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FROM THE EDITOR-IN-CHIEF

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It’s Time To Halt The Unacceptable Toll Of Diabetes

BY SUSAN DENTZER

Whenever the diabetes epidemic comes to mind, I picture the late Shirley Horn. The great jazz singer had a rich voice and beautiful phrasing; she also accompanied herself so brilliantly on the piano that a fellow jazz artist described her as having two heads. Tragically, Horn suffered from type 2 diabetes—and as her disease progressed, in 2002 she had a foot amputated. Deprived of the ability to pump the pedals, she mostly had to leave the piano playing to others. Eventually, Horn’s diabetes was further complicated by breast cancer, and she died of a massive stroke in 2005 at age 71.

As Judith Fradkin observes in this first-ever thematic issue of Health Affairs devoted to diabetes, some 26 million Americans have followed Horn into the veritable purgatory that diabetes can be. A staggering 79 million more are at high risk of developing the disease over the next decade, and one in three US children born in 2000 are likely to develop it over their lifetimes. Globally, as many as 285–347 million may also be affected.

STUNNING COSTS
The “unacceptable human and societal toll” of the disease, in Fradkin’s words, can include blindness; kidney failure; amputation; heart disease; and increased risk of various cancers, dementia, hearing loss, and osteoporosis. Diabetes also drives stunning medical costs: In the United States, an estimated $1 out of every $3 in Medicare dollars is spent on people with diabetes. You don’t have to be a math major to grasp the likelihood that growing spending on diabetes could easily overwhelm our other efforts at constraining health care costs.

What’s so frustrating is that we essentially know how to keep most diabetes, once diagnosed, under control—through weight loss, exercise, and appropriate medical management to attain tight control over glucose levels and blood pressure. Still, as is often the case in US health and health care, just because we know what to do doesn’t mean that we do it.

In fact, as articles in this issue spell out, we as a nation are falling massively short of the mark in diabetes prevention, diagnosis, treatment, and even diabetes-related research. We need an all-out assault on the condition—and, since obesity and diabetes walk hand-in-hand, a long-term commitment to radically reshaping the obesogenic environment we live in.

NEED FOR RESEARCH
Authors’ calls to action in this issue begin with the need for more research. There are now several known types of diabetes: type 1, or autoimmune; type 2, formerly known as “adult onset” and now the most common form even in children; and gestational, or pregnancy related. The betting is that future research will undoubtedly turn up more specific genetic gradations.

It’s not clear why all of the known types are rising in prevalence; type 1 may be driven by a virus or a dietary trigger, while type 2 is mainly linked to weight gain and obesity. As Allen Spiegel and Meredith Hawkins observe in their article, further research could elucidate these matters—and could lead to the identification of new biomarkers and diagnostic tests that could help to better identify people at risk for diabetes, including by race and ethnicity.

Advancing prevention is equally urgent, starting with early detection of the disease. As Deneen Vojta and colleagues observe, nearly 25 percent of people with diabetes—and more than 90 percent of those with prediabetes—are undiagnosed. These facts suggest an extraordinary missed opportunity to begin measures to delay disease onset or progression when they could do the most good. Christel Villarivera and colleagues write that a key step would be broadening the base of evidence used by the US Preventive Services Task Force to update its diabetes screening guidelines, which now recommend screening only for those with sustained high blood pressure.

LIFESTYLE INTERVENTIONS
Much of the content in this issue explores the potential utility and cost-effectiveness of instituting a nationwide diabetes prevention strategy modeled on the clinical trials carried out in the United States and Finland. The US Diabetes Prevention Program trial showed that when participants with prediabetes lost about 7 percent of body weight through exercise and dietary changes, progression to full-blown type 2 diabetes was reduced by 58 percent over three years.

Such findings have now led the Centers for Disease Control and Prevention, the Y-USA (formerly the YMCA of the USA), and UnitedHealth Group to band together to offer a cost-effective version of the program, under which...
trained lifestyle coaches help small groups of people adopt similar behavior changes.

Xiaohui Zhuo and coauthors from the Centers for Disease Control and Prevention report on their simulation modeling of taking such a program nationwide. Accounting for all health care costs, they find that the program would break even in 14 years and would prevent or delay about 885,000 cases of type 2 diabetes over 25 years.

LIMITS OF EFFECTIVENESS?
Do the back-of-the-envelope math, and you'll quickly conclude that that sum represents a small fraction of the diabetes cases expected in future years. Then add in the concerns raised by Richard Kahn, who points out human beings' dismal track record of maintaining even a modest weight loss over time.

In Kahn's view, shared by other authors in this issue, we'd do better to focus for now on far better medical management of prediabetes and diabetes—while continuing to develop a better understanding of the root biology underlying obesity and figuring out how to transform the world into something other than the obesity factory that it has become.

As noted, assuming that patients take their medications, use of low-cost drugs long on the market can help achieve the requisite blood glucose and blood pressure control to avert the worst diabetes outcomes. Various authors throughout this theme issue point to some innovations that can also improve health care for people with diabetes, from arranging for efficient group visits to providing comprehensive care through patient-centered medical homes.

As Venkat Narayan and colleagues observe, given the worldwide nature of the diabetes epidemic, there are plenty of opportunities now for "sharing and adopting evidence-based policies at a global level." One likely candidate: "peer support" programs, in which nonprofessionals who have diabetes or close familiarity with its management assist other sufferers with the daily management of the condition and provide social and other support. Amid the evidence that such programs work in Cameroon, South Africa, Thailand, and Uganda, there's a strong case for expanding them in the United States.

LIFETIME OF LOSSES
The urgency of moving forward in all these areas is driven home by Jason Fletcher and Michael Richards, who probe the nonmedical impact of diabetes on adolescents and young adults. Those with diabetes are 6 percent more likely to drop out of high school and to experience lower employment and wages over their lifetimes, compared to their peers without the disease. Racial disparities figure prominently in this equation, as they do in poor health outcomes of diabetes. As Monica Peek and colleagues note, in Chicago, diabetes prevalence on the South Side is roughly double that of white city neighborhoods—while African American areas of the city have five times the rate of leg amputations as primarily white neighborhoods.

Enough. Let's have no more Shirley Horns getting sick and dying before their time, depriving all of us of their talents and vast human potential.

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For the generous financial support that made this issue possible, we thank the United Health Foundation, which together with the UnitedHealth Group has made an active commitment to spreading lifestyle interventions nationally in hopes of preventing diabetes spread. We also thank the pharmaceutical company Novo Nordisk, which has obvious commercial interests in the market for diabetes medications but is actively committed to disease prevention as well. Our gratitude goes, too, to the New York State Health Foundation, whose support of activities to improve diabetes care in that state are recounted in the GrantWatch profile in this issue.

Finally, we express our appreciation to Richard Kahn, who served as our expert adviser on this thematic issue. Kahn is an independent consultant and a professor of medicine at the University of North Carolina at Chapel Hill. He previously served as chief scientific and medical officer at the American Diabetes Association. We benefited profoundly from his expert guidance throughout the preparation of this issue.