The Times They Are A-Changin'

Marjorie Cypress

Bob Dylan, one of my favorite singer-songwriters, sang about the changing times in our country in the 1960s. However, the lyrics to "The Times They Are A-Changin'," released in 1964, are still prophetic and can remind us of what we, as a country and as a world, continue to face with the high prevalence of diabetes. Consider the words:

Come gather 'round people,
wherever you roam
And admit that the waters
around you have grown
And accept it that soon
You'll be drenched to the bone
If your time to you
Is worth savin'
Then you better start swimmin'
Or you'll sink like a stone
For the times they are
a-changin' (1)

The analogy to diabetes is obvious. The waters around us are the rising prevalence of diabetes, prediabetes, and obesity and the song calls on us to recognize that, if things do not change, we will "sink like a stone" (1). Dylan's words serve to warn us that we need to do something now, or we will face the overwhelming societal, economic, and health consequences of diabetes.

For many years, we have talked about prevention and "upstream thinking." This originally came from an image used by John McKinlay in an address to the American Heart Association in 1974 (2). He described his frustration with medical practice. He used the analogy of a rapidly flowing river to represent illness, and he said that physicians are so caught up in constantly rescuing victims from the river that they have no time to look upstream to see who is pushing their patients into the water. He further discussed frustration with "downstream endeavors," which he characterized as short-term, problem-specific, individual-based interventions, and he challenged health professionals to refocus and look upstream, where the real problems lie.

The many concerns related to climate change are also analogous to our health situation. F. Sherwood Roland, a chemist who warned about the dangers of chlorofluorocarbons (CFCs) and the depletion of the ozone layer, said, "What is the use of having developed a science well enough to make predictions if, in the end, all we're willing to do is stand around and wait for them to come true?" (3). After many of his colleagues shunned him, his work was validated, and his research helped contribute to an international protocol to halt the manufacture of CFCs and aerosols.

So what is the diabetes community doing that many others still do not see and take seriously? Clearly, we have made some advances, but progress is slow. The fight to stop diabetes continues, but it feels as if we are losing that war. Selvin et al. (4) reported on epidemiological data showing that

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there are now fewer people who have undiagnosed diabetes. That means we have become more effective at diagnosing people with the disease.

However, we are still seeing soaring rates of obesity and diabetes. It is estimated that one-fifth to one-third of all Americans will have diabetes by 2050 if current trends continue (5). There are many who profess to know why, but there are many issues that play a role. Although we all have long lists, I have chosen to discuss just a few of these issues: the stigma of diabetes, particularly type 2 diabetes; the rising costs of diabetes; the way we deliver diabetes care in our medical systems; the problems we often do not address, namely health literacy and numeracy; and the social determinants of health that largely contribute to the increased risk of obesity and type 2 diabetes.

Stigma

It is certainly true that people with diabetes face a stigma. Many people see diabetes as indicative of a lack of discipline and think that it is strictly a matter of laziness, lack of exercise, and overeating. We, in the medical community, may be making this stigma worse by telling people they need to lose large amounts of weight because this will make a big difference in their glucose control. Although this is true, the amount of weight we expect our patients to lose is usually not realistic. We still label people "noncompliant" instead of really examining the issues that individual patients are facing. Whether we realize it or not, we may be shaming and blaming the victims, something that does not work in trying to motivate people to change lifestyle behaviors.

Another kind of stigma people with diabetes face are well-meaning family and friends who act like the "diabetes police," telling family members with diabetes what they can and cannot do. Children with diabetes often face this at school, when they are told they cannot take certain classes, cannot go on school trips unless there is a nurse present, cannot participate in sports, and on and on. There are those with diabetes who are denied certain jobs, not because they cannot do them, but because of ignorance and lack of education on the part of employers and coworkers. And, although controversial, lack of insurance reimbursement for diabetes self-management education and diabetes prevention by certified diabetes educators (CDEs) can be viewed as discrimination, as can lack of access to newer, frequently more effective, but very costly medications that many cannot afford.

Personal behavior change is a major determinant in developing prediabetes or diabetes. However, none of us lives in isolation. We are influenced by the values we grew up with, perhaps behaviors that are ingrained, cultural and personal histories, and economics and our environment. We cannot isolate people from all of these larger influences. We need to go beyond looking at our patients and their families individually and instead focus on public health. The socioecological model starts at the individual level, but it progresses to community, state, and national levels. The work that needs to be done may start at the bottom of the socioecological model, but in order to enable real change, it must continue on a grander and higher level. We will only see real change when policy drives and promotes health.

Economics

Financially, diabetes is destroying us. The American Diabetes Association (ADA) estimated the total economic cost of diagnosed diabetes in 2012 to be $245 billion (6). This is a 41% increase from the previous estimate of $174 billion in 2007. This should get everyone's attention. As incidence rates rise, more and more people are being treated for diabetes. More than one in five health care dollars in the United States go to the care of people with diagnosed diabetes. One would think our government would be appalled by this, as should we all. Again, I am reminded of Dylan's prophetic lyrics:

Come senators, congressmen,
please heed the call
Don't stand in the doorway
Don't block up the hall
For he that gets hurt
Will be he who has stalled
There's a battle outside
And it is ragin'
It'll soon shake your windows
And rattle your walls
For the times
They are a-changin' (1)

Speaking to our legislators, it is important that we relay to them that we are in a battle. Diabetes is costly and devastating, and it is rattling our walls. Unfortunately, not very many of our government leaders seem to be able to hear it.

And yet, we know we can make a difference in these cost. ADA, the YMCA of the United States, and the American Medical Association recently released a study they commissioned from Avalere Health (7) detailing new cost estimates of federal savings from the Medicare Diabetes Prevention Act. Under this proposed bill, the National Diabetes Prevention Program would be a covered benefit for Medicare recipients. As has already been demonstrated, a 5–7% decrease in body weight, along with 150 minutes/week of physical activity, can reduce the risk of developing type 2 diabetes in those with prediabetes (8). According to a November 2010 UnitedHealth report (9), enrolling adults with prediabetes in the National Diabetes Prevention Program could save the federal government $61 billion over 10 years and potentially reduce the number of individuals who progress from prediabetes to diabetes by 3 million by the end of the decade. But, thus far, Congress will not pass the Medicare Diabetes Prevention Act.

Diabetes research funding by the National Institutes of Health is not

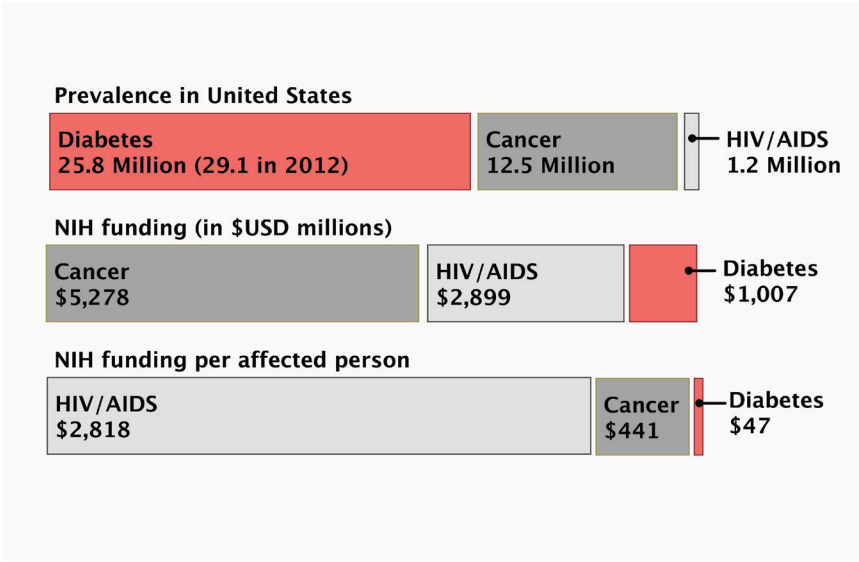

FIGURE 1. Prevalence, total funding, and money spent per person diagnosed with disease in 2013. Adapted from Ref. 10.

proportional to the prevalence of diabetes in the United States. As seen in Figure 1, diabetes affects more people in the United States than cancer and HIV/AIDS. However, the funding does not match this, and less is spent per person with diabetes than with cancer or HIV/AIDS (10). This is not to suggest that one disease is worse than the others, but that research monies are not adequate, nor distributed proportionately.

Delivery of Diabetes Care

It is well known that there is a shortage of primary care physicians and of endocrinologists. Perhaps as Gottlieb and Emanuel (both physicians with experience in health policy) tell us (11), we need to learn to practice smarter.

We need to work as a health care team. To increase productivity, we need to expand the scopes of practice of other health care professionals (HCPs), including CDEs, nurse practitioners, physician's assistants, pharmacists, and behavioral therapists. Others can monitor patients, adjust some medications, educate, and counsel patients. We can deliver more services even with fewer physicians. Peer support provided by community health workers, lay health advisors, promotores, patient navigators, and others can make important contributions to health, health care, and prevention. This has already been seen. Medical school curriculums should provide training in team care to take advantage of the capabilities of nonphysicians in caring for patients. The turf battles need to stop; everyone has something to offer, and we need everyone to participate.

Health Literacy and Numeracy

In 2014, the Institute of Medicine released a report from a workshop it held on health literacy and numeracy (12). Some of the data presented were somewhat dated because they refer to uninsured adults and were collected before the passage of the Affordable Care Act. However, only 8.6% of the uninsured adults were proficient in numeracy issues, with 29% below basic levels.

People with diabetes and limited health literacy have been shown to have problems acquiring the appropriate knowledge and skills necessary for diabetes self-management, including, for example, understanding food labels and estimating portion sizes (13–16). Numeracy skills are also needed to capably select a health plan, choose treatments, and understand medication instructions (12).

These are the adults who are coming into our health system now and are seeing HCPs for diabetes care and for care of other chronic and acute problems. The implications of this are serious. Several studies have shown that a very large number of previously uninsured people with diabetes have difficulty understanding glucose meter readings, interpreting sliding scales, titrating medications, and adjusting insulin based on carbohydrate consumed (16,17). If we do not address this problem, we will fail in our efforts to help people with diabetes.

Socioecological Determinants of Diabetes and Prediabetes

U.S. adults have the highest rate of diabetes and death from heart disease (18). Factors thought to contribute are those we all are familiar with: unhealthy behaviors and an unhealthy environment; sedentary lifestyles; economic and social conditions; social norms; and a built environment that does not promote activity.

Easily accessible and inexpensive high-sugar and high-fat foods take their toll on people's health. High-risk and highly disparate populations frequently deal with these problems, particularly because they may not have access to fresh produce and healthier foods. It is often easier and cheaper to grab a fast hamburger and fries, even for those who are food insecure. We need to make healthy foods the easier and more accessible choices.

According to the Center for Science in the Public Interest (19), McDonald's recently announced it would no longer list soda on its kids' menu. Subway, Chipotle, Arby's, and Panera also do not offer soda on their children's menus. But most of the top fast-food chains, including Wendy's, Burger King, and Chili's, still promote sugary beverages to kids. We tend to see these companies as evil. Perhaps instead of demonizing them, we need to think about partnering

with them to help educate them and the public about how to offer healthier choices, promote health, and decrease obesity rates.

ADA Activities

A number of ADA efforts are addressing some of these issues. ADA developed a Safe at Schools Program, which advocates to keep children with diabetes medically safe at school. Through its efforts, more teachers, nurses, and other school personnel will know what they need to do to keep kids with diabetes safe while they are in school.

ADA and volunteer diabetes advocates have worked in a large number of states to enact specific provisions regarding diabetes care in school. These provisions take the form of laws, regulations, or guidelines and ensure that trained school personnel provide assistance to students with diabetes and that students who are able to do so are allowed to self-manage their disease. ADA and its advocates were also able to get an extension of $300 million in federal funding for the Special Diabetes Program for Indians and the Special Diabetes Programs for Type 1 Diabetes.

In March 2013, more than 200 Diabetes Advocates from across the country gathered for the ADA's advocacy day in Washington, D.C., with its theme of "Call to Congress: Stop Diabetes." Advocates met with legislators to tell their stories, urge them to increase funding for diabetes research, and support other policy initiatives to help stop diabetes. Others phoned and e-mailed their legislators. We all need to participate and do more.

ADA is a major resource for health care professionals. By providing programs and resources such as Diabetes Is Primary for primary care providers; online webinars and free continuing medical education programs; reports on current research; the annually published Standards of Medical Care in Diabetes; and our position statements and journals, we have become the most respected experts in the diabetes medical community.

ADA also offers many activities and information resources for people with diabetes and others affected by diabetes. Our website, www.diabetes.org, offers information, advice, and recipes. Many of the educational materials ADA provides target high-risk populations, and plans are underway to improve access and information for these groups.

ADA is also involved in the Preventive Health Partnership (http://www.everydaychoices.org/aboutthisprogram.html), a collaboration with the American Heart Association and the American Cancer Society, to ensure that prevention of cancer, diabetes, heart disease, and stroke is firmly at the center of the health care system. One of the initiatives of this collaboration is to address health literacy. Together we have developed health literacy guidelines, and ADA is undergoing a systematic review of all of its patient education materials and working to make the messages more easily understood.

Last year, ADA published a scientific statement on the socioecological determinants of prediabetes and type 2 diabetes. This call to action, by Hill et al. (18), underscores the need for well-designed interventions that focus on both individuals and the social and physical environments in which they live. The statement concludes, "Our failure to adequately address the growing epidemics of obesity and type 2 diabetes will soon overwhelm our health care system, and investment in targeted research toward these identified social and environmental factors appears to be a productive avenue to improve our nation's health."

The Times They Are A-Changin'

It is time to recognize that we cannot continue with business as usual. We all need to take responsibility. Scientists, behaviorists, clinicians, diabetes educators, pharmacists, people with diabetes or at high risk or getting it, medical groups, the pharmaceutical industry, the food industry, government representatives, members of the media, and others all need to join the movement to make things change for the better. What we are doing now is not enough.

As previously noted, the issue of climate change is analogous to that of diabetes in its urgency. As Michael E. Mann, director of the Earth System Science Center at Pennsylvania State University in State College, put it (20), "It is no longer acceptable for scientists to remain on the sidelines." He added, "If scientists choose not to engage in the public debate, we leave a vacuum that will be filled by those whose agenda is one of short-term self-interest. There is great cost to society if scientists fail to participate in the larger conversation . . . . It is an abrogation of our responsibility to society if we remain quiet in the face of such a grave threat." And finally, "How will history judge us if we watch the threat unfold before our eyes, but fail to communicate the urgency . . . to avert potential disaster?"

We need to create that sense of urgency around diabetes. Urgency, as defined by John Kotter (21), is the condition in which "people are clearly focused on making real progress every single day. Urgent behavior is driven by a belief that the world contains great opportunities and great hazards. It inspires a gut-level determination to move, and win, now."

It is time for all of us to help create a sense of urgency. We cannot allow the diabetes epidemic to continue. You can help ADA in its mission to prevent and cure diabetes and improve the lives of all people affected by diabetes. The association is but one voice and cannot be effective alone. We need you. People with diabetes and those affected by diabetes need you.

I urge you to get involved. Donate your time, your money, whatever you can do: JOIN, by becoming a profes-

sional member of ADA, and add your voice. VOLUNTEER, by becoming a Diabetes Advocate, joining a committee, speaking to employer and community groups, writing letters to the editor of your local paper, or writing to your legislators. Add your voice. SPREAD THE WORD that we are responsible, and we need to make things change.

Finally, all of us need to create a sense of urgency. It is a feeling we know well, but we must help others who have not or have chosen not to feel it yet.

Acknowledgments

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1. "The Times They Are A Changin'," by Bob Dylan. Copyright ©1963, 1964, by Warner Bros. Inc., renewed 1991, 1992, by Special Rider Music. Lyrics reprinted with permission from The Bob Dylan Music Company.

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