The Diehl Lecture is devoted to cigarette smoking and what is being done about the problem in the United States to reduce the toll of self-induced disease caused by smoking. Some advance is being made, but still more must be done and this point is emphasized.

THE FUTURE OF AN ILLUSION

Luther L. Terry, M.D., F.A.P.H.A.

IT is a pleasure for me to join with each of you on this occasion to salute a truly remarkable individual. I have known Harold Diehl for at least 25 years. Yet, I have never ceased to be amazed that one human being can possess so many singular talents, develop them to such a degree of excellence and productivity, and yet remain so warm, responsive, and compassionate—so generous in his support of and assistance to others: his colleagues, his students, and his fellow man.

As a physician and a humanitarian, Harold Diehl's efforts to advance the health and welfare of Americans and of our fellow citizens around the world embrace the full gamut of professional endeavor and challenge. Typical of the man is the fact that, at a time in life when most are usually satisfied to rest on their laurels, Harold Diehl began an eminently successful, entirely new phase of his career as the senior medical officer of the American Cancer Society. Most notable among his other major contributions are those in the areas of physician and health manpower education, hospital and health services administration, health education of the public, and public health and preventive medicine.

Today, it is my privilege to follow Sir George Godber and Dr. Robert Marston in delivering the third annual Diehl Lecture, cosponsored this year by the American Association for World Health, the American Cancer Society, and the American Public Health Association.

I have been asked to discuss with you the progress made during the last several years with respect to reducing the toll of disability, disease, and death caused by or exacerbated by cigarette dependency. Since this is my subject, you may then be curious about my title, "The Future of an Illusion." The illusion I refer to is the value we, as a nation, give to good health as a positive asset and a most urgent necessity for ourselves, our families, and the members of our communities. And, quite frankly, this idea is an illusion! Would a nation that truly places good health in a penultimate position, next to life itself, tolerate the tremendous toll of self-induced disease, disability, and death that four out of ten adult Americans inflict upon themselves daily by cigarette smoking? The answer is obvious!

I would like to begin our discussion by reviewing briefly the magnitude of the problem we are dealing with—the reasons why I consider cigarette-induced disability, disease, and death the greatest single personal and public health problem we are faced with in the United States today. Next, I would like to tell you about some of the countermeasures that are showing increasing efficacy in

decreasing this awesome toll of life and productivity. And I would like to conclude with a brief discussion of what is happening abroad with respect to cigarette control activities.

Excess deaths among Americans associated with diseases caused by or aggravated by cigarette smoking are estimated to be more than 200,000 per year.[1] Contributing to this awesome total are more than 59,000 Americans who will die of lung cancer this year, about 75 per cent caused by long-standing cigarette smoking.[2]

Excess deaths among current cigarette smokers account for one out of every three deaths for men between the ages of 35 and 59. Because women have a lower over-all exposure to cigarettes, and are not prone to coronary disease until after the menopause, the comparable figure is about one death out of every fourteen in the same age group.

Information on house-to-house studies collected and analyzed by the National Center for Health Statistics[3] and review studies of scientific papers[4-6] published during the last few years give us the following additional information about the frequency of disease and disability among long-standing cigarette smokers.

Chronic bronchitis and emphysema are twice as common in men smokers and three times as common in women smokers, compared to nonsmokers of the same sex. The number of deaths from these diseases has doubled every five years since 1950, a rate of increase which is greater than that of any other cause of death in the United States.

On the basis of the lower rate of chronic illnesses among those who do not smoke, there are 11 million more cases of chronic illness yearly in the United States among cigarette smokers than there would be if all people had the same rate of illness as nonsmokers. Some 77 million work days are lost each year because of illness as well as over 300 million days of restricted activity—all because those who smoke cigarettes have a higher rate of illness and disability compared with nonsmokers of the same age and sex.

We know, beyond any doubt, that the disability, disease, and death caused by cigarette smoking is directly related to the number of cigarettes smoked per day and the duration of the smoking habit. For example, men who are light cigarette smokers—men who smoke less than ten cigarettes a day—have a 22 per cent higher frequency of coronary and atherosclerotic heart disease than those who have never smoked. Among those who smoke more than two packs a day, the frequency of coronary heart disease and atherosclerosis is almost 100 per cent greater than among those who do not smoke.

We all know friends or colleagues—men who are apparently well—who have been fatally stricken when rushing for a plane or train, or maybe even while engaged in normal activities with no undue strain involved. Many of these people have coronary disease, although they may not be aware of it. And sudden death from coronary disease is much more frequent among long-standing cigarette smokers than among those who have never smoked or among those who have stopped smoking cigarettes. Premenopausal women, however, are rarely subject to this kind of sudden death due to acute coronary disease, probably because of an estrogen-protecting effect which has not yet been fully defined.

Cigarette smoking causes an increased demand by the heart muscle for oxygen and other nutrients. Cigarette smoking also causes a decrease in the availability of oxygen to heart muscle. And many of the changes that take place in the blood vascular system which predispose an individual to atherosclerosis are encouraged by components of cigarette smoke which decrease the fluidity of the blood and cause changes in its lipid content. Both of these factors encourage the formation of blood clots and

plaque material which disturb normal blood flow and circulation as well as normal heart action.

Changes in blood pressure, heart rate and rhythm, and in the microcirculation of the lungs are typical of the changes in normal body physiology and biochemistry known to occur while smoking a single cigarette or as a result of smoking a few cigarettes.[7] Such pathology undoubtedly affects stamina and physical endurance long before repetitive cigarette smoking produces more serious damage reflected by the onset of disease symptoms characteristic of respiratory insufficiency or cardiovascular diseases.

A 25-year-old man who smokes two packs of cigarettes a day can expect to die on the average eight years sooner than a nonsmoker of the same age. Not only will he die sooner, but as the years go by, the average cigarette smoker will suffer more and more discomfort and pain as disturbances of his normal breathing mechanism and heart action become more serious. He will also suffer more from other kinds of disabilities. And he will be taking more time off from work and from his other usual activities than a nonsmoker of the same age as a direct result of the need to recover from minor illnesses caused by or made worse by the regular smoking of cigarettes.

Cigarette smoking is a much greater risk for the teen-ager or young adult than for those of middle age. Surveys indicate that, compared with middle-aged cigarette smokers, young smokers tend to inhale more deeply, smoke cigarettes to a shorter butt, and smoke more per day. All of these characteristics tend to increase the health hazards of cigarette smoking and promote the earlier onset of disease.

As a matter of fact, practicing physicians tell me that quite commonly they see more and more respiratory and coronary disease in young male patients aged 35 to 40, who have already been smoking for 20 or 25 years. Many of these men started smoking at the age of 15 or so. Therefore, we see disease patterns of lung cancer and coronary disease that much sooner than occur in their parents' generation—because the older generation did not become habitual smokers until their late twenties or even later.

At the present time, there are reports in the scientific literature of seven independent studies which clearly show that the birth weight of babies born to mothers who smoke during pregnancy is significantly lower compared with the birth weight of babies born to nonsmokers. Although this weight loss is made up by the end of the first year of life, a mother's smoking dependency may affect her baby in even more serious ways. Infants born to mothers who smoked during pregnancy are twice as likely to be aborted, to be stillborn, or to die soon after birth, compared with those of nonsmoking mothers.[6,8-10]

The reasons why I have gone into such detail to discuss with you the specific diseases and disabilities caused by cigarette smoking, something about their origin and their prevalence, are because these are the facts that have convinced more than 29 million American adults to give up their cigarette dependency. And these are the facts that some 44 million other Americans, who are still habituated to cigarette smoking, need to review very carefully as they question the value of continuing.[11]

Although we have been making considerable progress among the adult segment of those formerly habituated to cigarette smoking, recent progress among teen-agers has been disappointing. A recent Public Health Service-sponsored survey among teen-agers indicates that smoking has increased some 3 to 5 per cent among certain age and sex groupings compared with 1968 estimates.[11]

Nevertheless, I think this is just a temporary setback. I think our health education programs in the schools and our anticigarette commercials on radio and television have made and will continue to make a heavy impact on our children and young adults. And I know that many are sponsoring private campaigns of their own among members of their families whose cigarette cough, respiratory distress or other symptomatology are frightening daily reminders of decreasing ability to ward off the continuing insult caused by the inhalation of damaging tars and other chemicals.

In 1968, 52 per cent of male Americans and 34 per cent of female Americans were cigarette smokers. Today, the figure for American males has dropped 10 per cent, to 42 per cent; and for women cigarette smokers, the figure has dropped 3 per cent, to 31 per cent.[12] To my mind, these figures are very impressive. They indicate that we are making a good deal of progress.

Clearly, the focal point providing direction, coordination, and impetus—in mobilizing for action our national effort to reduce the wasteful toll of self-induced disease related to cigarette smoking—is the National Interagency Council on Smoking and Health, of which the American Public Health Association is a charter member. I have been privileged to serve as National Interagency Council chairman for the last four years.

The need for a national collaborative effort in the smoking and health field first became evident in June, 1961. At that time, the American Cancer Society, the American Public Health Association, the American Heart Association, and the National Tuberculosis Association, as it was then called, jointly expressed their belief that the health problems associated with smoking deserved national attention. This action, in which Dr. Harold Diehl and Dr. Berwyn Mattison played such a prominent role, eventually led to the establishment of the Surgeon General's Advisory Committee and the report with which we are all so familiar.

The National Interagency Council on Smoking and Health, founded in 1964 with 16 member organizations, was established to implement the recommendations of my Advisory Committee. Membership in the council includes a number of our national voluntary health organizations such as the American Public Health Association, the American Cancer Society, a number of medical, nursing, educational and community service organizations, as well as several government agencies interested in health, such as the Public Health Service, the Children's Bureau, and the Office of Education. With the affiliation of the American Medical Association in June, we now have 31 members. And Dr. James Hundley, the executive director of the American Heart Association, who worked so closely with the members of my Advisory Committee, while their report was in preparation, will be taking over as our chairman, beginning January, 1971.

Although our annual budget is less than 2 per cent of the $300 million that the tobacco industry spent in 1970 for advertising, the National Interagency Council has been effective in establishing a focal point at the national level for the collection and dissemination of knowledge about the psychological, physiological, and social aspects of smoking. We have been effective in encouraging smoking withdrawal and related educational programs on a local and regional basis. And we also work very closely with scientists and educators around the world involved with cigarette control activities.

Some of the other specific accomplishments of the National Interagency Council include production of anti-cigarette commercials for radio and television viewing; presentation of the National Smoking Test to enable cigarette smokers to identify the reasons why they smoke as an aid to finding the most

effective method to enable them to quit smoking; supporting the removal of cigarette vending machines from hospitals and other health facilities; getting the support of the commercial airlines to stop the complimentary distribution of cigarettes to passengers; encouraging activities defending the rights of the nonsmoker; sponsoring the recently held National Conference on Smoking and Health which was so successful in bringing together for an exchange of ideas those working nationwide in cigarette control activities; supporting the consumer protection activities of the federal regulatory agencies; and encouraging the implementation of more effective cigarette control legislation.

As you know, the 1970 cigarette control legislation prohibits radio and television advertising as of January 2 of 1971. The bill also strengthens the cigarette package label warning to, read "Warning: The Surgeon General has determined that cigarette smoking is dangerous to your health." And, effective July 1, 1971, the Federal Trade Commission will be free to take a much firmer stand in the regulation of then existing cigarette advertising in the print media than it has been allowed to do since 1965.

However, I am pleased that the Federal Trade Commission is not waiting until then to follow up on the strong position they have already taken with respect to consumer protection. In August of 1970, the FTC published a notice inviting the public to comment on the proposed trade regulation requirement that all advertising of cigarettes must display clearly and prominently the tar and nicotine content per cigarette, based on the most recently published Federal Trade Commission test results. This action on the commission's part has already alerted the public to the fact that they can lower the dosage of these harmful substances by choosing a cigarette that will deliver less of these noxious substances to their system. And, hopefully, the cigarette manufacturers will be encouraged to use means already at their disposal to compete for the questionable honor of producing the least toxic product. As of October, 1970, the FTC gave the manufacturers 30 days in which to tell the commission exactly how they voluntarily intend to disclose tar and nicotine content in cigarette advertising.

In the words of Federal Trade Commission Chairman Kirkpatrick, "The Commission's objective is to insure that all cigarette advertising make these tar and nicotine disclosures as soon as possible. If the industry can devise a voluntary plan that is feasible and appropriate, the Commission is willing to consider it. A trade regulation rule, if contested in the courts, might take a long time to become effective; a workable, voluntary plan by the industry could be put into effect immediately."[13]

Those of us working to reduce the health hazard of cigarette smoking only began to make our voices heard with the developing program of the National Interagency Council and the passage of the Cigarette Labeling Act of 1965. Until then, the cigarette industry has been waging its relentless campaign ever more successfully year after year, with blatant inattention to public responsibility. Although all major manufacturers had repeatedly been censured by the Federal Trade Commission, ineffective industry controls, and self-policing by the National Association of Broadcasters' Code proved to be a mere decoy—a splendid expedient to prevent the establishment of valid consumer protection measures.

Today, the Marlboro cowboy has changed his stripes, so to speak. Instead of calling forth the image of masculinity, we are now more apt to call to mind the huffing, puffing smokestack whose cough sounds like some-

thing brought back to life from the dead.

This turnabout results principally from the fact that the Federal Communications Commission has taken a very strong position in guaranteeing respect for the public trust mandated by receipt of the license privilege. Three years ago, the commission was questioned regarding the fact that the broadcasting industry was not giving adequate presentation of the view that cigarette smoking was hazardous to health although they were carrying the messages of the tobacco industry which encourage cigarette smoking. In a review of the industry's public service responsibilities, the Federal Communication Commission decreed that the broadcast industry was obligated to present the other side of the question as long as the sales appeals of the cigarette manufacturers were carried. And, although the radio and television cigarette commercial will only be with us until January 2, 1971, I feel certain that the broadcast industry will build on the public good will they have generated to date. There is no doubt that the networks will be encouraged by the Federal Communications Commission statement already on record, that the broadcast industry still has a debt of responsibility to pay the American people because, for such a long time, no health warnings were available to counteract the barrage of pro-cigarette advertising. By continuing to air the anti-cigarette commercial, together with implementation of stricter controls for cigarette advertisements appearing in the print media, our mass communications media will be doing a double-barreled job which I feel certain will be reflected in further sharp decreases in cigarette consumption as the months go by.

At the present time, all of our major professional health organizations have passed resolutions forcefully encouraging their membership to work toward eliminating smoking-induced or smoking-related disease. Some do not permit smoking at their meetings; many provide "no smoking" posters and polite reminders for positioning in reception or treatment rooms as well as a wide variety of educational materials. And a growing number of professional medical associations are following the practice of leading periodicals and newspapers that now refuse to accept cigarette advertising.

Today physicians are taking a more aggressive attitude about counseling their patients with regard to their personal smoking habits. Dentists, nurses, and other health professionals are also taking the initiative. And what could be a better method of instruction than for members of the health professions to teach than by example?

In 1967, the National Interagency Council, together with the American Cancer Society, sponsored the first World Conference on Smoking and Health. Another such conference is in the planning stage for 1971. In the meantime, some very encouraging developments have been taking place on the international scene.

At the Tenth International Cancer Congress held this year, a considerable portion of the program was devoted to how tobacco exercises its carcinogenic effect. In May of 1970, the World Health Organization adopted a resolution at its Twenty-Third World Health Assembly recommending concerted action on the part of member governments with regard to controlling the growing worldwide menace of smoking-induced disability, disease, and death. This resolution was based on a report made to the director-general by WHO consultants, Dr. C. M. Fletcher of the United Kingdom and Dr. Daniel Horn of the United States Public Health Service.[14]

For the first time in its history, the World Health Organization devoted an entire session at the annual meeting to

a discussion of the health consequences of cigarette smoking. At this time, WHO officially recognized "the serious effects of smoking in promoting the development of pulmonary and cardiac disease, including broncho-pulmonary cancer, chronic bronchitis, emphysema and ischemic heart disease."[15]

Stating that health agencies around the world must now demonstrate their concern for the reduction of the main causal factor in diseases related to smoking, the director-general was requested to submit the consultant's report to all countries so that the following recommendations could be implemented. All cigarette advertising should be reduced with a view to its eventual elimination. Tar and nicotine contents and a health warning should be placed on all cigarette packages and in all advertising. And, consideration should be given to the establishment of statutory upper limits for various harmful constituents of cigarettes.

The director-general was also requested:

(1) "to consider the desirability of making the subject for World Health Day *The Health Consequences of Smoking* on the earliest possible occasion;

(2) "to consider convening an expert group to recommend further action that might be taken to discourage smoking;

(3) "to examine to what extent and by what educational methods young people might be persuaded not to begin smoking; and,

(4) "to bring to the attention of the Food and Agricultural Organization, an affiliate of the World Health Organization, the need for studying crop substitution in tobacco producing countries."

In connection with this World Health Organization protocol for action, I would also like to bring to your attention the excellent report, entitled "Smoking and Health Programs Around the World," recently prepared by Emil Corwin of the National Clearinghouse on Smoking and Health.[16]

This report states that intensive anti-smoking campaigns are currently in force in at least 25 nations. For example, cigarette advertisement is barred from television in England and France, and from both radio and television in Argentina, Czechoslovakia, Iceland, Italy, Rumania, and Switzerland. Cigarette advertising will be eliminated from radio and television in Finland and Ireland in 1971, and in Canada as soon as present contracts expire. In Thailand, the tobacco monopoly expects cigarette advertising will leave the air soon. Since all commercial advertising is banned in Denmark, Norway, Sweden, and the Soviet Union, there is no broadcast of cigarette advertising in those countries.

As you know, beginning November, 1970, the health warning label on American cigarettes will be strengthened to read, "Warning: The Surgeon General has determined that cigarette smoking is dangerous to your health." By comparison, the cigarette label in Iceland now reads, "Warning: Cigarette smoking may cause lung cancer and heart disease." The proposed label being considered in the United Kingdom reads, "Danger: These cigarettes can harm your health. Cigarettes are known to cause lung cancer, bronchitis, and heart disease." And Queensland, the first Australian state to decide on a warning label, has adopted, "Warning—Smoking Is a Health Hazard."

From this report, we also learn that the demand for filter-tip cigarettes and cigarettes with lower tar and nicotine levels is increasing in several countries. Among them are Austria, Canada, the Federal Republic of Germany, the Netherlands, Scandinavia, and Japan. Certainly this suggests an increasing public awareness of the health hazards of smoking and a desire to limit the dosage of harmful substances insofar as choice of product is concerned.

Although most countries confine their anti-smoking campaigns to health warnings on package labels and advertising

restrictions, the survey does point up several unusual approaches to the problem. For example, in Bulgaria, if you wish to smoke while working, you must get permission in writing from any nonsmoking fellow worker. In Czechoslovakia, employers are encouraged to follow the example of a firm in Prague which has banned smoking during working hours with the agreement of the workers, most of whom are smokers. In the Soviet Union, posters in factories and elsewhere carry legends such as, "Tobacco Is Poison," and "How to Burn Up Your Health."

Although I have barely scratched the surface, so to speak, in discussing all the various aspects of cigarette smoking control activities both in our own country and abroad, it is very obvious that there is a tremendous amount of ongoing activity, I am confident that these activities will continue. Yet, to be increasingly successful in reducing cigarette-induced morbidity and mortality, we need the help of all. Working diligently together, we will give reality to the illusion that good health *is* a most urgent concern nationally as well as for all members of the international community.

Dr. Harold Diehl has devoted his lifetime to this pursuit. I am glad to have the opportunity of delivering this tribute to a man respected and admired throughout our own nation and throughout the world for his many contributions toward advancing the health and welfare of mankind.

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Dr. Terry is Vice-President for Medical Affairs, University of Pennsylvania (121 College Hall), Philadelphia, Pa. 19104.

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