



## Perspective

### The “Million Hearts” Initiative — Preventing Heart Attacks and Strokes

Thomas R. Frieden, M.D., M.P.H., and Donald M. Berwick, M.D., M.P.P.

Each year, more than 2 million Americans have a heart attack or stroke, and more than 800,000 of them die; cardiovascular disease is the leading cause of death in the United States and the largest

cause of lower life expectancy among blacks. Related medical costs and productivity losses approach \$450 billion annually, and inflation-adjusted direct medical costs are projected to triple over the next two decades if present trends continue.<sup>1</sup>

To reduce this burden, the Department of Health and Human Services (DHHS), other federal, state, and local government agencies, and a broad range of private-sector partners are today launching a “Million Hearts” initiative to prevent 1 million heart attacks and strokes over the next 5 years by implementing proven, effective, inexpensive interventions (see table).

Cardiovascular prevention works in two realms: the clinic and the community. Clinical and community interventions each contributed about equally to the 50% reduction in U.S. mortality due to heart attacks between 1980 and 2000.<sup>2</sup> If used consistently, proven interventions could prevent more than half of heart attacks and strokes. It's time to take the next big step.

In the clinical realm, Million Hearts will improve management of the “ABCS” — aspirin for high-risk patients, blood-pressure control, cholesterol management, and smoking cessation. As for community-based prevention, the initiative will encourage efforts to

reduce smoking, improve nutrition, and reduce blood pressure. It will implement the cardiovascular-disease-prevention priorities of the National Quality and National Prevention Strategies and help in meeting targets set by Healthy People 2020.

Improving management of the ABCS can prevent more deaths than other clinical preventive services.<sup>3</sup> Patients reduce their risk of heart attack or stroke by taking aspirin as appropriate. Treating high blood pressure and high cholesterol substantially and quickly reduces mortality among high-risk patients. Even brief smoking-cessation advice from clinicians doubles the likelihood of a successful quit attempt, and the use of medications increases quit rates further.

Currently, less than half of people with ischemic heart disease take daily aspirin or another

## The Million Hearts Initiative: Principles and Examples of Interventions.\*

Million Hearts Principles and Approaches	Effect on Quality of Care or Prevention	Sample Activities
<b>Improving clinical management of aspirin use, blood-pressure control, cholesterol management, and smoking cessation (ABCS)</b>		
Focus	Communication, clinical measurement, and reporting by physicians, health care facilities, and health care systems will emphasize improving ABCS care	<ul style="list-style-type: none"> <li>Incorporation of simple, consistent ABCS indicators into the Physician Quality Reporting System, Medicare Part D and Medicare Advantage plan ratings, EHR meaningful use criteria, community clinic measures, and guidelines from private-sector organizations</li> </ul>
Health information technology (HIT)	HIT enables providers and facilities to improve cardiovascular care and target intervention to patients in need of intensified care through registries and EHR functions used at the point of care	<ul style="list-style-type: none"> <li>Meaningful use criteria include clinical quality measures for hypertension and cholesterol control. Meaningful use of EHRs can include routine assessment of cardiac risk; use of patient recall, reminders, decision support, order sets; and monitoring of medication adherence</li> <li>HIT Regional Extension Centers and Beacon Communities, which reach nearly 100,000 primary care providers, will support providers and institutions in using EHRs to improve ABCS management</li> </ul>
Clinical innovations	Innovations such as team-based care, patient-centered medical homes, and interventions to promote adherence will be supported, evaluated, and disseminated rapidly to increase use of effective ABCS care practices	<ul style="list-style-type: none"> <li>In 2011, a pharmacist-led campaign will provide materials and facilitate patient counseling about hypertension control</li> <li>The CDC and the Agency for Healthcare Research and Quality will identify and disseminate strategies that improve ABCS delivery</li> </ul>
<b>Expanding community initiatives to reduce smoking, improve nutrition, and reduce blood pressure</b>		
Policies and programs designed to reduce tobacco use and exposure to second-hand smoke	Lowering exposure reduces heart attack risk among both smokers and nonsmokers	<ul style="list-style-type: none"> <li>Beginning September 2012, the FDA will require large, prominent health warnings on all cigarette packaging and advertisements in the United States</li> <li>Grants to communities will address tobacco-use prevention and cessation</li> <li>Mass-media campaigns will aim to reduce smoking initiation and promote cessation</li> </ul>
Policies for reducing sodium content of food	Facilitating healthier choices by consumers reduces risk of hypertension and cardiovascular disease	<ul style="list-style-type: none"> <li>Menu-labeling requirements in chain restaurants will help people make more informed choices about what they eat</li> <li>The CDC will increase public and professional education regarding sodium</li> <li>The CDC's NHANES will begin collecting information on sodium consumption</li> </ul>
Policies aimed at eliminating artificial trans fats from diet	Further reducing intake of artificial trans fat, which increases LDL cholesterol levels, decreases HDL cholesterol levels, and increases risk of heart attacks	<ul style="list-style-type: none"> <li>The CDC and the FDA will work with industry to expand voluntary food reformulation initiatives</li> <li>The CDC will monitor trans fat levels through NHANES</li> </ul>

\* EHR denotes electronic health record, HDL high-density lipoprotein, LDL low-density lipoprotein, and NHANES National Health and Nutrition Examination Survey.

antiplatelet agent; less than half with hypertension have it adequately controlled; only a third with hyperlipidemia have adequate treatment; and less than a quarter of smokers who try to quit get counseling or medications. As a result, more than 100 million people — half of American adults — smoke or have uncontrolled high blood pressure

or cholesterol; many have more than one of these cardiovascular risk factors. Increasing utilization of these simple interventions could save more than 100,000 lives a year.<sup>3</sup> Measuring and monitoring can encourage providers to improve preventive care.<sup>4</sup>

Improving care is particularly critical in light of increases in the prevalence of obesity and dia-

betes. Obesity and physical activity are currently being addressed by complementary efforts designed to improve understanding, implement pilot or community-based programs, and evaluate outcomes. The First Lady's "Let's Move" campaign is a comprehensive initiative with the goal of ending childhood obesity — a precursor to cardiovascular disease — with-

in a generation by fostering environments that support increased physical activity and improved nutrition for children and families. And public and private partners are working to expand the Diabetes Prevention Program, which promotes weight loss, improved nutrition, and increased physical activity among people at highest risk.

The Affordable Care Act (ACA) provides a strong foundation for Million Hearts by increasing coverage and facilitating improved care. It waives patient cost sharing for preventive services, including blood-pressure and cholesterol screening and smoking-cessation counseling and treatment, for enrollees in new private insurance plans. The new annual wellness visit for Medicare beneficiaries will help physicians focus on reducing cardiovascular risk and target interventions appropriately. Eliminating Medicare's "doughnut hole" in prescription-drug coverage will increase access to blood-pressure, cholesterol-lowering, and smoking-cessation medications. Covering 32 million currently uninsured Americans will reduce financial barriers to preventive care, and expanding community health centers will increase access to care and reduce health disparities. In addition, electronic health records (EHRs) will support improved clinical decision making.

Additional means of increasing control of the ABCS include reducing or eliminating copayments for medications, once-a-day dosing, team-based care approaches, stepwise care management, and new forms of payment and delivery for higher-quality, higher-value, and coordinated care, such as those envisioned for accountable care organizations.

Expanding use of prevention-oriented EHRs will enable providers and health systems to track and improve management of the ABCS. Incorporating core ABCS-related quality measures and decision-support tools into the 2013–2014 criteria for "meaningful use" of information technology and providing technical assistance through quality-improvement organizations in all states, the 62 Health Information Technology Regional Extension Centers (which reach nearly 100,000 primary care doctors), and Beacon Communities will reach more than 100 million patients within the next few years.

Million Hearts will work to standardize core ABCS indicators across medical practices, insurers, institutional providers, and systems in public and nonpublic settings. Standardization will facilitate public reporting and identification and diffusion of best practices and will reduce providers' burden by streamlining quality measurement and improvement. The initiative will be linked to quality-recognition programs (e.g., the Physician Quality Reporting System and star ratings for Medicare Part D and Medicare Advantage plans) and may eventually support approaches in which providers are paid more for better preventive care.

Community-based prevention works by facilitating healthy choices. Important community-based prevention initiatives include those funded by the American Recovery and Reinvestment Act's Communities Putting Prevention to Work program and programs supported by the ACA's Prevention and Public Health Fund, including Community Transformation Grants, initiatives for tobacco control and chronic-

disease prevention and control, many National Prevention Strategy initiatives, and state and local actions addressing tobacco use, nutrition, and the linkage between clinical and community-based prevention.

Reductions in smoking, sodium consumption, and trans fat consumption can substantially and rapidly improve cardiovascular health. Warning people about the harms of tobacco use through mass media and other measures, as well as package labeling as enabled by the Family Smoking Prevention and Tobacco Control Act, and creating smoke-free public places and workplaces, as detailed in the National Prevention Strategy and facilitated through ACA-funded community grants, should further reduce smoking rates by discouraging smoking initiation and encouraging cessation.

Reducing sodium intake, another key National Prevention Strategy intervention, reduces risks of hypertension and cardiovascular disease. Because most dietary sodium comes from processed and restaurant foods, it's difficult for Americans to limit their sodium consumption. Procurement guidelines from the DHHS and the General Services Administration and proposed school-food standards from the Department of Agriculture include a focus on sodium reduction. Menu-labeling requirements in chain restaurants will help people make more informed choices. The Centers for Disease Control and Prevention (CDC) is increasing public and professional education regarding sodium, and the CDC's National Health and Nutrition Examination Survey (NHANES) will begin collecting information on sodium consumption.

Consumption of artificial trans fat increases the risk of cardiovascular disease by raising low-density lipoprotein (LDL) cholesterol levels and lowering high-density lipoprotein (HDL) cholesterol levels. Replacing artificial trans fat with heart-healthy oils is feasible and does not increase the cost or change the flavor or texture of foods. Since the Food and Drug Administration began requiring listing of trans fat content on food labels, the industry has voluntarily reformulated foods, and according to CDC data, Americans' trans fat consumption has decreased by at least half. Elimination of such consumption could prevent 50,000 deaths per year.<sup>5</sup>

Million Hearts will leverage, focus, and align existing investments and generally not require

new public spending. Voluntary initiatives will simplify, harmonize, and automate clinicians' reporting requirements, decrease administrative burden, improve the quality of prevention and care, and inform the public more fully. Improvements in control of the ABCS, nutrition, and smoking are projected to prevent more than a million heart attacks and strokes over the initiative's first 5 years. By focusing our initial efforts where they will save the most lives, we aim to make progress toward a health system that will serve Americans' needs in the 21st century.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

Dr. Frieden is the director of the Centers for Disease Control and Prevention, Atlanta; Dr. Berwick is the administrator of the Cen-

ters for Medicare and Medicaid Services, Baltimore.

This article (10.1056/NEJMp1110421) was published on September 13, 2011, at NEJM.org.

1. Heidenreich PA, Trogdon JD, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. *Circulation* 2011;123:933-44.
2. Ford ES, Ajani UA, Croft JB, et al. Explaining the decrease in U.S. deaths from coronary disease, 1980–2000. *N Engl J Med* 2007;356:2388-98.
3. Farley TA, Dalal MA, Mostashari F, Frieden TR. Deaths preventable in the U.S. by improvements in use of clinical preventive services. *Am J Prev Med* 2010;38:600-9.
4. Mehta RH, Peterson ED, Califf RM. Performance measures have a major effect on cardiovascular outcomes: a review. *Am J Med* 2007;120:398-402.
5. Danaei G, Ding EL, Mozaffarian D, et al. The preventable causes of death in the United States: comparative risk assessment of dietary, lifestyle, and metabolic risk factors. *PLoS Med* 2009;6(4):e1000058.

Copyright © 2011 Massachusetts Medical Society.