

Preventing Diabetes

The time is now

Readers of *Diabetes Care* know that the prevalence and cost of diabetes is increasing rapidly. Without a suitable population health response, the epidemic of obesity coupled with an aging population will relentlessly increase that burden. Breakthroughs in management of diabetes and systematic delivery of effective clinical services may ameliorate the enormous cost of the disease, but that is not the solution. The real answer lies in preventing the disease in the first place.

Until recently, we had few effective strategies for attacking the root of the problem over the longer term. Those now exist. We need to promote primary prevention strategies to improve nutrition and reduce sedentary behavior, but to do so will require a major societal commitment to safe, walkable communities; good recreational facilities; changes in agricultural subsidies and marketing of poor food choices; school nutrition education and physical activity programs; social supports; financial incentives for fitness; and much more. *The Guide to Community Preventive Services* has begun to assess the effectiveness of those interventions (1).

While we await the implementation and impact of primary prevention strategies, there are concrete actions that clinicians could take now if the necessary financial and delivery systems were in place. The Diabetes Prevention Program (DPP) unequivocally demonstrated the potential for slowing the progression of glucose impairment to diabetes. Metformin was effective, but the behavioral interventions were almost twice as effective (2), and economic evaluations have demonstrated that the intensive behavior change intervention was highly cost effective, though not cost saving (3). Were we looking at a medical procedure or drug with those effects, does anyone doubt that it would rapidly become the clinical standard of care and be reimbursed?

It is a dismal commentary that a health care system capable of the most sophisticated care in the world does not have the mechanisms to deliver and finance behavioral interventions capable of

providing cost-effective benefits. Hence the need for the two articles in this issue of *Diabetes Care* (4,5).

Ackermann et al. (4) use novel economic modeling techniques to demonstrate the financial consequences of paying for a behavioral program to delay or prevent the development of diabetes. What is startlingly clear is that a DPP lifestyle intervention beginning at age 50 years is much more effective at reducing progression to diabetes than delaying the intervention to age 65, even though a program beginning at age 65 is still very cost effective. The authors show that the return on investment to payers is reasonable, and for employers, adding the improvements in human capital not included in these models would make the interventions even more cost effective.

The distinctly American anachronism of having a separate health care coverage system for people >65 years of age leads to potentially unfortunate consequences. By initiating interventions at age 50, large savings accrue to Medicare by reduction in rates of diabetes, yet Medicare has no way to reimburse for services for younger individuals that are in its own financial interest. This is analogous to Medicare's inability to provide first-dollar coverage for the use of ACE inhibitors in Medicare patients with diabetes despite its ability to extend life and save costs (6).

Recognizing that our current reimbursement system is ill equipped to pay for and deliver DPP-like behavioral services, Johnson et al. (5) take a different tack by examining patients' willingness to pay for them. Their model is hypothetical and the findings unremarkable; patients prefer programs that reduce the risk of diabetes substantially, induce large amounts of weight loss, and have few dietary restrictions. Those who perceive themselves to be at high risk are more willing to participate and to pay more to reduce that risk. Despite the fact that such a combination of features is not even feasible at the moment, the study illustrates the difficulty of developing an attractive program that most individuals at risk would be willing to pay for.

We know that increased cost discourages access to care and adherence to medical regimens (7). This problem is compounded by current trends in the reimbursement system. More and more, patients, now often called consumers, are being given responsibility for determining which services to use. High-deductible, consumer-driven health plans (CDHPs) are intended to make patients seek those services that provide the most value. This requires high-quality, locally relevant information delivered to a health-literate population. These criteria are scarcely in place anywhere in the U.S., so how can we rely on individuals alone to seek these services and pay for them out of pocket? Some hope can be found in high-deductible plans, which the Internal Revenue Service will allow to cover preventive services using first-dollar coverage, i.e., preventive services could be covered with no deductible. We need to encourage payers (plans and employers) to include DPP-like programs as part of the no-deductible preventive services.

Many of the highest-risk patients are covered by Medicaid or uninsured. Within Medicaid, recent federal budget initiatives transfer more of the costs to patients. Since some of the estimated federal savings derive from the assumption that people will seek less care, it is clear that many of those most in need will be unable to pay increased fees for services. Therefore, innovative approaches to both secure the best policy response from Medicaid programs to incent use of preventive services and to reach these populations will be needed. Group programs such as those modeled in Ackermann et al. (4) could potentially be delivered efficiently in community settings. Such programs might have additional benefits in terms of scalability, convenient access, built-in social-support systems, and integration with local nutritional and physical activity resources to not only reinforce behavioral changes among participants but also spillover into the general population, thereby reducing overall risks. We need good demonstrations and evaluations of this approach. Regardless, these will be

important challenges for our chronically overburdened and underfunded population health system.

Solutions must come from synergistic changes in our clinical, financing, and population health systems to create sustainable behavior change for high-risk patients, for whom intensive efforts are needed, as well as for the rest of the population, which will bear the brunt of the panoply of health consequences of poor nutrition, obesity, and sedentary behavior. A central challenge is that churning within the current reimbursement system creates a disincentive for prevention. Those who pay are seldom those who reap the financial benefits for implementing primary and secondary prevention preventive programs. This is a typical "tragedy of the commons" where the common good is difficult to achieve by the simple sum of individual interests. Public funding of prevention is a potential approach. DPP-like programs provide economic value, target behaviors that contribute in large measure to the leading causes of death and health care costs, and now demand that we find realistic ways to

deliver them in real-world settings. Failure to do otherwise will doom us to continuing to fight the costly rear-guard action to battle the consequences of our inaction.

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