

EDITORIAL COMMENT

Failing Cardiovascular Health

A Population Code Blue*



Thomas E. Kottke, MD, MSPH,^a Ajay K. Gupta, MD, PhD,^{b,c} Randal J. Thomas, MD, MS^d

In this issue of the *Journal of the American College of Cardiology*, the reader will find 2 papers that report trends in the cardiovascular health of Americans.^{1,2} The findings alarm us: after decades of declining mortality from cardiovascular disease, cardiovascular health declined by >10% for the overall American population in the first 18 years of the 21st century.¹ It also plateaued after 2010 for the subpopulation with cardiovascular disease.² Increasing obesity and one of its consequences, diabetes, were the leading drivers of the adverse trends. Both teams of authors advocate for urgent and comprehensive action to reverse the rise in obesity. If this were an individual patient rather than a multinational trend, someone would probably be calling a code blue.

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The reported findings of secular trends of stalling and worsening cardiometabolic profile^{1,2} should not be a surprise as the obesogenic lifestyle³—unhealthy dietary patterns that feature foods and beverages high in saturated fat, sugar, salt, and calories; little or no physical activity; alcohol; too much or too little sleep; and hours of screen time—seems to be the norm for many Americans and other populations. These

obesogenic behaviors are promoted by increasing opportunities for screen time, a snack food industry that uses science to craft products that are tasty and addictive yet neither satisfying nor filling,⁴ and community designs that favor travel by automobile and discourage walking and bicycling.⁵ We are particularly concerned about the potential for the developing metaverse to decrease physical activity and increase obesity.

Regaining the momentum toward positive cardiovascular health will not occur spontaneously. It will require the engagement of every physician and every public health policy with action at 3 levels—personal, clinical, and community.

At the personal level, people adopt new behaviors as they observe individuals they emulate. Because cardiologists and other health care professionals tend to be held in high esteem, their behaviors should be models. To the American Heart Association's "Life's Simple 7" (smoking, body mass index, physical activity, diet, total cholesterol, blood pressure, and blood glucose),⁶ we would add adequate sleep, limited or no alcohol, practicing gratitude, and maintaining one's social networks as behaviors that promote total health and well-being along with cardiovascular health.

At the clinical level, if all of the currently available interventions to prevent and treat heart disease were applied, nearly two-thirds of all deaths in the U.S. population 30 to 84 years of age might be prevented or postponed.⁷ Primordial, primary, and secondary prevention would produce more than 80% of the impact. In addition to the very large gaps in health promoting behaviors identified in the 2 papers in this issue of the *Journal of the American College of Cardiology*,^{1,2} the impact of prevention results from the fact that the behaviors that produce cardiovascular health also reduce risk of type 2 diabetes, cancer, obstructive lung disease, and several other chronic conditions.

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From ^aHealthPartners, Minneapolis, Minnesota, USA; ^bWilliam Harvey Research Institute, Queen Mary University of London, London, United Kingdom; ^cBarts BP Centre of Excellence, Royal London Hospital, Barts Health NHS Trust, London, United Kingdom; and the ^dDivision of Preventive Cardiology, Department of Cardiovascular Medicine, Mayo Clinic, Rochester, Minnesota, USA.

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Systematic approaches to cardiovascular risk reduction have been shown to help improve clinical outcomes in both individuals with elevated cardiovascular risk⁸ and with documented cardiovascular disease.⁹ Cardiac rehabilitation programs are excellent examples of systematic, cost-effective, and beneficial secondary prevention services.⁹⁻¹² In addition to managing blood pressure, blood lipids, and medications to prevent and treat heart failure, comprehensive cardiac rehabilitation creates an opportunity to help the 20% of patients who continue to smoke after their acute event.² Intervention is particularly important for Black adults whose prevalence of smoking is increasing.²

Unfortunately, only a minority of eligible patients participate in center-based rehabilitation programs,¹³ but the systematic referral of patients to cardiac rehabilitation programs,¹⁴ the removal of financial disincentives,¹⁵ and the use of home-based strategies¹⁶ point the way to improved delivery of these important services to patients with cardiovascular disease.

Such systematic approaches also hold significant promise in efforts to improve the primary prevention of cardiovascular disease.¹⁷ One such example is the systematic identification and management of individuals with hypertension in the Kaiser Permanente Northern California.¹⁸ Another is the DiRECT (Diabetes Remission Clinical Trial) study in which nearly one-half of the intervention group participants experienced remission of their diabetes.¹⁹ In response, the DiRECT methodology has been adopted by the National Health Service of England. For secondary prevention, low-cost procedures to improve adherence²⁰ or routine use of fixed-dose combinations have a potential to improve the overall gains in resource-poor settings.²¹

At the community level, there is broad agreement that population-level changes must occur if the obesity “syndemic” is to be controlled.²² Although obesity was not a driver of the cardiovascular disease epidemic of the 1960s,²³ lessons about how to mobilize communities to promote cardiovascular health and prevent obesity might be taken from the community-based heart disease prevention programs of the late 20th century. As the first, and perhaps most, comprehensive heart disease prevention program, the North Karelia Project conceptualized cardiovascular disease both as a problem for individuals and a common source epidemic with roots in the community environment.²⁴ At its inception, the North Karelia Project

comprised 5 groups of activities: health education to produce permanent changes in behavior; screening to make personalized behavior change recommendations; a hypertension program that included both treatment protocols and a treatment register; intensification of treatment with attention to prodromal symptoms, examination methods, treatment, and follow-up; and rehabilitation to increase the patients’ sense of security and control of risk factors.²⁵ By 2012, coronary heart disease mortality rates in North Karelia had declined by more than 80% for both men and women of working age.²⁶

Many cardiologists will not have the resources to organize a comprehensive cardiovascular health program like the North Karelia Project or CardioVision 2020, organized by Mayo Clinic cardiologists.^{27,28} Although they may also lack the opportunity to engage in national or international initiatives,²⁹ they can contribute their energy and expertise through the councils and committees of the American Heart Association and the American College of Cardiology. They can also promote cardiovascular health in their own communities.

Promoting cardiovascular health depends on alliances.²⁹ Some of these alliances will be with hospitals to assure that the foods served to employees, visitors, and patients are health-promoting. Alliances with schools will likewise assure that health promoting foods are served to students and faculty and that students have opportunities for adequate physical activity during the school day. Alliances with city planning, transportation, and parks and recreation to increase opportunities for physical activity will also promote cardiovascular health. Behavioral economics³⁰ tells us that any alliance that results in modeling of the healthy behaviors and makes the healthy behaviors the easier behaviors will promote cardiovascular health.

To understand the origins of cardiovascular disease and how interventions might control it, the Boston-based cardiologist Paul Dudley White urged the study of “nature’s experiments” that occur when similar populations live under different conditions and differing populations live under similar conditions.³¹ This advice led to the epidemiologic observations, clinical trials, and community-based interventions that generated the massive declines in coronary heart disease death rates in the developed economies. If personal commitment by all and a societal will to act emerge, the same strategy could also contribute the knowledge and action necessary to reverse the rising

burden of obesity and put the world's populations back on the path to cardiovascular health.

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ADDRESS FOR CORRESPONDENCE: Dr Thomas E. Kottke, HealthPartners, Medical Directors, 8170 33rd Avenue South, Mail Stop 21110X, Minneapolis, Minnesota 55425, USA. E-mail: thomas.e.kottke@healthpartners.com. Twitter: [@_HealthPartners](https://twitter.com/_HealthPartners).

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