MICHAEL McGINNIS, MD

Assistant Surgeon General (former)
Director (former)
US Office of Disease Prevention

Discusses association between behaviors and chronic diseases, Health Promotion Act of 1976, impact of the LaLonde Report and the Healthy People Report, and the notion of prevention to include behavioral, health protection and clinical preventive services.
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I'm Michael McGinnis, and I am senior scholar at the Institute of Medicine at the National Academy of Sciences in Washington D. C. And I am here today to talk about - to reminisce really - about work in which I've been involved over the last 30 years in health promotion and disease prevention, in particular, the importance of health education/health promotion in the early days of the prevention movement.

Early in the century and, indeed, throughout history, most of the killers of people were infectious diseases, and that was really true until the second half of the 20th century. And with the control, at least relative control through the use of antibiotics of infectious diseases and then later on the use of vaccines, chronic diseases began . . . people began to live longer and chronic diseases became the major threat.

When I went to medical school in the 1960's, even at that relatively late stage, the notion of chronic diseases was that they were essentially inevitable consequences of the aging process. They just happened as people got old. But, as a result of research that was sponsored by the National Institutes of Health and grew gradually over the decade of the '60s and into the '70s, we began to understand more and more about the root causes of many of these chronic diseases. And it turned out that a lot of them were behavioral, that lifelong behavioral patterns like tobacco use, dietary habits, exercise habits, and so forth, had a tremendous impact on the occurrence or prevention of chronic diseases.

What that meant was that by the mid-1970's, we were beginning to develop an epidemiologic database that was quite compelling for a variety of potential interventions, behavioral interventions, that could address chronic disease. We had the first hints of this -- Really to trace back a little bit, the first hints of the involvement of behavior in chronic disease emergence was the work on tobacco. There were some very early observations in the late 1940's and 1950's that tobacco use was associated with lung cancer. Most of that was ignored or rebuffed, rejected, by the established community until systematic studies developed a much stronger case, strong enough that, by 1964, the Surgeon General of the United States issued what is now the landmark report, the turning point in our work on tobacco control, the Surgeon General's Report On Tobacco and Health. That launched both a campaign against tobacco use and greater awareness of the role of an important behavior: tobacco use and the occurrence of lung cancer, and greater receptivity to looking for other root causes of these chronic diseases-- heart disease, cancer, stroke, diabetes, and so forth--that were increasingly features of the American scene.

Indeed, when I was a medical student, the greatest epidemic in the country was heart attacks among middle-aged men. And even then chronic diseases were still considered inevitable. Men got heart attacks just because they were predisposed to it as a result of their genetics. It was a biological factor.

But then with the occurrence of -- or with the insights that, in particular, were gleaned from the Framingham study of a long-term, three-decade study of the profile of disease occurrence and behavioral factors and environmental factors and a population in Framingham, Massachusetts, it became clear that it was not just tobacco use that was the problem for heart disease, it was also dietary patterns -- in particular, serum cholesterol levels -- and high blood pressure, another important and compelling risk factor. That's when the term "risk factor" came into use is when the association between behaviors and chronic diseases became apparent.

I came into involvement in these issues when I was a fresh, young appointee of the Carter Administration working with Secretary Joe Califano. As a physician who had worked in smallpox eradication in India, I was naturally predisposed to the prevention arena; and so I was assigned responsibility to coordinate and oversee the development of new initiatives that were prevention related: national immunization initiative, the strengthening initiative on tobacco, and so forth.

One of the things that fell to my responsibility was the development of a Surgeon General's report on health promotion and disease prevention. You know, the way we got to that -- to the idea to develop that report is interesting and it's worth tracing back a little bit historically.

In 1974, the Canadian Minister of Health, a fellow named Marc LaLonde, who was not a physician but was a farsighted political leader, issued a report called "A New Perspective on the Health of Canadians." In that report, he described, not just a litany of the leading killers of Canadians, but rather probed a layer below to note that science had revealed the fact that health was caused by a variety of fields of activities in certain fields, like biological field, the environmental field, the social and behavioral fields. So, he called the field concept of the health of populations.

That was an important statement, not only to Canadians, but to the world, and it -- in some respects called for a response on the part of the U.S. Government; not a response in a rebuttal notion, but rather in an affirmative response: What does this mean for this nation?

So, in 1977, with the new administration of President Carter coming in and with Secretary Califano, who was the head of the Department of Health, Education and Welfare, and with Surgeon General Julius Richmond, all of whom from the President to the Secretary to the Surgeon General were keenly interested in this notion of preventing disease and raising the national consciousness about the opportunities to prevent disease, decided to develop a Surgeon General's Report on health promotion and disease prevention that would in effect lay out for the American people the charge and the opportunity in prevention.

That task fell to me because I had come in early in the administration with responsibility for prevention activities based on my previous work in prevention, smallpox eradication in India, and so forth. And one of

the things in which we were involved at that time was the development of a series of recommendations. I chaired a Secretary's task force on prevention. There was developing recommendations for federal action in prevention. And actually during that time I naturally turned to the Centers for Disease Control director, Bill Fagee, who was my supervisor five years earlier in the India Smallpox Eradication Program. And I asked Bill if -- because CDC was clearly our lead prevention agency -- if he could partner with us on this activity and detail somebody up to -- up from Atlanta to Washington to work on the effort. And so Dennis Tolsma was one of his right-hand people for planting in the director's office, he asked Dennis to come up and work with me and with others in the Secretary's office. And the long and the short of it is we spent a year developing this report of the Secretary's task force.

And Dennis actually came up with the idea when we were thinking about, well, what do we call this report. We don't have to give it a fancy name of any sort, but it would be nice to have something a little catchy. And Dennis suggested, well, why don't we just call it "Healthy People," which is what it's all about. So, we did. We called the Secretary's task force report "Healthy People." And the recommendations of that report were like any other federal document. Some of them were accepted and entered into the budget process. Others were tabled. But the important issue was that there was a commitment to increasing the focus of leadership at the federal level for prevention.

It turned out that when we would develop the Surgeon General's Report, which started in parallel tracking with the completion of the Secretary's task force, we also decided to call that "Healthy People," and because it was such a simple and clear expression of what it is -- of what it was we were about.

It's probably also worth tracing back a little bit to the other developments in this country that led up over the decade of the late '60s and early '70s that allowed us, indeed, that obligated us to take advantage of the growing awareness expressed formally the opportunities. They had the roots and the epidemiologic research that had been sponsored by NIH that gradually increased our understanding of the importance of behavioral factors in chronic disease occurrence and prevention, and that led to the establishment by President Nixon of a President's committee on health education. As people became aware both of the importance, for example, their relationship between tobacco and lung cancer, and as they became aware of the substantial changes that were occurring in the way that population eight it's increasingly sedentary lifestyles, the challenge was, well, what kind of activities can the government undertake that might raise people's awareness on this emerging science.

So, the Health Education Committee made a recommendation for the -- among other things, for the establishment of two leadership organizations: One outside government, which became the National Center for Health Education funded by donations and private sector contributions; and one inside government, which became the Bureau of Health Education at the Centers for Disease Control.

And, in addition, Congress passed a law PL 94-317 in 1976, which was the Health Information and Health Promotion Act of 1976 that set the basis for increasing formal federal leadership in the area.

So, those were all in play at the time that we had this flurry of activities in the first two or three years of the Carter administration to formalize the mandate and the leadership profile in prevention.

In developing the Surgeon General's Report, as the U.S. response to the LaLonde report, I don't think it's unfair to call it that. Obviously it was done independently and wasn't characterized formally as a response. It was our -- meeting our national obligation to speak to the American people about these issues. And undertaking that report, we did things a little differently.

First of all, the -- it's probably worth going over the purposes of the report which were not just to talk about prevention, but we are really three-fold. The first purpose was to put some -- the notion of prevention into a conceptual framework that made it easier to grasp by the American people. Previously, the notion of prevention was rather authorial. It seems like a good thing. You know, "a stitch in time saves nine" and all the aphorisms that have gone on for decades and centuries related to the merits of prevention. But the fact is and was that in the mid-1970s the notion of prevention as a series of specific actionable agenda items was not well formed.

So, we decided to develop a conceptual framework that made it more accessible conceptually, and we expressed the notion of prevention in three general categories: Health promotion, or health education interventions; the behavioral initiatives that could make a difference like tobacco, like diet, like physical activity, like programs targeted to alcohol and drugs abuse.

And the second was health protection, what it is that we as a society ought to do to protect people from preventable injuries like injuries at the workplace or injuries on the highways or exposure to environmental toxins or protection, for example, in fluoridation of community water supplies, a variety of environmental issues.

And the third category is clinical prevention active services. What could your doctor provide to you in the way of preventive services that would reduce your risk for preventable disease like high blood pressure screening and control, cholesterol screening, immunizations.

There were a total in the 1979 Surgeon General's Report of 15 priority areas, five each in health promotion, health protection and clinical preventive services. So, just that specific noting of the 15 key areas gave a little form to the -- to the notion of what prevention was.

The second major goal -- or purpose of the Surgeon General's report beyond the notion of giving structure to prevention was to make it clear what prevention could actually achieve. And so we embedded formal, quantified goals in that report. One of the problems with prevention, which is, of course, wonderful, but its problem is it celebrates things that don't happen. And we all know another old axiom, "The squeaky wheel gets the oil." And the fact is that in a treatment versus prevention arena, it's the rescue mentality, the need to focus on people who need to be rescued from diseases they already have that naturally draws the attention. And it should draw the attention, but even more powerful opportunities to reduce the burden of disease on populations, lie in prevention.

So we had to find a way that would allow us to make it clear to the American people just how much power there was in prevention. And to do that, we chose to set specific measurable goals to be achieved over a

ten-year period, goals that we felt were substantial, no question about that -- and I will mention them in just a second -- but goals that we felt were achievable with current resources if we focused those resources in the right fashion.

The goals that we set were according to five life stages. If we marshaled prevention, what could we achieve for infants, for children, for adolescence and young adults, for adults, and for older adults in terms of better health? The goals we set were aggressive. For infants, our goal was to reduce infant mortality by 35 percent in one decade, from 1980 to 1990. The goal for children was to reduce deaths among children by 20 percent by 1990. For adolescence and young adults, the goal was 20 percent reduction in death rates. For adults, it was a 25 percent reduction in death rates. And for older adults, people over age 65 -- we didn't expect people to live forever -- but we did expect them to have healthier lives. So, the goal was a 20 percent reduction in morbidity or illness in that population over the ten-year period. Now, if you think about it, those are ambitious goals -- 35 percent, 25 percent, 20 percent reductions -- in death rates over the whole population in just a short decades time. But it gave a sense to the American people of the power of prevention.

Let me just backtrack a little bit and say that the roots of that goal-setting activity actually in some respects were founded on the Ganges Plain in India, and I say that because I mentioned that I was working in the Smallpox Eradication Program and one which was spectacularly successful. And one of the key strategies in that program was to divide up the areas geographically, assign an epidemiologist to each geographic area, and then set goals for the reduction in smallpox occurrence in that area. And we would bring folks in every month to a central location. I was the head of the program in the State of Uttar Pradesh, and we would review the progress. And where progress hadn't been great enough, we would shift resources into that area until we had enough resources and enough focus to bring the disease occurrence down there.

Well, within 18 months of implementing that strategy, disease was eradicated from India. And it occurred to me certainly that if a state -- if a country with its few resources as India in the 1970s, early 1970s, could eradicate smallpox by that kind of a concerted, targeted and monitoring effort, then certainly a nation as rich and well-endowed at the time as the United States ought to be able to at least express to the American people what it ought to expect from prevention interventions and ought to track carefully across the board the kind of progress that was being made.

So, there was a certain inherent obligation for the government to lay out the kinds of goals that the American people ought to expect. That does not mean that those goals, the goals that we put into the Surgeon General's Report, are necessarily intended to be federal goals. In fact, because prevention is fundamentally part and parcel a public, a private, a multi-sectorial issue that has to have leadership from every individual in the nation, every institution in the nation and every governmental level in the nation, they were specifically noted as national goals and not federal goals.

So, the notion of goal setting was the second important feature and purpose of the Surgeon General's Report. And by the way, the results were pretty impressive. I recall that we set the goal of a 35 percent reduction in infant mortality over that ten-year period to a level of nine deaths per thousand live births. At

the end of the decade, we actually had a level of nine deaths per thousand live births, a 35 percent reduction, pretty close to right on the mark.

For children, I recall the target was a 20 percent reduction. We actually achieved a 25 percent reduction in childhood death rates largely as a result of improvements in motor vehicle protection, the use of seat belts, and so forth, a variety of other safety measures that reduced the injury death rate among children substantially.

I recall that our target for adolescence was a 20 percent reduction over that ten-year period from 1980 to 1990. That was in some ways the most bold of our targets because it was a target that was aiming to reduce death rates at a time in which death rates had actually been increasing for that population as a result of bumps up in motor vehicle fatalities during the early '70s as well as homicide death rates among low income populations for that age group.

But we felt that it was -- first of all, that there were means to address those issues, and we felt it was really inexcusable to tolerate a continued increase, so we set a 20 percent target. We fell short of that target, but the fact is that the trend did turn around and we had a 12 percent reduction in death rates among the adolescent and young adult population at the end of the decade.

I think the most impressive result in some ways was for the adult population in which, recall, we targeted a 25 percent reduction in death rates to a level of 400 deaths per hundred thousand adult population. At the end of the decade, we actually achieved a level of 400.1 deaths per hundred thousand population. Really, again, virtually right on the mark were the 25 percent reduction. The reason that is I think most impressive is that in this particular age group we targeted to accelerate the trends. Each of these areas we began the goal-setting process by looking at what the recent trends had been for the particular age group. For example, with infants, the 35 percent targeted reduction was essentially a linear extension of the trend over the previous ten years. We thought we had been doing pretty well to maintain that slope of improvement.

With adults, on the other hand, the linear extension of the trend over the previous ten years would have had us at a very different point, but we looked at what we knew about the controllable factors, about the impact of tobacco, the impact of diet, the impact of physical activity, the impact of hypertension control. All of these relatively new insights we thought, through health education and health promotion campaigns, could be accelerated so that we would have an expediential curve of sorts and substantially improve upon a simple linear extrapolation, and, in fact, that's what actually happened.

For older adults, the targeted reduction in morbidity, the figures are obviously a lot less pristine, if you will, when you are talking about morbidity or illness or limited daily activities, than they are for the binary in point of dead or alive in mortality tables.

So, our data at that point were not terrific, but the data we had suggested that, in fact, we had come pretty close, about a 17 percent reduction in sick days among older people as opposed the 20 percent target. It's interesting to note that we have gotten a little better over the subsequent couple of decades in assessing

the prevalence of chronic illness in older age and the prevalence of incapacity and so forth. And some of those trends of healthier, older populations are continuing to be reinforced, which is a very good sign. And, again, it's because of the marshaling of health promotion and health education activities for older people. You know, if you want a single pill that's going to be a magic bullet to address the aging process, it's clearly physical activity. And we now see more older people engaging in physical activity.

So, the second goal -- or the second purpose of the Surgeon General's Report to set goals that would make our achievements clearer was embedded in the goals of the Surgeon General's Report.

The third purposes of the report I mentioned was to drive data collection to improve our data system to make sure it focused on the issues most important. So, when we set specific measurable targets for improvement and in these various areas, we also drove the effort to collect the data to improve our monitoring. Where we really devoted attention on that count was in the follow-up to the Surgeon General's Report, Healthy People. Healthy People was issued in 1979. The follow-on report was promoting health/ preventing disease objectives for the nation issued in 1980. I am going to have to backtrack a little bit.

When we were developing the Surgeon General's Report and decided to put in the life stage goals, we were also thinking that maybe we should set specific measurable targets for those 15 priority areas in the three categories of health promotion, health protection and clinical preventive services. What we decided to do instead, though, was rather to put everything out into one volume. We would use the effort to develop targets around the 15 priority areas as a strategy to engage many more people in the effort. I mentioned earlier that prevention is inherently a multi-sectorial effort, and this seemed an ideal opportunity to reach out to participants from around the country and engage them in the target-setting process.

So, as we were putting the finishing touches on the Surgeon General's Report Healthy People, issued in 1979, we were ramping up the effort to develop specific measurable objectives in the 15 priority areas. And we did that by assigning lead agency responsibility to one or another of one of our public health service agencies. For example, FDA took the lead for nutrition. NIH took the lead for high blood pressure. CDC took the lead for immunization. Alcohol Drug Abuse and Mental Health Administration took the lead for those issues, and asked them -- charged those agencies with reaching out to their colleague of experts and community leaders around the country to develop an initial set of targets in those 15 areas.

Fast forwarding those first approximation targets were put in the Federal Register for comment and issued in 1980 as a promoting health preventing disease objectives for the nation.

With the establishment of those objectives, we not only had rallying points for voluntary organizations, for example, the American Cancer Society while there wasn't a target to reduce cancer per sè, there was a clear target to both for screening and for the tobacco initiatives and a variety of other initiatives that would impact cancer. It allowed them to rally around the same with the Heart Association, or the Diabetes Association, or the traffic safety community, the National Safety Board. And that then became the hallmark of the subsequent implementation effort throughout the 1980s was reaching out to involve other folks in these prevention and health promotion and health education activities.

What it also meant was that we had to track progress. And that meant that we had to develop the data systems necessary to track progress and to ensure that we had a national vital statistics and health data infrastructure that was targeted on the important issues.

The importance of the behavioral initiatives has become clear over time as we develop more and more information. In fact, it's now clear that if you look at the ten leading causes of death that we traditionally think of the causes of death that the coroner tells us about -- number one, heart disease; number two, cancer; number three, stroke; number four, accidents; number five, diabetes, and so forth, lung disease -- the fact is we now have learned a great deal about the root causes of those problems.

So, we are in a position where we can speak of the leading causes of death and the actual causes. And those actual causes at this point are diet and physical activity patterns are probably number one. Accounting for more than 400,000 of the 2.2 million deaths that occurred last year followed closely by tobacco, or running neck and neck with tobacco, add another 350,000 or so followed by alcohol and so forth. The short take is that, of the 2.2 million deaths that occurred in one year's time, about 40 percent are attributable to behavioral factors. That's a very compelling mandate for health education, health promotion, and clearly drives home the importance of it.

In addition, we not only know about the importance of behavior in the leading causes of death, we know about the importance of behavior in the overall scheme of the determinants of health. You recall that I mentioned when I was in medical school the notion that chronic diseases were an inevitable consequence of the aging process. People were either sick or healthy. We didn't really know what made some people sick, some people healthy, and so forth. We now know that health and illness is determined by five factors, the inner play of five factors: Genetic pre-dispositions, social circumstances into which we are born, the physical environments in which we live, the behavioral choices that we make, and the medical care we receive. What's really important is how those dynamics between the domains of influence play out, and among those five areas of influence behavior is clearly the leading determinant of health across the population. So, that's, again, an important element to bear in mind or thinking about the central dependency on health education initiatives.

It's also important to bear in mine that health education is not talk just talking at people. We have come to learn over the last quarter of a century in particular that health education and health promotion behavioral programs, again, are a blend of multi-central initiatives. Some of them are one-on-one counseling, it's true; but, in fact, the most important levers to health and behavior change are population-wide levers; for example, increasing the excise taxes on tobacco or changing the way food is marketed or making available walking and fitness and bicycle trails. It's the environmental and social influences that are at least as important as part of the behavioral intervention strategies as are the individual, one-on-one discussions. And, indeed, over time it's clearly more important that we have healthy environments and reinforcing social circumstances and social signals for those behavior changes.

One other issue with respect to the CDC efforts, a little historical vignette, I mentioned that in 1976 Congress passed a law establishing an office of health information, health promotion, which was put into the Secretary's office with a small budget, and that fell into my lap, if you will, when I came on in 1977. It

hadn't yet been formed. But we had this small budget and used it in part to support the task force on prevention and used it in part to develop the Surgeon General's Report. But we also had funds that I thought should be used for data collection because that was one of the important reasons for the whole effort. And so I called up Dorothy Rice, who was then the head of the National Center for Health Statistics and a very wonderful and important leader in the health statistics community, and asked her what she would recommend we use a certain amount of the money for -- what would be in her wish list in the prevention arena in the way of data. And she said to me, she said, you know, what we've been wanting to do is to do some trials on telephone surveys as opposed to door-to-door surveys. You recall this was in the mid-70s -- late-70s. And maybe we could do a telephone survey of risk factors.

So, we transferred money to Dorothy in the National Center for Health Statistics, and that became the forerunner of the behavior risk factor surveillance system, and it's an activity that CDC has really developed into the wonderful art form and resource form that it is today.