Type 2 Diabetes Prevention: An Opportunity for a New Discipline

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In this issue of *Clinical Diabetes*, Leena A. Ahmad, MD, and Jill P. Crandall, MD, provide a comprehensive review of the data on type 2 diabetes prevention (p. 53). One cannot help but notice the magnitude of benefit (a reduction of anywhere from 25 to 60%) of a variety of modalities (e.g., lifestyle, medication, and surgery) for those who are at high risk (traditionally those with impaired glucose tolerance) for developing type 2 diabetes. It is difficult to think of many chronic diseases for which the evidence base for prevention is so robust and the magnitude of benefit so large.

Although the benefits of efforts to prevent or delay type 2 diabetes have been known for nearly a decade, the incidence and prevalence of diabetes continue to rise. Explanations and attempts to bridge the gap between what we know and what we do usually fall under the purview of translational research. Specifically, individuals in this field are charged with generating and testing hypotheses about the "how" of moving care to where we ought to be in light of what we know. The issue is less "What is the right thing to do?" and more "How can we best accomplish what we know we need to do?"

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Many efforts have tried to bridge this gap: Teach new learners evidence-based medicine. Equip physicians to communicate better. Start disease management companies. Design and distribute better information technology. Do community-based participatory research. Increase funding for translational research that includes sustainability and scalability.

Many of these efforts have had some success. But that success has been limited, largely because these efforts rarely grasp the levers of change, and even when they are grasped, the grip is not sufficiently strong to effect change.

I believe that our efforts need two fundamental changes. First, we need to develop a new specialty of individuals whose expertise is in Implementation Science. These individuals would draw attributes from several disciplines and focus more on the intersection of policy and practice. There is too much fragmentation of efforts and talents.

Such experts would understand complexity science, principles of industrial engineering, know ledge management, and participatory methods and would also be grounded in the business of health care. We have too many individuals trying to translate knowledge whose skill sets are too narrow for the task at hand. Although good leaders are good at assembling talents that match the task at hand, these leaders should at least be conversant with the tasks themselves. We have too few individuals.

Second, we need efforts more potent than a Red Ryder BB gun. These efforts should involve large-scale collaborations that appreciate the complexity of the problem of translation. Few of these efforts will be randomized, controlled trials. We simply cannot continue to randomize a couple of hundred people to test one specific effect on one specific outcome if our goal is to translate knowledge and implement sustainable, scalable improvement. Although this is a clean and crisp approach, it is weak.

Type 2 diabetes can be delayed and possibly prevented. We should continue our efforts to prevent this disease. Our efforts will be accelerated and amplified if we use this problem as an opportunity to develop a new specialty in Implementation Science whose practitioners will employ appropriately potent and comprehensive efforts.