SECTION 2. A COMPREHENSIVE PUBLIC HEALTH STRATEGY AND THE FIVE ESSENTIAL COMPONENTS OF THE PLAN: A PLATFORM FOR ACTION

Summary

Section 2 presents a vision of cardiovascular health (CVH) that is achievable through a comprehensive public health strategy. Such a strategy will guide the needed action, from preventing heart disease and stroke among healthy people to treating and managing these conditions when prevention has failed. To develop the strategy, an action framework was developed that outlines the present reality, a vision of the future, and six broad intervention approaches that can help achieve this vision. These six approaches address the two overarching goals of *Healthy People 2010*, which are to increase quality and years of healthy life and eliminate health disparities, as well as the specific goal for preventing heart disease and stroke.

The action framework helps to distinguish two widely recognized aspects of intervention—health promotion and disease prevention—as they apply to heart disease and stroke. It also describes the nature and magnitude of the target population for each intervention approach. These descriptions illustrate a striking imbalance between the lack of investment in prevention—when risk is still low—and the massive expenditures for health care once recognized cardiovascular disease (CVD) has developed. A comprehensive public health strategy must address this imbalance.

The meaning of "public health" is central to the concept of a comprehensive public health strategy and is clearly stated in the 1988 Institute of Medicine report, *The Future of Public Health*. That report defined public health and its core functions and emphasized that state public health agencies have the primary responsibility for these functions. The report also described the potential roles of other parties, including health agencies at federal, state, and local (i.e., county/city) levels; health care providers; other partners in and outside the health sector; the public at large; and representatives of specific population groups or particular target settings.

To proceed from a comprehensive public health strategy to a practical plan of action requires that specific recommendations be developed and concrete action steps be proposed. Accordingly, recommendations and related action steps are presented in five essential areas that constitute the core of this plan.

Introduction: A Vision of Cardiovascular Health for America

A challenging vision of cardiovascular health for the United States is a nation whose residents are heart-healthy and stroke-free. Can we reach this vision from the present reality? What will the CVD burden be like in such a future? By what means can so radical a change be achieved? What roles will public health agencies and others need to play? What action areas must be addressed in developing appropriate recommendations?

To effectively address these questions, we must develop a framework for addressing the questions, understand the role and responsibilities of public health agencies, and define the major action areas so that the most pertinent issues can be identified and corresponding recommendations formulated.

A Framework for a Comprehensive Public Health Strategy

Developing a comprehensive public health strategy requires considering the full scope of a public health problem and the array of potential approaches to controlling it. It also requires recognizing the present reality and having a vision of the future that includes the most favorable conditions that can result from effective public health action. Bringing these four elements together in one action framework provides guidance and helps ensure that all relevant aspects are addressed. The framework developed for the *Action Plan* provides a useful point of reference for considering the recommendations and proposed action steps (see figure on inside back cover).

This framework is intended to represent the full scope of CVH in all its aspects, including the progressive development of CVD and the corresponding opportunities for CVH promotion and CVD prevention. It reflects the extensive research and practical experience of the past 50 years and more, which have provided a solid understanding of the causes of CVD and identified a wide range of opportunities for intervention. The framework also indicates where intervention approaches can be applied, through greatly expanded public health efforts, to advance from the present reality toward the vision of the future.

The Present Reality

The present reality of the burden of heart disease and stroke, especially in the United States, was documented in Section 1.[1,2] Underlying this burden are the long-term development of atherosclerosis and high blood pressure, conditions that are widely prevalent throughout our society. The causes begin with unfavorable social and environmental conditions that foster adverse behavioral patterns and result in a high prevalence of major risk factors. Inadequate measures for preventing, detecting, and

controlling risk factors lead to first CVD events (e.g., heart attack, heart failure, stroke) from which many victims die suddenly, while others survive with a high risk for recurrence and often with disability. Many victims ultimately suffer fatal complications or cardiovascular decompensation months or years after the initial event.

A Vision of the Future

We envision a future when the epidemic of heart disease and stroke has been arrested and reversed. This future includes social and environmental conditions that are favorable to health, a predominance of health-promoting behaviors, a low prevalence of risk factors, fewer and less frequently fatal CVD events, rapid recovery of full functional capacity for victims who survive, and good quality of life thereafter until death from whatever cause. The critical question is, how do we move from the present reality to this vision of the future?

Intervention Approaches

The answer can be found in the six-fold array of intervention approaches available today. First, policy and environmental change addresses fundamental social and environmental conditions that operate early in CVD development; this approach can also influence later phases of the disease process (e.g., by improving accessibility, use, and quality of health care).[3] Second, behavioral change, especially population-wide, can reduce the effects of adverse social and environmental conditions. It can also reinforce the approaches that follow (e.g., by fostering community awareness and support for heart disease and stroke prevention). The third approach—detecting and controlling risk factors—has been a mainstay of CVD prevention and is needed continually once risk factors are present, to prevent both first and recurrent CVD events. (This approach comes too late in the process to prevent the risk factors themselves.) The fourth approach is emergency care and acute case management for those victims of first events who survive long enough to receive intervention. This approach continues to apply when survivors of previous acute CVD events experience recurrent ones. The fifth approach is rehabilitation, which should be applied following most acute events, and long-term management, which continues throughout the remainder of a victim's life until the sixth approach, end-of-life care, may be required.

Healthy People 2010 Goals

The action framework establishes a clear link between the proposed comprehensive public health strategy and *Healthy People 2010* goals.[4] Together, the six intervention approaches will help achieve the two overarching goals of *Healthy People 2010*, as well as the specific goal for preventing heart disease and stroke. The Healthy People 2010 Heart and Stroke Partnership divided this goal into four separate goals based on the different intervention approaches that would be needed to achieve them.

Target Population

Each intervention approach has the potential to affect millions of people in the United States.[1] The total U.S. population of 281 million people stands to benefit from policy and environmental change and population-wide behavioral change. The more than 100 million people with risk factors (e.g., high cholesterol, high blood pressure, smoking, obesity, diabetes) could benefit from effective risk factor detection and control. In addition, the hundreds of thousands of victims of first major CVD events each year can gain from acute or long-term case management and, potentially, from end-of-life care.

Interventions with the greatest impact on the population as a whole are those applied in the earliest phases of CVD development. To treat victims of heart disease, stroke, or other cardiovascular conditions is clearly to intervene late in the disease process. For those who die suddenly without warning, it is too late to have any benefit. Today, only a few cents per person per year are invested in the most far-reaching intervention approaches, whereas thousands of dollars per person per year are spent in efforts to treat established risk factors, rescue the victims of acute events, restore function and reduce risk for recurrent events among survivors, and provide end-of-life care. There is a need and opportunity to support a continuum of care, from the whole population to the individual victims of CVD, but we as a nation are not doing so. To attain our vision of the future and achieve the applicable goals of *Healthy People 2010*, a change in the balance of investment between early and late intervention is needed. A comprehensive public health strategy to prevent heart disease and stroke must aim for greatly increased application of the earliest intervention approaches, while working toward assurance that appropriate services of high quality will be accessible and used by all those who continue to need them. In the vision of the future, that need will be substantially reduced.

Finally, the action framework offers a clearer understanding of CVH promotion and CVD prevention, as these terms are defined and used in the *Action Plan* (see Section 1 and Appendix A). CVH promotion is intended to prevent risk factors (goal 1) and includes policy and environmental change and behavioral change, especially at the population level. CVD prevention applies to subsequent phases of CVD development and includes primary and secondary prevention. Primary prevention is intended to prevent first clinical events by detecting and treating risk factors (goal 2), whereas secondary prevention follows the first event and, for victims who survive, seeks to restore full functional capacity and reduce the risk of recurrence (goal 4). Goal 3, early detection and treatment of heart attacks and strokes, is part of CVD prevention and falls between primary and secondary prevention.

The Three Core Functions of Public Health

For many people, addressing the meaning of "public health" and clarifying its essential role in protecting society from such chronic diseases as heart disease and stroke may be helpful. The 1988 IOM report, *The Future of*

Public Health, was a critical assessment of the nation's public health system by the Committee for the Study of the Future of Public Health.[5] The findings of that report provide an important perspective on what will be needed for a successful public health strategy to prevent heart disease and stroke. The following excerpts illustrate this point.

- **A definition of public health:** *Public health is what we, as a society, do collectively to assure the conditions in which people can be healthy.*
- **A key barrier to public health action:** *Health officials have difficulty communicating a sense of urgency about the need to maintain current preventive efforts and to sustain the capability to meet future threats to the public's health.*
- **The report's overall appraisal:** *. . . this nation has lost sight of its public health goals and has allowed the system of public health activities to fall into disarray.*
- **The needed response:** *This report conveys an urgent message to the American people. Public health is a vital function that is in trouble. Immediate public concern and support are called for in order to fulfill society's interest in assuring the conditions in which people can be healthy.*

Especially relevant to the development of the *Action Plan* is the IOM report's formulation of the three core functions of public health: ". . . the core functions of public health agencies at all levels of government are assessment, policy development, and assurance." Assessment refers to the obligation of every public health agency to monitor the health status and needs of its community regularly and systematically. Policy development refers to the responsibility of every public health agency to develop comprehensive policies that are based on available knowledge and responsive to communities' health needs. Assurance is the guarantee of governments that agreed-upon, high-priority personal and community health services will be provided to every member of the community by qualified organizations.

Each of the recommendations in this plan is readily identifiable with one of these three core functions or addresses requirements for public health agencies to fulfill them. The recommendations also reflect many of the perceptions about the roles and relationships of public health agencies and other entities in the IOM report. Two points are especially relevant. First is the scope of participation needed to achieve public health goals. Private and voluntary organizations and individuals must join with government entities in actively contributing to the functions of public health. Second, state public health agencies have primary constitutional responsibility for public health functions. This premise is reflected in this plan's development and the expectation that these agencies must have a central role in implementing its recommendations.

In this respect, as in many others, the views of the five Expert Panels that helped develop the *Action Plan* closely matched those expressed in the 1988 report. They also reflected agreement with the conceptual framework described here. Subsequent to the work of the Expert Panels, two new IOM reports on the present and future of public health in the United States have been released, and both of them strongly reinforce

the recommendations presented here.[6,7] The first, *Who Will Keep the Public Healthy?*, focuses on new requirements for educating health professionals for the 21st century. It presents an ecological model (i.e., "a model of health that emphasizes the linkages and relationships among multiple determinants affecting health") as the essential backdrop, both in concept and in practice, for addressing future health challenges. The framework guiding development of the *Action Plan* is such a model. Further, the newly formulated goals and objectives for educating health professionals closely mirror the recommendations for strengthening capacity of the public health workforce.

The second report, *The Future of the Public's Health in the 21st Century*, builds on the 1988 report. It emphasizes a broad view of the "public health system" that encompasses the governmental public health infrastructure as well as other potential partners, specifically the community, health care delivery system, employers and businesses, media, and academia. This report also explicitly embraces the vision of the nation's health expressed by *Healthy People 2010*: "healthy people in healthy communities." Topics addressed in the report include "adopting a focus on population health that includes multiple determinants of health; strengthening the public health infrastructure; building partnerships; developing systems of accountability; emphasizing evidence; and improving communication." The congruence between recommendations of the *Action Plan* and the IOM's recent reassessment of what is needed to strengthen the nation's public health system is striking.

Potential Roles of Partners

The *Action Plan* recognizes the necessary scope of participation in public health activities expressed in the 1988 IOM report and highlights the need for partnership, collaboration, and shared responsibility. Although state health agencies are primarily responsible for fulfilling the core functions of public health, the potential roles of private and voluntary organizations and individuals in public health activities are also important.[5] In anticipation of the involvement of various types of organizations and agencies, general descriptions of these roles are as follows:

- **Public health agencies** are responsible for leadership in convening all participating organizations and agencies to define and delineate tasks and to support the long-term implementation of this plan at national, state, and local levels. Agencies will participate in accordance with their particular missions, interests, and resources. Some are already involved through the Healthy People 2010 Heart and Stroke Partnership. State and local (i.e., county/city) health agencies and tribal organizations will help guide national implementation and take direct responsibility for action at their own levels.

- **Health care providers** are central to the provision of preventive services throughout the clinical phases of CVD. Addressing goals 2–4 of the Healthy People 2010 Heart and Stroke Partnership requires active collaboration with providers, third-party payers, and

other relevant partners to assure access to and appropriate use of quality health services by those who need them.

- **Other health-sector partners** will help implement the plan at national, state, or local levels, as appropriate. Their roles include contributing to detailed implementation plans, raising public awareness, and supporting legislative and regulatory action to fulfill the plan's policy goals.

- **Non–health-sector partners** represent such areas as education, agriculture and food production, community development and planning, parks and recreation, transportation, and the media. These partners can contribute different perspectives, as well as additional resources, to help implement the plan and are clearly essential for success.

- **The public at large and representatives of specific groups or settings** are critical parties to public health action of any kind. Engaging these parties is also essential to the plan's implementation and success.

- **All interested parties and stakeholders** should be included in implementation, and mechanisms for their involvement must be established and maintained.

Five Essential Components of the *Action Plan*

The third requirement for a comprehensive public health strategy is defining the action areas in which recommendations are needed. An independent Expert Panel was convened to address each of five components considered essential to this plan—taking action, strengthening capacity, evaluating impact, advancing policy, and engaging in regional and global partnerships. Each component is best characterized by brief statements from the five panels, indicating their perspective on their charge and the theme of the resulting recommendations. The linkages of these five components form an integrated plan (see Figure 2 in Overview). Each panel's recommendations are presented in Section 3. Details of the planning process and the premises that guided each panel's work are outlined in Appendix D.

- **Taking action:** Putting present knowledge to work (Expert Panel A).

  Perspective: Acting now on what is already known must be the first priority. The greatest need is to implement the most promising policies and programs for heart disease and stroke prevention immediately and to the fullest extent feasible. Effective communication and innovative leadership, partnerships, and organizational arrangements are required.

  Theme: Federal, state, and local public health agencies urgently need explicit mandates and adequate resources to effectively implement

policies and programs to prevent chronic diseases and to arrest and reverse the continuing national epidemic of heart disease and stroke.

- **Strengthening capacity:** Transforming the organization and structure of public health agencies and partnerships (Expert Panel B).

  Perspective: Effective action to prevent heart disease and stroke requires transformation in how public health agencies are organized. Strengthening the competencies and resources of the public health workforce for the needed tasks and managing the development, maintenance, and dynamic growth of effective partnerships are necessary for this change.

  Theme: Public health agencies must develop and maintain new capacities, including organizational arrangements and competencies for CVH promotion and CVD prevention. They also need networks of established and innovative partnerships to fulfill their mandates to prevent heart disease and stroke.

- **Evaluating impact:** Monitoring the disease burden, measuring progress, and communicating urgency (Expert Panel C).

  Perspective: Action must be guided by 1) continuous, comprehensive assessment of all aspects of the public health burden of CVD; 2) identification of opportunities for effective intervention; and 3) prediction and evaluation of the impact of actions taken. At present, essential information for planning and evaluation is often unavailable for priority populations or the population as a whole. The needed data include key indicators of social and environmental conditions; patterns of behavior; incidence and prevalence of risk factors, as well as the status of their detection, treatment, and control; and incidence of first and recurrent CVD events, case fatality, hospitalization, mortality, disability, and survival. Data sources must be enhanced and used more effectively for assessment, policy development, and assurance at local, state, and national levels. Major gaps in data systems must be closed (e.g., by monitoring incidence of risk factors and events), workforce needs must be met (e.g., for data collection, analysis, interpretation, reporting, and dissemination), and new data sources must be established (e.g., to expand coverage of populations at high risk and establish a network of sentinel communities for comprehensive population-based monitoring and surveillance).

  Theme: To guide and document progress toward national goals for heart disease and stroke prevention, public health agencies at all levels must establish and maintain substantially improved systems of data collection, analysis, and reporting. These systems must meet requirements for monitoring key *Healthy People 2010* leading health indicators, evaluating the impact and effectiveness of policies and programs, and communicating this information rapidly. All such systems must conform to the highest standards of data quality and reliability.

- **Advancing policy:** Defining the issues and finding the needed solutions (Expert Panel D).

  Perspective: The effectiveness of actions taken to prevent heart disease and stroke in coming years can increase as the foundation of evidence-based public health decision making is strengthened. A well-developed and continually updated agenda for CVD prevention research will support this growth. This research agenda must address critical policy issues through targeted investigations and scientific oversight; potential research settings, funding mechanisms, and evaluation plans require attention as well.

  For example, if atherosclerosis and high blood pressure (major causes of heart disease and stroke) were prevented by interventions that promote healthy lifestyles and environments in youth and throughout adulthood, such efforts would greatly reduce the risk of the current school-aged generation for developing CVD. Testing this hypothesis and others related to CVH promotion and CVD prevention depends on research that is strongly supported, effectively implemented, and adequately sustained. Although current knowledge provides a solid base for policy and practice, more research is needed. Methods for translating existing knowledge into practice must be improved; current and proposed policies and programs that create a demand and opportunity for healthy lifestyles must be evaluated; and new data, especially on social and environmental determinants of CVD, must be collected. These areas correspond closely to the U.S. Department of Health and Human Services priority area of Preventing Disease, Illness, and Injury (Priority X of the Research Themes and Priority Research Areas).[8]

  Theme: A prevention research agenda for heart disease and stroke must be developed and fully implemented to rapidly expand the nation's ability to translate existing knowledge into practice, while continually providing new knowledge to advance public health policy and create more effective programs.

- **Engaging in regional and global partnerships:** Multiplying resources and capitalizing on shared experience (Expert Panel E).

  Perspective: Regional and global partnerships in heart disease and stroke prevention present important opportunities for collaboration, as described in Section 1. Contribution of material and nonmaterial resources developed in the United States can be used to benefit global prevention efforts. Communicating closely with regional and global partners regarding their experiences with policies and programs in diverse settings will be beneficial to all and will return high dividends on investment. Contributions of research in other countries to policy development in the United States are illustrated in Section 1. The threat that CVD poses to human life is important nationally and globally, especially in poorer countries. The widespread occurrence of CVD in countries undergoing social and economic transitions, the unaddressed needs related to CVD prevention, and the need for

expanded use of early intervention approaches that are largely unfamiliar all underscore the value of global cooperation.

Theme: As action to prevent heart disease and stroke gains momentum globally, the United States must engage with regional and global partners to support their efforts and to gain from the resulting worldwide growth of knowledge and practical experience.

- **Linking the components:** Integrating the parts and forging a plan (All Expert Panels and the Working Group).

  Taking action will be limited initially by the capacity of public health agencies and partners to undertake the work on the scale required. ***Strengthening capacity*** will enable them to increase the range and intensity of action. ***Evaluating impact*** will contribute to development of more effective policies and programs, improved identification of best practices, and more rapid communication of new information to the public and policy makers. This activity will increase support for the first two components. ***Advancing knowledge*** through prevention research will accelerate policy development by supporting critical investigations on policy-related issues and by contributing to better ways to disseminate effective programs widely. Prevention research will become more common as research capacity is strengthened, data systems for surveillance and evaluation are improved, and policy makers increasingly recognize the value of such research. ***Regional and global partnerships*** will contribute to progress in each of the other four components through the shared experience of global partners who are addressing similar issues.

  Theme: Implementation of the plan must assure integration of all five components in a coordinated approach that recognizes and strengthens the potential linkages among them. Such integration and coordination are critical to effective implementation of the plan.

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