

ENHANCING THE GOOD, ABOLISHING THE BAD AND THE UGLY  
KEYNOTE PRESENTATION  
NEW MEXICO ENVIRONMENTAL HEALTH ASSOCIATION  
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by  
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Oliver Wendell Holmes wrote that, -- *the great thing in this world in not so much where we stand, as in what direction we are moving.* But before dealing with the direction in which we are moving, I wish to briefly describe the direction from which we have moved. The second meeting of the New Mexico Board of Health in 1919 saw the authorization of the Division of Sanitary Engineering, which was the direct line predecessor of the agency currently termed the New Mexico Environment Department. In 1920, the first regulations were adopted governing water supply, sewage disposal, sanitation of foods, and the prohibition of common drinking cups and towels in public places.

During those days milk supplies were abominable, filthy and infected with tuberculosis, brucellosis, and mastitis. Milk was not pasteurized. Water supplies were dangerous and were the cause of typhoid and dysentery. There was no chlorination or filtration of water supplies. Sewage disposal was a tremendous problem as sewage was untreated, discharged into streams or arroyos, and used for irrigating vegetables. Three-fourths of the population used outdoor privies, of which only 10% were fly proof. Malaria was common in many areas of New Mexico. Garbage was strewn around homes, alleys, and in open spaces as there was no organized collection. House flies were everywhere, breeding in garbage, sewage, and horse manure. Food sanitation was non-existent, and there was no organized program. As late as 1940, there were 125 cases of rabies among dogs.

As late as 1949, the U.S. Public Health Service issued a report stating that the death rate for diarrhea and enteritis was nearly seven times as high in New Mexico as in the United States as a whole, and that death rates from typhoid and paratyphoid fever were twice the national average. The

state health director said, *it demonstrated that much basic sanitation work is still needed in New Mexico because typhoid fever, diarrhea and enteritis are known among public health workers as the filth diseases. They are spread through the improper disposal of the intestinal discharges, which indicates that one of the pressing problems before New Mexico is better sewage disposal, better and safer water supplies, more protection of food supplies, and an unrelenting fight against flies and other insects which play a role in the spread of filth. If these death rates are to be reduced, not only must the number of sanitarians be increased, but the municipalities must develop more comprehensive systems of water supplies and sewage disposal plants.*

Early day sanitary engineers and sanitarians made giant strides in making inroads on all such sanitation and sanitary engineering problems. Many of the foregoing problems would still be with us were it not for your continuing control efforts. I began my first job in public health in New Mexico as an entrance grade County Sanitarian at \$225 per month in 1950, so it has been my privilege to have been intimately involved in changes that have occurred in environmental health and protection issues from the early day concerns, which were primarily with aspects of the biological environment, until today.

Following World War II, New Mexico began experiencing additional problems as the result of population growth and the increase in various chemical pollutants. These increased problems of chemical agents did not replace existing problems but just made the job more challenging. As environmental health and protection became increasingly complex, most prevention and control activities have been diversified to independent public health **agencies** such as the New Mexico Environment Department and the Albuquerque and Bernalillo County Environmental Health Departments.

Now, environmental health and protection personnel must increasingly work closely with such interests as community planning, public works, transportation planning, chambers of commerce,

agriculture, energy planning and development, land use and development, education and research, conservation, other public health groups, economic development, labor and trade groups, the news media, citizen groups, resource development, elected officials, and business and industry.

A wide-ranging arsenal of environmental health and protection competencies are crucial to the proper delivery of environmental health and protection services. Machiavelli noted that, *All armed prophets have been victorious, and all unarmed prophets have been destroyed*. You must be continue to be periodically re-armed through targeted continuing education to the end that you may anticipate and keep pace with future challenges. Among your arsenal of armaments required for victory, include the following:

- Understand the role of science in determining public policy, place a high value on scientific excellence when developing public policy, and recognize the misuse or absence of science in an effort to justify a position or alarm the public.
- Be scientifically critical. Too many practitioners are actually only regulators and functionaries, ever ready to accept, promote and enforce the current party line or misinformation.
- Recognize that if all the alleged environmental catastrophes were scientifically factual, we would have many times our actual morbidity and mortality rates.
- Question reports which base a problem on one anecdotal example, e.g., one cancer patient near a hazardous waste site, that capitalizes on appeal to the emotions.
- Investigate alternative solutions, and analyze existing and proposed regulations and standards to determine the validity of their scientific base. Existing programs, standards and regulations tend to be magical and take on lives of their own. They are seldom challenged. A standard in motion tends to remain in motion in a straight line unless impeded by an equal and opposite force. Environmental health and protection professionals should provide the

scientific equal and opposite force to challenge any prevailing misunderstanding of risk.

- Remember that people tend to over-estimate risk from rare but dramatic events, and tend to under-estimate common events. People disdain changing preconceived notions about risks and priorities, and people are quick to dismiss evidence as erroneous or biased if the information contradicts their preconceived opinions.
- Understand that many Americans seem to exhibit a love of calamity. Extremists are applauded and profit from false predictions of environmental calamity, some of which becomes translated into public hysteria and public perception, thence into political action, and finally into expensive and unnecessary programs and public policy. Those promoting such hysteria accept no responsibility for their false statements and predictions.
- Define problems and their attendant risk before proposing solutions, and fit the solutions to the problems rather than the problems to the solutions. Some groups seem to consistently have canned solutions waiting for perceived problems.
- Recognize that a low risk program becomes difficult to stop or alter once a bureaucracy or an industry is developed to promote the program.

And finally:

- Be wary of accepting problems based only on extrapolations and correlations rather than on sound epidemiological and toxicological cause-and-effect studies. If you consider correlations only, you would conclude that:

**CARROTS WILL KILL YOU!** After all,

- Nearly all sick people have eaten carrots. Obviously the effects are cumulative.
- An estimated 99.9% of all people who die from cancer have eaten carrots.
- 99.9% of people involved in auto accidents ate carrots within 30 days prior to the accident.
- Some 93.1% of juvenile delinquents come from homes where carrots are served frequently.

- Among people born in 1889 who later ingested carrots, there has been a 100% mortality.
- All carrot eaters born between 1900 and 1940 have wrinkled skin, have lost most of their teeth, and have brittle bones and failing eyesight, if the ills of eating carrots have not already caused their deaths.

None of you would be so foolish as to accept these correlations as evidence that carrots cause illness or death. Yet, similar conclusions are frequently reached based on other similar correlations. The science of epidemiology attempts to sort out from myriad chance correlations those meaningful ones which might involve cause and effect. However, we all know that epidemiological methods are inherently difficult, that it is not easy to obtain convincing evidence, and that there are many sources of bias.

Thomas Jefferson wrote that, *If we think (the people) are not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion.* And this leads me to discuss risk communication which may be the most significant weakness in your armor of essential competencies. In the absence of continuing effective risk **communication with** the general public, various interest groups, official agencies, industry, and public policy officials, risk **assessment** is merely academic. Many officials continue to view risk communication as a one-way process composed of official pronouncements, advisories, letters, leaflets, booklets, and other such materials. As a group, we as scientists and engineers have been particularly inept as risk communicators.

Effective risk communication requires complete openness throughout the process and involvement of the public as actions are being developed and planned, rather than after the fact. Failures in risk communication are frequently linked to failures to involve the public early and openly discuss the assumptions and data on which risk has been assessed. But recognize that the professional activists represent special interests and do not represent the general public. Therefore, you must be

diligent and creative in developing methods of communication with the public.

Risk communication skills will aid you in overcoming some of the more common enemies of environmental quality. These enemies include the following:

1. Individuals who oppose sound solutions without proposing better solutions,
2. Individuals proposing solutions without first thoroughly understanding the net impact of their proposals on the environment, the health of the public, as well as the economy,
3. Some Neanderthal-minded polluters who do not have the enlightened self-interest to protect the environment and the health of the public,
4. Some irresponsible news media pursuing increased sales and **creating** controversy through misusing term such as "deadly", "cancer-causing", "killer chemicals", "dangerous", "toxic", etc., and
5. Individuals proposing solutions without specifically defining, quantifying, assessing, and prioritizing the problems to be addressed.

In addition to competencies in epidemiology, risk assessment, and risk communication, a few other common gaps in environmental health and protection armaments required for victory include:

1. the proficiency to understand the fiscal impacts of environmental health and protection programs,

2. the skills to practice environmental health and protection planning as basic preventive measures. We must emphasize prevention as differed from curative efforts and clean up.

While the field of environmental health and protection is supposedly based on prevention, a preponderance of money and effort are devoted to remediating problems created as a result of earlier decisions and actions taken by both the public and private sectors. Therefore, environmental health and protection personnel must become effectively involved in the

planning and design stages of energy production and alternatives, land use, transportation methodologies, resource utilization, facilities, and products which may impact human health or environmental quality.

3. the ability to develop and implement public policy,
4. the competency to prioritize effort among myriad complex problems, and
5. the capability to evaluate programs to determine continued need and effectiveness of effort.

Many of you know that the novel *Ben Hur* was written by Lew Wallace while serving as United States Territorial Governor for New Mexico from 1878 to 1881. Some allege that Lew Wallace wasn't much of a governor, but was a helluva writer. Perhaps relevant to your careers, Governor Lew Wallace wrote: "Every calculation based on experience elsewhere fails in New Mexico." You may have learned this statement has significant relevance to the field of public service in New Mexico.

Your work is reimbursed inadequately, is varied, is challenging, and is demanded by our society. There **can** be remarkable opportunities to make your marks and do something constructive and noteworthy. Or, depending on your own abilities and ambitions, or lack thereof, you may find disillusionment in public service. However, disillusionment may also be experienced in the private sector.

You have and will observe elements of the good, the bad, and the ugly in the public sector as well as in the private sector.

You have been embarrassed by witnessing incompetency, greed, administrative and organizational stupidity and inflexibility, as well as turf protection not in the public's best interest.

You have observed that public policy and budgets are seldom the result of any rational public policy model, but are more commonly the results of raw political power appropriating "pork" to

ensure the re-election of some incumbent elected official who knows that he or she will reap electoral rewards.

You have been incensed because the public sector, like the private sector, has too many who protect the status quo and do not wish to rock the boat or make any waves.

You have been irked because those with ideas and enthusiasm to work hard and improve services may be ostracized by the status quo elements.

You have been irritated because many employees in any organization passively ignore the dictates of top management, knowing that they will still be feeding at the public trough when top management is changed by the new broom of another new governor or mayor.

You have been chagrined to observe that some of your co-workers have better recall of the phone numbers of their personal attorneys than of their knowledge and understanding of their public service **responsibilities**, and that they are more concerned with their **perceived rights** than their **professional obligations**.

You have been frustrated by the fact that many in the public sector want to be considered professionals and reimbursed accordingly, but behave more like hourly employees when it comes to work performance and insuring that the job gets done regardless of the additional time and effort required.

You have been mortified to observe that many individuals have been promoted to positions beyond their levels of competence in accordance with the Peter Principle.

You have been exasperated to observe that many public servants feel that government owes them employment regardless of their performance or lack thereof. Experience suggests they may be correct in this belief, as they always manage to feed at the public trough in some position no matter who is in power.

You have been embarrassed to observe that a large percentage of public employees seem to

believe that working hours begin as they leave their homes, rather than when they arrive at the work place ready to begin.

You have been maddened to learn that every organization is subsidizing numerous incompetent employees who should have been dismissed, but remain in some position because management has not taken appropriate dismissal action, or has found it impossible to remove the incompetents for any of a number of reasons.

You have been concerned that in the public sector, as is in the private sector, there is a significant paucity of vision and leadership, as many in the work force are more interested in job security and longevity than the difficult and controversial measures essential to improve public services.

You have been distraught to learn that expensive programs and requirements are frequently developed before the perceived problem is adequately defined and assessed.

You have been dismayed that program evaluation is a rarity, and is threatening to many involved in administering programs which should be evaluated and possibly changed or abolished.

You have been alarmed to note that a program in motion tends to remain in motion in a straight line unless impeded by an equal and opposite force, and that such equal and opposite forces are seldom generated.

You have been mortified to know that the knowledge and skills of many personnel are sadly antiquated, that all personnel need periodic re-treading to keep current, and that employers simply cannot afford **not** to invest in continuing in-service training.

You have been discouraged because many personnel have become root bound in their positions and should be re-potted periodically to revitalize their potentials and careers.

You have been dispirited because some editors and reporters believe they can sell more papers by constantly criticizing public agencies and personnel. They seldom praise anyone in the public

sector for all the things which are working well. They frequently make one wonder why he or she chose a public service career, and the media contribute substantially to the public's opinion of public employees.

You already perceive that both the public and the private sectors do a poor job of involving and informing the public, as well as communicating risk and relative risk.

You have gleaned the fact that public employees are perceived to be public property, and they must be accurate in their public actions and pronouncements.

You have discerned that effective practice in the public sector has different complexities and requires different methods, approaches, and greater patience than practice in the private sector. Anyone who alleges that government can be managed like a business is flaunting something between innocence and ignorance.

The foregoing examples are based on a lengthy and rewarding career in public health. These examples are only the tip of the iceberg. But in one way or another, most of these ills are found in any large public or private organization.

Despite these obstacles, I have no hesitancy encouraging careers in environmental health and protection. Opportunities for victory abound for every bad or ugly practice or shortcoming such as those I have mentioned.

As you continue in your careers, I wish to note one observation, and three principles regarding practice in the public or private sector. The observation is that:

Virtually all of the principals and most of the practices of administration are well known to children by the time they enter junior high school, learned as they participated in games and were programmed to respond to bells and whistles before concepts and ideas. Almost any concept of administration that is reduced to plain English elicits the response, "Oh yeah, I knew that." Everyone knows these things because they have already been administered.

The three principles I wish to communicate delineate the characteristics of a good administrator. They are:

1. The good administrator is lovable. Staff will customarily perform their tasks for money, but they only knock themselves out for love.
2. The good administrator is ruthless. A commonplace observation is that the administrator must be prepared to sell his grandmother into slavery if this will further the mission of the organization. Because people who are both lovable and ruthless are relatively rare, good administrators are rare.
3. The good administrator is independently wealthy. The administrator who is unduly concerned over a mortgage or educating his or her children is usually in no position to hang tough when his supervisor's stupidity becomes intolerable. In the private sector, the stock option helps.

I admonish you to bury the notion that personnel in the public sector are inferior. You must recognize that government **will** respond to good practices.

I counsel you to seek out the most competent, initiate professional relationships, seek mentors, and be constantly inquisitive. As you earn greater positions of influence and leadership, devote time and effort to mentoring others.

I exhort you to propose improvements, involve citizens and develop effective and continuing linkages with other public and private sector interests.

I entreat you to ignore gossip, as it is titillating in the short run, demoralizing in the long run, and takes away from positive endeavors.

I urge you to set goals, dream big, and ask why not.

I beseech you to maintain an exemplary standard of ethics.

I solicit you to begin with the end in your sights.

And, above all, I implore you to maintain your sense of humor!

I invite each of you to adopt a personal career mission of enhancing the good, and reducing the bad and the ugly wherever you apply your professional talents. Remember that every problem provides an opportunity for improvement. Choices between the status quo and progress are yours.

Leadership on the road to improved environmental quality is not an easy journey. There are many potholes in the way of providing effective, priority environmental health and protection services. The journey requires vision and steadfastness of purpose, as it is beset by emotional pressures, tempting comfortable detours, political surprises, and usually offers no short-term gratification. There are few if any rest stops along the way. Unlike cold fusion, you will not get something wonderful with little or no effort.

You have chosen careers in a field which has a proud history and record of achievement. Environmental health and protection will continue to be basic to the public health and the quality of our environment. If the past is prologue, it is certain that environmental problems, programs, organizations and requisite personnel competencies will continue to evolve in ways that are as yet unforeseen. Anticipating and meeting the challenges of the future by being properly armed will insure a bright future for those who possess and practice the necessary competencies and exhibit leadership.