



# Our National Approach to Diabetes

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The ongoing SARS-CoV-2 pandemic has understandably consumed a large share of the energy and attention directed toward U.S. health policy. While the impacts of the COVID-19 pandemic continue to reverberate, other issues also require urgent attention. In addition to the toll inflicted by COVID-19, our national health status has steadily deteriorated due to the effects of common chronic diseases (CCDs) (1). CCDs include obesity and its consequences: diabetes, cardiovascular, lung, and renal diseases, mental health issues, substance use disorders, and neurodegenerative illnesses, including Alzheimer's disease (2). Together, they have contributed significantly to the flattening and decline in U.S. life expectancy over the past decade as well as to recent accelerations of this trend (3). However, our insufficient response to this crisis evokes the analogy of the frog placed in water that is gradually heated to a boil.

Mounting an energetic response to an epidemic of CCDs is difficult while we are also grappling with an ongoing pandemic and emerging threats from other infectious diseases. The National Clinical Care Commission Report to Congress (4) provides a welcome revitalization of government-driven efforts to combat type 2 diabetes (T2D)—a major element of the wave of CCDs that has swept the U.S.

## BACKGROUND

Despite decades of warnings from the public health and clinical communities, global rates of obesity, T2D, cardiovascular

disease, and cancer are increasing rapidly (5), a development partially due to reductions in poverty in low-income countries that enable more people to afford higher-carbohydrate diets. In the U.S., the alarm should be loud and clear (6). As the report notes, almost 40 million Americans have been diagnosed with T2D and almost 100 million are believed to have prediabetes (4). Further, assessments of risk among youth reveal these trends as the tip of the iceberg—if they continue, rates of T2D will accelerate and length and quality of life will decline (4).

U.S. life expectancy began leveling off a decade ago, but recent drops have been precipitous, particularly compared with those of other high-income countries (7–9). U.S. life expectancy is currently estimated to be 5 years shorter than the average of high-income countries and ranks behind China, according to some recent sources (10). Furthermore, these changes are accompanied by declines in function and quality of life (11). These declines are not driven solely by infant mortality or precipitous death among elderly people. We also have a failing, directly related to policies, in traditional working-age populations (12).

T2D is both a primary cause of death and disability and an underlying risk factor for cardiovascular disease and cancer. Furthermore, it is intertwined with depression, anxiety, and other mental health issues that influence these negative

health outcomes (13,14). Diabetes and other CCDs are also rooted in social determinants of health: less wealth, lower educational status, insecure housing, diet-related disparities, less exercise, and greater environmental risk exposure, among other health risks. In addition, struggles with health equity continue to mean that underrepresented minorities are more likely to see poor health outcomes from these conditions. A rapid worsening of outcomes in rural areas is also now apparent (15). A reconsideration of our national approach to CCDs is clearly needed, making this report a welcome addition.

## BRIEF OVERVIEW

This report appropriately identifies two types of public health targets: 1) T2D prevention in people with prediabetes; and 2) control and treatment of T2D in those already diagnosed. It also provides a continuum of recommendations ranging from population to individual levels. The overarching themes are not novel, but they have not been adequately operationalized: 1) integrating agency activities that include health and non-health-related policies and programs; 2) health equity as a lens for all policies and programs; and 3) access to high-quality, affordable health care.

Specific recommendations range from broad constructs, such as increasing awareness of prediabetes and improving the built environment, to specific initiatives, such as covering hemoglobin A<sub>1c</sub>

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measurement as a screening test and providing support for a submission to the U.S. Food and Drug Administration (FDA) for metformin to receive a marketing approval for diabetes prevention. Many recommendations on prevention focus on support and implementation of the Diabetes Prevention Program (16). Most of the recommendations related to control and treatment call for additional resources, ranging from personalization and use of telehealth to support for the workforce and reducing out-of-pocket costs through more insurance coverage of preventive, diagnostic, and therapeutic interventions for T2D.

Several recommendations would involve the FDA. The metformin recommendation, nutritional labeling changes, attention to contaminants in food, and participation in a more potent “all-of-government effort” all deserve focused attention. Final decisions about policies depend on the evidence and, in many cases, concurrence across several levels of government.

The report astutely points out the potential benefits of cross-agency coordination. For example, the U.S. Department of Agriculture is responsible for many essential nutrition programs for underserved populations, especially children; more effective coordination with FDA’s foundational responsibilities, noted above, should produce synergy across these programs. Improving the built environment to encourage exercise, foundational support that helps families afford nutritious food, and improved education can have an enormous effect on T2D prevention, control, and treatment. The report effectively highlights the need for an all-of-government response to meld traditional medical, social, and economic strategies.

## EVALUATION

The emphasis on the holistic situation of T2D is the major strength of this report, and the call for better coordination among federal agencies is sensible and well-considered. Most of the recommendations are reasonable and worth pursuing.

What do I wish had received greater emphasis?

First, most of these recommendations and strategies would be equally useful for any of the CCDs impacting national and global health. This raises several

questions. Will a focus on T2D detract from attention to other diseases and problems? How can we structure a response that is synergistic across CCDs, rather than creating a whole that is less than the sum of its parts (17) by adding resources to one CCD in a limited federal budget?

Second, because the committee’s charge concerns the federal government, the important roles of our consolidated health systems and insurance industry go largely unaddressed. Although the recommendations for continued expansion of telehealth and broad use of community health workers are critical, the current trajectory of resource allocation within health systems runs counter to this. Health system leaders have indicated that they are simply responding to incentives that reward use of expensive technology, even when benefits are marginal or nonexistent. Focusing on geographically dispersed care for T2D and its antecedents by investing in clinics and personnel in rural areas, for example, would negatively affect health systems’ financial margins in the current payment environment. Surely, within a \$4.1 trillion health care budget, the private sector can reallocate resources away from ineffective, inordinately expensive therapies and practices to focus on the elements of this report that are based on clear evidence of effectiveness at a reasonable cost.

Third, the report only partially addresses the promise of more effective technology. Despite our national failings in implementing effective health care relative to peer countries, the U.S. remains a beacon of invention and innovation. The use of continuous glucose monitoring addressed in the report is only a beginning for the role of digitally integrated devices in caring for patients with T2D. New medications for T2D are now available, although their uptake has unfortunately been slow and high prices tend to reinforce underlying inequities (18,19). The complex neuroendocrine and behavioral control of appetite is better understood, and several classes of drugs hold promise for reducing weight and controlling diabetes while also reducing the risk of death and cardiovascular events (18,20–22). Although definitive clinical trial data are still pending, an effective national strategy for appropriate use of disease-modifying therapies for

obesity and T2D would be a welcome addition to the strategy.

Needs specific to rural America received scant attention in this report, although recommendations for telehealth and community health workers point to an improved future if health systems, state governments, and the clinical community can assemble comprehensive systems that cover poorly resourced geographical areas. The confluence of resources in urban areas and cities where technology and education are concentrated in otherwise rural states has been associated with stark differences in CCD outcomes and access to effective health care in rural America (15,23). This in no way detracts from the need to attend to underserved urban areas, but issues of transportation, access, and information are important across the spectrum.

## THE FUTURE

The goals of this report are lofty and aspirational. By working together, we can start turning the tide of CCDs in a more favorable direction. Success requires not only an all-of-government response but also an aggressive reorientation of health systems, payers, and community organizations, as well as more efficient and effective allocation of human and technological resources to the obvious culprits driving the expanding epidemic of T2D and other CCDs.

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**Duality of Interest.** R.M.C. is an employee of the U.S. Food and Drug Administration. Prior to his appointment to the U.S. Food and Drug Administration as Commissioner for Food and Drugs, he was an employee of and held equity in Verily Life Sciences and Google Health (Alphabet). He also served on boards of directors for Cytokinetics, Centessa Pharmaceuticals, Clinetic, Keystone Symposia, the Critical Path Institute (C-Path), the Clinical Research Forum, and OneFifteen. No other potential conflicts of interest relevant to this article were reported.

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