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Policy Perspectives

Government continues to have an important role in promoting cardiovascular health

Government investment has facilitated remarkable advances in cardiovascular science and medicine. It is vitally important that government engagement and investment continue as the US population faces unprecedented rates of obesity, diabetes, hypertension, sedentary behavior, and poor diet. Importantly, health disparities are increasing by geography, race/ethnicity, and income. These poor health metrics threaten to erode the tremendous gains in life expectancy achieved in recent decades. Government investment in population health, research, clinical outcomes, and access to care is critically important. We examine how government investment in research has promoted ideal cardiovascular health and can now promote the development of new and effective approaches to both cardiovascular health and better disease management for all. This paper responds to the commonly raised concerns of paternalism regarding government intervention and outlines the potential benefits and risks to society of government–industry partnerships and industry initiatives that may supplement government efforts in improving cardiovascular health.

Cardiovascular disease (CVD) remains the number 1 killer of American men and women.¹ With the aging of the population, the prevalence and cost of care associated with CVD conditions like heart failure and stroke will increase markedly over the next several decades.^{2–4} By the year 2035, nearly half of the US population is projected to have CVD, generating \$1.1 trillion annually in direct and indirect medical costs,⁵ a price our society can ill afford. Because of the growing national burden and persistent disparities in the rates of CVD, the American Heart Association (AHA) is committed to improving the cardiovascular health of all Americans while simultaneously reducing deaths from CVD.⁶ This is especially true for children who are increasingly exhibiting prediabetes, hypertension, and other risk factors for CVD and stroke at an earlier age.^{7,8}

Frequently, the AHA staff and volunteer leadership have to answer why the organization does advocacy and what the role of government is in addressing CVD and population health. Accordingly, the association's policy research department convened an expert writing group to answer these questions with this policy statement. The writing process began 2 years ago, but the need for this paper may be stronger than ever.

Government continues to have a significant role in promoting the health of the public and reducing the burden of CVD.^{9–12} The federal government and many state governments have the constitutional authority to enact, implement, and enforce laws to protect the health of their citizens. In the exercise of that authority, federal, state, and local governments play a critical role in scientific discovery, health care financing, delivery and quality of care, drug and device approval and regulation, prevention and population health, and food and water safety. Increasingly, the federal government is leveraging its payer role to drive improvements in health care value, with a large emphasis on CVD. Importantly, the actions of the legislative, executive, and judicial

branches; nearly all departments; and several independent establishments chartered by the United States Congress,¹³ as well as government corporations,¹⁴ have the potential to dramatically improve the cardiovascular health of our population. Government agencies also affect the broader, upstream, social determinants of cardiovascular health: education, housing, transportation, the environment, zoning and taxes, safe streets, and economic development. Moreover, government at all levels now is seeking to address the lack of health equity and persistent health disparities, immigrant health, and urban health. These efforts will positively affect the cardiovascular health of an increasingly large segment of the population.

Accordingly, the aims of this statement are to (a) outline how government investment in policy-relevant research has promoted ideal cardiovascular health and can now promote development of new and effective approaches to both cardiovascular health and disease management for all; (b) review how mandatory government regulation and legislation can improve cardiovascular health of the public; (c) address the commonly raised concerns regarding government intervention; and (d) describe potential benefits and risks to society of government–industry partnerships and industry initiatives that may supplement government efforts in improving cardiovascular health.

Government has historically improved both public health and cardiovascular health

In 1988, the National Academy of Sciences defined *Public Health* as “what we as a society do collectively to assure the conditions in which people can be healthy.”¹⁵ Often, government's role is to do what the private sector cannot or will not do to prioritize the welfare of the nation's population. The importance of government in promoting the public health has long been understood. Dr E. L. Bishop, the State Health Commissioner of Tennessee in 1928, wrote, “Can there be a more fundamental responsibility of government, considered from an economic standpoint alone, than the responsibility to serve and protect the public health?”¹⁶

Dr Bishop's prescient insight has been validated by the events of the ensuing century. The Centers for Disease Control and Prevention (CDC) review of the 10 greatest public health achievements of the 20th century (1900–1999) (Table 1) showed that all 10 achievements were directly influenced by governmental policy.¹⁷ As stated in the CDC document, the average life expectancy of a US resident increased by more than 30 years from 1900 to 1999, largely the result of National Institutes of Health (NIH)–funded research.¹⁸ Governmental role in both health insurance and population health has remained closely linked. From the early 20th century in the United States, federal and state governments have enacted laws to promote and protect public health, including immunization requirements and mandatory food inspection laws. The basic 6 services citizens should expect from local government include

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vital statistics, communicable disease control, environmental sanitation, public health laboratory services, maternal and child health services, and public health education.¹⁹ The implementation of income support through Social Security after World War II, combined with later universal health insurance from Medicare in 1965 for older Americans, has contributed to a dramatic improvement in the economic well-being and reduced health disparities for those over the age of 65 years in the United States.²⁰ Poverty fell dramatically for older adults, more than any other age demographic,²⁰ from 35.2% in 1959 to 9.7% in 2008.²⁰ Government and health care systems are interconnected with an observed relationship between access to quality health care services and health outcomes and trust in government.²¹ Especially during times of economic downturn and unemployment, government investment in health care can be an important safety net and complement to private sector investment to increase access to quality care. One study focusing on stroke showed that for every 1% increase in government health care expenditure, there was a significant decrease in cerebrovascular deaths.²² A nation's health strategy is intimately connected to its national security and economic well-being.²³

The government role in promoting cardiovascular health extends across the lifespan. For example, government-required pulse oximetry to detect critical congenital heart disease is now standard newborn screening in almost all states.²⁴ Government intervention in promoting cardiovascular health of the public involves numerous agencies across federal, state, and local government. For example, the Food and Drug Administration (FDA) was created in 1938 and has grown in prominence and impact over the subsequent decades addressing drug and device approval, food safety, and tobacco regulation. With the Family Smoking Prevention and Tobacco Control Act of 2009, Congress gave the FDA authority to regulate tobacco products that were determined harmful to the public. This law signified a major initiative in public health policy, resulting in a dramatic reduction of a primary cause of CVD.²⁰ Government was acting where industry, with its profit imperative, would not. Tobacco-related deaths in the early 2000s had reached more than 400,000 annually with tobacco-related health care expenditures estimated at \$96 billion. The FDA has since expanded its oversight on newer products, such as e-cigarettes and heat-not-burn products. In addition, state and local governments have been essential in creating comprehensive smoke-free air laws, funding tobacco control and prevention programs, and increasing excise taxes on tobacco.

Overall, local governments play a key role in affecting the places where people live, work, play, and worship. They manage police protection, recreational facilities, transportation, utilities, and public works.²⁵ They also play a key role in the funding and provision of education, a major social determinant of health. Decisions on zoning of neighborhoods and taxation on consumables and property, made at the local level, influence multiple sectors related to health such as land use, housing, transportation, public safety, and access to physical activity and healthy foods. Philadelphia has passed a landmark tax on sweetened beverages that will fund pre-K and recreational programs, highlighting the role of local government to impact health through policies and programs that involve multiple sectors and agencies.

Government investment in health research has produced significant health and economic returns

Government investment in biomedical research has been central to reducing the prevalence and progression of chronic disease, and thereby preserving and promoting human capital and productivity particularly later in life.²⁶ The NIH is the largest supporter of biomedical research in the world. Most people are both living longer and enjoying improved quality of life. The number of older Americans with chronic disabilities has decreased by almost a third.²⁷ The US death rate for coronary disease is 60% lower—and for stroke, more than 70% lower—than 3 generations ago, a result of both improved acute treatment of heart disease and enhanced preventive measures.²⁸

NIH-funded research is the primary source of new therapies for chronic diseases, many of which in 1950 were considered untreatable, and is also the genesis of screening and preventive strategies. In fact, much of the early decline in CVD mortality from 1969 can be traced to associations identified in the federally funded Framingham Heart Study (FHS).^{29,30} FHS informed the identification of risk factors (smoking, hypertension, cholesterol, exercise, and obesity) for coronary heart disease, and the development and dissemination of more effective interventions for risk factor management have produced marked improvements in public health. The results from FHS and other longitudinal studies inspired the development of landmark public health documents, such as the 1964 Surgeon General's report on smoking.

The declines in heart disease and stroke mortality began after large increases in the NIH research budget from 1956 to 1967, with a clear inverse correlation with a notable lag between NIH funding and disease specific mortality in CVD and stroke between 1950 and 2004.²⁷ The correlation between federally funded research and decreasing death rates has impact beyond health benefits, as the economic impact of NIH funding on decreasing death and disability rates for heart disease and stroke translates into higher tax revenues, estimated to be \$885 billion over 10 years.²⁷ Approximately 47% of the decrease in CVD deaths in recent decades has come from technological innovations, including revascularization in acute myocardial infarction, and secondary prevention with aspirin, β -blockers, statins, and heart failure therapies.²⁸ Approximately 44% of the reduction in CVD mortality is attributed to the improved rates of smoking, hypercholesterolemia, and hypertension.²⁸ These advances stem in large part from the substantial federal government investments in basic, clinical, and population science.

Government involvement and stewardship of population health will continue to be imperative in the complex social and environmental challenges of the future and the disturbing trends more recently of increasing CVD mortality and decreased life expectancy.³¹ Challenges of alcohol consumption, tobacco use, the opioid epidemic, poor diet quality, and sedentary living reveal the need for policy interventions in taxation, education, affordable housing, active transportation, and community and economic development. Over time, as government policy influences systems and environmental change, this framework will continue to evolve to achieve a healthier and safer society.³²

By addressing the social determinants of cardiovascular health, government has improved health and reduced costs

Government policies that protect cardiovascular health and encourage healthy behavior affect vast numbers of people, can be a worthy investment, and can be more efficient than education and individual action alone.³³ For example, government effort to remove *trans* fats from the food supply has been an efficient way to reduce health risk from partially hydrogenated oils. Educating individuals about limiting *trans* fats would be extremely expensive and would likely have minimal impact because complex behavior changes would be required. Limiting *trans* fats in the food supply shifts responsibility from individuals to the food industry, transforming the food supply with government monitoring and enforcement.³⁴ Other examples of the legitimate role of government in protecting health include requirements for safe water and air which are preferable to placing responsibility for reducing risk entirely at the individual level.

Government intervention with respect to lifestyle decisions conflicts with approaches emphasizing personal responsibility. Arguments are made, for instance, that smoking is a personal decision and government should not impose tobacco taxes. More recent debates relate to proposals to tax sugar-sweetened beverages.^{35,36} Rather than pitting government action against personal responsibility, government action should be viewed as enhancing personal responsibility by creating healthier environments as the default.³⁷

All branches of government at the local, state, and federal levels have necessary roles in improving cardiovascular health. Legislatures can establish beneficial laws; the executive branch can implement those laws through administrative action and state and federal regulatory agencies; the judicial branch can adjudicate disputes arising from enforcement of those laws and related regulations. Government has clear authority to act, especially when circumstances create a need to protect the public's health.

The argument that government public health policies infringe on personal freedom,³² pitting government intervention against personal freedom, has been debated since the passage of the first British Public Health Act in 1848, which gave local government control over local water and sewage systems. At the time, it was derided as "paternalistic" and "despotic."³⁸ The public similarly criticized the Licensing Act of 1872, which prohibited children from drinking alcohol in pubs.³² In our current society, clean drinking water, sewage control, and protection of children are viewed broadly as legitimate government responsibility toward promoting population health.

In most government actions that promote public and cardiovascular health, individuals have a choice. The key to success is to create a framework that empowers individuals to make the healthy choice. This may include government support in making healthier choices available, easier to obtain, and more affordable. The more modern approach to health intervention uses behavioral research to identify areas in which cognitive and emotional capacities could be leveraged in support of population health.³⁹ Good examples are pricing, placement, or promotion strategies for healthy foods and beverages to influence consumer purchasing behavior, and eliminating smoking in public places so that people who do not smoke are protected and smokers may be persuaded to quit. These policies lead to environments that promote healthy behaviors, reduce disease, and lower the burden on individuals and government of medical costs generated by poor health in the population.⁴⁰ This has to be balanced with potential overregulation by government that has the inadvertent consequence of stifling innovation intended to transform population health and well-being.

Population health policy must adapt and mature, becoming more robust, intelligent, and nuanced, to keep pace with the increasing complexity of medical science and health challenges. Obesity, virulent infections, nanotechnology, end-of-life care, access to medical therapeutics, globalization, and other currently unseen problems will dominate the population health debate for the coming decades. Citizens must demand the continued development and implementation of evidence-based health strategies.⁴¹

Government agencies track and improve cardiovascular health in multiple ways

Local, state, and especially federal government agencies facilitate and conduct disease and health behavior surveillance and promote cardiovascular health in several ways. These include the following areas.

Surveillance

Surveillance of our population's health at the federal level is primarily the responsibility of the CDC. No other agency or nongovernmental organization provides such complete relevant population health data. The agency has developed a comprehensive national surveillance data resource guide for tobacco-related surveillance databases (http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/pdfs/surveillance_evaluation_508.pdf) and for CVD and stroke prevention programs (<http://www.cdc.gov/dhdsp/pubs/guides.htm>) that researchers and government policy makers can use to access, analyze, and/or publish results from these data. Organizations like the AHA also can use these resources to assess progress toward their health impact goals.

The definitive National Health and Nutrition Examination Survey collects nationally representative data from the US population⁴² for assessing the prevalence of CVD and its risk factors (eg, dietary or physical activity patterns and tobacco use) and biometric measures (eg, biospecimen and DNA repositories). These data inform the allocation of public and private resources for CVD prevention and treatment. Researchers can use the National Health and Nutrition Examination Survey and other regularly conducted surveys (eg, Behavioral Risk Factor Surveillance System,⁴³ School Health Policies and Practices Survey)⁴⁴ to assess progress in preventing CVD.

Guidelines

Government agencies also develop important public health guidelines. For example, the Department of Health and Human Services (HHS) and the US Department of Agriculture periodically develop Dietary Guidelines for Americans that provide guidance to the public and are integral to all government food assistance programs. In 2008, HHS released the Physical Activity Guidelines for Americans,⁴⁵ which provided the first government guidelines for physical activity and defined research objectives to strengthen the recommendations. The AHA and many other organizations have endorsed them.

Although not legally mandated, HHS conducted a midcourse review of the Physical Activity Guidelines for Americans in 2012 with a focus on increased physical activity in youth⁴⁶ and will likely update these guidelines at least every 10 years.

Program funding and initiatives

Federal agencies provide technical assistance and funding to the states, such as the CDC's support to state and community health departments for CVD prevention, including evidence-based guidelines to address nutrition and physical activity in early care and education centers,⁴⁷ schools,⁴⁸ and worksites.⁴⁹ The US Department of Agriculture provides technical assistance to school districts on implementing nutrition standards in schools, and the Department of Education provides funding to states for physical education.

Agencies also translate clinical strategies to population-based practice, such as the Million Hearts Initiative (MHI) and the Diabetes Prevention Program (DPP). The DPP⁵⁰ was an NIH-funded randomized clinical trial which showed that behavioral intervention in community settings more effectively prevented onset of type 2 diabetes mellitus in adults than medication or usual care. This has been found to be a sustainable, cost-effective way to prevent or delay development of type 2 diabetes.⁵¹ The CDC played a central role in adapting the DPP for delivery in community settings⁵² by certifying providers. The aspiration is for DPP to be fully funded and provided by private and public health insurance plans.

The Centers for Medicare & Medicaid Services have taken an active role in health care quality improvement by tying Medicare payments to reporting and performance on quality and efficiency measures. Medicare now promotes alternative payment models that reward overall health care value. From the start, an important part of these programs has been CVD measurement (eg, door-to-balloon time for acute myocardial infarction, which improved from 96 to 64 minutes over 5 years).⁵³ Many commercial value-based insurance payment programs will continue to look to Centers for Medicare & Medicaid Services for guidance.

Government interaction with industry/quasi-governmental initiatives can be effective but requires oversight

Government regulation or legislation, although effective, is not always politically or financially feasible. This has led to a variety of arrangements between government and private nonprofit and for-profit

entities that have attempted to facilitate public goals. The nature of any public-private partnership depends upon the partnership agreement and the purpose of the activity, which have included product development; increased access to health care or health care products; and improved coordination of services, public advocacy and education, regulation, and quality assurance.⁵⁴ Such partnerships and quasi-governmental organizations have experienced variable success.

The MHI, the Healthy Weight Commitment Foundation funded by the Robert Wood Johnson Foundation with Michelle Obama's Let's Move Initiative,^{55,56} and similar programs abroad^{57,58} are illustrative of public-private arrangements. MHI is noteworthy for its emphasis from its inception⁵⁹ on partnerships with governments and private organizations at all levels to achieve a specific goal of preventing a million heart attacks and strokes by 2017. (<http://millionhearts.hhs.gov/partners-progress/partners.html>). Although many government programs seek to affect change through large grants or contracts, MHI provides no substantial funding but functions through convening and facilitation to galvanize support among stakeholders to achieve MHI's goals.

Quasi-governmental organizations also bring together government and private sectors and are different from public-private partnerships in that they are granted legal attributes of both government and private organizations.⁶⁰ Although strengths and weaknesses of these entities are largely similar, most population health-directed initiatives have taken the form of public-private partnerships. Public and private cooperation can facilitate adequate funding, influence positive consumer behavior and choices, increase competition within the marketplace that may improve population health as manufacturers seek to develop new products and reformulate existing ones, identify the feasibility of affecting large segments of the population, and offer some opportunity for sustainability.⁶¹

Although these arrangements may present opportunities for progress by both parties, their differing goals, outcomes, and conflicts of interests have attracted some concern. Optimally, public-private partnerships require accountability mechanisms, led or overseen by an independent third-party, to improve transparency, manage conflicts of interest, assess progress toward intended goals, provide incentives/disincentives related to performance of the agreement, determine the level of population health impact, and recommend termination of ineffective partnerships.^{62,57} Accountability in any public-private arrangement assures credibility and performance toward declared public health goals,⁶³ and cooperation between government and industry to overcome poor community health.⁶⁴

Voluntary/industry initiatives are a bellwether for industry conduct

Industry as change agent

Industry-led initiatives set standards that ostensibly govern an industry's conduct. They occasionally have shown success but also present risks.^{65,66} Founded by the AHA and the Clinton Foundation, the Alliance for a Healthier Generation, for example, works with companies and the broader community to improve children's health. Through its agreement with the American Beverage Association, the Alliance achieved a 90% reduction in the beverage energy shipped to schools. This voluntary commitment was later reinforced with update of the nutrition standards in school meals and competitive foods in the Child Nutrition Reauthorization Act of 2016. Other industry-led initiatives have had less positive impact.⁶⁷ The beverage industry, for example, has used voluntary agreements to maximize the halo effect of the already downward trend in consumption.⁶⁸ Table II summarizes the advantages and disadvantages of government-led approaches versus industry initiatives.

An industry may voluntarily initiate change for a variety of reasons, including to forestall threatened government intervention or to avoid

heightened public scrutiny.⁶⁹ Advocates of voluntary, industry-led initiatives submit that voluntary agreements, self-regulation, and public-private partnerships are promising ways to advance cardiovascular health initiatives.^{70,71} However, risks may arise, including inadequate oversight and transparency and inherent conflict of interest between a company's profit motive and the population health improvement.⁷²⁻⁷⁴ Without a basis in reliable science, strong oversight, tracking, transparency, and checks and balances, industry-led initiatives in the area of cardiovascular health improvement may prove ineffective.

Corporate social responsibility

Many companies are placing renewed value on corporate social responsibility (CSR),⁷⁵ a business practice that involves participation in initiatives to benefit society.^{76,77} The theoretical goal of CSR initiatives is to be both economically productive and socially accountable. Examples of activities that could be framed as health-related CSR include nutrition information on a restaurant's menu, even where not legally required,⁷⁸ and beverage companies investing in parks to encourage physical activity among youth.⁷⁹

CSR initiatives are not purely altruistic, however, as they provide opportunities for economic growth, tax benefits, or public relations. Consumer goodwill may translate into greater product sales.^{80,78} In fact, CSR initiatives that purport to improve population health may have the opposite effect. For example, tobacco industry antismoking campaigns presumably designed to discourage tobacco use in youth were actually detrimental to tobacco control efforts.⁸¹ Consumer perception that a corporation is socially responsible may create inferences that the corporation's product is healthful. This "health halo"⁸² can lead to overconsumption and, in turn, negative health effects. Others suggest that particular CSR initiatives may be an attempt to absolve a corporation of responsibility for improving population health, instead placing the burden on consumers individually to change behavior.⁸²

The effectiveness of CSR activities is controversial,⁸³⁻⁸⁵ and public health professionals should carefully consider whether an industry-initiated CSR effort is likely to have an actual positive effect on cardiovascular or population health.⁸⁶

Conclusion: continued government promotion of improved cardiovascular health is essential

The maintenance and improvement of the health of its citizens are a foundational responsibility of government and essential to the common good of our nation and the future well-being of our republic. A fundamental expectation of tax payers is that some of these resources to which they have contributed will be used to inform and protect individuals from health and environmental risks and will also be used to reduce the enormous estimated societal cost of poor health. All branches of government at the local, state, and federal level can play a prominent role. Four domains of chronic disease prevention outlined by CDC include epidemiology and surveillance, environmental approaches, health systems interventions, and clinical and community linkages. Examples of each of these have been addressed throughout this statement. The full integration of these approaches is a work in progress and represents the next developmental steps for decreasing CVD mortality and improving cardiovascular health. It is also increasingly clear that achieving this population health impact is not an exclusive responsibility of government. Government agencies and programs have been crucial in providing and initiating such safeguards. However, as we move into the future, effective partnerships between industry, voluntary health organizations, and government agencies will help define the path to economically sustainable improvements in individual and population health. This pathway will require cooperation of all sectors of society and citizens.

Appendix A. Appendices

Table I

Ten greatest public health achievements in the 20th century

<ul style="list-style-type: none"> • Vaccinations
<ul style="list-style-type: none"> • Motor vehicle safety • Safer workplace environments • Control of infectious disease • Reduced mortality and morbidity for heart disease and stroke • Safer and healthier foods • Healthier mothers and babies • Family planning • Fluoridation of drinking water • Recognition of tobacco use as a health hazard

Table II

Comparison of government-led approaches versus voluntary initiatives to address cardiovascular health

Government-led initiatives
Advantages <ul style="list-style-type: none"> • May have large-scale impact on population health • Level the playing field • May catalyze and amplify the effectiveness of private sector self-regulation • Required by law and/or regulation • Can purposefully address health disparities and reach vulnerable populations
Disadvantages <ul style="list-style-type: none"> • May be onerous • Attract the criticism of paternalism or government overreach
Industry-led or private/public initiatives
Advantages <ul style="list-style-type: none"> • Self-regulation, with a defined set of practices/commitments • Proving ground for improving population health outcomes • May help to improve relationships between government and industry • Can become the basis for federal/state law, showing proof of concept • Public knowledge of voluntary agreements can help encourage participation and ensure compliance • Possibility of creation of new governance regulatory regime
Disadvantages <ul style="list-style-type: none"> • Industry unlikely to take voluntary actions that prioritize population health interests above shareholders or profit • Ceding regulation to industry carries opportunities, but there is also risk • Putting a positive public relations spin on an existing downward or negative market trend • Often created to offset possible government regulation, litigation, or critical public opinion • Stave off robust government and exert undue influence over regulatory agencies • If voluntary commitments by industry are relatively vague, nonbinding, and permissive, then measurable effects will be small

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