

Women's Heart & Vascular Symposium

Cardiometabolic Health: Actionable Prevention Strategies and New Care Models

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The Cardiovascular Burden of Type 2 Diabetes

Approximately 11.3% of the US population has diabetes,¹ and the prevalence of type 2 diabetes continues to increase. It has been established that diabetes is associated with premature morbidity and mortality, primarily attributed to cardiovascular disease (CVD). Of note, the health burden of diabetes is not evenly distributed among the population, leading to disparities in diabetes prevalence. The prevalence rate of diabetes is approximately 7.4% in non-Hispanic White populations, 12% in Hispanic and non-Hispanic Black populations, and higher than 14% in American Indian and Alaska Native populations. Diabetes is also more prevalent among individuals with lower education and household income levels. These factors are associated with restricted access to health care, which exacerbates the disparities in diabetes prevalence and management.

Because patients, health care professionals, and government organizations have implemented strategies to improve diabetes care and reduce CV risk factors, the incidence of diabetes complications, including coronary heart disease, stroke, lower extremity amputations, and end-stage kidney disease, declined substantially between 1990 and 2010. Recent data, however, reveal a shift in these trends, with a plateau and subsequent increase in several of these complications, particularly among young and middle-aged adults.² National data also indicate a reversal in the progress achieved in controlling glycemia, blood pressure, and lipids from 1999 to the early 2010s. Recent years have seen a decline in glycemic and blood pressure control, while lipid control has reached a plateau.³ Strikingly, the percentage of US adults in whom all 3 CV risk factors were controlled also stagnated after 2010, reaching a mere 22% between 2015 and 2018.³

A Holistic, Person-Centered Approach to Type 2 Diabetes Management

Recent recommendations for the treatment of type 2 diabetes emphasize a holistic, person-centered approach to prevent complications and improve quality of life.⁴ These recommendations outline 4 key treatment pillars: (1) glycemic management, (2) weight management, (3) CV risk factor management, and (4) selection of glucose-lowering medications with CV and kidney protective effects. The guidelines stress setting individualized weight management goals. Weight management strategies include providing general lifestyle advice; offering evidence-based, structured weight management programs; using medications for weight loss (such as glucagon-like peptide-1 receptor agonists [GLP1-RA]); and considering metabolic surgery when appropriate. The guidelines highlight the need for comprehensive strategies to detect and optimize CV risk factor management, including regular screening

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and surveillance, implementing measures to lower blood pressure and lipids, administering antithrombotic agents, and encouraging smoking cessation.⁴

The results of CV and kidney outcome trials involving sodium-glucose cotransport 2 (SGLT2) inhibitors and GLP1-RAs have delivered much-needed treatments to improve CV outcomes in patients with diabetes with established CVD, multiple CV risk factors, or chronic kidney disease (CKD).⁵ In individuals with atherosclerotic CVD or indicators of high CV risk, either an SGLT2 inhibitor or a GLP1-RA with proven CV benefit should be used. In individuals with heart failure, an SGLT2 inhibitor with demonstrated heart failure benefits should be administered. For patients with CKD with an estimated glomerular filtration rate of 20 mL/min/1.73 m² or higher, an SGLT2 inhibitor known to reduce CKD progression should be used.⁵

Use of these medications is no longer based on glycemic control but rather on the presence of high CV risk, heart failure, or CKD. This important shift in approach recognizes the benefits of SGLT2 inhibitors and GLP1-RAs beyond glycemic management.

New Care Models

Recent data reveal major opportunities to implement these CV risk-reduction strategies. In a national cohort study conducted in 2018 of individuals with diabetes and established atherosclerotic CVD, only 57% of patients were prescribed statins, 45% were prescribed an angiotensin-converting enzyme inhibitor or angiotensin

Abbreviations and Acronyms

CKD	chronic kidney disease
CVD	cardiovascular disease
GLP1-RA	glucagon-like peptide-1 receptor agonist
SGLT2	sodium-glucose cotransport 2

receptor blocker, and 2% to 4% were treated with either a GLP1-RA or an SGLT2 inhibitor.⁶ More than 40% of these individuals were not treated with any of these medications.⁶

To address this care gap, new care models are needed. These models should aim to overcome the siloed and often fragmented current system because the cardiometabolic benefits of GLP1-RA and SGLT2 inhibitors have blurred the boundaries between specialties such as cardiology, endocrinology, and nephrology. Chronic care models should prioritize delivery systems that incorporate planned, team-based visits; that use diabetes self-management tools; and that integrate evidence-based decision support tools accessed at the point of care. Advancements in clinical information systems, including patient-specific registries, the implementation of community resources and partnerships to support healthy lifestyles, and the development of quality-oriented health care systems focused on delivering comprehensive care, are necessary. Achieving these goals will require a multidisciplinary team of partners (Fig. 1), with the person with diabetes placed at the center of care.

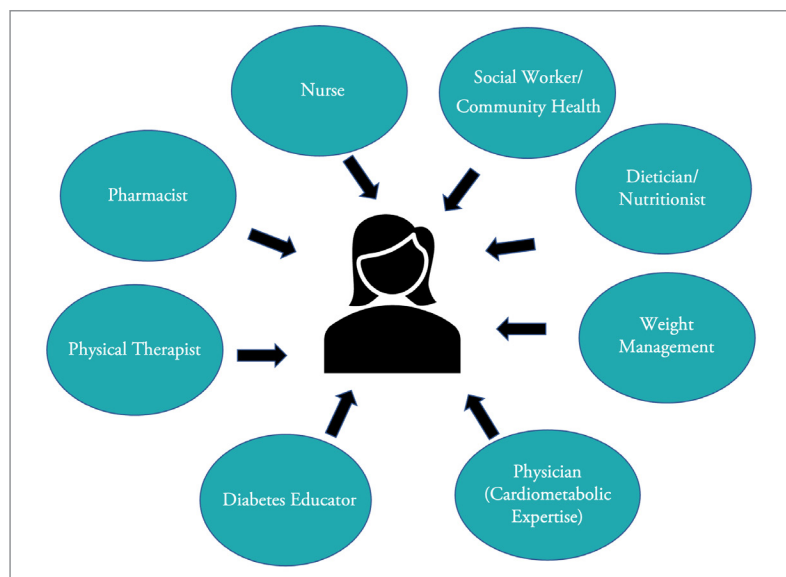


Fig. 1 A multidisciplinary care model for the cardiometabolic health of people with diabetes.

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References

1. Centers for Disease Control and Prevention. National Diabetes Statistics Report. Reviewed November 29, 2023. Accessed May 5, 2023. <https://www.cdc.gov/diabetes/data/statistics-report/index.html>
2. Gregg EW, Hora I, Benoit SR. Resurgence in diabetes-related complications. *JAMA*. 2019;321(19):1867-1868. doi:10.1001/jama.2019.3471
3. Fang M, Wang D, Coresh J, Selvin E. Trends in diabetes treatment and control in US adults, 1999-2018. *N Engl J Med*. 2021;384(23):2219-2228. doi:10.1056/NEJMsa2032271
4. Davies MJ, Aroda VR, Collins BS, et al. Management of hyperglycemia in type 2 diabetes, 2022. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*. 2022;45(11):2753-2786. doi:10.2337/dci22-0034
5. ElSayed NA, Aleppo G, Aroda VR, et al. 10. Cardiovascular disease and risk management: standards of care in diabetes—2023. *Diabetes Care*. 2023;46(Suppl 1):S158-S190. doi:10.2337/dc23-S010
6. Nelson AJ, O'Brien EC, Kaltenbach LA, et al. Use of lipid-, blood pressure-, and glucose-lowering pharmacotherapy in patients with type 2 diabetes and atherosclerotic cardiovascular disease. *JAMA Netw Open*. 2022;5(2):e2148030. doi:10.1001/jamanetworkopen.2021.48030