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CDC Grand Rounds: The Million Hearts Initiative

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The Magnitude of the Problem

Cardiovascular disease, including heart disease and stroke, is the leading cause of death and disability in the United States. Every year, approximately 2 million persons in the United States have a heart attack or stroke and, as a result of these conditions, approximately 800,000 die from cardiovascular disease (*1*). For those persons who do survive a heart attack or stroke, many are faced with serious illness, disability, and decreased quality of life. The ongoing complications that result from cardiovascular disease greatly contribute to the economic burden on the health-care system and to society as a whole. In 2010, the cost in health-care expenditures and lost productivity in the United States from cardiovascular disease amounted to nearly $444 billion, and these costs are increasing every year (*2*). This is especially alarming because the primary risk factors for cardiovascular disease (i.e., high blood pressure, high cholesterol, smoking, type 2 diabetes, inactivity, and obesity) are largely preventable and have effective, low-cost treatments (*1*). If these risk factors were well-controlled through behavioral modification and/or treatment, the risk for death from heart attack and stroke could be reduced by more than half (*3,4*).

The Million Hearts Initiative

Launched in September 2011 by the U.S. Department of Health and Human Services (HHS), Million Hearts is a national initiative that aims to prevent 1 million heart attacks and strokes by 2017. This public-private partnership, co-led by CDC and the Centers for Medicare and Medicaid Services (CMS), will integrate proven and effective prevention activities to reduce cardiovascular disease. A key strategy of Million Hearts is to engage a broad set of stakeholders involved with health and health care, including clinicians, pharmacists, insurers, health-care systems, retailers, consumer groups, and others.

Better alignment and coordination of existing and new prevention and treatment efforts will accelerate translation into practice, resulting in decreased burden to society and greater population health improvements. The two primary goals of Million Hearts are 1) to reduce the need for treatment by empowering persons in the United States to make healthy choices (e.g., avoid tobacco, reduce sodium intake, and reduce artificial trans fat intake) and 2) to improve care for persons who need it through focus on the "ABCS" (i.e., appropriate aspirin use for those at risk, blood pressure control, cholesterol management, and smoking cessation).

Million Hearts is being implemented through parallel efforts aimed at clinical settings and communities (*3*). Community efforts will keep the population healthy and reduce the number of persons who need treatment in the first place. Million Hearts will focus community efforts on decreasing tobacco use and exposure to secondhand smoke, reducing sodium intake, and

eliminating consumption of artificial trans fats (*3*). Examples include designated smoke-free public spaces, policies that reduce sodium and eliminate artificial trans fats in prepared food, workplace wellness programs, and media campaigns related to the hazards of smoking. These activities align with the *Healthy People 2020* targets and the goals of the Prevention and Public Health Fund, the National Quality Strategy, and the National Prevention Strategy (*3*).

Clinically based prevention efforts will improve quality of care, access to care, and improve outcomes through focus on the ABCS. These efforts will include drawing the attention of health-care professionals and the systems in which they work to the ABCS, increasing and improving the use of health information technology in clinical practice, and using clinical innovations to increase the use of effective ABCS care practices. Although high achievement in the ABCS has been shown to prevent more cardiovascular disease–related deaths than other clinical preventive services, overall performance in the ABCS by persons at risk and their health-care professionals generally is low (*3,5*). For example, less than half of persons (47%) with ischemic vascular disease are prescribed aspirin or other antiplatelet medication, less than half of persons (47%) with hypertension have their blood pressure under control, only one third of persons (33%) with high cholesterol are effectively managed, and approximately one fourth of persons (23%) who smoke get tobacco cessation counseling or medications (Table) (*6,7*). Consequently, the estimated number of persons who smoke or have uncontrolled hypertension or cholesterol totals approximately 100 million. Improving performance on the ABCS is the means by which the majority of lives can be saved and how the greatest health value can come out of current health-care investments (*3*).

National Prevention Efforts

CMS is the largest payer of health care in the world and provides health-care coverage to nearly 105 million beneficiaries in Medicare, Medicaid, and the Children's Health Insurance Program. CMS has a critical role at the federal level in building clinical prevention strategies with a focus on health information technology and innovation in health-care delivery. Technology and innovation are central to fostering a health-care system that delivers care that is safer, better coordinated, and patient-focused. CMS is working to standardize ABCS indicators as part of clinical quality reporting requirements among physician offices, hospitals, health departments, insurers, assisted-living facilities, and related health-care providers and systems (*3*). Standardization will improve reporting of the ABCS and reduce the burden of reporting while enabling more efficient communication of best practices to those providing care. These also will support quality-incentive programs focused on the ABCS, such as the Physician Quality Reporting System for clinicians and for Medicare health plans and prescription drug plans. In 2011, CMS initiated the Medicare and Medicaid Electronic Health Records Incentive Program, which will provide payments to eligible health professionals and hospitals as they adopt, implement, and demonstrate "meaningful use" of certified electronic health record (EHR) technology in ways that improve the quality of care delivered. Meaningful use is the use of certified EHR technology in a manner that provides for the electronic exchange of health information to improve the quality of care and submits information on quality of care and other measures.* Clinical decision support tools are being developed in conjunction with the EHR Incentive Program to further disseminate clinical guidelines and best practices, such as optimal medication prescribing support, screening prompts, and medication alerts. Broad use of EHR technology can improve provider communication, reduce medical errors, limit duplicate tests and screenings, and lower costs (*3*).

The Million Hearts initiative also has the opportunity to generate innovative ways to deliver health care and to improve patient adherence. CMS is working with the Medicare Quality

Improvement Organizations and Federally Qualified Health Centers and others to develop and test new models of care, such as accountable care organizations[†] and learning and action networks.[§] These initiatives have a patient-centered philosophy supported by knowledge management and real-time learning functionality (*3*). The interventions will focus on reducing the barriers to providing health care and continuous quality improvement. Tools and strategies emphasize a team-based approach to care that strives to enhance the role of pharmacists, advanced practice nurses, physicians' assistants, community health workers, cardiac rehabilitation teams, nurses, and peer wellness specialists, among others. CMS also supports innovative health-care models and structures, such as patient-centered medical homes and point-of-care counseling, and will implement payment reform initiatives that incentivize adherence to ABCS clinical quality metrics through programs such as value-based purchasing, new primary-care payment models, and accountable care organizations.

Local Prevention Efforts

San Diego, California. In addition to action at the federal level, communities also have a critical role in improving clinical care and reducing cardiovascular disease risk factors in the community. For example, the Department of Health and Human Services of the County of San Diego developed a county-wide prevention initiative, including an effort to reduce risk factors for cardiovascular disease. The initiative, Live Well, San Diego! is a comprehensive effort with partners from state, local, private, professional, and community-based groups. Live Well, San Diego! is organized on a "3-4-50" concept, referring to the notion that three behaviors (i.e., poor diet, physical inactivity, and tobacco use) lead to four diseases (i.e., cardiovascular disease, type 2 diabetes, cancer, and lung disease), which account for approximately 50% of deaths (*8*). In conjunction with local medical providers, the county adopted the goal of becoming a "Heart Attack and Stroke Free Zone" to capture public attention, extend the project to all citizens, convey ownership of the program to the public in addition to the medical community, and to capitalize on the strong sense of community pride. One specific feature of the Live Well, San Diego! initiative is the "Be There Campaign," which focuses multimedia and social media strategies on heart attack and stroke prevention. It aims to motivate patients to reduce their risk factors to be there for loved ones. The campaign is based on risk-reduction tactics that are designed to actively engage persons in improving their own health as a way to be responsible to family and friends. One method for engaging persons and increasing their participation in the campaign is through the use of new technologies, such as wireless heart monitors, pill bottles designed to measure medication adherence, exercise frequency monitors, and smartphones to report vital signs. For the first time, the top 10 health-care systems in San Diego meet monthly, share data, and discuss how treatment goals are met. Through efforts focused on engagement of the entire medical community and the integration of health programs into the initiative, San Diego County intends to create an effective population health program that can be scaled to other communities throughout the United States.

New York City. New York City (NYC) established a cardiovascular disease prevention initiative focused on smoking cessation, reducing intake of artificial trans fats and sodium, and expanding the use of EHRs. In 2002, the NYC Smoke-Free Air Act was enacted, prohibiting smoking in workplaces, restaurants, bars, and nightclubs. In 2011, the smoke-free ordinance was expanded to parks, beaches, public plazas, and boardwalks, and by the end of 2012, all 23 campuses of the City University of New York will become tobacco free. In addition to the smoke-free law, NYC implemented an excise tax in 2003; when combined with subsequent tax increases at the state and federal levels, the total cost of a pack of cigarettes is now $11. Ongoing cardiovascular disease prevention efforts include a mass media campaign that delivers graphic images and testimonials about the long-term suffering and harmful effects

caused by tobacco use. Data from the NYC Community Health Survey (CHS) have shown that during 2002–2010, the combination of changes to local laws, excise taxes, and media messages have resulted in approximately 450,000 fewer smokers in NYC (Figure) (*9*).

The NYC Board of Health restricts the use of artificial trans fat in restaurants, and approximately 90% of NYC restaurants were in compliance in 2008 (*10*). NYC also has led the National Salt Reduction Initiative (NSRI) to decrease sodium intake by 20% over the next 5 years.¶ The initiative is promoted by a voluntary coalition that focuses on government-industry collaboration. To date, 28 major packaged food companies and restaurants have committed to NSRI.

NYC also is supporting the ABCS through the implementation of the Primary Care Information Project (PCIP).** The goal of the project is to facilitate improvements to the quality of primary care delivered with enhancements to health information technology. Currently, approximately 3,000 primary-care providers serving nearly 3 million patients are using a prevention-oriented EHR capability that provides a clinical decision support system and monitors physician-reported patient data. PCIP delivers a personalized dashboard showing physicians their performance on the ABCS. It also provides prevention and treatment recommendations and reminders to address for future improvements. PCIP EHR enhancements exemplify the health information technology meaningful use improvements underway at CMS.

Summary

Million Hearts is a large-scale, public-private initiative that aims to change the cardiovascular health of the nation by preventing 1 million heart attacks and strokes by 2017. Success can be achieved by the implementation of proven, effective interventions, health technology and systems improvements, modifications in health-care coverage and reimbursement, and innovative strategies to improve performance on the ABCS by patients, health-care professionals, and health-care systems. System and environmental changes at the local and state levels will be important to create environments that facilitate healthy choices. Considerable commitments and dedication from various partners will make the difference in reaching the Million Hearts goal.

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References

1. Roger VT, Lloyd-Jones DM, Benjamin EJ, et al. Heart disease and stroke statistics–2012 update: : a report from the American Heart Association. Circulation 2012;125:e2–e220.
2. Heidenreich PA, Trogdon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States. Circulation 2011;123:933–44.
3. Frieden TR, Berwick DM. The "Million Hearts" initiative–preventing heart attacks and strokes. N Engl J Med 2011;365:e27.
4. 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.

5. 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.
6. CDC. Million Hearts: strategies to reduce the prevalence of leading cardiovascular disease risk factors—United States, 2011. MMWR 2011;60:1248–51.
7. CDC. Vital signs: awareness and treatment of uncontrolled hypertension among adults—United States, 2003–2010. MMWR 2012;61:703–9.
8. County of San Diego. Live well, San Diego! Building better health: a report on year two of a ten year initiative. San Diego, California: County of San Diego; 2012. Available at http://www.sdcounty.ca.gov/dmpr/gfx/Live_Well_Annual_Report . Accessed December 14, 2012.
9. New York City Department of Health and Mental Hygiene. Epi data brief: trends in cigarette use among adults in New York City, 2002–2010. New York, NY: New York City Department of Health and Mental Hygiene; 2011. Available at http://www.nyc.gov/html/doh/downloads/pdf/epi/databrief12.pdf . Accessed December 14, 2012.
10. Angell S, Silver LD, Goldstein CM, et al. Cholesterol control beyond the clinic: New York City's trans fat restriction. Ann Intern Med 2009;151:129–34.

This is another in a series of occasional MMWR *reports titled CDC Grand Rounds. These reports are based on grand rounds presentations at CDC on high-profile issues in public health science, practice, and policy. Information about CDC Grand Rounds is available at http://www.cdc.gov/about/grand-rounds.*

* Additional information available at http://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms/meaningful_use.html and http://healthit.hhs.gov/portal/server.pt?open=512&objID=2996&mode=2 .

† Additional information available at http://innovations.cms.gov/initiatives/aco/index.html .

§ Additional information available at http://www.cfmc.org/provider/provider_lans.aspx .

¶ Additional information available at http://www.nyc.gov/html/doh/html/cardio/cardio-salt-initiative.shtml .

** Additional information is available at http://www.nyc.gov/html/doh/html/pcip/pcip.shtml .

TABLE. Current status of the Million Hearts ABCS (aspirin therapy, blood pressure control, cholesterol control, and smoking cessation) to prevent cardiovascular disease in the United States, 2012

Prevention measure	Data source	Definition of measure	Estimate
Aspirin therapy	NAMCS and NHAMCS, 2007–2008	% of visits of patients aged ≥18 years with ischemic vascular disease who are prescribed aspirin or other antiplatelet medication	47%*
			47%†

Blood pressure control	NHANES, 2003–2010	% of adults aged ≥18 years with hypertension who have adequately controlled blood pressure	
Cholesterol control	NHANES, 2005–2008	% of adults aged ≥20 years with high cholesterol who have adequately controlled LDL-C	33%[§]
Smoking cessation	NAMCS, 2005–2008	% of outpatient visits of persons aged ≥18 years who screened positive for current tobacco use and for whom tobacco cessation counseling and/or cessation medications were provided	23%[¶]

Abbreviations: NAMCS = National Ambulatory Medical Care Survey; NHAMCS = National Hospital Ambulatory Medical Care Survey; NHANES = National Health and Nutrition Examination Survey; LDL-C = low-density lipoprotein cholesterol.

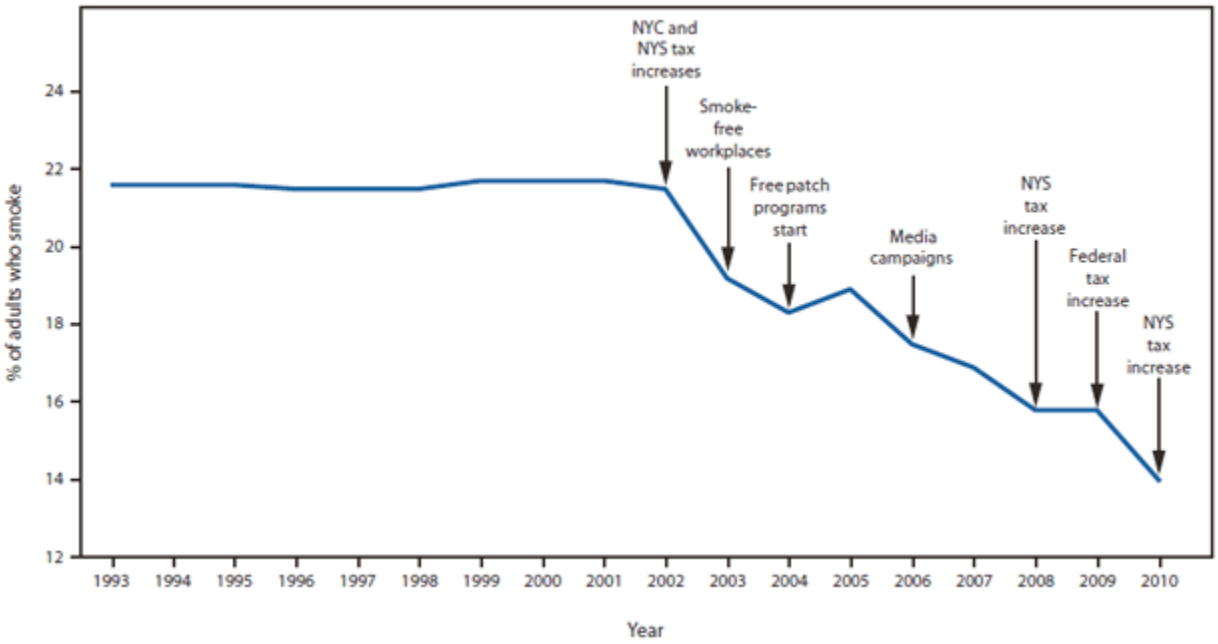
* Source: CDC. Recommended use of aspirin and other antiplatelet medications among adults—National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey, United States, 2005–2008. MMWR 2012;61 (Suppl; June 15, 2012):11–8.

† Newer data released since CDC Grand Rounds presentation. Source: CDC. Vital signs: awareness and treatment of uncontrolled hypertension among adults—United States, 2003–2010. MMWR 2012;61;703–9.

§ Source: CDC. Vital signs: prevalence, treatment, and control of high levels of low-density lipoprotein cholesterol—United States, 1999–2002 and 2005–2008. MMWR 2011;60:109–14.

¶ Source: CDC, unpublished data, 2011.

FIGURE. Percentage of adults who smoke, by year — New York City Community Health Survey,* 1993–2010



Abbreviations: NYC = New York City; NYS = New York state.

* Additional information available at http://www.nyc.gov/html/doh/html/survey/survey.shtml .

Alternate Text: The figure above shows the percentage of adults who smoke in New York City (NYC), by year, during 1993-2010. Data from the NYC Community Health Survey have shown that during 2002-2010, the combination of changes to local laws, excise taxes, and media messages have resulted in approximately 450,000 fewer smokers in NYC.

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