

Today, it is my privilege to visit with you regarding a number of current and important issues in public health. I would first like to spend some time discussing disease prevention and health promotion which, of course, includes environmental health.

Many of us old-time public healthers have never lost sight of the need for prevention, the value of prevention, and the cost-benefit desirability of prevention. We have watched with frustration and dismay while staggering billions have been poured into the sickness treatment systems of our communities, states, and nation, with unsatisfactory (though expensive) attendant impact on the health status of our citizens. It was erroneously concluded that treating health problems was alone sufficient to improve the health status of our citizens.

During the last ten to twenty years, sickness treatment costs have escalated and skyrocketed to the end that such costs have become a serious economic problem which has become a priority issue for our health care providers, our political leaders, health care officials, and our health planning groups. They have realized that we must build a conscience for disease prevention, health promotion, and environmental quality. They have been advised that we are going to be spending increasing piles of sickness treatment dollars with little overall impact on health status unless we improve our prevention efforts. They are increasingly recognizing that any national health insurance program would be doomed to failure and spiralling costs without more effective disease prevention and health promotion measures as a pre-requisite. National Health Insurance without such measures would be another expensive experiment in the matter of misplaced priorities and improper timing. Citizens are finally recognizing that we must stop expecting medicine to bail us out from the consequences of our own foolishness, and that we must stop waiting for tragedy before taking action.

Despite a long-standing commitment to prevention, we have frequently witnessed more prevention rhetoric than substance. Prevention continues to be difficult to sell to legislatures and local governing bodies, whereas treatment and rehabilitation programs usually continue to be better funded and more acceptable to those entrusted with authorizing and budgeting public funds. Even when a health agency goes before a budgetary body with "prevention" as the number one priority, the number one request is frequently by-passed in favor of lower priorities such as treatment and rehabilitation. Prevention programs, unlike treatment and rehabilitation programs, have lacked a constituency. When considering funding for any one of a number of treatment or rehabilitation programs, the legislative hearing room may be filled with assertive constituents wearing their appropriate hats, banners, or badges. Not so with prevention. Prevention has always been a rocky road and this continues to be the case, because in the eyes of many people it provides no immediate gratification or feed-back. It does require

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the ability to look to the future. Prevention, thus far, lacks the glamour commonly associated with physicians and hospitals, diagnosis and treatment, and therefore does not compete well with sickness treatment and crisis medicine.

While most of us have a reason to be proud of the various prevention programs in our states, I do not always share this feeling when it comes to health promotion. By health promotion, I mean the effective use of health education in ways that move people to action. Many health personnel have not had a good handle on health education and health promotion, and to date have not really packaged them properly so the services will be delivered in an effective, coordinated, and visible fashion. We have traditionally and historically been expert at telling people what to do, but frequently have not understood the desirability of working with people to determine what they want so that we might correlate health goals with other personal aspirations and desires of our citizens.

Realistically, we must admit that most health policy, at this time, remains focused on sickness treatment and rehabilitation rather than prevention and promotion, and this continues to be evidenced by the lopsided funding allocations for treatment and rehabilitation. Like beauty, health promotion lies in the eyes of the beholder rather than in the funding allocated.

Despite the problems with funding and policy acceptance, we can be proud of reduction in communicable disease, smallpox eradication, a high rate of immunization of school children against seven diseases, a decline in infant mortality, a decline in cardiovascular mortality, and a definite trend toward decision-makers realizing that an investment in health promotion and disease prevention makes good sense. We have seen a decline from 52% to 37% in adult male smokers since the first Surgeon General's Report; we have a tremendous interest in healthful diet; exercise and physical fitness are much better accepted; we have improved knowledge of stress as a health factor; and better program relationships between mental health and other aspects of public health. And, in general, we have a great of public and social momentum toward acceptance and utilization of disease prevention and health promotion.

Generally, we have not fully used health education as a tool to better deliver health promotion services in an effective manner. Running and jogging, for example, are usually perceived as being activities engaged in by the middle and upper-class citizens, and may not be socially acceptable for many citizens in other socio-economic categories. Good involvement with health education would help us determine what type of physical activities might be more desirable for people in various rungs of the socio-economic ladder. People in the slums of urban areas, for example, may place a great deal of emphasis on such physical activities as weight-lifting and body-building, but are not at all interested in jogging in the beautiful and inspirational environment of an urban slum.

But, back to prevention --- while the toxic effects of tobacco and alcohol are well-documented, a little plague or cadmium in the environment frequently creates havoc with health personnel and the news media. I cringe with frustration when I note the effort health personnel devote to some minor public health issues, and the space and attention afforded such issues by news media; and always wonder how many humans suffered or died prematurely that same day from the toxic effects of tobacco or alcohol. Or of equal importance, how many citizens are not enjoying positive health and well-being due to the insidious creeping effects of tobacco? We need to re-define the term "crisis" to include conditions which allow a crisis to exist, such as the growing of tobacco, the sale of tobacco, the promotion of tobacco, and the utilization of tobacco.

It is essential to understand the large stakes that some industries have in opposing widespread behavior change with respect to their products. For example, an employee publication of the J.R. Reynolds Tobacco Company included the following: "If the current efforts of anti-smoking groups to restrict smoking in public places were to result in no-smoking laws which caused every smoker to smoke on less cigarette a day, J.R. Reynolds Tobacco would stand to lose \$92 million in sales every year." Understandably, the Chairman of the company added, "But we have no intention of standing idly by while this happens." As if to prove its point, Reynolds spent \$40 million in one six-month period in 1977 to launch a single cigarette. The industry's highly successful advertising and lobbying efforts are legendary.

Not too long ago, Russell Baker of the New York Times, wrote he had no objection to people who did not smoke just so they did not do it around him. Now, non-smoking has become more fashionable than smoking.

By and large, providing people with health information does not change health attitudes and health behavior. It is more important to learn what people want than for us to tell them what they need. Public information does create an awareness, but not necessarily behavior change. People are more apt to respond to public health information if it does not involve a change in lifestyle; for example, the administration of polio vaccine. People are not so apt to respond to something they fear and do not wish to discuss, such as cancer.

We must constantly elicit the view of what people themselves want. Only in this way will the social pressures be developed for changing health behavior. We professionals bring an expertise, but so do consumers, and we need consumers in alliance with us.

Our people are by nature suspicious of coercion, and resist both restrictions imposed on them for their own good, and exhortations to shape up in their personal lifestyles. Yet again and again, our citizens have responded to leadership and reason when a convincing case has been made to them in terms they can weigh and evaluate.

Surveys continue to indicate that more than 90% of our citizens agree that if we Americans lived healthier lives, ate more nutritious food, ceased smoking, decreased consumption of alcohol, maintained proper weight, and exercised regularly, it would do more to improve our health than anything doctors and medicine could do for us. There is widespread recognition among the public of the need for a major shift of emphasis toward more and better disease prevention and health promotion efforts. However, many still have unhealthy aspects of their lifestyles. Knowledge alone is not enough to change health habits. For example, the vast majority of smokers know that smoking increases their chances of getting cancer or one of many other adverse health conditions ... and yet they still smoke. But knowledge is a necessary first step and is almost always an essential component of change.

More than ever before, examination of the causes of poor health and disability and the means available for improving health status must focus on health education as the best means of achieving public health goals. The next improvements in health status must come from changes in lifestyles and from improved control of health hazards in the environment.

It is probable that we can do more to enhance health status and quality of life through more effective community health education than through some of our other time-honored and better accepted and funded activities. However, issues of federal, state, and local mandates and expectations, and constituency pressures preclude complete managerial flexibility and effectiveness in developing programs best designed to solve or ameliorate priority health problems.

Health education has repeatedly been more difficult to sell to budget officials and legislators than activities defined in terms of clinics, hospital beds, patients, immunizations, inspections, or numbers of analyses.

Prevention and promotion are "issues whose time have come", in terms of rhetoric -- while funding continues to be channelled to treatment and care programs which have the citizen constituency who regularly appear at administrative and legislative budget hearings. We do not have an organized prevention and promotion constituency despite the acknowledged fact that prevention and promotion are cheaper and more effective than care -- and enhance the quality and enjoyment of life.

If states and the Nation are to have a commitment to prevention and promotion, health education must be the mainstay -- the backbone of a concerted effort to improve the health status of our citizens. We must have a commitment to preventing damage to the human machine in balance with efforts to repair the human machine after it is wrecked. And again, I would emphasize the importance of enjoying positive health through known, documented changes in lifestyle related to smoking cessation, exercise, nutrition, drinking, weight and obesity, mental health, and environmental health. Such changes in lifestyle would directly affect the leading causes of death and disability among our citizens, such as heart disease, cancer, and accidents. Health education is also a basic strategy when dealing with hypertension, family planning, maternal and infant health, immunizations,

sexually transmitted disease, control of toxic chemicals and hazardous waste, occupational health and safety, dental health, communicable disease control, mental health, alcoholism, and drug abuse.

We need an extension of disease prevention and health promotion services to the un-served and under-served, and we must target our efforts in more effective ways even though this may mean a re-allocation of personnel and resources.

Before going further, I should set the stage for further discussions by defining environmental health programs. Environmental health programs are organized groupings of activities or methods designed to protect and promote health, comfort, safety, and well-being by managing the environment. Within this definition, environmental health programs include, but are not limited to, air pollution control, water pollution control, safe drinking water, hazardous waste management, solid waste management, occupational health and safety, institutional environmental health, radiation protection, recreational environmental health, swimming pool sanitation and safety, housing conservation and rehabilitation, noise pollution control, food protection, and insect and rodent control.

Within the past 10 to 15 years, Congress and state and local governing bodies have enacted numerous laws designed to protect human health by managing the environment. Many of these laws have gone even further and have dealt with such related issues as atmospheric visibility, water clarity, property damage, and plant and animal life. All these laws were enacted in response to the evident public clamor for a healthy environment. The struggle for a quality environment takes place in many areas, and after the legislative arena, the confrontations have shifted to the regulation promulgation arena where those interests which failed to win legislative battles are looking for another opportunity to weaken or undermine environmental health programs.

Some of these polluter interests would have us choose a course which not only sacrifices the public's right to good health, but has the ultimate effect of increasing medical, hospital, and insurance bills. Now, some of the official inflation fighters have targeted environmental and occupational measures for their criticism while admitting that they really have no cost data on environmental and occupational diseases. Since these economic "experts" don't know the costs, they won't consider them in a cost-benefit equation. And still worse, they seem to reject any responsibility for gathering the data on the effects of environmental disease in terms of disability, inefficiency, morale, comfort, quality of life, life-span, absenteeism, insurance rates, Medicaid and Medicare budgets, and other health care costs.

We have a long way to go in sharpening and utilizing the tools of environmental epidemiology to better identify the health effects of environmental chemicals and stresses.

Our political leaders largely ignore the issue of population stabilization, which (and while frequently an emotional issue) is an absolute necessity for the human animal to thrive in balance with the resources of his environment -- including energy supplies. The human species, either through rational behavior or environmental limitation, must and will be limited. The plight of our energy addicted and starved society may well portray a system that has filled its "ecological niche." The social, political, and environmental consequences of over-population are evident daily.

Recent public opinion surveys continue to indicate that Americans favor environmental protection even at a price.

The majority of Americans say they favor efforts to control pollution and protect endangered species despite concerns over the economy and energy supply, according to a survey commissioned by the President's Council on Environmental Quality and three other governmental agencies. The poll found that 55% of those surveyed said their views were sympathetic toward the environmental movement, while 7% were active in it. Eighty-three percent said the government should screen new chemicals for safety before they are allowed to go on the market, even if doing so might keep potentially useful chemicals away from the public. Solar energy was chosen by 61% of the population as the energy source on which the Nation should plan for the future. And the poll also indicated that the Nation should not plan for any new nuclear plants, but continue using those in operation or currently under construction. Seventy-five percent said that an endangered species must be protected even at the expense of commercial activities. Sixty-one percent of those polled felt that we should concentrate the most on development of solar energy, while only 23% thought we should concentrate the most on nuclear energy. Further, most of those polled thought solar energy would take less effort to develop than nuclear energy.

There is no doubt that environmental measures contribute to inflation, but only moderately. A study prepared for EPA by Data Resources, Inc., (DRI) of Cambridge, Massachusetts, estimates that spending by major industries and state and local governments to meet federal pollution requirements would add only 0.6 percent per year to the Consumer Price Index between 1981 and 1987, but that nationwide unemployment rates would be 0.3 percent less in the 1970-87 period as a result of an estimated 524,000 new jobs created by the same pollution control requirements.

More recently, we have learned that a large majority of Americans support the current provisions of the Clean Air Act and Clean Water Acts, and many favor making the laws stricter, according to a survey by the Lou Harris organization.

By 85% to 12%, those surveyed oppose making the Air Act less strict, and by 93% to 4% they oppose easing up on environmental rules governing water pollution, the survey found.

About 12% want to make the Air Act less strict, 40% want to keep it as it is, and 38% want to make it stricter.

The Harris Survey found that 52% of Americans want to make the Water Act stricter; 41% want it to remain the same, and only 4% want to make it less strict.

Testifying before the House Subcommittee on Health and Environment on March 29, 1984, pollster Louis Harris reported the results of his most recent public opinion survey on the Clean Air Act. The poll found that 72 percent of the public surveyed feel that curbing air pollution should be a top priority of this country. Continuing a previously observed trend, the number of Americans who feel the Act should be made stricter than it currently is has risen to 69 percent, up from 38 percent in 1981. Altogether, 89 percent of the public wants to keep the Act as it is or make it tougher.

The public continues to oppose relaxing air pollution standards affecting human health, even if the costs are too high, by more than a 2 to 1 margin. This fact emphasizes the public's support for setting health-based standards without cost-benefit considerations being taken into account, which is contrary to the philosophy of the Reagan administration.

The idea of relaxing auto pollution standards was rejected by 74 percent of the public, with only 21 percent agreeing--more than a 3 to 1 margin. The public also rejected the idea of relaxing air pollution standards to allow power plants to burn oil and a coal with a higher sulfur content by a 80 to 16 percent margin.

On the acid rain issue, 90 percent of the public feels that acid rain is a serious problem. By over a 3 to 1 margin, 73 percent of the American people think that it is fair that the costs of cleaning up acid rain be born by "all individuals and businesses who use fuels that contribute to the acid rain problem, including oil, natural gas, and gasoline." An almost identical 72 percent feel it is fair to have the major cost of cleaning up acid rain born by shareholders of investor-owned utilities. By 60-35 percent, a majority of Americans also favor having acid rain control costs paid by electricity consumers nationwide.

Whatever public backlash has developed against environmental measures would appear to be aimed more toward questionable regulatory methods than against the basic statutes and the goal of a healthy environment. This behooves regulation promulgating authorities to utilize rational and acceptable methods and strictly follow statutory intent. Those protesting regulations must be reminded that regulations are mandated not by bureaucrats, but by congressmen and legislators elected by the citizenry.

U.S. Senator Gary Hart, of Colorado, has noted that, "Public support of air quality is stronger than ever before, but public frustration with government regulation is also stronger. A major challenge before us is to satisfy both of these popular demands: cleaner air and less burdensome regulations." perhaps greater utilization of economic incentives such as a "pollution tax" should be effected. This is a methodology which has not been well-utilized. However, limited experience in the Delaware River Basin has indicated that taxes could reduce water pollution as much as current regulations ... but at only half the cost.

It has become increasingly important, but perhaps not more common, for environmental health agencies to have their own economists to study cost-benefits of existing and proposed requirements and to counter as necessary some of the ridiculous economic claims of those interests opposed to environmental controls. A November, 1979 Abstract of a paper entitled, "Putting Environmental Economics in Perspective: Case Study of Four Corners Power Plant, New Mexico," by John R. Bartlett, D.Ch.E., published in the American Journal of Public Health, states that, "Environmental control costs can be made to appear much larger in impact than they actually are by placing costs in misleading contexts or failing to provide perspective. It is essential for continued public support of environmental health programs that this practice be countered by meaningful presentations of economic data. As an example, analytic methods appropriate to the case of a large coal-fired power plant in northwestern New Mexico are developed and discussed. Pollution control expenditures at the Four Corners Power Plant were presented as costing \$28 million annually. Although this figure may be the correct one, data were collected and analyzed to show that this cost represented an increase of only 5 to 60 cents on a \$100 electricity bill for the consumer of electricity."

Many of us remember the "olden" days when the vast majority of environmental health programs were organized within the framework of the then traditional Public Health Departments. But with emphasis on consumer protection, comprehensive programming, organizational visibility, importance of citizen input and participation, and effective regulatory actions, the organizational picture has changed radically within the past decade. Public and political clamor, and concern over the rapidly deteriorating environment in the late 1960s caused a widespread re-evaluation of environmental problems, program goals, program support, program effectiveness, as well as organizational settings. Programs were shifted to new and/or different agencies for a variety of reasons -- some valid, and some questionable. Eager citizen environmentalists and citizen action groups sometimes confused change with progress. Public health and environmental health officials generally exhibited a high degree of territorial defense and relatively low titer of organizational and program management knowledge. Powerful polluter lobbyists delighted in the opportunity to retard and confuse environmental health measures through repeated reorganizations and by placing health personnel and programs in positions of greater "political responsiveness."

Regardless of the organizational placement of environmental health, the goal should be to insure an environment that will confer optimal health and safety on this and future generations. The mission should be one of citizen and environmental protection rather than environmental utilization and development. Some environmental health agencies have not fully developed the concept of mission and have been ready prey for those polluters and others they are charged with regulating. This has sometimes resulted in the environmental health agencies protecting or promoting the interests of those they are charged with regulating.

It is increasingly important to realize that the concern of environmentalists with wildlife and the natural environment is a sound manifestation of interest in the entire natural system of which the human animal is a part, and the environmental effects on wildlife serve an "early warning" or "preview of coming attractions" in accordance with the known and proven ecological maxim that "everything is connected to everything else." And citizens are learning that sound environmental health measures must be for today and tomorrow -- not just tomorrow.

I cannot conscientiously address the matter of environmental problem priorities without noting the impact of other societal issues on environmental problems. Over-population and the resulting consumption and/or destruction of non-renewable resources is the single highest priority affecting the environment. Population stabilization is the only real preventive endeavor, as curative programs to control the resulting secondary problems of environmental degradation, energy shortages, transportation, land-use, congestion, crime, and famine have not and will not be effective without resolving the basic issue of over-population.

Health professionals should support specific national and global actions and agreements to stabilize human population levels through such mechanisms as education, racial justice, sexual equality, technology sharing, birth control, re-orientation of social values and attitudes, demographic research and planning, and economic and fiscal policies and incentives.

Energy for homes, industries, and transportation from non-polluting, renewable energy sources is another major issue having an impact on environmental health problems. For a number of reasons including industry monopolies, union agreements, and government conflicts-of-interest, the Nation has not made even a good token commitment to solar resources.

Underlying the previously-mentioned issues are ignorance and poverty which must be addressed and solved for there to be substantial, permanent, long-range progress toward our goal of "an environment that will confer optimal health and safety on this and future generations," or FOR PEOPLE TO DIE YOUNG AS LATE IN LIFE AS POSSIBLE.

With regard to the environment and the economy, let us not be misled into a process of "versus" or "either-or." A quality environment and a healthy economy are not contradictory expectations, and, in fact, are mutually interdependent. We can't have an economy without an environment. "Ecology" and "economy" are both derivatives of the Greek word "ecos" (oikos) which means house. An economist was a keeper of the house; and an ecologist is a keeper of the big house in which we all live -- or our environment -- the place in which we are all going to spend the rest of our lives.

It is a matter of serious concern that the human animal sometimes seems more willing to suffer the health, social, and economic consequences of disease and pollution than to pay for environmental health for this and future generations. Perhaps the human animal can slightly adapt to some degree of environmental degradation, but it is indeed alarming that the human animal might attempt to merely survive through adaptation rather than thrive through environmental quality.

As health professionals, we must be willing to evaluate our own environmental health programs and organizations to determine if they are properly planned, designed and organized to insure the greatest good for the largest number over the longest period of time. We must be willing to critically review the mission of our environmental health programs to insure that they really operate to serve and protect all our citizens rather than protecting and promoting the interests of special-interest groups. We must insure that the over-riding goal of environmental health programs is to insure an environment that will confer optimum health and safety on this and future generations. We must insure that our environmental health agencies have authority and resources to solve a broad spectrum of environmental health problems including air pollution, water pollution, solid wastes, food safety, water supply, hazardous wastes, toxic chemicals, radiation, environmental injuries, vector control, housing and noise pollution, in order to deliver programs effectively and efficiently for our citizens. We must be creative and aggressive in changing environmental organizational patterns in line with public expectations and priorities, rather than being viewed as defensive traditionalists intent on protecting archaic fiefdoms. We must develop and utilize the type of person-power necessary for problem solving rather than continuing to promote the selfish interests of engineers, sanitarians, physicians, or any other single profession. We must analyze all programs and change where necessary for solving priority environmental health problems in the most effective fashion.

The lack of firm, explicit and practical management foundations for many of our nation's federal, state, and local environmental health programs has been all too obvious in recent years. This weakness was pinpointed and noticeable during the "decade of the environment" which began in the late 60s. There is no longer any doubt that the environment must and will be managed. The only remaining questions relate to "how" and "by whom." Traditionally trained and experienced "environmental healthers" have frequently not exhibited the management knowledge and

capability to cope with or show leadership regarding the new-found public and political pressures, organizational trends, expanded program methodology, legislative demands and mandates, broadened scope, and evolving program goals. Frequently, our environmental health leaders have been viewed as negative obstructionists rather than constructive leaders, and have exhibited territorial defense mechanisms in lieu of creating, promoting, and justifying effective program and organizational concepts to meet the public clamor for a quality environment. "There go my people and I am their leader" has become a truism.

We must have a realistic, accepted and working health policy based on health, environmental quality and wellness. All this will imply major changes in public health where the priorities will be centered around life-styles and require a multitude of decisions by all of our citizens daily. A rational public health future is possible and whether it occurs or not depends upon all of us. One of our most compelling messages is not that our citizens can merely live longer, but enjoy life more and feel younger. It is up to us to see that citizens see health promotion, disease prevention and environmental quality as a promise and important to the enjoyment of life. The obstacles remain numerous, varied, and formidable, but we must remember that public health and environmental quality are purchasable; and that within natural limitations any community may determine its own health status and environmental quality. Let's not allow disease prevention, health promotion, and environmental quality to be ignored and left halfway between leprosy and the quarantine station. Let's make certain that prevention and promotion programs are effectively supported, organized, and administered.

From the Arizona Public Health News, "Prevention," by Joseph Helin:

'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A Duke and full many a peasant.
So the people said something would have to be done
But their projects did not all tally,
Some said, "Put a fence round the edge of the cliff,"
Some, "An ambulance down in the valley."
But the cry for the ambulance carried the day,
and it spread through the neighboring city;
A fence may be useful or not, it is true,
But each heart became brim full of pity.
For those who slipped over the dangerous cliff,
And dwellers in highway and alley
Gave pounds or gave pence, not to put up a fence,
But an ambulance down in the valley.

Then an old sage remarked, "It's a marvel to me
That people give far more attention
To repairing results than to stopping the cause,
When they'd all better aim at prevention."

"Let us stop at its source all this mischief," cried he.
"Come neighbors and friends: let us rally.
If the cliff we will fence we might almost dispense
With the Ambulance down in the valley."

"Oh, he's a fanatic," the other rejoined;
"Dispense with the ambulance? Never!
He'd dispense with all charities, too, if he could.
No, no, we'll support them forever!
Aren't we picking up folks just as fast as they fall?
And shall this man dictate to us? Shall he?
Why should people of sense stop to put up a fence,
While the ambulance works in the valley?"

But a sensible few, who are practical too,
Will not bear with such nonsense much longer;
They believe that prevention is better than cure,
And their party will soon be the stronger.
Encourage them, then, with your purse, voice, and pen,
And while other philanthropists dally,
They will scorn all pretense and put up a stout fence
On the cliff that hangs over the valley.

I hope that this Conference is as rewarding for you as the
preparation has been for me.