

Diabetes Prevention at the Tipping Point: Aligning Clinical and Public Health Recommendations

For decades, clinical and public health recommendations have advised overweight and obese adults to eat more healthfully, adopt regular physical activity, and lose weight. Unfortunately, such advice unaccompanied by ongoing support is rarely sufficient to enable the adoption of healthier behaviors. In this issue, the Community Preventive Services Task Force delivers new recommendations for health care systems and community organizations to offer combined diet and physical activity promotion programs that provide counseling and longitudinal support for persons at increased risk for type 2 diabetes (1). This recommendation follows 2 related systematic reviews that evaluated available evidence for the effectiveness and cost-effectiveness of combined diet and physical activity promotion programs (2, 3). Evidence suggests that programs that achieve a mean weight loss at 1 year of just 2.5% confer a 60% reduction in diabetes development at 6 years, with approximately one half of patients reverting to normal glucose levels (2). Programs based on the U.S. Diabetes Prevention Program (DPP) or Finnish Diabetes Prevention Study interventions yielded a 2-fold greater weight loss (mean, 3.0% [95% CI, 1.9% to 4.1%]) than less structured approaches (2). Although programs adapted from the DPP are generally considered “resource-intensive,” their median cost was only \$424 per person, or approximately 25% of that of the original DPP lifestyle intervention (3). Alas, if every overweight or obese American adult participated in such a program, the total bill would approach \$71 billion (\$424 times 168 million people), which raises important questions for stakeholders. Are there “priority” populations that benefit most from access to intensive combined diet and physical activity promotion programs? Should society or health systems pay for these interventions if an individual is unable? Are different forms of delivery more effective or cost-effective than others? Can effective programs be scaled nationally?

The Community Preventive Services Task Force found that the median incremental cost for a health payer to offer a group-based program adapted from the DPP was just \$1819 per quality-adjusted life-year gained (3), and there were modest yet statistically significant improvements in blood pressure and lipid levels. Previous studies also suggest that those benefits may be underestimated if some participants who lost weight tapered dosages or eliminated some medications for managing those cardiovascular risk factors (4). Unfortunately, there was insufficient evidence to assess the comparative effectiveness and comparative reach of different combined diet and physical activity program delivery channels. For example, if social media-based interventions are found to be equally effective but less costly than face-to-face programs, we must also

know whether those approaches reach the same or different persons. It is likely that we will need a “portfolio” of approaches to maximize population reach and effectiveness.

Early field experience often provides more information about program scalability than research studies. One relevant example involves a partnership among the YMCA of the USA, UnitedHealth Group, and the Centers for Disease Control and Prevention, which combined community program delivery with health payer and public financing to bring the YMCA of the USA's adaption of the DPP to more than 28 000 participants in 1100 locations in 43 states (5). The Centers for Disease Control and Prevention also hosts the National DPP, which provides standards for program delivery, guidelines for organizational recognition, workforce training, and a national registry that lists more than 660 organizations offering high-fidelity DPPs in all 50 states and the District of Columbia (6).

Despite the ongoing growth in capacity, 1 prevailing challenge is that only 1 in every 13 of the 86 million Americans with prediabetes today are aware of their high risk (7). In this context, the health care sector can play a pivotal role in raising awareness about diabetes risk as well as the availability of programs for lowering that risk. In 2010, the Patient Protection and Affordable Care Act mandated that commercial health plans, Medicare, and Medicaid programs provide full coverage, without cost-sharing, for all U.S. Preventive Services Task Force (USPSTF) “A” or “B” recommendations. In August 2014, the USPSTF issued a “B” recommendation that overweight or obese adults with cardiovascular risk conditions (including impaired fasting glucose levels and the metabolic syndrome) be offered intensive combined diet and physical activity interventions (8). Like the Community Preventive Services Task Force, the USPSTF recommendation referenced the DPP as an exemplar program that could be adapted and delivered in either primary care or community settings to meet the recommendation. In November 2014, the USPSTF issued a draft recommendation (not yet finalized) supporting prediabetes screening among adults with a wide array of risk factors (9). Overall, approximately 20% of American adults with either a high-risk hemoglobin A_{1c} level (5.7% to 6.4%) or fasting plasma glucose level (5.55 to 6.94 mmol/L [100 to 125 mg/dL]) will progress to diabetes over 10 years (10). Thus, a best-case scenario that successfully identifies all high-risk persons and links them to a combined diet and physical activity promotion program that reduces diabetes development by 50% has the potential to prevent 8.6 million new cases of type 2 diabetes over the next decade.

Combined diet and physical activity promotion programs are an effective prescription for diabetes prevention—they have a preferred DPP formulation, a minimum dose, and must be taken continuously. This treatment has become increasingly available, but most persons remain unaware of their need for a prescription or where to fill it. Health care providers should assume a greater role in performing recommended screening and linking high-risk patients with combined diet and physical activity promotion programs; the National DPP registry and the YMCA of the USA's program database should be used as tools. Health payers should recognize that these programs meet Affordable Care Act-directed coverage requirements for recent USPSTF recommendations. As a society, we should no longer hold for ransom the potential to reduce the burden of diabetes by continuing to await further evidence that interventions will be cost-saving or prevent myocardial infarctions or deaths. It is imperative that we promote a known cost-effective intervention that improves health, reduces the need for medication, and has the potential to enable millions of Americans to evade a remaining lifetime burdened by the daily management of diabetes.

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