection agencies also suffer in that they are usually led and staffed by personnel who do not possess requisite public health competencies such as epidemiology, risk assessment, toxicology and the basic environmental health and protection sciences.

Schools of public health have changed and have also followed the money trail leading away from developing visionary environmental health and protection practitioners to developing disciplinary researchers. And schools have moved from emphasizing public health to emphasizing health care in their misplaced zeal to follow the money trail. As differed from earlier years, few faculty have experience as environmental health and protection practitioners, and most faculty are disciplinary specialists rather than environmental health and protection professionals. Therefore, there are few faculty mentors and role models for practitioners.

The foregoing changes in directions, emphases, education, and organizations have already taken place. The delivery systems and organizations for public health services continue to change. There is an incubation period for ideas as well as for germs. Victor Hugo wrote that "*Neither an army, nor a legislature, nor an armed sheriff can withstand the strength of an idea whose time has come.*"

### **THE WORKFORCE AND WORKFORCE COMPETENCIES.**

Effective efforts to protect public health and the environment require a multidisciplinary workforce of environmental health and protection professionals as well as professionals in environmental health including engineers, chemists, biologists, sociologists, physicians, planners, public administrators, economists, geologists, physicists, ecologists, attorneys, computers specialists, veterinarians, dentists, and many others. The mantle of leadership will fall to those earn it and who seek leadership roles. I find it troublesome that EPA, for example, has never had an environmental health and protection professional as Administrator, nor has there ever been an organized effort to place an environmental health and protection professional in that office. The same may be said about nearly every state environmental health and protection organization except for those components remaining in health departments. Regrettably, many individuals shy away from top leadership roles as the positions are usually exempt positions without career protection.

The USPHS Bureau of Health Professions has indicated shortages of properly trained personnel in a number of environmental health and protection program areas, and has estimated that only 11 percent of the environmental health and protection workforce have formal education in environmental health and protection.

EPA's Science Advisory Board has stated that, "*The nation is facing a shortage of environmental scientists and engineers needed to cope with environmental problems today and in the future. Moreover, professionals need continuing education and training to help them understand the complex control strategies and pollution prevention strategies needed to reduce environmental risks more effectively...*"

Following are some of the significant workforce competencies for environmental health and protection:

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#### **WORKFORCE COMPETENCIES**

- Knowledge of the relevant environmental health and protection sciences such as epidemiology, of etiology of diseases, biology, chemistry, physics, geology, ecology, and toxicology.
- Environmental health and protection technical issues, such as air, food, water, wastes, radiation, etc.
- Risk assessment, risk communication, and risk management.
- Marketing techniques.
- Personnel and program management.
- The political process, including public policy development and implementation.
- Environmental health and protection planning.
- Financial planning and management.
- Fiscal impacts of environmental health and protection problems and programs.

- Environmental health and protection law.
- Federal, state, and local environmental organizations.
- Program planning, prioritization, and evaluation.
- Definition and philosophy of environmental health and protection.

Formal education in environmental health and protection is not a vaccine that will prevent ineffectiveness throughout one's career. Continuing education is an essential component of a rewarding career. Such continuing education should be timely, relevant, convenient, and strongly promoted by management.

Appropriate competencies are your weapons --- your arms. Machiavelli wrote that "*All armed prophets have been victorious, and all unarmed prophets have been destroyed.*"

I will single out a few of the foregoing listed competencies for further discussion.

### **ENVIRONMENTAL HEALTH AND PROTECTION ORGANIZATIONS.**

As health departments move toward health care, most public health leaders choose to ignore the fact that environmental health and protection is the largest single component of the field of public health.

Examples of federal environmental health and protection agencies include:

#### **Slides, federal**

- Environmental Protection Agency
- Department of Labor
- U.S. Public Health Service
  - Nat'l Institute of Environmental Health Sciences
  - Nat'l Center for Environmental Health
  - Food and Drug Administration
  - Indian Health Service
  - ATSDR
  - NIOSH
- Coast Guard
- Geological Survey
- Nat'l Oceanographic and Atmospheric Administration
- Nuclear Regulatory Commission
- Corps of Engineers
- Department of Defense
- Department of Transportation
- Department of Agriculture
- Department of Housing and Urban Development
- Department of the Interior

#### **Slide, state**

- Health Departments
- Environment Departments
- Ecology Departments
- Conservation Departments
- Environmental Quality Departments
- Natural Resources Departments
- Pollution Control Departments
- Agriculture Departments
- Labor Departments

**Slide, local**

- Health Departments
- Environmental Health Departments
- Planning Departments
- Building and Inspection Departments
- Solid Waste Management Departments
- Housing Conservation and Rehabilitation Depts.
- Public Works Departments
- Councils of Government
- Special Purpose Districts
- Regional Authorities

Practitioners must seek positions in, and build and constantly travel communication bridges between the various interests involved in the struggle for environmental quality rather than protecting turf and allowing walls to exist. Such interests include, but are certainly not limited to the following:

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- Elected Officials
- Other Public Health Agencies
- Community and Regional Planning
- Land Use Interests
- Transportation Planning and Operations Systems
- Resource Development and Utilization Interests
- The Health Care Community
- News Media
- Public Works Planning and Operation
- Agriculture
- Conservation
- Engineering
- Architecture
- Academic Training and Research
- Product Design and Development
- Economic Development
- Chambers of Commerce
- Environmental Activists
- Labor, Trade and Industry Groups

**ENVIRONMENTAL HEALTH AND PROTECTION PLANNING.**

Environmental health and protection planning is a key element in the effort to move many environmental health and protection expenditures from expensive clean-up to the more cost effective mode of prevention -- the public health model.

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Practitioners must become effectively involved in prevention during the planning stages of energy development; in land use planning; in transportation planning; in facilities planning; in resource development planning; and in product planning and design. Environmental health and protection planning will require additional competencies for agency personnel, as well as additional authority in some jurisdictions.

**RISK ASSESSMENT AND RISK COMMUNICATION.**

Risk assessment is one important element of the management system for environmental health and protection. Risk assessment provides an opportunity to help manage the changes that are facing environmental decision



makers. Risk assessment helps develop priorities regarding the complex and controversial spectrum of problems which must be addressed by government and industry. Risk assessment can aid in identifying where budget increases will yield the greatest benefits, or where budget cuts will do the least harm.

Risk assessment can aid in providing a framework for developing positive dialogue among various interest groups. Such constructive dialogue must be based on the art of risk communication.

Risk communication is an art requiring complete disclosure throughout any planning or decision making process, as well as embracing all relevant interest groups. Failure to develop valid priorities and programs is frequently linked to a previous failure to practice good risk communication and openly discuss the needs, assumptions, alternatives and data on which risk is assessed. This public openness and involvement has been termed environmental democracy.

## RECOMMENDATIONS.

What are some of the recommendations stemming from the foregoing discussion for those personnel professionally involved in the struggle to insure a healthful and high quality environment for this and future generations?

1. Develop and pursue a vision of the total field of environmental health and protection beyond that of any single program or agency.
2. Be flexible, competent and willing to seek positions of responsibility and leadership in any environmental health and protection agency at the federal, state, or local level, or in the private sector.
3. Be involved in the development of public policy which impacts your organizational or programmatic interests. Do not assume that it will be done by someone else or by some other group. Make certain you are heard regarding policy issues. Do not leave this to others. Develop competencies in risk assessment and risk communication, and speak out to insure appropriate priorities for your agencies. As Frederick Douglas said, "Power concedes nothing without demand."
4. While environmental health and protection is diversifying from health departments, most aspects of environmental health and protection should be organized together in order to most effectively serve the public and build on the important ecological and programmatic relationships. All environmental health and protection programs share the need for similarly trained personnel, laboratory support, regulatory methods, risk assessment, environmental epidemiology, and legal support. Splintering major environmental health and protection programs among a number of agencies is ill-advised public policy which does not properly serve the best interest of our citizens or the environment.
5. Recognize that the successful quest for enhanced responsibility and leadership will be the result of individual abilities and initiatives. Many of our great leaders were not organization people. They were dedicated individuals who achieved eminence not because they wore the right labels, but because they had the right ideas, the right information, and the right abilities at the right time. Shattuck was a publisher; Chadwick, a lawyer; Snow, an anaesthetist; Winslow, a sanitarian; Pasteur, a chemist; and Lasker, an advertising man. Whoever leads the struggles for environmental quality, the job belongs to no group by divine right. It is not hereditary. The mantle of leadership falls to those who:
  - Earn it,
  - Are willing and able to tackle the controversies and complex problems inherent in the role of leadership, and
  - Are willing to make difficult, important career choices.
6. Keep current in those competencies necessary for effective environmental health and protection practice. Take advantage of every opportunity to sharpen your skills and develop additional competencies through formal education and continuing education.

7. Encourage colleges and universities to offer course content in the basic environmental health and protection competencies. Encourage inculcation of the competencies necessary for problem solution, rather than promoting the traditional interests of any discipline or profession. Send employees to the courses, provide guest lectures, provide opportunities for internships, and utilize their graduates.
8. Build, and constantly travel the network of communication bridges to and from all the various environmental health and protection interests.
9. Market the **benefits** of environmental health and protection, be open to and embrace the news media and communicate your problems and needs to media on an ongoing basis,  
  
and finally,
10. Do not underestimate your individual abilities, contributions and potentials.

## CONCLUSIONS.

Rapid change is occurring in public health delivery systems and in education for public health. At this point, health departments appear to be a cause in search of an identity. Many health departments will embrace some aspects of health care, and health care organizations will embrace more public health activities as they move toward managed care. At the same time, environmental health and protection in many health departments is not being adequately understood, emphasized, or included. As personal public health interests are gravitating closer to health care, environmental health and protection will increasingly be diversified and assume different organizational identities.

Public health delivery systems have diversified into a number of organizations. As the largest single component of the field of public health, environmental health and protection continues to evolve as a separate system for delivering public health services.

We must realize that environmental health and protection goals **may** be properly addressed by agencies other than the evolving type of health departments, and that environmental health and protection educational needs **may** be properly addressed by educational programs other than the evolving schools of public health. The practice of public health other than environmental health and protection will be gravitating closer to clinical practice, while environmental health and protection is being aligned closer to environmental quality and conservation agencies.

You can take the lead in defining and achieving your futures and the nature of environmental health and protection education and service delivery systems. Or, you can be left behind. Do not be shackled by petrified opinion and inaction, or be slaves of the past.