

THE SCIENCE OF PREVENTION

Proceedings of the 24th Annual NECON Conference on
Health Promotion and Disease Prevention

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The New England Coalition for Health Promotion
and Disease Prevention (NECON)

The U.S. Department of Health and Human Services,
Region I

Co-Sponsored by:

The New England Governors' Conference, Inc.
The New England Public Health Association
The New England Community Health Centers Association
The New England AIDS Education & Training Center
The American Cancer Society, New England Division
The American Diabetes Association, New England Affiliate
The American Heart Association, New England Affiliate
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FOREWORD

This report summarizes proceedings of the NECON/DHHS conference titled The Science of Prevention, held at the Westin Hotel, Providence, Rhode Island, on Friday, October 8, 2004. The text presents edited, and in some instances abbreviated, versions of presentations.

The conference was presented by the New England Coalition for Health Promotion and Disease Prevention (NECON), and the U.S. Department of Health and Human Services, Region I. Co-sponsors included: The New England Governors' Conference, Inc.; The New England Public Health Association; The New England Community Health Centers Association; The New England AIDS Education and Training Center; The American Cancer Society, New England Division; The American Diabetes Association, New England Affiliate; The American Heart Association, New England Affiliate; and The American Lung Association, New England Affiliate.

Special funding for the conference was provided by Glaxo-SmithKline and Blue Cross and Blue Shield of Rhode Island. Additional support came from Pfizer Health Solutions, Health Media, and Health Dialog, Inc. Development of the Strategic Plan for the Prevention and Control of Overweight and Obesity in New England was generously sponsored by Abbott Laboratories and the Harvard School of Public Health Nutrition Round Table.

This is the 24th year in which NECON has presented annual conferences devoted to health promotion and disease prevention in New England. Since 1994, the focus has been on collaboration for public health among the six New England States, the public and private sectors, and between public health and medicine. A series of specialized working groups have made detailed and far-reaching recommendations pertaining to some of the most important health problems facing our society: tobacco use, obesity, racial and ethnic health disparities, inadequate health insurance coverage, domestic and community violence, HIV/AIDS, unmet women's health needs, gaps in mental health services, cancer prevention and control, diabetes control, and prevention and control of cardiovascular disease. In response to a request from the New England Governors' Conference, NECON recommendations have been translated into an action plan for the region.

Early conferences in this series were devoted to framing the issues confronting the region as state governments assumed increasing responsibility for shaping health policy. Subsequent conferences addressed reports of NECON/DHHS working groups, with their recommendations for education, policy change, legislation, and new service programs. Last year's conference focused on how to market action recommendations to policy makers, consumers, health care providers, schools, worksites, and through the media. This year's conference turns to the growing body of science-based research which identifies and documents effective preventive health interventions.

We would like to acknowledge the contribution of the NECON Advisory Group (Appendix 1) which is responsible for planning these conferences. Our thanks, also, to conference presenters (Appendix 2). This report was edited by Avery M. Colt; conference management services were provided by Carol McCullough.

Brian M. Cresta
Regional Director
DHHS, Region I

Bertram A. Yaffe
Chair, NECON

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EXECUTIVE SUMMARY

The costs of health care continue to rise, driven in part by the demographics of a progressively older population, in part due to being a labor intensive industry, and in part by continuous expansion of costly new pharmaceuticals, technology, and diagnostic and therapeutic procedures. Nor is there any immediate end in sight to this trend. As a consequence, the burden of financing health care—whether borne by government programs, health maintenance organizations, private sector employee health plans, or private individuals—has become increasingly difficult to bear.

Public health professionals have argued for years that aggressive health promotion and disease prevention efforts could significantly reduce the burden of morbidity, disability, and premature mortality; and in the process could slow the upward spiral of health care spending. But unlike many other developed nations, the United States' investment in prevention is nugatory.

A major barrier to investment in prevention has been an absence of hard scientific proof that preventive interventions work. That is changing, however. On April 24, 2004, NECON sponsored a conference in Sturbridge, Massachusetts, titled Prevention Works: Evidence-Based Programs for the Prevention of Mental and Substance Abuse Disorders. During that conference an array of investigators described their work with effective interventions for prevention of suicide, depression, schizophrenia, and other mental health problems.

This conference, The Science of Prevention, takes a somewhat broader view, describing workable programs in the context of policy makers' expectations, and looking at methods the New England states can use to build interagency and public-private coalitions for health promotion and disease prevention.

WELCOME

Bertram A. Yaffe, Chair, NECON

The costs and burdens of preventable disease are immense and escalating, Mr. Yaffe said. Yet, of the nearly two trillion dollars we spend on health care, less than three percent is directed to disease prevention and health promotion. For nearly a quarter of a century, NECON has been assembling the New England region's public health professionals and policy makers to these annual conferences to focus attention on how to do prevention. Over that same period, the quality of sound scientific research on healthy behaviors and societal health policy has improved significantly, to the point where we have a body of science-based interventions with documented efficacy in preventing disease. The scientific argument for prevention has been made and we need to get the word out to policy makers, providers, and the public.

The Hon. Donald L. Carcieri
Governor, State of Rhode Island

From a policy viewpoint, the Governor said, there are two components of the health care system: first, that comprised of usage, i.e., the demand for and delivery of services; and second, the

cost-benefit component, i.e., what it costs to obtain the outcomes we desire. Both are important. The challenge is to keep people healthier, longer, through the promotion of wellness.

The goal, he said, is to keep people well, improve the quality of life and improve the health care delivery system. On the usage side, we need to strengthen our assessment capabilities. On the cost-benefit side, we need to increase efficiency and effectiveness. What does it take to do these things?

- (1) Sufficient information about individual patients, and the population as a whole, so that providers can identify levels of risk and establish appropriate protocols for medical care, for health promotion, and for disease prevention.
- (2) Methods for incentivizing individuals to take responsibility for their own health, and providing community support systems to aid them in doing this.
- (3) Easy access for providers to all relevant health information about their patients, regardless of when or where health care services were delivered and recorded.
- (4) Reasonable ways to finance the use of proliferating medical technologies, which benefit patients and make providers more efficient, but which also increase the volume and cost of services.
- (5) More rational ways of organizing the health care system so that patients obtain appropriate health care in the most appropriate settings.

PANEL: THE SCIENCE OF PREVENTION

Michael Samuelson, Moderator
Health and Wellness Division
Blue Cross and Blue Shield of Rhode Island

There is one simple reason for the growing federal interest in prevention, Mr. Samuelson said: treatment alone doesn't seem to be working. People are not getting healthier and the dollars are beginning to shrink. But before we start throwing money at prevention it is important that we know what prevention is, what works, what doesn't work, and who is qualified to tell us. Our panelists this morning are more than qualified to discuss prevention and the science behind it.

Health care spending was \$245 billion in 1980, and is now up to \$1.9 trillion annually; approaching \$6,000 per person in health care costs. At this rate, health care costs will be about \$4.3 trillion in 2012. We must do better at prevention.

From the 1930s to the 1970s, we depended on physicians, specialists, and the health care system for prevention, with patients playing a passive role. But starting in the mid 1970s, there was an explosion of information available to the public on health issues, and especially about lifestyle choices that affect health. What is needed now is a "responsibility shift," in which we as individuals take more responsibility for making healthy lifestyle choices.

The business of prevention requires collaboration, a partnership between providers, insurers, employers, government, and individuals—both as community residents and as patients using the health care system.

David L. Katz, MD, MPH
Director, Yale Prevention Research Center

There are several barriers to securing adequate funding for prevention research, Dr. Katz observed. These include competition from demands for treatment research and service programs, the fact that successful prevention results in no visible outcomes, and the long elapsed time between investment in research and outcomes, which puts prevention research essentially outside a political time table.

There is also an imbalance in where we invest the prevention research dollar. The usual progression is from basic research, through clinical research and bench-to-bedside translation, and eventually, research on how to do community-based intervention. The problem is that we have a bottleneck at the end of the "assembly line," where prevention research fails to focus on how to bring results to the community.

For example, a \$174 million project of the National Institute of Diabetes proved convincingly that we can prevent diabetes with appropriate lifestyle interventions. But we still don't know how to actually make it work in the community. We need to focus on building capacity for community translation of knowledge into action.

The Yale Prevention Research Center has carried out several of these kinds of capacity-building studies, involving smoking cessation, physical activity promotion, diabetes prevention, and childhood nutrition education. A common feature of these projects has been a focus on working with the health professionals, consumers, or patients who were study participants to define the core issues at stake.

Bill Whitmer, MBA
President and CEO
The Health Enhancement Research Organization (HERO)

Nearly 7 out of 10 people who have a health insurance plan are insured through their employers. When we look at who is paying the bill in the U.S., Mr. Whitmer said, employers pay 55 percent of the roughly \$1.8 trillion in health care expenditures. This is roughly \$900 million off the bottom line. HERO is a national coalition of large employers established five years ago to do econometric research, using a 50,000 person database from six companies, relating modifiable health risks (both behavioral and for selected diseases) with individual health care costs.

Two years ago, HERO turned its attention to prevention, to see if employers could develop strategies and policies that would impact on health care costs. The first step was to establish the HERO Forum for Optimum Employee Health as a meeting place for interaction between employers, providers, and other stakeholders. The second step was to form a Strategic Leadership Alliance to

develop specific strategies for implementing workable prevention programs. And third, a HERO Coalition for Education and Networking was created to sponsor small scale regional workshops to look at how to actually implement these in the workplace.

In the process, HERO has developed a four-point definition of what it means to achieve through prevention:

- (1) Programs to help low-risk or no-risk workers maintain that status, build wellness awareness in the workplace, provide regular on-site health assessments for workers, and provide education and motivational programs, and innovative incentive programs, for employee health promotion.
- (2) Health management programs to prevent or reverse disease through regular employee health screening, and targeted behavioral health programs to reduce major health risks.
- (3) Best practices programs, including pharmacologic and behavioral components, to control symptoms of disease and reduce future co-morbidities.
- (4) Demand management programs, to help patients resolve health problems without physician or health plan involvement, where appropriate, through self-treatment resources and telephonic nurse advice services.

Other goals are to help companies break down the walls between various corporate divisions that need to work together to make these strategies and programs effective, and to promote self-responsibility in the workforce. Fifty to seventy percent of all disease and illness are associated with modifiable health risk and non-compliant behavior. If we don't start connecting self-responsibility with prevention we will never be able to control health care costs.

Terrie Fox Wetle, Ph.D.
Associate Dean for Public Health and Public Policy
Brown University Medical School

In 1900, the average life expectancy was 47 years. Today it is 77 years. If we reach age 65, we can on average expect to live to age 83. Unfortunately, Dr. Wetle said, with advancing age there is an increase in the burden of disease. Both chronic and acute conditions have a higher prevalence of disease among the elderly, and that, in turn, leads to major, staggering health care costs. Older persons represent 13 percent of the population, but account for roughly one-third of annual health care costs in the U.S. I would argue, she said, that there has been inadequate attention given to health promotion and disease prevention in the elderly. Less than two percent of the overall budget at the Centers for Disease Control, targeted to health promotion intervention research, is allocated to the health of seniors.

Prevention programs for the elderly pay off. For example, influenza vaccine is 56 percent effective in preventing respiratory illness, 53 percent effective in preventing pneumonia, 60 percent effective in preventing hospitalization, and 68 percent effective in preventing mortality in the 65 and over population. It is 80 percent effective in preventing mortality in the nursing home population.

Regular physical activity also promotes health. The benefits of physical exercise include: improved cardiovascular function, pulmonary function, muscular strength; decreased osteoporosis, falls and fractures; reduced constipation; decreased depression; and increased cognitive function. Unfortunately, inactivity increases with age. Persons age 45 and over who are physically inactive have more than double the health care costs of those who remain active—excluding those who have physical activity limitations. Even among inactive older persons, we can reduce the risk of mortality by more than half if we can get them moving.

Promoting health of an aging population can be done. Multifaceted programs work best. But they require that we pay attention to the special concerns, needs, and sensitivities of those to whom the programs are addressed.

**Deborah Riebe, PhD, Associate Professor
The University of Rhode Island**

Over the past 20 years, there has been a dramatic increase in the prevalence of obesity in the United States. Sixty-four percent of U.S. adults are either overweight or obese. Obesity is associated with heart disease, some cancers, Type-II diabetes, and other chronic conditions. It also has a negative impact on quality-of-life and psychosocial functioning. Overweight and obesity also have a significant economic impact, Dr. Riebe said, accounting for 9.1 percent of total U.S. medical expenditures in 1998: \$75 billion. Preventing obesity should be a U.S. health priority. However, most obesity research has focused on treatment rather than prevention.

The emphasis on preventing weight gain, in the first place, is an important goal, because the behavior change that is required to prevent small increments in weight is likely to be easier to sustain than behavior change needed to achieve and maintain large amounts of weight loss. A second important intervention goal is to focus on preventing weight re-gain following treatment-induced weight loss. The problem is compounded when overweight or obese persons have unrealistic weight loss expectations, and give up when these are hard to achieve.

Prevention also needs to focus on changing environmental factors, e.g., through nutrition education, healthy food preparation programs, advocacy to improve the quality of fast foods, physical exercise programs, and modification of the physical environment to facilitate walking and other regular physical activity.

**Steven L. Gortmaker, EdD, MS, PhD, Director
Society, Human Development, and Health
Harvard School of Public Health**

Overweight has been increasing among children for the past 30 years, Dr. Gortmaker said, but especially in the past decade. While we all know that weight gain is due to taking in more calories than we expend, the fact is that the obesity epidemic is being driven by rather small changes in the energy balance on any given day. And extra can of sugar sweetened beverage per day can add about 15 pounds weight over the course of a year.

Planet Health is an interdisciplinary health promotion curriculum for middle-school children, focusing on three educational targets for which there is a scientific basis for preventive interventions: (1) improving food nutrition, (2) reducing television screen time, and (3) increasing physical activity. Educational elements are delivered as part of the regular curriculum, e.g., in social studies, language, math, art, and physical education classes. Other intervention components include teacher training, a two-week TV time reduction campaign, and wellness sessions for teachers. The program avoids talking about overweight or obesity, *per se*. Rather, it emphasizes active things that students can do, such as healthy eating, reduced TV time, and increased exercise.

In a randomized controlled trial involving 1,400 middle-school children, the program found that Planet Health interventions reduced obesity among girls in the intervention vs. control schools, and reduced television viewing time for both boys and girls in the intervention group.

Question: What is the ideal diet?

Dr. Katz: In his opinion, 25 percent of calories from fat, 20 to 25 percent from protein, and the bulk of calories from carbohydrates—with the following caveats: fats should be polyunsaturated or monounsaturated, and carbohydrates should be in the form of whole grains, fruits, and vegetables.

Question: When people talk about "personal responsibility" it sounds very much like blaming the victim.

Mr. Samuelson: The issue of self-responsibility is key. But without awareness, without access, without portability, there will be no opportunities for self-responsibility. We need to provide an appropriate infrastructure, eliminate hunger, provide for the economic needs of the population. There is no such thing as self-responsibility until we have collective responsibility.

WHAT WORKS IN SUBSTANCE ABUSE AND MENTAL ILLNESS PREVENTION

Gilbert J. Botvin, PhD
Professor, and Director, Institute for Prevention Research
Weill Medical College, Cornell University

The process in prevention research involves trying to understand risk and prevention factors in substance abuse, said Dr. Botvin, to design interventions which may be effective, and then to subject them to methodologically rigorous tests of efficacy. Research in the field begins with small pilot studies and graduates to large randomized trials. The major targets for prevention research have been children, primarily in school settings.

Early prevention interventions were based on efforts to educate children about dangers of tobacco and other substances, on the assumption that knowledge would motivate behavioral change. This approach proved to have limited effectiveness. The Cornell Life Skills Training Program takes a more comprehensive approach, with a focus on building problem-solving and decision-making

capabilities through enhanced cognitive behavioral skills and practice with assertive skills.

The Life Skills Training Program is offered for 15 sessions in the first year of middle school, and is repeated for 10 and 5 sessions respectively in the following two years to reinforce skills learned in the first year. Randomized trials have shown positive results in preventing smoking and drug use behavior.

Similar research by other investigators, using the same approach, has also demonstrated effectiveness in mental health areas, e.g., reducing aggressive behavior, anxiety, and depression.

WHAT WORKS IN PREVENTION AND CONTROL OF HIV/AIDS

**Donna M. Gallagher, RNC, MS, ANP, FAAN, Director
The New England AIDS Education and Training Center**

The AIDS epidemic is getting to be 25 years old. But even with years of knowledge, public education, and highly effective medication, we are still looking at 40,000 new cases every year. In New York City, over the past three years, there has been a 17 percent increase in HIV cases. The good news is that many more people who are HIV positive are living healthy lives. The bad news is that many more people in the population have the potential to transmit HIV, either through sexual contact or IV drug use. Seven out of ten people with HIV are sexually active.

Who is at risk? Young people are particularly at risk. Upward of 79 percent of kids have intercourse before they are 17, and in some urban settings sexual activity begins at age 12 or 13. Clinicians are beginning to see increased STDs associated with oral and anal sex. Adults in communities of color have increasing numbers of new HIV cases. Women, including women over age 50, are increasingly likely to be HIV positive.

Two recent changes in federal health policy have a bearing on prevention. First, there has been a shift in funding from population-based programs, which educate everyone who may be at risk, to programs targeted to known HIV-positive people. The purpose is to reduce risk of transmission at the source. This is not unreasonable. But if it means cutting support for existing and effective population-based prevention programs, that will be counter productive.

Second, there has been a concerted effort to downplay, and reduce support for, using condoms to prevent HIV transmission—despite the fact that they are proven effective in controlling the spread of HIV. This is part of the Administration's overall preference for promoting abstinence. But it doesn't fit well with a prevention approach targeted to known HIV-positive people, 70 percent of whom are sexually active.

Finally, Ms. Gallagher said, we need to reinvigorate school education programs about HIV/AIDS and AIDS prevention. We very much need programs in schools that teach kids the skills they need to be effective and empowered decision-makers, which are essential if we expect them to be, and to become, capable of negotiating their sexual decisions, i.e., whether to have sex at all or to practice safe sex.

Question: Does seeing so many people living successfully with HIV reduce concern over getting the disease?

Gallagher: The availability of effective treatment has reduced some of the fear of contracting HIV, and there is now even a new population of young gay men who are actively seeking HIV infection.

KEYNOTE ADDRESS

THE SCIENCE OF PREVENTION: TRANSLATING DISCOVERY INTO POLICY AND PRACTICE

Harvey V. Fineberg, MD, PhD
President, The Institute of Medicine

It has been a quarter century or more since we first began thinking seriously about prevention. In that time we have made significant progress in developing a scientific basis for the design, testing, and implementation of health promotion and disease prevention interventions. Nevertheless, the science of prevention faces challenges.

The first challenge is to find ways to persuade people to do what is in their own best interest, and to enable them to do so, without blaming the victim. The science of prevention is partly about what would make a difference if we could do it, and partly about how to go about doing it, which involves social change, influencing individual behavior, allocation resources, and political will.

A second challenge centers around the invisibility of success when prevention works, and equally, the invisibility of costs to society when there is no prevention. We don't count the number of children each year who did not get measles because they were immunized. We need to make the invisible visible.

A third problem, said Dr. Fineberg, is that sometimes what we know is good for health comes into conflict with other values, other preferences, other ideologies. We may have a very clear idea of the value of condoms in preventing HIV transmission, for example, but it is hard to break through the resistance to condoms which is based on policy preferences unrelated to health. There are people who object to fluoridating water supplies, immunizing their children, or laws requiring use of motorcycle helmets, for reasons they believe are more important than the known health advantages.

Fourth, there is a fundamental disconnect between how we regard preventive interventions and therapeutic interventions. If a therapeutic intervention is cost-effective, we are delighted. But preventive interventions are not only expected to be effective, they are also required to save money and to lower health care costs. That is an unfair double standard.

Fifth, when we talk about preventing conditions such as obesity, we need to understand that

these are not just problems of individuals, they are problems of a whole society. We are not just trying to get a better balance between calorie intake and expenditure for the individual—we need to shift that balance to a whole new spectrum society-wide.

Finally, another challenge to prevention is the delay between investment and return on prevention, which makes it hard for policy makers, operating in a shorter time frame, to give prevention the priority it deserves.

Question: How can we translate what is learned from academic research to what is practiced in communities on an everyday basis?

Fineberg: That is the \$64 trillion question. I think we can propel the translation part if we are invested and systematic in evaluating the things we are already doing, today, and getting feedback regularly and systematically into the minds and practices of those who are delivering health care.

Question: What can we do to achieve more substantive collaboration between health professionals and other professional groups?

Fineberg: Any time you set up a specialized agency or professional group you are going to have an inherent focus in that organization on its own mission, profession, and expertise. One can try to bridge these "silos" through various collaborative mechanisms, such as interagency task forces or academic centers with specific problem-solving objectives.

WHAT WORKS IN THE CONTROL OF OVERWEIGHT AND OBESITY

Walter C. Willett, PhD
Professor of Epidemiology and Nutrition
Chair, Department of Nutrition
Harvard School of Public Health

Everyone has become aware, said Dr. Willett, that obesity is a major problem in the United States, and this awareness is part of the science for controlling the epidemic. Without that awareness it would be hard to generate the energy or the willingness to invest the resources needed to deal with the problem.

What are the dimensions of the problem? Studies in which subjects are actually weighed and measured show a 30 percent prevalence of obesity, i.e., Body Mass Index (BMI) over 30, and another 34 percent who are overweight, i.e., BMI between 25 and 30. Moreover, many people in the 18 to 25 age range, with a BMI of 25, are still not at their optimal weight and are at risk for adding another 30 to 40 pounds as they grow older. Finally, since the 1960s, there has been a three-to-fourfold increase in the prevalence of overweight in children aged 6–11.

There are various basic science studies that contribute useful information about overweight

and obesity, e.g., test tube studies, animal studies, controlled feeding studies. However, randomized trials and epidemiologic studies are the most useful when it comes to developing and assessing interventions to modify human behavior. This is because they can take into account the physical, social, cultural, and policy environments which facilitate or impede behavior change.

The importance of increasing public awareness is illustrated by the impact of the Surgeon General's 1964 report, *Smoking and Health*, on tobacco use, notably in subsequent downward trends in smoking, and the organization of advocacy groups to control smoking. Similarly, getting the right information to the public on the relation of excess weight to health is the starting point for preventing obesity. There is ample evidence that obesity increases risk of morbidity, and premature mortality, from heart disease, diabetes, and other chronic conditions.

Several caveats are necessary, however. First, just looking at weight alone is not enough. Men in their 50s and 60s, in particular, can maintain their weight but increase waist size three or four inches, which is very bad for health. Second, it is important to look at weight change since early adulthood, to help define the best weight for an individual. And third, if a person is seriously overweight it is almost impossible to go back to the weight they were, so there is a distinction between goals for prevention and the goals for weight loss in people who are already obese.

What do we do about the epidemic? People can lose weight on both low fat and low carbohydrate diets at 6 months, but they tend to regain it by 12 months and beyond. The Mediterranean diet has proven more effective in losing weight and maintaining that weight loss. A number of studies have shown the value of reducing consumption of sodas and other sugar sweetened beverages.

In addition, there is an extensive literature demonstrating that increased physical activity has a modest beneficial effect on weight loss, but an important benefit in maintaining weight loss. Finally, TV watching is one of the most consistently strong predictors of overweight in children and adults. Turn off the TV.

Question: What do you think about the new 2005 dietary guidelines which are just about to be issued?

Willett: The new guidelines are an important step forward because they put the emphasis on type of fat being more important than just the percent of fat in the diet. The key message is to choose your fats carefully, choose your carbohydrates carefully. Avoid trans fats, avoid foods high in saturated fats. On the carbohydrate side, focus on high fiber whole grains instead of refined starch and sugar.

PANEL: BUILDING STATE COALITIONS FOR PREVENTION

Moderator, Patricia Risica, DrPH
Assistant Professor, Brown University
Institute for Community Health Promotion

What we learn from research requires collaboration among public, private, and community organizations for implementation. Mr. Whitmer described worksite collaborations, Dean Wetle talked about coalitions for preventing influenza, and Dr. Gortmaker described school-based collaboratives to strengthen students' decision-making skills. Our panelists, this afternoon, will describe coalitions that have been effective in the business of prevention in their states.

**William Gerrish, MBA, Director
Office of Planning, Communications, and Workforce Development
Connecticut Department of Public Health**

Building and working through coalitions has become increasingly important for the Department of Public Health, said Mr. Gerrish, because it is difficult, and sometimes impossible, for the Department to accomplish public health goals by itself. Consequently, we have been actively pursuing strategies of building and working with coalitions to integrate our programs at the community level.

For example, in 2001, the Department developed an asthma management protocol for integrating and standardizing care across multiple settings. The protocol was presented to providers and stakeholders at a state asthma summit, and a number of task forces were set up to address specific issues, e.g., with regard to clinical medicine, provider education, public education, and environmental issues. Task Force members were charged with developing a state asthma management plan incorporating the new protocol. The plan has now been completed and the Department is meeting with local health directors, and scheduling stakeholder meetings in the state's 10 bioterrorism regions.

Other examples include establishing and staffing a Health Care Advisory Committee for the Homeless, a viral hepatitis collaborative program, and a statewide bioterrorism program.

Finally, collaboration with public health professionals in other states, e.g., through the National Public Health Information Coalition, and NECON, has been tremendously helpful, he said, in sharing information and coordinating responses to common public health problems.

**Christine C. Ferguson, JD, Commissioner
Massachusetts Department of Public Health**

Massachusetts has been very successful, over the past several years, in assembling the expertise to develop and disseminate best practices. For example, we established the Betsy Lehman Center for the Promotion of Patient Safety and the Reduction of Medical Errors. The first thing the Center did was to assemble the best practitioners in the field of weight loss surgery to develop and promote a statement of "Best Practices and Outcomes."

Other efforts, Dr. Ferguson said, include examination of how substance abuse impacts on all of the services the Department provides statewide, exploring opportunities for health department collaboration with law enforcement and criminal justice systems, and an outreach effort to familiarize the public with the relevance of public health to their lives.

Finally, she wanted to say a word about obesity. We have a enormous responsibility to work with people who are overweight in a positive, non-judgmental way. We have a lot of “evidence,” e have a lot of information about interventions that work. But we have to be careful how we work with people, and especially kids. How we approach kids is going to affect them for the rest of their lives, not only their weight, but how they are perceived by others and how they perceive themselves.

Patricia A. Nolan, MD, MPH
Director of Health
Rhode Island Department of Health

Public health is about what we do as a society to assure the health of all of the people in society. It is not what we do as health departments, or as researchers, or as physicians, but what we do collectively.

A successful example of long term efforts by a coalition in Rhode Island is the Coalition to End the Scourge of Tobacco, which has just succeeded in getting worksite smoking ban legislation enacted. And the lessons learned in our tobacco initiative can help us in working together in the area of overweight and obesity, that is, in changing our physical activity and eating habits.

We learned two important lessons from the tobacco control campaign, said Dr. Nolan: (1) that advertising works, and that if we don't have advertising to counter the opposition's advertising, we are not going to achieve the goal; (2) we need to remember that it is the goods that is the problem, not the person who consumes the goods.

Dr. Nolan agreed that taking personal responsibility for one's health is important, but we have to recognize that we live in environments which drive behavior, and that we have to modify those environments in order to make it easier for people to take personal responsibility. For example, there are a lot of diets being promoted to lose weight, but low income families often cannot afford to buy the food required by those diets.

Two additional coalitions that have been effective in Rhode Island are the Worksite Wellness Council and Healthy Schools/Healthy Kids. The former gives us access to employers to discuss coverage under employee benefit plans, making the worksite a healthier and safer environment, and programming to promote healthier employee lifestyles. Obviously, healthier worksites and lifestyles will also help control health care costs. The Healthy Schools/Healthy Kids coalition works with schools, both to strengthen health education programs, and to increase student physical activity during the school day.

Donald Swartz, MD
Director of Maternal and Child Health
Vermont Department of Health

Almost half the residents of Vermont are beyond the range of prevention, in that they already have one or more chronic conditions. The cost of maintaining medical services to address their conditions is enormous and crippling. Finding money for prevention, under these circumstances is extremely difficult.

Our response has been to develop the Vermont Blueprint for Health, which includes a broad focus, not just on primary prevention, but also secondary and tertiary prevention throughout the life span.

The Blueprint is designed to do for every Vermonter what we already know how to do around health care and health maintenance. The coalition established under the Blueprint involves all relevant stakeholders: payors, providers, patients, employers, academics, and public agencies. We have organized the coalition, Dr. Swartz said, into six problem-solving committees to move the plan forward on a broad front: (1) self-management, (2) provider practice, (3) information systems, (4) the health care system, (5) improving lifestyles, and (6) the role of government.

In addition, the Department is developing centers of expertise in cross-cutting problem areas such as tobacco control and obesity. In addition to fielding specialized programs these centers will provide technical assistance and support services to chronic disease programs in their fields.

Question: Simply pulling people together doesn't make them a coalition. The most successful coalitions are those made up of organizations with strategically recognized shared mutual interests.

Nolan: People have to work together, and sometimes you have to work with people with whom you disagree, or who have a totally different outlook or value set. Indeed, sometimes it is more important to work with these people than with those who are your traditional partners.

CONFERENCE PROCEEDINGS

WELCOME

Bertram A. Yaffe
Chair, NECON

Over 25 years ago, NECON sprang forth from an intuitive precept that was best described by the following metaphor: “Why do we spend so much of our energies, expertise, and resources rescuing flailing bodies from turbulent waters downstream, when we could be preventing them from falling or jumping in upstream?” Today we recognize and celebrate that this precept has progressed from the intuitive to the substantive.

Over the past two and a half decades, the quality of sound scientific research on healthy behaviors and societal health policies has improved significantly. Recommendations based on scientific research are much more certain than they were twenty years ago. The Centers for Disease Control and Prevention estimates that more than seven percent of all premature deaths can be postponed by health promotion and disease prevention efforts.

At the same time, the costs and burdens of preventable diseases are immense and escalating. Yet, of the nearly two trillion dollars a year that we spend on health care, less than three percent is directed to disease prevention and health promotion, activities that truly address the determinants of our health and enhance the quality of our lives.

Now, through the depth and span of the NECON Project Prevention Collaborative, of which today's conference participants were an integral part, we believe we have a special opportunity to bring the relevance of evidence-based prevention strategies to the attention of New England policy-makers and members of the health care infrastructure, and thereby redirect our energies, our expertise, and our resources upstream, to the riverbank of prevention.

We are honored and pleased that Governor Donald L. Carcieri, Governor of the State of Rhode Island, is with us this morning to welcome you. His presence is especially heartening because of his interest in our subject matter. The fact that he has taken the time to come and give us his leadership on the issue of prevention means a great deal to us.

The Hon. Donald L. Carcieri
Governor, State of Rhode Island

Thank you. I am happy to be here this morning to welcome all of you. And what I would like to do this morning is to address some of the overarching systems issues from the vantage point of a state chief executive.

Health has always been a major public policy concern, but recent demographic trends have made it even more pressing. As the “baby boom” population grows older there are more people, living longer, who will be using services of the health care system, and the challenge will be how to assure a health care system that meets their needs and how to pay for it.

There are two important components to the health system. First, there is the usage

component, that is, the demand for services. There is also a cost-benefit component, that is, what it costs to attain the outcomes we desire. If the goals are to keep people well, improve the quality of life, improve the health care delivery system, then on the usage side we need to strengthen our assessment capabilities, and on the cost-benefit side we need to increase efficiency and effectiveness.

Assessment. Assessment is based on having sufficient information from individual patients, and the population as a whole, so health care providers can identify levels of risk and establish appropriate protocols for medical care, health promotion, and disease prevention programs.

Related to this is the issue of behavior modification. Because health professionals have a pretty good sense of what people's health behaviors need to be, the question is how to incentivize and motivate positive health behaviors. Unless people take personal responsibility for their health, improvements in health will not occur. But we have to recognize that incentives to lead healthier lives will not be enough. There also have to be support systems in place. Diabetes management programs are an example.

Cost-Benefit. There are several parts to the cost-benefit side. First is the issue of making all relevant health information about a person, from records of all past and present health care provider files, easily accessible to a primary care provider or hospital-based provider, when a patient walks in the door. Here we are at the beginning of the 21st century, when a shipper can track a package, any hour, anywhere in the world, and tell you when it will arrive. But health care providers can't access readily available patient information because it is scattered in a variety of manila folders or computerized databases, across the state. Information technology gives us the tools we need, if not to centralize, then to link the medical databases so that a provider can pull together information from all relevant patient medical records. Rhode Island has just received a grant to bring the medical community together to consider the technical issues involved, and the prospects for great efficiency and effectiveness that can result.

A second issue is the proliferation of technology: new pharmaceuticals, mechanical technology, electronic technology. This proliferation of products and procedures make providers more efficient and effective. But the technology, and the increased volume of services that new technology generates, costs a great deal of money. How we utilize technology, and how we finance it, is one of the overarching issues we need to deal with.

A third issue is the structure and function of the health care system. Every state, and every employer, is looking at rapidly increasing health care costs. Making sure we have a rationally organized health care delivery system is going to be an important part of what we do to control costs. For example, when you look at utilization, no matter how hard we have tried we still have hospital emergency rooms being used for high volumes of visits by patients who do not have true emergencies. Well, that is understandable. A patient who is worried about a sick child in the middle of the night, when doctors' offices and neighborhood health clinics are closed, is going to take that child to the ER. The health care system needs to stand back and say: "If we are going to deliver the best possible service, at the best possible cost, how do we do this?" Maybe more community centers need to be open 24 hours a day.

What is the heart of prevention? If we can do a better job of identifying people at high risk, improving their health behaviors, getting them proper care, early, in an appropriate setting, we will have a healthier population and a strong health care system.

PANEL: THE SCIENCE OF PREVENTION

Michael Samulelson, Moderator
Health and Wellness Division
Blue Cross and Blue Shield of Rhode Island

The science of prevention is an important issue. I have been doing this now for almost thirty years, and in this time it has become increasingly important. I was in Washington recently, talking with a number of legislators who are pushing for more investment in prevention. And the reason for their interest in prevention is simple: treatment doesn't seem to be working. People are not getting healthier and the dollars are beginning to shrink.

This new interest in prevention is great news—and it is scary news. Before anybody starts throwing dollars in the direction of prevention, it is important that we know what we are talking about, what really works, what doesn't work, and who is qualified to present the information. Our panelists this morning represent national leadership in the field and are more than qualified to discuss the art of health promotion and the science behind it.

We are used to hearing a lot of rhetoric from people in Washington, but this concern about prevention is not just rhetoric. It is serious business when the U.S. Secretary of Health and Human Services says that: “We face an epidemic of unparalleled proportions; we cannot afford to ignore the urgency of chronic disease.”

Two years ago I was the keynote speaker at the Steps to a Healthier U.S. conference in Washington, at which the pervasive theme was recognition that individuals must assume more responsibility for their own health; in fact, that the individual's role has to be at the center of our overall responsibility for health as we move forward. Let me give you some perspective.

Health care spending is on the rise. In 1980, we spent \$245 billion on health in the United States. We are now looking at an annual expenditure of \$1.9 trillion. We are approaching expenditure of \$6,000 per person in health care costs. We can no longer absorb the economic burden. The concomitant quality-of-life issues are also of concern. If we go on at this rate, by 2012, health care costs will rise to about \$4.3 trillion. No wonder we are all scrambling to reassess how and where health dollars should be spent.

By the most optimistic estimate, less than five percent of the health dollar is invested in health promotion and disease prevention. In fact, as Bert said, it is probably closer to two percent. By 2012, the percent devoted to health promotion and disease prevention is going to shrink to a fraction of that. We can't keep this up, continually throwing dollars into treatment.

How do we involve the individual in the promotion/prevention process? Part of what is needed is a “responsibility shift.” From the 1930s to the mid-1970s, we depended for prevention on

physicians, specialists, the health care system—with the individual playing a passive role. But about the mid-seventies, there was an expansion of information available to the public on health issues which allowed the shift to occur, and we are still in the middle of that process. This shift in responsibility, to include the individual front and center, is tremendously empowering. And from an economic standpoint it is a tremendous way of saving dollars.

So, increasingly we are moving to a health system in which the individual assumes more and more responsibility for his or her health. But it can't be the individual's responsibility alone. Health promotion and disease prevention are also a community and organizational responsibility. It is easy, sitting here, to talk about the importance of self-responsibility, but try giving that message to residents of the inner city, and then look around at the lack of a community infrastructure to facilitate or permit individual responsibility. Strengthening the community infrastructure is part of the challenge.

This business of health promotion and disease prevention requires an integrated collaborative effort; a partnership including providers, insurers, employers, government, and individuals—as community residents and as patients. There is a lot that we can do, but only if we all work together, independent of our political views, our philosophies. We are all in this together, but until we join hands and work together, with the individual as a central partner, we will not make progress.

David L. Katz, MD, MPH, FACPM, FACP
Director, Yale Prevention Research Center

Prevention research starts out with two strikes against it. When prevention works, it keeps adverse events, like heart attacks, from happening. How do you measure things that have not happened? Research is hard to justify when it is addressed to prevention, whose best outcomes are not visible. Moreover, allocating resources to prevention, and prevention research, is hard to justify when it competes with the need to invest in treatment. A medical crisis gets attention by governors and legislators and in the press. But the quiet achievements of prevention go largely unnoticed.

It was very appropriate that our session this morning was introduced by the Governor of Rhode Island. And it is important that we have his support. But there is a problem with what we do, because prevention takes a long time to achieve its benefits. Lifestyle interventions now, that prevent heart attacks or strokes later on, will not suit the political time line. Even when the results of preventive interventions are visible, they are of no political value to those who initiated or supported them. We must be honest about the challenges we face in efforts to sell prevention or we will never successfully overcome them.

Research might be viewed as an assembly line process, intended to take the insights and perspectives of the scientist and translate them into practical benefits for the population. One of the weaknesses of prevention research, however, is that while it corroborates the findings of science, it often fails to apply these findings in a practical way. The assembly line might be viewed as having the following elements: basic research, clinical research, bench to bedside translation, and community intervention. The problem is that we have a bottleneck at the end of the assembly line, where prevention research fails to focus on bringing results to the community.

A case in point is the diabetes prevention program of the National Institute for Diabetes, Digestive, and Kidney Diseases; a \$174 million investment that demonstrated impressively, convincingly, that we can prevent diabetes with a lifestyle intervention. The drug arm of the study prevented diabetes in one out of three high risk adults. By comparison, the lifestyle intervention prevented diabetes in nearly two out of three high risk adults. The problem is that we don't know how to translate those findings into the real world.

There is also a broader strategic concern, i.e., that we focus on planning individual prevention research studies, but we pay little or no attention to assessing overall investment policy. If we had \$10 billion to invest in prevention research, what stages in the research assembly line would produce the greatest results for the money? Frankly, what is needed is a vast reallocation of funds to research that allows us to implement what we already know. There is a logjam at the end of the assembly line and we need to develop more capacity at that end if we are to convert knowledge to power. Let me give you some examples of capacity building from the work we are doing at the Yale Prevention Research Center.

Smoking Cessation. This project began with the recognition that there were multiple different obstacles to smoking cessation and that, to be effective, interventions had to identify which obstacles were operative in any individual person, and to address each of them. The project developed an “impediment profiling” technique, which: (1) identified several common obstacles to cessation, (2) developed an instrument to catalogue an individual's impediments to cessation, and (3) tailored an intervention to match that profile. What is unique about this approach is that the research does not begin by supposing something about the solution, but by supposing something about the question.

Physical Activity. The aim of this program is to train physicians and other health care providers to counsel patients to become more physically active. The method used to train providers is based on a paper of mine titled “The Pressure System Model,” which hypothesized that complexities of behavior modification could be simplified to an understanding of the interaction between levels of motivation for, and resistance to, change. Residents in a hospital system were trained in use of a two-question algorithm, followed by counseling. In a test of the method, patients seen by residents trained in the method demonstrated a statistically significant increase in physical activity.

Diabetes Prevention. The Yale Prevention Research Center has initiated a diabetes prevention program in New Haven and Bridgeport, Connecticut. This is a community participation project, based on: (1) forming community coalitions and working with faith-based organizations, to (2) promote diabetes prevention and train community workers, who (3) will provide prevention information and motivation, and (4) train other community residents to do the same thing.

Childhood Nutrition. Finally, the Nutrition Detective's Program teaches eight- and nine-year-olds how to read nutrition labels on food products and make healthy food choices. The approach has not been to impress children with problems associated with chronic disease, but to instruct them in the simple premise that: eating well makes a person healthy, and that healthy people have the energy to do the things that are fun. Now why wouldn't that work just as well with adults?

Each of these projects was an effort to build capacity at the end of the prevention research assembly line, to test practical methods for implementing prevention.

Bill Whitmer, MBA
President and CEO
The Health Enhancement Research Organization (HERO)

For the past 28 years my work has been centered in the area of worksite health promotion. And in that time I have come to the conclusion that the health system, in its current form, will not survive without fundamental change. Most of the people I meet in my work agree with this assessment. But when I ask them: “What are you going to do about it,” they have their heads in the sand.

The way we finance health care in the United States is unique. Nearly seven out of ten people who have a health care plan are insured through their employers. Whereas, in almost any other developed country in the world, local government, in conjunction with the national government, provides health care. When we look at who is paying the bill in the U.S., employers pay about 55 percent of the roughly \$1.8 trillion in health care expenditures, which is in the neighborhood of \$900 million off the bottom line.

A recent survey of over 3,000 employers found that virtually all companies are significantly or critically concerned about health care costs. A separate study found that only 18 percent of employers were confident of their ability to manage current increases in health care costs.

The Health Enhancement Research Organization (HERO) is a national coalition of large employers, established nine years ago to conduct econometric research. The organization now manages the largest database in existence, 50,000 employees from six large companies that directly connects modifiable health risk—behavioral and for selected diseases—with individual health care costs.

Two years ago, the HERO Board of Directors decided that the organization should directly address the challenge of prevention, to see if employers could develop strategies and policies that would impact on health care costs. The first step was to establish the Hero Forum for Optimum Employee Health, as a gathering place for interaction between employers, providers, and other stakeholders, all of whom share the goal of making prevention a recognized strategy for optimizing the health of employees and their families, to foster appropriate health care utilization, and thereby control health care costs.

Membership in the forum includes some of the major employers in the U.S., universities, consulting firms, and government organizations. Under the umbrella of the Forum, HERO has established a Strategic Leadership Alliance, as a sort of think tank to develop specific strategies and tactics for worksite prevention programs, acceptable to employers, and feasible from the viewpoint of providers.

A question raised by corporate officers was how these strategic approaches would actually

be implemented. In response, the organization is establishing the HERO Coalition for Education and Networking, which will sponsor small scale regional workshops that will look at “how to do it” in the workplace.

The moderator has asked me to conclude with a discussion of the three top things needed to be done to make prevention work. To my mind they are to: (1) make sure that we all have the same understanding of what we mean by prevention, (2) integrate efforts of all the players who are needed to make sure prevention works in the workplace, and (3) enhance self-responsibility for health promotion and disease prevention.

Defining Prevention. The HERO Forum for Optimum Employee Health has a four-part definition of what it means by prevention:

- (1) Programs to help employees who are at no risk, or at low risk, to maintain their status over the long term through wellness awareness-building and cultural change; regular on-site health assessment; education and motivational programs; and innovative incentive programs.
- (2) Health management programs to prevent or reverse diseases, through regular employee health screenings and targeted behavioral health programs that are effective, in order to eliminate or reduce major health risks.
- (3) Targeted disease “best practices” programs, including pharmacologic and behavioral components, to control symptoms of disease in the short term, and to reduce major disease co-morbidity in the long term.
- (4) Demand management efforts, which include self-treatment and telephonic nurse advice programs that often help employees resolve selected health care problems without physician or health plan involvement.

Integration. The future of effective prevention in the worksite may very well depend on breaking down the “silos” within corporations. Too often, different divisions that need to collaborate to make prevention effective have little or no history of working together. A premier example of how integration can work is in place at Prudential Financial. They have established a Health and Welfare Unit that incorporates the functions that can make prevention a reality: clinical care, prevention, EAP, child care, safety, workers comp, work life responsibility, and return to work.

Self-Responsibility. Fifty to seventy percent of all diseases and illnesses are associated with modifiable health risk and non-compliance behavior. If we don't start connecting self-responsibility with prevention we will never be able to control health care costs. This leads, as Governor Carcieri said, to the importance of finding ways to incentivize individual preventive health behaviors.

Terrie Fox Wetle, PhD
Associate Dean of Medicine for Public Health & Public Policy
Brown University

In 1900, the average life expectancy was 47 years, today it is 77 years. If we are fortunate

enough to reach age 65, we can on average expect to live to age 83. Unfortunately, with advancing age there is an increase in the burden of disease. Both chronic and acute conditions have a higher prevalence of disease among the elderly. And that, in turn, leads to major, staggering health care costs. Older persons, who represent about 13 percent of the population, account for roughly one-third of the \$1.8 trillion per year in health care costs in the U.S.

I would argue that there has been inadequate attention given to health promotion and disease prevention among older persons, and that this is an important missed opportunity for achieving better health for each of us and major cost savings.

Why is it that older people are not included in health promotion efforts? For one thing, we know that the elderly are under-represented in clinical trials. Initially, for example, persons 65 and over were explicitly excluded from the National Institutes of Health Diabetes Type II prevention trials. The National Institute on Aging (NIA) had to add money to the trials so that older persons would be included, and provided expert guidance on how to recruit them. And interestingly, results from the trials showed that older people complied with the lifestyle interventions at a higher rate than younger participants and experienced a higher rate of effectiveness.

Older people are under-represented in funding for health promotion research. At the Centers for Disease Control (CDC), less than two percent of the overall health promotion intervention research budget is allocated to the health of seniors. Health promotion outreach and services for the older population are proportionately under funded, even state and community-based efforts and health promotion interventions generally are often not targeted to, or appropriate for, elders.

Nevertheless, health promotion and disease prevention efforts targeted to persons age 65 and over can be effective in maintaining and improving health, and can significantly help in reducing health care costs. For example, the older population is especially vulnerable to influenza. Flu related acute respiratory disease hospitalization increases with advancing age, and mortality from influenza and pneumonia increase exponentially with age. This is in a normal flu season. If we look at 1918, when we experienced a major influenza pandemic, we see that under those circumstances, death rates can increase four-, five-, or six-fold.

Fortunately, effective methods of prevention are available, and we need to take advantage of that. Influenza vaccine is 56 percent effective in preventing respiratory illness, 53 percent effective in preventing pneumonia, 60 percent effective in preventing hospitalization, and 68 percent effective in preventing deaths in the 65 and over population. If you look at those who are most vulnerable, those in nursing homes, influenza vaccine is 80 percent effective in preventing death.

Why don't people get vaccinated? Some are worried about side effects; some don't think the vaccine works. These are mistaken beliefs and health education programs are needed to correct them. The National Institute on Aging, the CDC, state and local health departments, the Merck Pharmaceutical Company, the American Federation for Aging Research, and several other organizations put together a collaborative vaccination campaign that included public and professional education components. They also worked hard on an advocacy program which led to: (1) Medicare reimbursement for flu shots, and (2) inclusion of an influenza measure in quality assurance surveys for managed care.

The education program was effective. In 2002, 83 percent of nursing home residents received an influenza vaccine. For those 65 and over, unfortunately, the program was somewhat less effective among minority populations, so there is more that needs to be done.

Another example of prevention opportunities in the elder population is promotion of increased physical activity. Sedentary health behaviors increase with age. More than half of all elders do not exercise regularly, and lack of physical activity is associated with a number of health problems.

From middle age to old age, physical inactivity increases, for both men and women. Vigorous physical activity, enough to work up a sweat, decreases with advance age. And there are substantial health care costs (more than a doubling of annual health care expenditures) for people 45 and over who are physically inactive. And these are data for people who do not have physical activity limitations, i.e., people who could do exercise if they wished to and were motivated to do so.

There are all kinds of benefits from regular physical activity: improved cardiovascular function, pulmonary function, and muscle strength; reduced constipation; decreased depression; increased cognitive function. We know that even among inactive older people, we can reduce the risk of mortality by more than half if we can get them to become more active.

The National Institute on Aging has been involved in a collaborative public education campaign, promoting increased physical activity, with the CDC. The AARP has multiple interventions targeted to specific populations.

There are three keys to making these education programs effective. First, they have to be targeted to specific populations. Second, they have to match the exercise programs or physical activity to an individual's personal preferences, which means that programs have to offer multiple exercise options. And third, the programs have to provide feedback to participants on their achievements and support their continuing participation with acknowledgement and rewards.

So, promoting health of an aging population can be done. Multi-faceted programs work best. But they require paying attention to the special concerns, needs, and sensitivities of those to whom the programs are addressed.

Deborah Riebe, PhD
Associate Professor
University of Rhode Island

Over the past 20 years there has been a dramatic increase in the prevalence of obesity in the United States. An estimated 64 percent of U.S. adults are considered either overweight or obese. Obesity is associated with heart disease, some cancers, Type II diabetes, and other chronic conditions. It also has a negative impact on quality-of-life and psychosocial functioning, and can be a source of stigma.

Overweight and obesity also have a significant economic impact, accounting for 9.1 percent

of total U.S. medical expenditures in 1998: \$75.8 billion, or close to \$100,000 billion in 2004 dollars. Approximately half of these costs were paid by Medicare and Medicaid. Clearly, prevention of obesity should be a national priority. However, most obesity research so far has focused on treatment rather than prevention.

We know that physiologic and genetic factors can contribute to obesity, but the increase in prevalence of obesity over the past 20 years cannot be explained wholly on those grounds. Researchers have found that heritability of obesity is only a moderate factor. Studies of identical twins that have discordant BMIs, have found that the mean body weight difference between overweight and lean siblings can vary as much as 35 pounds in men and 43 pounds in women, even though they have the same genotype. Moreover, recent increases in the obesity rate have occurred at a faster rate than could be explained by changes in obesity genes.

This suggests that increased rates of obesity are to a large measure due to an increase in the number of adults and children whose energy consumption is greater than their energy expenditure. That is, that they take in more calories from food than they burn through physical activity. In other words, obesity is a lifestyle issue and should be preventable through changes in diet and exercise.

It is worth noting, in this connection, that in the 20 years, which have seen a dramatic increase in obesity, we have also seen an unprecedented increase in access to inexpensive, high-density foods. For example, there has been an exponential increase in the number of fast food outlets; there has been a systematic increase in portion sizes; and an increase in dollars spent to market fast foods. Several years ago the marketing just for MacDonaldis was \$1.1 billion. On the energy expenditure side, a host of laborsaving and home entertainment equipment has contributed to increased sedentary behavior. These are lifestyle issues that can and should be addressed in efforts to prevent overweight and obesity.

The emphasis on preventing weight gain in the first place is an important goal because the behavior change that is required to prevent small increments in weight is likely to be easier to sustain than the behavior changes required to achieve and maintain large weight losses.

A second way to think about obesity prevention is to focus on preventing weight regain following treatment-induced weight loss. Since two out of three adults in the U.S. are overweight or obese, we do still need to concentrate on treating them. And in general, treatment is effective. Most treatment results in people losing weight. The problem is that when treatment ends, individuals tend to regain what they lost: two thirds of it by the end of a year, almost all of it within five years.

So the maintenance of weight loss is important, but it is difficult, and there is a complex interaction of physiologic, environmental, and psychological factors that contributes to the problem. For example, we know that weight regain is more likely to happen when individuals have less contact with health care providers, and thus less positive reinforcement to maintain changes they have made in diet and exercise.

The problem is compounded when overweight or obese persons have unrealistic weight loss expectations. Most obese patients start weight loss programs expecting to lose 25 percent of their body weight. Most non-surgical treatment results in more moderate weight loss of five to ten percent

of body weight. The mismatch between expected and actual weight change can lead to demoralization, and then poor maintenance of the behavioral changes necessary to sustain weight loss.

Prevention also needs to focus on changes in environmental factors, to make them more conducive to appropriate dietary and physical activity behaviors, e.g., nutrition education, healthy food preparation programs, advocacy to improve the quality of fast foods; physical exercise programs, modification of the physical environment to facilitate walking and other regular physical activities.

At the University of Rhode Island, we developed a two-year study to test a healthy lifestyle approach to weight management.

The approach was intended to help people lose weight, but especially to see if we could help subjects keep up the behaviors that would allow them to maintain their new lower weight over time. This was a multi-disciplinary program including an exercise physiologist, nutrition counseling, and behavior counseling based on the Transtheoretical Model of Behavior Change developed by Dr. Prochaska at URI. The study enrolled 190 adults, of whom 144 remained in the study to the end. They were predominantly middle aged who were overweight or obese at baseline. Subjects were treated with a combination of supervised and unsupervised activity, with a focus on decreasing dietary fat.

We were concerned about subjects losing clinical contact over time, when they might be expected to regain weight. To address this issue the program was designed to start with three months of intensive clinical contact, followed by three months of gradually reduced clinical contact. At six months the subjects were randomly assigned to two follow-up programs administered by mail. One group received generic information on diet and exercise; the other received individualized information about how well they were doing with the behavioral change strategy they had been taught. The follow-up was conducted for another 12 months, and then we went back to subjects at the two-year mark to see where they were. This is what we found:

- (1) Subjects achieved a moderate weight loss, about six kilograms on average, roughly six percent of body weight. There was a slight regain over time.
- (2) Changes in dietary and exercise behaviors were observed, with caloric intake decreasing over time. Changes were maintained over the two-year study period.
- (3) Subjects reported they were doing about 16 more minutes of exercise per week at the end of two years. Increased treadmill time at the end of the study period tends to support these reports.
- (4) However, the project did not see a difference in outcomes between the two follow-up groups, which were supposed to test the efficacy of continuing clinical contact on maintenance of behavior change.
- (5) What the data did show was that subjects who were more successful in maintaining changed

behaviors and weight loss had fewer self-identified barriers to behavior change, were more adept at removing barriers, and generally exhibited higher levels of confidence or self-efficacy. Understanding the role of these elements may help in the design of future preventive interventions.

In conclusion, four factors would seem to be important for obesity prevention: (1) educating the public to the seriousness of obesity as a health problem, (2) getting people who want to lose weight to set more reasonable weight loss goals, (3) focusing more of our efforts on weight gain prevention, and (4) addressing environmental barriers and disincentives to behavior change.

Steven L. Gortmaker, EdD, MS, PhD
Director, Society, Human Development & Health
Harvard School of Public Health

We know that overweight is increasing among children. It is increasing among all children, in all regions of the country, in urban and rural areas, among rich and poor, both sexes, and all ethnic groups. It has been increasing for 30 years, and especially in the last decade. In addition, there are ethnic and socio-economic disparities and these are widening.

While we all know that weight gain is due to energy imbalance, i.e., taking in more calories than we burn, the fact is that the obesity epidemic is being driven by rather small changes in the energy balance on any given day. An extra can of sugar-sweetened beverage per day can add about 15 pounds weight over the course of a year. Little changes like that can make a substantial difference, and that makes obesity hard to study, from both a prevention point of view and an intervention point of view.

In addition, individual behaviors are strongly influenced by context. As you have just heard, the growth of the fast food industry, the increased size of portions, the increasing lack of opportunities to be physically active, all create a context in which children have less of a chance to lead healthy lives.

In the early 1990s, we created Planet Health, and interdisciplinary health promotion curriculum for use with middle school students in the Boston area. The objective was to develop a risk-reduction curriculum based on current scientific knowledge that would be sustainable in school systems at low cost.

In developing the project we spent a lot of time talking with school system personnel to assure that the curriculum could be taught by existing teachers and was compatible with the primary educational aims of the schools. We decided to focus on just a few educational targets where there was a scientific basis for the prevention: improving food nutrition, reducing television screen time, and increasing physical activity. And we wanted to develop a curriculum that was liked by both teachers and students.

The educational material is taught as part of the standard curriculum in different subject areas, e.g., social studies, language, arts, math, and physical education classes. And the Planet Health curriculum is consistent with the curriculum framework in multiple states across the country. The

community-based participatory process we followed was necessary to accomplishing these aims, and essential to translating science into future action.

Intervention components included: (1) teacher training in use of the Planet Health curriculum, (2) a two-week TV reduction campaign called “Power Down,” and (3) wellness sessions for teachers. This last was an important part because teachers are also interested in their own health.

The project has funding from the National Institutes of Health. We spent several years developing the curriculum, several years testing it, and then we did a randomized controlled trial involving 1,400 middle school children in the Boston metropolitan area. At the end point of the trial we found that use of the curriculum reduced obesity among girls in the intervention vs. control schools, and television viewing time among both boys and girls.

Our focus emphasized active things students could do: healthy eating, reducing television time, increasing moderate and vigorous physical activity. We really didn't talk about overweight or obesity at all because of the stigma associated with them. And since children are constantly growing, it isn't very useful to tell them to maintain their weight. So we kept the focus on positive behaviors. There are indications there may also have been a reduction in eating disorders.

The U.S. Centers for Disease Control recently conducted an independent economic analysis of Planet Health, to see whether they could project the effect of reducing obesity on subsequent mortality, morbidity, and loss of work among the population to whom we delivered the intervention. Of course, studies of this type involve making a number of assumptions. But one advantage of the approach is that it took account of the lifetime potential reduction of time lost from work of subjects who are only children today. The analysis found that Planet Health was a cost-effective program, with costs of \$14 per student per year, compared with costs of things like screening and treatment for hypertension, at \$4,300 per quality adjusted life year.

The City of Boston is expanding use of the Healthy Planet curriculum in Boston Schools, and Blue Cross/Blue Shield of Massachusetts has allocated \$3 million, over the next four years, to implement Planet Health in afterschool programs. Planet Health has now been distributed to 48 states and 20 countries.

Question: There is a lot of conflicting information about nutrition. What is an ideal diet?

Katz: Sources of information about optimal diet include randomized clinical trials, studies of evolutionary biology, and transcultural studies, e.g., epidemiologic observational studies of changes in obesity when populations emigrate from one country to another. An optimal diet would fall within the ranges published by the Institute of Medicine. In my opinion, 25 percent of calories from fat, 20 to 25 percent of calories from protein, and the bulk of calories from carbohydrates—with the following caveats: (1) that fats should be polyunsaturated or monounsaturated, and carbohydrates should be in the form of whole grains, fruits, and vegetables.

Question: When people talk about “personal responsibility” it sounds very much like blaming

the victim. There are a lot of environmental impediments to physical activity and healthy eating. We need to start working on those, especially with people who are outside the public health profession but do things like urban planning.

Samuelson: The issue of self-responsibility is key. But without awareness, without access, without portability, there will be no opportunity for self-responsibility. We need to provide an appropriate infrastructure, eliminate hunger, and provide for the economic needs of the population. There is no such thing as self-responsibility until we have collective responsibility.

Question: I am concerned about the effort and attention being devoted to weight loss, in part because the benefits of weight loss have been overstated, and in part because the money could be better used for other prevention programs, especially those that focus on early childhood.

Katz: Of course it is better to prevent than to have to treat. Nevertheless, when we have 65 percent or more of the population overweight or obese, we cannot not respond to that fact. We know, beyond the shadow of a doubt, that excess body weight at the population level is associated with chronic disease risk. We know that there is an association between excess body fat and adverse health outcomes in children and adults. American Cancer Society study has demonstrated a link between BMI levels and all causes of mortality in a cohort to 960,000 people who were followed for 15 years—including every type of cancer the study looked at.

You may be suggesting that the relative benefits of lifelong weight control vs. the cost of interventions to cause weight loss once obesity has occurred are not comparable. Doubtless that is true. Long-term weight control is the goal. But I don't think these are mutually exclusive goals. Moreover, there are clear cases where treatment of obesity is primary prevention for severe medical conditions. As a clinician I would certainly recommend weight loss to a patient with coronary disease, at risk of a myocardial infarction, or who had already had one MI.

Question: Would Dr. Gortmaker describe in a little more detail how the Planet Health intervention works to reduce TV screen time?

Gortmaker: The good news is that most of the time children watch TV, averaging about three hours a day, they aren't having a good time. They are actually killing time. The first thing we do is to ask them, in math class, to calculate how much time they spend in watching TV in a year. They love this because they get a really big number. Next, we ask them what they would rather do, and to set goals to replace TV time with things they would rather do. And they have no trouble identifying things they would prefer. Then we have a two-week TV reduction contest in which parents are involved. And as you know, it works. And there are practical things that parents can do if they get involved. The best approach is prevention, and one of the easiest steps is never to put a television set in a child's own room or bedroom.

WHAT WORKS IN SUBSTANCE ABUSE AND MENTAL ILLNESS PREVENTION

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The major emphasis of my remarks will be on research related to prevention of tobacco, alcohol, and drug abuse prevention, and particularly the work being done by our group at Cornell. But I will also say a few words about related research on school-based early intervention programs to prevent mental illness. We have interventions that have been tested and are recognized as being effective science-based early intervention approaches, both with regard to substance use and mental health. The challenge, in addition to continuing research, is to further the dissemination and implementation of our science-based programs.

Conceptually, the process in prevention research has involved trying to understand risk and protective factors involved in substance abuse, to design interventions that may be effective, and then to subject them to methodologically rigorous tests of efficacy. Research in the field began with small pilot studies, leading, over the past 20 years, to large randomized trials, most of which have been funded by the National Institutes of Health (NIH). The major target for this research has been children, primarily in school settings, although some comprehensive programs have used multiple intervention channels, e.g., schools, families, and community organizations, working in concert.

At the start, prevention research was based on the assumption that kids engaged in substance abuse behavior because they lacked information about their adverse health effects. The logical intervention, according to that way of thinking, was to provide education; for example, about health problems associated with tobacco use. Unfortunately, a great deal of research has shown that simply providing the facts is not sufficient for deterring kids from engaging in health compromising behaviors. Scare tactics, which involved trying to dramatize the facts, got kids' attention, but had no meaningful or lasting impact on behavior.

Prevention approaches that have shown promise focus on two models. First, trying to understand the social influences promoting substance abuse behaviors, and developing interventions that target these influence, in an attempt to deter kids from smoking, drinking, or using drugs. Second, more comprehensive competence enhancement approaches, designed to teach kids an array of self-management and social skills, and how to cope with social and environmental pressures promoting substance abuse. The Cornell Life Skills Training Program is an example of this latter approach.

The social influence model has typically involved several different components:

Psychological Inoculation. The idea, here, is that if you can make kids aware of the dangers of smoking before they entered middle school, they would be "inoculated" against the temptation to smoke when they reached 6th or 7th or 8th grade. Research has not demonstrated this approach to be particularly effective.

Normative Education. The purpose of this intervention is to make kids aware that most of their peers do not smoke, drink, or use drugs; and that substance abuse is not the norm. Normative education has been found to have a positive effect.

Public Commitment. This intervention is based on the assumption that if students stand up in class and make a pledge not to smoke, that this will take off some of the social pressure to smoke as a way of keeping up with their peers.

Social Resistance Skills. This approach involves alerting kids to high risk situations, such as going to parties, hanging out after school, or even going to the boys' bathroom, where they might experience pressure to smoke, and teaching them a set of pre-programmed responses, i.e., skills for actively resisting and coping with these situations. Research around the country has shown that this approach can show reductions in initial tobacco use by 30 to 50 percent for students in intervention classes vs. controls.

Most prevention research has focused on white, predominantly middle class populations, but over the last 10 years there has also been evidence that these techniques also work with a variety of populations, including inner city urban minorities.

The comprehensive approach is more broad based. Though it includes some of the components just described, the focus is on competence enhancement. Thus, while it includes normative education and training in refusal and resistance skills, it also incorporates training in self-management and coping skills, e.g., for coping with anxiety and how to make rational, well-informed decisions.

The Cornell Life Skills Training Program is our example of the comprehensive enhancement approach. It addresses a number of major categories of risk factors and identifies interventions designed to address these factors. It is a "universal" intervention program, meaning that it targets all students in a school, or class, not just selected students at special risk.

The program tries to teach students problem-solving and decision-making skills, because as they move through elementary school, and junior high or middle school, they will increasingly be called upon to make decisions at a time when peers are becoming more influential in the decision-making process. And adolescents, as we all know, are not necessarily the best guides in decision-making.

Many decisions at this age are based on fear and emotional responses. The program seeks to teach students to set goals for personal things they would like to achieve. It could be losing weight, it could be improving academic performance, it could be trying to get along better with other family members. We ask them to set a goal, to break it down into a series of shorter sub-goals, to focus on sub-goals, and monitor performance over time.

The program teaches kids cognitive behavioral skills to help them deal with stress and anxiety: how to communicate effectively and avoid misunderstandings; how to exchange greetings and brief social exchanges, which are great ways to help kids get over shyness; how to meet other

people and start and maintain a conversation; how to gracefully bring a conversation to conclusion, without cutting the other person off; and finally, how to give and receive compliments.

The program also teaches students assertive skills. These are focused, in the training process, on refusing offers or pressures to use tobacco, alcohol, and drugs, but clearly have applicability to a much wider range of domains. These kinds of interventions, used in the Life Skills Training Program and by other investigators, have been tested and shown to be effective.

We have arrived at the point where our program is typically run over a three year period, with training offered in 15 class periods in the first year, ten class periods in the second year, and five in the third. Although you can achieve initial effects after just one year, those effects tend to erode over time, whereas subsequent year “booster shots” tend to deepen and extent the preventive effect.

The program tries to keep lecturing or didactic instruction to a minimum. Experience has shown that interactive techniques produce the best results. It is important for teachers or peer leaders to facilitate group discussion, to provide positive reinforcement for achievements, and to provide opportunities for students to practice their new skills, both in and outside of class. Behavioral rehearsal in the classroom, with feedback on performance, has to be followed by extended practice outside the classroom. For this reason students are given behavioral homework assignments.

Various tests of the program in randomized trials have shown significantly positive results in different years and settings, with regard to smoking and drug use behavior. Similar research by others using some of the same types of interventions have proven very promising in the mental health arena. Randomized trials have demonstrated effectiveness in reducing aggressive behavior, anxiety, and depressive symptoms, and increasing competence to find peaceful solutions to everyday conflicts. Other studies have reported improvements in reading achievements and reductions in tobacco use and substance abuse.

After many years of conducting small pilot studies, and then large scale randomized trials with long-term follow-up to demonstrate continuing effects, we know that these interventions work, and the time has come to disseminate and implement these prevention programs in the real world. In doing so, however, we need to recognize a new set of challenges:

- (1) We need more research to understand the mechanics of how these programs work, for whom they work, and how to start tailoring “universal” programs to applications for specifically targeted populations.
- (2) We need more research into methods for assuring “implementation fidelity,” so that programs are not diluted in the field by an inadequate teacher or team leader training or program resources, i.e., to develop better teacher training models and provide technical assistance.
- (3) We need more research into methods for expanding school-based programs into programs based on comprehensive partnerships of schools, families, and community organizations.

We have made tremendous progress in developing effective tools. The prospects for public health are exciting.

WHAT WORKS IN PREVENTION AND CONTROL OF HIV/AIDS

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The New England AIDS Education and Training Center

The AIDS epidemic is getting to be 25 years old. I saw my first patient in 1982. Anti-retroviral therapy has been available for almost a decade. But even with years of knowledge, public education, and highly effective medication, we are still looking at a consistent 40,000 new cases every year.

In New York City, in the past three years, there has been a 17 percent increase in HIV cases. There are an increasing number of identified cases on college campuses. The fact that we are seeing an increase in sexually transmitted diseases is really disheartening because, if you have an STD, you have been exposed to HIV. People really haven't gotten the message that they need to protect themselves.

The good news is that we have many more people living healthy lives who are HIV positive. The bad news is that we have many more people in the population who have the potential to transmit HIV, either through sexual contact or IV drug use. Seven out of 10 people with HIV are sexually active, and anywhere between 25 and 50 percent are having unprotected sex.

Our youth are particularly at risk. Upward of 79 percent of kids are having intercourse prior to their 17th birthday, and in some urban settings sexual activity begins at age 12 or 13. This at a time when less is being taught about sex, and about HIV, in our schools. Clinicians are beginning to see kids presenting with rectal gonorrhea because they have become part of a movement to have unprotected anal intercourse to preserve (in the case of girls) their virginity. In my daughter's school, a boy and a girl were expelled because they were caught doing fellatio out behind the school. There is a problem here.

Men and women between the ages of 22 and 45, in communities of color, have had increasing numbers of new HIV cases over the past several years. African-American women, in particular, are overrepresented in the new case numbers. New cases of HIV are also rising among women over 50, possibly due in part to the introduction of Viagra.

There have been two recent changes in federal health policy which bear on this increasing number of people with HIV, both new cases and people living healthy lives with HIV. First, there has been a shift in funding from population-based prevention programs to prevention programs targeted to HIV-positive people, to reduce the risk of transmission at the source. Second, there has been a concerted effort to downplay, and reduce support for, using condoms—despite the fact that they are effective in preventing HIV transmission. This is part of the Administration's overall preference for promoting sexual abstinence, but doesn't fit well with the new prevention focus on HIV-positive individuals, 70 percent of whom are sexually active.

The Centers for Disease Control (CDC) calls this new focus the Advancing HIV Prevention Program (AHP). So the mandate that comes with our federal funding is to shift our energies from previous target populations (at high risk of contracting HIV), i.e., minorities, gay men, women, drug users, to persons known to be HIV positive and their partners.

There is a certain amount of wisdom in a new focus on reinforcing safe sex education among patients who are HIV positive, but it is questionable whether this should be done at the expense of programs targeted to the larger population at risk of contracting HIV. If prevention money flows primarily into the AHP program, a lot of our other programs will be effectively defunded. However, those of us who receive our funding from the CDC and other federal sources know that this shift in focus is not optional.

One of our colleagues has developed a simple medical model for understanding prevention: (1) reduce the source of infection, (2) decrease the susceptibility of people with the potential to become infected, and (3) reduce risk-taking behavior. Compare this with the new ABC model of prevention being promoted by DHHS under the current Administration: Abstinence first, Be faithful to your monogamous partner, Condoms as a last resort. I can fully embrace abstinence as part of a prevention program. This disease is 100 percent preventable. It is one of the few diseases where, if you don't participate in a risk behavior, you can't get the disease. We teach abstinence. But I think it is naive to believe that it is sufficient.

Condom use needs to be part of the prevention strategy. Sadly, information on condoms has been removed from the CDC web site, except for one small study whose main point is that condoms are not 100 percent effective. Well, no one would argue that condoms are 100 percent effective, but they are significantly effective. In Thailand, massive campaigns around the use of condoms have resulted in a sharp decrease in new HIV cases. In a U.S. study of discordant couples, i.e., where one of the partners was HIV positive and the other was not, couples who reported consistent use of condoms had zero percent transmission rates. Both male and female condoms have proven effective.

We need to reinvigorate educational programs in the schools about HIV/AIDS and prevention methods. The program we have just heard about is very promising in that it teaches kids the skills they need to be effective and empowered decision-makers; skills which are essential if we expect people to negotiate their sexual decisions, i.e., whether to have sex at all, or to practice safe sex. However, negotiating sexual decisions is not currently taught in any school curriculum I have seen. Unless we begin to start teaching negotiating skills around sex we will see increasing numbers of HIV cases in the coming years.

Question: Does seeing many people living successfully with HIV reduce people's concern about contracting the disease?

Gallagher: There are clearly new populations of young gay men who are actually seeking HIV. There is not the same fear of AIDS that we saw in the 1980s. When we first started in this field, most of the populations that had HIV were surrounded by a population who were terrified of getting it, and did everything in their power to avoid transmission. Now we have taken the face of HIV off the airwaves, and we certainly haven't reminded people that, even though the death rates have fallen dramatically,

they are still huge, and people are still dying every day of HIV. So yes, some people think that to be part of their peer group they need to try and get HIV. Some are desperate enough that they feel that getting HIV will give them access to services that they never had. And some people just feel that it is no big deal, they have these drugs now, if I get it, I get it. And a lot of that has to do with the fact that we as a society have de-emphasized the impact of HIV—on all of us.

KEYNOTE ADDRESS: THE SCIENCE OF PREVENTION: TRANSLATING DISCOVERY INTO POLICY AND PRACTICE

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President, The Institute of Medicine

It has been a quarter century or more since we first began thinking seriously about prevention. In that time we have made significant progress in developing a scientific basis for developing, testing, and even implementing health promotion and disease prevention interventions. Nevertheless, we face challenges to the science of prevention.

The first big challenge is to find a way to persuade people to do what is in their own best interest, and enable them to do what they should without blaming the victim. It is a big challenge for those of us who are interested in translating the science of prevention into reality. The science of prevention is partly about what would make a difference if we could change things, and partly about how you effect in practice what you already know should be done. There is no doubt that the second part—the science of implementation, the science of social change, the science of individual behavior, the science of political will—is much the harder.

A second challenge centers around the invisibility of success when preventive interventions work. We don't count the number of people who have avoided heart attacks because they ate a better diet, were physically active, and kept their cholesterol levels under control. We don't count the number of children annually who did not die of measles because they were immunized. For that matter, we don't count our failures to implement preventive measures either. We attribute their mortality to disease. For those of us who are interested in translating the science of prevention into action, we need to make the “invisible” visible.

A third problem is that sometimes, what we know is good for health comes into conflict with other values, other preferences, other ideologies. We may have a very clear sense of the value of condoms in preventing HIV transmission, but it is hard to break through the resistance that comes from other belief systems. We may have great confidence that fluoride is effective in preventing tooth decay, but there are towns that will not fluoridate their water supplies because it conflicts with their idea of what a community should or should not do to protect health. There are groups in society that refuse to immunize their children because they think it is “unnatural.” These are serious challenges to prevention even when the science is solid. How do we cope with the obstacle, everything from the person who is convinced that wearing a motorcycle helmet is an infringement on liberty, all the way up to those who, for religious reasons, are opposed to condom availability and distributions? Those of us in prevention need to face up to, understand, and learn how to work

around the personal and ideological preferences and beliefs that inhibit successful prevention.

Fourth, there is a fundamental disconnect between how we regard other interventions. Bill Whitmer described a program this morning where employers are looking to prevention as an opportunity to reduce costs. Nothing wrong in that. Steve Gortmaker described a program that was highly cost-effective, which is great. But consider this, we only ask therapeutic interventions to be cost-effective, but we ask preventive programs to be cost-effective and to reduce health care costs. That double standard is an added handicap that advocates for prevention should not have to face. The standard for evaluating both types of interventions should be the same: value for dollar invested. The return from investments in prevention are abundantly clear. They need to be communicated, over and over, to the public, to policy makers, to health plans.

Finally, we need to understand that problems such as obesity are not only the problems of individuals who are overweight, they are problems for the whole community, moving the balance of calorie intake and energy expenditure to a whole new spectrum, society-wide. And if we can demonstrate how to do that in New England, we can set a standard for the nation.

Question: There are so many economic incentives favoring investment in treatment over investment in prevention, what can we do about that?

Fineberg: Well, there are some great examples of that problem. If a drug company can invest in developing a drug to treat HIV, which people have to take four times a day for the rest of their lives, or the same amount in a vaccine which they take only once in their lives, which option would they be more likely to choose? Which is why we have many effective drugs for HIV and no vaccine. The market forces that produce incentives for development and production do not always align with what we need for prevention.

When we looked specifically at the issue of vaccines at the IOM, one of the ideas we considered was creating counter incentives for products that produced a “socially useful benefit.” More generally, when we think about health expenditures, it would be useful to assess them in terms of “value per dollar invested in prevention.”

And what we invest in prevention should be administered the usual health care system, but part should be allocated for community-based prevention. If we start looking at expenditures in terms of “health investments” instead of “disease treatment” we would begin to put the dollars that are needed into our public health infrastructure, in our prevention programs, and the results would be tremendous.

Another challenge to prevention is the delay between investment and return on investment. The return is real, but it can take a long time, so you need to work with decision-makers who have the vision to see the far horizon.

Question: What is the IOM's agenda for the next three to five years?

Fineberg: The Institute of Medicine is part of the National Academies in Washington. They are

outside of government. They were originally chartered by Congress in 1863, as an advisory body to the Congress. The IOM now sees its mission as advisors to the nation on health. Basically, our agenda is as wide as the agenda for health in the U.S. Some of the issues on that agenda include studies relating to: health insurance coverage for all Americans, cost and affordability of health care, quality and safety of health care, disparities in health care, new research strategies, and technology impacts on health care.

Question: How do we translate what is learned by the academic community into what is practiced in communities on an everyday basis?

Fineberg: That is the \$64 trillion question. I think we can propel the translation part if we are much more invested and systematic in our evaluation of the things we are doing today, and getting feedback regularly and routinely into the hands and practices of those who are delivering health care. The big challenge is adoption and diffusion of innovation, and there is no magic bullet, no one single thing we can do to make that happen.

Someone made the observation, concerning efforts to facilitate adoption of the electronic medical record by doctors, that “free is not cheap enough,” because there is other, non-monetary resistance to adoption. It isn't just a matter of making it easily available. The trick is to match the right incentive to the right innovation. Some will be promoted by financial and other incentives, some through education, and some through systems redesign and incorporation of simplified appropriate procedures. We are going to have to push on all of these fronts—and more.

Question: What can we do to achieve substantive collaboration between health professions and other professional groups whose work affects community health?

Fineberg: Any time you set up a specialized agency or professional organization, you are going to have an inherent focus on that agency's mission, profession, expertise. At least one can keep making enlightened reminders. There are also mechanisms that can be used to facilitate collaboration, such as interagency task forces, or creating academic centers with a specific problem focus.

Question: Has the IOM given any consideration to endorsing a single payor health plan?

Fineberg: An IOM report issued last January outlined two desiderata for a solution to the health insurance problem in the U.S., and compared various models, including the single payor model, on how they would perform with regard to each of the desired attributes.

My personal opinion is that the most significant obstacle is political, and by political I mean finding a solution that will be acceptable. Every other civilized country has solved this problem. The United States has not. But solutions do exist. We just haven't found the increments to get us across the line.

WHAT WORKS IN THE CONTROL OF OVERWEIGHT AND OBESITY

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This overview of issues related to overweight and obesity will focus on the science underlying our understanding of the problem, workable interventions, and what we need to do to make further progress.

Everyone has become aware that obesity is a major problem in the United States and this awareness is part of the science we bring to the problem. There isn't going to be the energy, the willingness, to invest resources into solving the problem without broad awareness.

The Centers for Disease Control has developed a series of slides with simple descriptive statistics that show that, year by year since 1985, the U.S. has been engulfed by an epidemic of obesity. Three states have an over 25 percent prevalence of obesity. This information is now widely understood by decision-makers in business and government, and by the public at-large.

Some of our data come from telephone surveys, and these may actually underestimate the problem because respondents tend to say they are a little taller, or a few pounds lighter, than they actually are. When we look at studies where participants are actually weighed and measured, we find that around 33 percent have a Body Mass Index (BMI) over 30, i.e., are obese. And if we add persons who are overweight, a BMI between 25 and 30, we are up to about 64 percent. Even this may be an under-representation, since approximately 30 percent of those who are asked to participate don't come in to be weighed and measured, and they are likely to include some of those who are most seriously overweight or obese.

Moreover, many people in the 18 to 25 age range are still under a BMI of 25, but are not at their optimal weight, and are at an appreciable risk of putting on 30 to 40 pounds as they grow older, which will put them at increased risk for serious disease. Obesity is not a problem for just certain groups in the population. There may be 5 percent of the population who can eat all they want and sit around all day and never gain weight. Almost of us, however, have to pay attention to healthy diets and active living.

The data for children are particularly striking. Since the 1960s, there has been a three- to four-fold increase in the prevalence of overweight in children aged 6 to 11. African-American boys had the lowest prevalence of overweight in the sixties, but now they, and African-American girls, have a much higher prevalence than their white counterparts, up to about 25 percent.

There are various kinds of studies, various sorts of evidence, that help us address the problem. There is no one kind of study that will provide the answers on its own. There are several kinds of basic science studies that provide useful information: test tube studies, animal studies, and controlled feeding studies. However, the research which will be most useful in helping us understand

how we as individuals and as a society can control obesity will come from epidemiologic research and randomized trials.

There is a strong bias toward randomized trials in the medical community because they are designed to control for confounding variables. But the reality is that in most situations, the bigger the problem gets, the harder it is to identify and control all the confounding variables. Another limitation of randomized trials, applied to broad social problems, is that they tend to focus in on individuals: their conditions and response to direct personal interventions, e.g., testing subjects and controls for effectiveness of blood pressure medication. But while the individual is important as a primary decision-maker, he or she is surrounded by other factors, such as:

The social environment, including the family, which has an enormous impact on adults, and especially on children, in terms of life activity and nutritional patterns.

The physical environment, including things like recreational facilities, safe walking and bicycling routes, store location, vending machines, etc., has an important influence on how we live our daily lives.

The macro environment, which includes government agencies and policies, culture, advertising, the media, establish important parameters for individual understanding and choices.

What emerges from this is recognition that no one type of research method is sufficient to look at all the factors involved in designing strategies for obesity control.

Experience in dealing with the smoking epidemic has been instructive for those who are trying to tackle the problems of overweight and obesity. The turning point in smoking control came with the *1964 Surgeon General's Report on Smoking and Health*. Smoking rates had been rising steadily up to 1964, but within a year or two of the report there was a small decline, especially noticeable if compared with the projected increase that would have occurred if past rates had continued. This experience showed the importance of information, whether about smoking and health, or weight and health. It is essential that we get this information straight, and that we convey it to the public in a straight and accurate manner. There are many motivated people who just need the straight information to take action.

In the area of healthy weight, just getting the relationship between weight and health straight has been a bigger problem than it might seem to be. You can get a sense of this from the variety of messages that have been conveyed to the public. For example, the 1959 Guidelines for Health were essentially derived from Metropolitan Life Insurance Company data. For females five foot eight, and males five foot ten, the desirable weight for minimal mortality was said to be 132 to 147 pounds. The guidelines shifted a little in 1983, but took a huge jump in 1990. In that year, according to the U.S. Department of Agriculture's guidelines for Americans, one could now weight 30 pounds more, and that being above the average weight was actually healthier than being below average weight. Unfortunately it wasn't true.

It didn't make sense to us at the time because, if you think of the major causes of death in the

United States—heart disease, cancer, stroke, diabetes --four of our top four causes of death were clearly related to overweight. So how could it be better to be above average weight than to be below it?

The guidelines were based on analysis of data from the Nurses Health Study, which showed that the relationship of weight to mortality was a U-shaped curve. However, closer analysis of the data disclosed that many of the people in the curve, in the low-weight end, were a mix of heavy smokers and people with chronic conditions, e.g., lung disease, heart disease, cirrhosis of the liver, etc.; in fact, people who were at higher risk for mortality. If you did a more careful epidemiologic analysis, and control for smoking, and for people who are thin due to illness, the supposed health advantage of people at the other end, above average, evaporated. This illustrates the importance of getting the data straight.

It has also been important not to use mortality as the only end point. In fact, mortality is the most difficult end point to see because we have all this reverse causation. So it is also important to look at incidence of disease. Diabetes is one of the most direct measures of adverse consequences of being overweight. For example, one study showed that increasing BMI increased the adjusted relative risk of developing diabetes. Even persons with a BMI of 24 had an almost three-fold greater risk than persons with a BMI under 23. Again, this emphasizes that many people who are in the so-called healthy range are still not at their optimal weight.

The guidelines do not currently take into account the degree to which a person's weight changes since age 20. If you are kind of stocky all your life, and you are holding your weight, that's not so bad. But if you were thin at age 19 or 20, and then you put on 30 pounds, you might be at the same weight as the stocky person, but you will be at considerably excess risk. So it is important to keep an eye on one's weight history.

As a result of these kinds of data, in 1995, the National Weight Guidelines were adjusted back down to what they had been in 1985, and are now aligned with World Health Organization healthy weight ranges: BMI of 18 to 25, healthy; 25 to 30, overweight; 30 and over, obese.

But there are two caveats. First, just looking at weight alone is not enough. Men in their 50s and 60s, in particular, can maintain their weight but increase their waist size three or four inches, which is very bad for their health. Second, it is important to look at weight change since early adulthood, to help define the best weight for an individual. And obviously, these healthy weight objectives are for prevention. If a person is already seriously overweight, it will be almost impossible to go back to the weight they were, because even the bones have gotten bigger over the years just to carry around the extra weight. So these are not goals for people who are already obese.

There has been a lot of coverage in the press lately about a book saying that overweight and obesity are a myth; that it is all a question of whether you are fit; and that if you are fit you can be fat and fit. In fact, there are very few people who are substantially physically active and also obese. But that misses the point. Data from the Nurses Health Study, based on 20 years of follow-up of over 100,000 people, of whom 10,000 have died by this time, found that: Yes, there was a 50 percent increase in mortality to people with low activity levels, across all weight categories; but, at each level of physical activity, there is a two-fold excess risk of death if you are obese. Clearly, both

factors are important.

What do we do about the epidemic? In one sense it is very simple: it's calories eaten vs. calories burned. But how do we control calories eaten and how do we burn more. One of the major debates has been over the mix of foods we eat. Does diet influence body weight?

Until just the last couple of years the dominant view in the American nutrition community has been that only fat calories made you fat; that you couldn't get fat eating carbohydrate calories. However, that belief has no scientific basis. On the contrary, there is a lot of evidence that a calorie is a calorie, whatever its source. But there is still an issue around whether or what mix of fats, carbohydrates, and fiber in a diet make it easier to control calorie intake.

Low Fat Diets. Some cross country studies have shown a positive correlation between percent of energy from fat and prevalence of overweight, but this is less conclusive than one might think, because it involves comparing rich countries like the U.S., with poor countries like India and China, which don't have abundant food resources to begin with.

The notion that all fat was bad and all carbohydrates were good, reflected in the USDA pyramid, was based on a meta analysis of randomized trials which had looked at the relationship between calories from fat and body weight. However, most of these studies were short term and not well controlled. When we looked only at studies lasting one year or more, we found that there was a difference of only one quarter kilogram, on average, between high fat and low fat diet groups. Clearly, the percentage of calories from fat is not the critical issue.

One of the most successful studies done in this area looked at the so-called Mediterranean diet: 35 percent of calories from fat; lots of vegetables, healthy fats, whole grains. People on this diet maintained fairly good weight loss, on average, over a 24-month period. A comparison group on a low fat diet was not able to maintain their weight loss over the same period.

Low Carbohydrate Diets. A relative newcomer in the field is the very low carbohydrate diet. Looking at short term (6-month) studies, low carbohydrate diets work better than low fat diets. But again, a couple of longer term (1 year) studies show that the difference between them over time narrows considerably.

What we are seeing is that people can lose weight on almost all types of diet, but they tend to regain weight. Moreover, one of the things that has become clear from all the dietary studies is that there are large individual differences in response to diets. For example, there is a group in both the low fat and the low carbohydrate studies who don't lose any weight and we are not sure just why.

Soda Consumption. There is a new body of evidence that soda consumption has adverse effects on body weight. Data from Planet Health observational studies addressed soda consumption in relation to increase in weight and BMI. Over a period of 19 months they found that there was a 60 percent higher onset of new obesity in children who were consuming one serving of sugar sweetened drink per day. An intervention study in England randomized 20 school groups between a campaign to reduce drinking carbonated beverages and a control group with no campaign. The intervention group reduced their intake by almost one serving per day and had an almost 30 percent lower

incidence of new obesity.

Finally, data from the Nurses Health Study looked at consumption of carbonated drinks sweetened with sugar. Those in the study with increased soda consumption had gained weight, those with reduced soda consumption lost weight. Moreover, for each serving of soda per day there was an almost doubling risk for Type II diabetes. So we are talking about more than weight gain: there are also serious health conditions at stake.

Physical Activity. There is an extensive literature demonstrating that increased physical activity has a modest beneficial effect on weight loss, but an important benefit in maintaining weight loss. An eight-year prospective study in China showed that in households that acquired a non-motorized vehicle, such as a bicycle, household members exhibited a slight decrease in weight. In families that acquired a motorized vehicle, men experienced a substantial increase in weight. Finally, TV watching is one of the most consistently strong predictors of overweight in both adults and children.

The Role of Health Care Providers. There is clear evidence that overweight people are receptive to weight loss advice from health professionals. In one study, the odds of trying to lose weight were three times greater in physician consultation groups than those who were not counseled; 89 percent of obese patients who were counseled by physicians were trying to lose weight vs. 52 percent of those not being counseled. Unfortunately, the rate of physician counseling is very low; only about one fifth of overweight patients were counseled according to a survey of physician practices.

Data from a wide variety of research indicates that there is not one single thing we can do to control the epidemic, but many little things, and that we need to do all of them: programs in schools, worksites, physicians' offices, the media; modifying the physical and food environments; surveillance programs to evaluate and report progress; and economic analysis to make the case for investment in weight control interventions.

In the end, is it possible to control the epidemic? There is some evidence suggesting that obesity is not an inherent part of life in developed nations. Only six to eight percent of Swedish and Japanese women have a BMI over 30, compared with 34 in the U.S. There are differences in degree of obesity by educational level, highest in high school graduates, lowest in college graduates. Why is that? It may be social control, family support, the immediate environment. Or it may be related to genetic factors as well. But this difference in responses is one of the reasons why there is controversy over which diet works.

Glycemic Load. Another area of research about dietary composition has been about glycemic load. One of the few randomized trials done in adolescents looked at lowering the amount of rapidly absorbed carbohydrates from refined starch and sugar. At the end of one year, the experimental group (lowered glycemic load) lost 1.3 BMI units and was still losing weight. The control group, on a low fat diet, gained .7 BMI units. In addition, the experimental group showed an improvement in insulin resistance, which is important. In Singapore, a comprehensive nutrition program is integrated with the school curriculum and is part of a nationwide program. As a result, there has been a two percent drop in prevalence of obesity in the schools, and a 30 percent drop in mortality from

coronary heart disease in the community.

Question: What do you think about the new 2005 dietary guidelines which are about to come out?

Willett: The new guidelines are an important step forward because they put the emphasis on the type of fat being more important than just percent of fat in the diet. The key message is: Choose your fats carefully, choose your carbohydrates carefully; avoid trans fats, avoid food high in saturated fats; on the carbohydrate side, focus on high fiber whole grains instead of refined starch and sugar.

PANEL: BUILDING STATE COALITIONS FOR PREVENTION

Moderator: Patricia Risica, DrPH
Assistant Professor, Brown University
Institute for Community Health Promotion

The progress of NECON's obesity initiative is an excellent example of the movement we can make in prevention, from awareness to research, and in developing guidelines for intervention. Five years ago, when advocates from the Rhode Island Public Health Association testified on obesity before state legislators, their response was largely amusement. They didn't take the issue seriously. Since that time there has been enormous change in the media and among the public.

I am pleased to moderate today's discussion on coalitions for prevention because we all realize that successful implementation of what we learn from research requires collaboration among public, private, and community organizations. Mr. Whitmer described worksite coalitions, devoted to promotion of a healthier workforce and reduced health care costs; Dean Wetle talked about coalitions for preventing influenza; Dr. Gortmaker described school-based coalitions to strengthen student health-related decision-making skills; and here in Rhode Island, the Coalition for Healthy Schools is bringing about broad-based change in the state's school systems.

Our panelists this afternoon will tell us about coalitions for prevention in their states, how they were established, how they worked, and lessons learned.

William Gerrish, MBA, Director
Office of Planning, Communications, and Workforce Development
Connecticut Department of Public Health

Building and working through coalitions has become increasingly important for the Connecticut Department of Public Health. Those of you in public health can appreciate how hard it is to accomplish public health goals and effect change; and how difficult it is, if not impossible, for the Department to do so by itself. So we have actively been pursuing strategies to build and work with coalitions to try to integrate our programs at the community level.

One example of coalition-building has been in the area of asthma control. In 2001, the

Department undertook development of an asthma management protocol directed toward integration and standardization of asthma care, whether by health care providers, day care centers, schools, or other relevant sites. This was the first such protocol in the nation and won a Vision Award from the Association of State and Territorial Health Officials (ASTHO).

The protocol was presented at a statewide meeting, the Connecticut Asthma Summit, involving a broad array of partners and stakeholders. Participants were asked to work with the Department on dissemination and implementation issues, and a number of task forces were set up to address specific issues, e.g., clinical medicine, provider education, public education, environmental considerations, etc. And we charged task force members to develop a state asthma management plan incorporating the new protocol.

The State Asthma Plan has been completed and we are now working on implementation down to the community level. Because we have relatively weak county government structures in Connecticut, the Department decided to use the state's 10 Bioterrorism and Public Health Preparedness regions as the framework for dissemination and implementation. We have met with all the local health directors in each region, presented the plan, secured feedback, and are now scheduling information sessions with a broader array of stakeholders.

Part of our effort has been to assess the level of resources and services that are available for asthma management in each region. The State does have some money available for this initiative, and the Department is offering funds to communities, within the framework of the plan, which may be invested either in promoting adoption of "best practices," or in strengthening community infrastructure for asthma management.

Also, we have just completed a three-year strategic plan addressing health care needs of the homeless, again utilizing a coalition model. The Department created a Health Care Advisory Committee for the Homeless, and we are now in the process of setting up subcommittees that can start implementing interventions around the issue.

Another example is our viral hepatitis program. We had some very limited funding to create this program, enough to devote one full-time equivalent staff person, and developing a coalition approach has been a way of stretching what we can achieve with these dollars. The design has been to involve stakeholders who can help us integrate our program into other existing programs, e.g., ongoing STD services, and working with the Department of Corrections on a variety of issues and policy changes.

And obviously, the whole public health preparedness effort is based on the premise of interagency cooperation. Through the administration of federal bioterrorism grants we have strengthened our relationships with traditional partners, such as local health departments, hospitals, and other health care providers. But we have also established partnerships with new partners, such as law enforcement, homeland security, the postal service, and other important partners when you are talking about being prepared for natural or man-made catastrophes.

Finally, from my personal perspective, the strengthening of my own relationships with other public health personnel, through the National Public Health Information Coalition, and especially

with colleagues in New England, has been very helpful. When something comes up, any of us can get on the phone and compare notes and share experience. Just this week, for example, we held conversations about how the states were going to handle the flu vaccine shortage. This kind of collaboration is extremely helpful.

**Christine C. Ferguson, JD, Commissioner
Massachusetts Department of Public Health**

I want to raise a couple of issues around coalition building, and then go off script and talk a little about obesity.

We have been very successful in Massachusetts over the past couple of years in assembling the expertise to develop and disseminate best practices. One of the things we did was to establish the Betsy Lehman Center for the Promotion of Patient Safety and the Prevention of Medical Errors. And the first issue which the Center took on was weight loss surgery. We are blessed with having some of the best practitioners in the field in Massachusetts, and in a very short time we brought some of these folks together and put together a statement of "best practices and outcomes," and we are in the process of disseminating them. It was very interesting to see people from very different institutions and backgrounds, that are very competitive, come together to develop something they were all going to actually adhere to in terms of practice.

We have also carried out a very involved process over the last six months, looking at how the issue of substance abuse affects all of the services we provide statewide, looking at the continuum of services, beginning with prevention, and involving the courts and correctional systems as part of our substance abuse delivery system, in addition to the usual treatment modalities and settings.

The process has also involved hundreds of people across the state coming together and talking about the impact of recent budget cuts, as well as where we need, strategically, to focus our efforts going forward. I don't think we would have been as effective in the arena if we hadn't built and worked with these networks as we have.

I look at the public health function as a kind of glue that holds service delivery systems, and the people who are involved in them, together. It is a very thin glue at the best of times. And we took a big hit when we lost a lot of our tobacco programming money. We lost a lot of people who were supporting regional efforts around the state. We are still reeling from some of the impacts and we are trying very hard to rebuild and resupport these networks.

The other thing we are doing is working with communities across the state to increase awareness of the relevance of public health. The problem is that people in public health tend to talk to people in public health. And the coalitions that we build tend to be coalitions of people who already believe what we believe. This as opposed to really reaching out and pulling people in who are not part of our normal constituencies.

In Massachusetts, we are in the process of going through the state and spending a lot of time working on the development of what people expect from public health, what we actually do, and

how to communicate that work to people effectively. The flu vaccine situation may actually give us an opportunity to do this kind of thing. It provides a way of saying that what we do is not only about individual services, who is and who isn't going to get vaccinated; it is also about looking at health on a population basis. And having these conversations with folks all around the state, and, in effect, deputizing them to spread the message, can go a long way to empower people's understanding of public health and what we do.

On obesity: When I was appointed to be commissioner of public health in Massachusetts, I weighed 100 pounds more than I weigh now. I felt very uncomfortable at the time, being a commissioner of health and so overweight.

I have to tell you that it has been extraordinarily interesting watching the evolution of this issue, having experienced it also on a personal weight loss basis. I gave a speech yesterday, at a big Blue Cross gathering on childhood obesity. I have a surgical implant (not a gastric bypass) and it has been interesting to hear people talk about whether or not it is the morally right thing to do; whether I was correct to have surgery as opposed to losing weight "the hard way."

So I talk about this a lot, because I think it is important to understand the judgment issues that are related to alcohol and drug abuse are the same kinds of judgments that are being applied to obesity. We can have these very academic conversations about what works. But if you are an obese person, especially if you are 50 or 60 pounds over where you are supposed to be, the possibility that you might be able to lose weight is so slim, and your hope is so limited, that all these conversations are like being constantly barraged with what a terrible person you are.

So I made this great speech yesterday, and we had a good conversation, good interaction, and in this morning's paper a good write-up. But I want to read you the headline that the editor put at the top of the story: DOC SAYS SICK KIDS ARE NO FAT HEADS. From a conversation all day about how we have to encourage kids, and work with kids, we get that kind of headline!

I will say to you, as someone who is very concerned about this, that we have an enormous responsibility on this issue to be working with people in a positive, non-judgmental way. And more than non-judgmental. I was an athlete as a kid. I gained my weight as an adult. But if you are a kid facing obesity, it's hard to believe that cutting down on cookies and Coke might help you weigh a pound less has any meaning.

We have a lot of evidence, we have a lot of information; some things work, some things don't work as well; but we have to be really careful how we work with kids around this issue. Because we are going to affect these kids for the rest of their lives; affect them, not only about how they lose weight, but also in what we are saying about them because they are not thin. And this headline is the epitome of what the problem is.

Because, if it comes down to name calling of kids who are fat, those kids are not going to be thin adults. They will stay at home. They don't have to leave the house today, and they won't in the future. They will stay at home. They will remove themselves from society. So I am just saying: There is a lot more than just evidence we need to be looking at.

Patricia A. Nolan, MD, MPH
Director of Health
Rhode Island Department of Health

Public health is about what we do as a society, to assure the health of all of the people in society. It is not about what we do as health departments, or as researchers, or as physicians, but what we do collectively.

I want to describe a couple of interactive exercises that we have had in Rhode Island recently, and some of the lessons we can learn from them about approaching obesity and some other prevention issues.

One successful long-term coalition has been the Coalition to End the Scourge of Tobacco. And here in Rhode Island we have succeeded in getting a complete worksite smoking ban bill enacted. That leaves us with just a few little places left without a ban, but we are working on that. The lessons learned from our tobacco initiative can help us in working together in the area of overweight and obesity, that is, in changing our physical activity and eating habits.

A key lesson is that advertising works really well, and if we don't have advertising on our side, to counter the advertising on the other side, we aren't going to achieve our goal. Advertising is important because it is one of the driving forces affecting how we make decisions. One of the first things our coalition helped us do was get a ban on tobacco advertising on TV. And that, in itself, gave a very important message: "Hey, this stuff is no good!"

And we need to keep in mind that it is the stuff that is no good, not the people who use the stuff who are no good. And the same message applies when we are dealing with physical activity and nutrition.

A related issue is the question of taking personal responsibility. I agree that we are all responsible for our health. But we have to remember that we live in an environment that actually drives our behaviors and choices more than we realize. We could ban TV advertising of tobacco because virtually everyone understands that tobacco is bad for your health. But we don't have that option with food, even though we are surrounded by all kinds of food products, because food is a necessity.

We talk a lot about various kinds of diets, the Atkins Diet, the South Beach diet, etc. One of my co-workers added up what it costs to follow one of those diets, and by his projection it is about three times what is available for food to a low income individual. To eat a healthy diet is going to cost somewhere between ten and fourteen dollars a day. Most poor families can't spend that kind of money. So it's very important to recognize that where groceries are, and what you can buy cheaply, is what drives people's food choices.

I'd like to talk about two coalitions we have developed in Rhode Island that have really helped us. The first is the Worksite Wellness Council. The Council has been important to the Department for the access it gives us to the business community, and that access allows us to do

three things. First, we are able to talk with employers about their employee benefit plans, and the kinds of coverage they can put in their plans that will improve employee health.

Second, we can talk with them about ways of making the workplace a healthier physical environment, offering healthier food in the cafeteria, etc. There are many opportunities for making the workplace a healthier place. Third, we had a really good coalition effort around offering healthier lifestyle information in the workplace, encouraging physical activity. Adults spend an awful lot of time in the workplace, too much of it sitting down.

Then, there is the Healthy Schools/Healthy Kids Coalition. The idea behind the work of this coalition is that schools should not just be a place where kids learn about health, but be an environment that creates a whole set of messages in our society about healthy living. For example, we need to find better approaches to encouraging physical exercise, and not only in physical education classes. Our schools are eliminating recess in order to devote more time to academics, but that means less time for exercise. Children don't walk to school any more because it is too time consuming, or unsafe. So we need to be thinking about schools as environments in which teachers and students live healthier lifestyles.

Going back to my initial point: If public health is about what we do as a society, we have to think about the entire environment in which we make our individual decisions. We can't just approach it one life at a time.

Donald Swartz, MD
Director of Maternal and Child Health
Vermont Department of Health

Almost half of the residents of Vermont are beyond the range of prevention in that they already have at least one chronic condition. In the over age 65 group, 80 percent have at least one chronic condition that influences day-to-day living. The cost of maintaining medical services to address these conditions is enormous and crippling, and strains our capacity. Obviously we can't deprive people of the medications or services they require to continue living productive and useful lives, or of the resources needed to provide those services. Which means there is nothing left over to put into upstream prevention programs. This is a fact of life.

We are fortunate, however, in having a Commissioner of Health who comes to the job with experience in management and health care systems, and a Governor who supports him in the belief that our job is to make things happen, not simply accept things as they are. And the result of their efforts has been the Vermont Blueprint for Health.

The Blueprint takes a broad focus on prevention, not just primary prevention but secondary and tertiary prevention through out the lifespan, to maintain optimal health and function for all members of the population.

I loved the definition of health that we heard earlier today: having fun, or having the capacity to have fun. I understand that definition. It is very personal, very individual, and it reflects the values of the person in question; not the values of society or a judgmental view of somebody else. And for

health systems to work, they have to support the individual in achieving his or her health goals, consonant with his or her own values. There are some responsibilities that go along with that, of course, responsibilities which apply to the individual, and responsibilities that apply to the system, and they are obvious.

With this philosophy in mind, the Blueprint is designed to do for every Vermonter what we already know to do around health care and health maintenance. And this includes identifying and removing barriers that keep us from doing the things we know we can and should do.

For example, we all know the poor track record for achieving A1C levels for folks who are diabetic. There is no question whether it is important to do that, no question whether providers taking care of diabetics want to do that, and feel that they should do that. And yet we only make it half the time. What is wrong?

Clearly, there is something about the way we do health care that prevents us from reaching the goal. And that barrier is what the Blueprint is intended to remove. Because if we do the things we already know how to do, we don't just create financial benefits for the future, we create financial benefits within this budget cycle. We can begin to catch up with the enormous costs of health care and can even begin to find some extra cash to start doing prevention. And it is important to recognize that the same skills and tools that are required to make sure we do what we know how to do for people with chronic conditions, are the same skills and tools that apply to well child care, adult health maintenance, etc.

Where do coalitions come in? We need coalitions because it is obvious that we don't know all we need to know in public health, to achieve their goal. For example, we don't know a lot, on our own, about information systems. Yet information systems are critical to managing care, if we are to do all that we know how to do for all people.

The provider needs to know, at the time he is seeing the patient, what the patient needs to have according to our guideline-based plan. The patient needs to know what to expect. The patient needs to understand what the various options are for treatment so that the selection of treatments can be made. The system needs to know who is out there, who requires services, how resources should be distributed, on the basis of real information. A case in point is the flu vaccine. If we had an appropriate data system we would know how many doses were needed and where; physicians would know how many of their patients were high risk so that they could call them in and enormous benefit could be accrued.

The purpose of our coalition is to establish active collaboration among folks from a wide range of disciplines in Vermont. We have all three health care plans at the table; Medicare and Medicaid; academic medical centers; hospitals and the Hospital Association; the Medical Association; purchasers of health care; the Business Round Table; academic public health people—all contributing to the process. And we have organized them to address six areas of importance:

Self Management. How do you teach people, and provide them with the tools they need, to understand and to make the decisions about health that will get them where they want to be?

Provider Practice. What are the tools that providers need to be partners in this process on behalf of individual patients?

Information Systems. How do we establish a system to facilitate optimal patient management and provide information needed for allocating health dollars?

Health Care Systems. The system has to reward and support the kinds of behaviors we want to go forward, which it doesn't do now. We have brought together all the payors and the purchasers of health care in Vermont so that we can discuss the issues, moving toward what will be a virtual single payor system—not because we have only one payor, but because all of the payors will be on the same page.

Lifestyle. We also have community people in the coalition who are looking at what can be done in each community to support a fit and healthy lifestyle for their residents. This includes things like the built environment. But more important to me is the development and expression of community values promoting a healthy life.

Government. We also have several branches of state government that provide services sitting around the table, with the Governor there, interacting around a broad definition of health, to make the collaboration work.

Collaboration around the Blueprint also affects the way we are doing things within the Department of Health. Like every state health department we are heavily reliant on categorical grants from agencies like the Centers for Disease Control, which inform us what we can do in the areas of obesity, tobacco control, heart disease, cancer, HIV, diabetes, etc. What we are insisting on now in Vermont, since so much of chronic disease management is generic, is that these generic elements be identified and addressed in each grant-funded program, regardless of category. In that way, the different programs can each develop high levels of expertise in these areas and efficiencies can be spread across all of the Department's activities.

We are also looking at cross-cutting risk factors, which are distinct from our chronic disease programs, but affect them all. Thus, we have a special tobacco control program, but it is charged with responsibility for being a resource to chronic disease programs, providing expertise and assistance around smoking cessation in particular, and social marketing techniques more generally. Similarly, our obesity initiative is free-standing, but supports our cardiovascular, diabetes, and other chronic disease programs.

So, multiple collaborations around the goals and guidelines of Vermont's Blueprint for Health are well underway, within the Department and across the state, and we find this a very exciting prospect.

Comment: I want to thank the panel for describing some very successful coalitions, but I would like to point out some pitfalls that can stand in the way of successful coalition-building. First, cases in which organizations are recruited and their names look good on the coalition letterhead, but they never do anything together. Second, cases in which the only reason a coalition was formed was because it was mandated in a

federal or foundation grant, but there was no central purpose, and a lot of time was wasted on the process of trying to figure out what the coalition was for. Third, cases in which all the natural allies formed a coalition, but left out other organizations which had to be part of any community of solution. The most successful coalitions are those made up of organizations with strategically recognized shared mutual interests.

Nolan: People have to work together. Sometimes you get to work with people who are just like you. This can be unexciting, but it is also energetic and supporting. And sometimes you have to work with people with whom you disagree, or who have totally different value sets, and you have to figure out where you can actually come together. We achieved that in working on a workplace smoking law. There are actually a lot of opportunities for collaboration. Sometimes your coalition partners turn up in the most interesting places.

Ferguson: We have had some unexpected and exciting experiences in Massachusetts in developing a strong collaborative relationship between public safety and public health; natural partners, in some ways. For example, you have to make a community safe from both a public health and a public safety perspective if you expect business to come into the community with investments.

Comment: The one thing to bear in mind about coalitions, of any kind, is that they are productive if they are based on mutual benefit. If you can find mutual benefit, you can do amazing things.

The specific requirements mandated in categorical grants can become shelters behind which people can hide if they don't want change. But if there is a mutual benefit to all the people involved in the grant program to do something different, there is real scope for creativity, and often the modifications can be sold to the granting agency, which after all, is also interested in success.

But we need to be careful about "identifying the enemy." It was easy in the tobacco wars because there is nothing good about tobacco. But that is a rare case. With regard to MacDonalds, for example, they aren't trying to poison Americans. They are trying to make a living selling to people the things that people want. They do have, in the context of their commercial interests, a desire to do the right thing. And it is on that basis that we ought to engage them.

Question: I have a question for Dr. Ferguson. You recently reorganized local health into regional coalitions for emergency preparedness. Will these be mechanisms for working on other public health issues?

Ferguson: Absolutely. We don't have a county system in Massachusetts, but 351 cities and towns, each with a separate health department. The state has now been divided into 15 regional areas for public safety and public health, for emergency response. This emergency preparedness infrastructure-building process has involved the court

systems and the emergency response systems, which also come into play in substance abuse and other areas. We can use this process to strengthen the public health infrastructure, and I have to say, the cities and towns in those regions have done a phenomenal job of coming together.

Question: We hear a lot about employers being dissatisfied with rising health care costs, and their sense that they pay more and more to cover their workers and get less and less in terms of positive health outcomes, and that they are ready to pull out. How do we deal with that?

Swartz: In Vermont, it is the business community that is driving our initiative. They understand quality, and they understand "zero defect" thinking. We are not used to thinking that way in public health, but you can apply some of the same approaches. We can be precise about getting A1C levels in diabetes on time, and in an enormous number of criteria that drive the costs of care. And business people understand that systems have to be shaped to achieve goals. They understand that a system which is clearly not doing what you want it to is a system that needs to be remodeled and overhauled.

Ferguson: I have a somewhat different perspective. I think these things go in cycles. I heard this kind of thing in the 1990s, before managed care came in. And now I am beginning to hear it again. It is a numbers-driven actuarial kind of thinking. It is driven by frustration over the collision of individual responsibility, corporate responsibility, the cost of health care, and technology. So we are in another one of those cycles, when we have to go out and talk about the value of investments, both health and economic benefits, of comprehensive health care.

Question: Where are the media? Why are there no reporters here to pass on the information at this conference to their readers?

Response: It is too bad that we don't have any reporters here, but it is difficult to get them to cover this kind of event. The media are usually interested only in those types of events which involve conflict and controversy. So there is a lot of room for us to engage the media and inform them about our activities.

Nolan: The media and the health care system don't have the same mission, but there is a lot of interest in health care issues in the media, and they can be effective communicators of public health arguments, discussions, and actions, where there has been energetic activity to report. Our tobacco control efforts are a case in point.

