

# ENVIRONMENTAL HEALTH AND PROTECTION: A PRIMER

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Environmental health and protection is a high priority issue in our society. It is expected and demanded by the public, the media and our political leaders, and is widely considered to be an entitlement. Environmental health and protection is the largest single component of the field of public health and approximates 50% of the field of public health in terms of numbers of personnel and expenditures.

Definitions are essential inasmuch as the field of environmental health and protection practice deals with scores of problems and programs, and requires the involvement of a varied spectrum of disciplines and professions. In the absence of standard definitions, many continue to re-invent the wheel.

Many of the following definitions were developed through peer review comments by some 75 representatives of such agencies and groups as NACCHO, NCLEHA, APHA, NEHA, ASTHO, HRSA, CDC, NCEH, ATSDR, EPA, various state and local health departments and agencies, and several accredited environmental health and protection programs and schools of public health.

**Health services** encompass public health, including environmental health and protection, health promotion, and disease prevention, as well as health care.

**Public health** is the art and science of preventing disease and disability, prolonging life, promoting the health and efficiency of populations, and ensuring a healthful environment through organized community effort. **Public health is not health care and health care is not public health.**

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

The term **environmental health and protection** combines environmental health and environmental protection and is the terminology of choice rather than the separate terms **environmental health** and **environmental protection**. Environmental health and protection is useful terminology because: 1) the separate terms do not embrace the comprehensive field of practice, 2) the separate terms are divisive rather than inclusive, and 3) the separate terms are utilized to denote programs based on organizational settings rather than definable differences in programs. Environmental health and protection is a basic component of the field of public health regardless of the titles of agencies involved.

**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; disease vectors; safety hazards; and habitat alterations.

Environmental health and protection is an effort engaged in by a varied assortment of disciplines and professions within a broad array of organizations. The field of environmental health and protection is not a profession, and is not a discipline. The field of environmental health and protection is profoundly multidisciplinary as well as interdisciplinary. Most environmental health and protection practitioners may be classified as either environmental health or protection professionals, or as professionals in environmental health and protection. **Environmental health and protection is a field in which to practice one's profession.**

**Environmental health and protection practitioners** are those who manage environmental factors that may adversely impact human health or the ecological balances essential to long term human health. Such environmental factors include, but are not limited to: air, food and water contaminants; harmful radiation; toxic substances; wastes; disease vectors; safety hazards; and habitat alterations.

**Environmental health and protection professionals** include 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, risk communication, risk management, environmental law, social dynamics and environmental finance.

**Professionals in environmental health and protection** include other essential personnel such as, but not limited to, chemists, geologists, biologists, meteorologists, physicists, physicians, nurses, economists, engineers, attorneys, planners, epidemiologists, social scientists, public administrators and planners.

Both **environmental health and protection professionals** and **professionals in environmental health and protection** are essential to the success of a comprehensive program. Few environmental health and protection professionals are utilized by agencies other than health departments. Most environmental health and protection practitioners are professionals in environmental health and protection rather than environmental health and protection professionals.

**Health department** is a statutorily designated agency of government that includes the word "health" in its title and is charged with delivering identifiable services designed to prevent or solve health problems.

**Health agency** is a statutorily designated agency of government charged with delivering identifiable services designed to prevent or solve health problems.

At the federal level, most environmental health and protection programs are administered by agencies other than the USPHS. Among states, some 90 to 95% of environmental health and protection activities are administered by agencies other than state health

departments. At the local level, increasing environmental health and protection responsibilities continue to be assigned to agencies other than local health departments.

**Environmental health and protection system** is a regularly interacting or interdependent group of activities constituting a unified whole. No level of government has an environmental health and protection system, but has multiple systems that do not effectively interact or form a unified whole.

**Mission** is a statement indicating the services to be rendered and the public to be served to protect the health of the public and the quality of the environment.

**Goal** of environmental health and protection is to ensure an environment that will provide optimal health and safety, ecological well-being, and quality of life for this and future generations.

**Program** is a rational grouping of activities designed to solve one or more environmental health problems.

**Problem** is a reasonably discrete environmental condition having an impact on human health, safety, or well-being.

**Risk assessment** is a process by which the form, dimension, and characteristics of risk are estimated.

**Risk communication** is a process of effectively communicating risk to the public, community groups, the media and public policy makers.

**Risk management** constitutes those myriad measures utilized to deal with risk that has been assessed.

**Values and benefits** of environmental health and protection include:

- enhanced economic status,
- enhanced productivity,
- enhanced educational achievement,
- less social problems,
- a more livable environment,
- better quality of life, as well as
- reduced disease and disability, and
- reduced health care costs.

The **practice** of environmental health and protection is based on risk assessment, risk communication and risk management applied to one or more of the following problems:

Ambient air quality  
Indoor air quality

Radon  
Asbestos

Community noise pollution

Radiation  
Tanning parlors

Water pollution  
Safe drinking water  
Liquid waste disposal  
Cross-connections

Eating and drinking establishments  
Food wholesalers  
Food retailers  
Itinerant food establishments  
Fish sanitation  
Shellfish production and sanitation  
Pure food control  
Slaughterhouses  
Poultry processing  
Milk sanitation

Industrial hygiene and safety

Disaster planning and response

Healthful housing  
Educational facilities  
Health care facilities  
Day care facilities  
Correctional facilities

Massage clinics, tattoo and piercing parlors, and cosmetology salons

Unintentional injury prevention

Amusement parks  
Temporary mass gatherings, concerts, fairs  
Migrant workers health

Swimming pools and spas  
Beaches  
Parks and recreational areas

Solid waste management  
Hazardous waste management  
Community right-to-know  
Toxic chemicals  
Lead poisoning and remediation  
Pesticide control  
Fertilizer control  
Weed control  
Hazardous spills  
Brownfield remediation  
Underground leaking storage tanks

Insect control  
Rodent control  
Nuisances  
Animal bites

Bioterrorism

Global warming  
Stratospheric ozone depletion  
Global toxification

**Program activities** to prevent or ameliorate the foregoing problems include:

Surveillance, sampling, monitoring

Regulation, including:

- Warnings
- Administrative hearings
- Permits
- Grading
- Compliance schedules
- Variances
- Injunctions
- Administrative and judicial penalties
- Embargoes
- Environmental impact requirements
- Court preparation/testifying

Inspection

Complaint response

Consultation

Networking and community involvement

Pollution prevention

Plan and design review

Economic and social incentives

Public information and education

Problem prioritization  
 Public policy development and implementation  
 Program marketing  
 Strategic planning  
 Planning for prevention of environmental health problems through effective involvement during the planning, design and implementation stages of:  
     Energy production and utilization  
     Land use  
     Transportation systems  
     Resource development and consumption  
     Product and facility design

**Support services** for the foregoing include:

Epidemiology  
 Laboratory  
 Legal  
 Geographic information systems  
 Personnel training  
 Information technology  
 Research

Practitioners should be building castles rather than laying bricks. They should be managing the environment rather than merely inspecting and reacting. Environmental health and protection practitioners should have a vision, a philosophy, a comprehensive understanding of the field of practice, and understand the values and benefits of environmental health and protection. And they should understand that everything they do is based on risk --- risk assessment, risk communication, and risk management.

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*Larry Gordon is an Adjunct Professor at the University of New Mexico. He has also served as:*

- *New Mexico Cabinet Secretary for Health and Environment,*
- *Deputy Cabinet Secretary for Health and Environment,*
- *New Mexico Administrator for Health and Environmental Programs (State Health Officer),*
- *Founding Director , New Mexico Scientific Laboratory System,*
- *Founding Director , New Mexico Environmental Improvement Agency,*
- *Founding Director, Albuquerque-Bernalillo County Environmental Health Department,*
- *Director, Albuquerque Health Department, and*  
*continues as a*
- *Commissioned Officer (Navy Captain), U.S. Public Health Service Reserve, and is a*
- *Consultant to numerous national public and private agencies and groups.*

*Gordon also served as:*

- *President, American Public Health Association,*
- *Chair , National Conference of Local Environmental Health Administrators,*
- *President of the New Mexico Public Health Association,*
- *President and Founder, New Mexico Environmental Health Association,*

- *Chair, APHA Section on Environment,*
- *Co-Chair, APHA Action Board,*
- *Member, APHA Science Board,*
- *Founding Member, Council on Education for Public Health (the national accrediting agency for schools of public health and public health programs), and*
- *Member of the National Environmental Health Science and Protection Accreditation Council (the national accrediting agency for environmental health and protection academic programs.)*

*He has over 220 professional and technical publications.*

*Gordon is a recipient of the:*

- *National Society for Public Administration (New Mexico Chapter) Distinguished Public Administrator Award - 1996*
- *Univ. of Michigan School of Public Health Alumni Society Distinguished Alumnus Award - 1995*
- *Distinguished Leadership in Environmental Management Award, American Society for Public Administration - 1994*
- *County of Los Angeles Lester Breslow Award for Distinguished Service in Public Health - 1994*
- *University of New Mexico Alumni Association Zimmerman Award for bringing credit to UNM- 1993*
- *New Mexico Governors Distinguished Public Service Award - 1988*
- *American Public Health Association Sedgwick Award (the oldest and highest honor bestowed by the APHA)- 1987*
- *American Lung Association Clinton P. Anderson Award for Outstanding Efforts to Improve the Health and Environment of New Mexicans - 1987*
- *New Mexico Public Health Association Larrazola Award - 1987*
- *American Academy of Sanitarians Wagner Award for Leadership Ability and Professional Commitment - 1984*
- *New Mex. Hospital Assoc. Commendation for Leadership in Health Care - 1981*
- *Honorary Fellow Royal Society of Health For Distinguished Work in Connection With The Promotion Of Health, London, - 1981*
- *National Environmental Health Association Snyder Award - 1978*
- *New Mexico Public Health Association Award for Distinguished Service - 1970*
- *National Secretaries Association International, Boss of the Year Award - 1970*
- *New Mexico Sanitarians Association Award for Outstanding Contributions to Sanitation - 1967*
- *Sanitarians Distinguished Service Award, International Sanitarians Assoc. - 1962*
- *Western Branch, American Public Health Association Sippy Award for Meritorious Service to Western Public Health - 1962*
- *National Environmental Health Association Mangold Award for Outstanding Contributions to Professional Advancement - 1961*
- *Samuel J. Crumbine Award for Outstanding Development of an Environmental Sanitation Program - 1959*

*Gordon planned and gained legislative authorization for the:*

- *Albuquerque-Bernalillo County Environmental Health Department,*
- *New Mexico Scientific Laboratory System,*
- *New Mexico Environmental Improvement Agency, and*
- *New Mexico State Health Agency (now the Public Health Division.)*

*He also developed and gained enactment of numerous state and local public health and environmental health statutes and ordinances, in addition to testifying before Congressional and other national Committees on various public and environmental health measures.*

*Gordon earned his MS degree in Biology from the University of New Mexico and his MPH degree from the University of Michigan School of Public Health.*

*Gordon is listed in:*

- *Who's Who in America, 1988 - current*
- *Who's Who in the West, 1970 - current*

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