Translation Research in Diabetes

Asking Broader Questions

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“If we want more evidence-based practice; then we need more practice-based evidence,”
Larry Green, 2004

INTRODUCTION

The burden of diabetes is well documented. Adverse health conditions, disability, reduced quality of life, and heightened risk of premature death characterize the progression of this disease (1–3). The considerable personal burden of diabetes is magnified by the penetration of the disease into the American population. By the age of 60, approx 1 in 10 Caucasians, 1 in 6 Latinos, and 1 in 5 African Americans, have type 2 diabetes (4). Further, the prevalence of diabetes is projected to increase by almost 40% by 2010 (5). An unfortunate sidebar to these statistics is the increasing prevalence of type 2 diabetes or its precursor, impaired glucose tolerance, among American children (6). In clinic-based studies, the proportion of diagnosed pediatric type 2 diabetes (i.e., type 2 vs type 1) has risen from less than 5% prior to 1994 to 30–50% in recent years (6). Similar to adults, the disease is disproportionately high among youth with minority ethnic and racial backgrounds (6). In addition to the considerable burden on personal...
health, it is estimated that the annual direct and indirect economic costs of diabetes in the Unites States are approx $132 billion (7).

This information is probably not new to the audience reading this chapter, but our point here is to illustrate breadth of the impact of diabetes across age groups, cultures, and the economy in the United States (1). This context highlights the importance of identifying strategies to address the personal and societal costs of diabetes. Fortunately, the health outcomes and cost of managing diabetes can be strongly influenced by integrated care management that includes self-management support (8,9). However, individuals with diabetes often find it difficult to sustain healthy self-management behaviors. Although there is research support for the efficacy of behavioral programs to improve maintenance of self-management behaviors, there is little evidence that these programs or strategies are being adopted and offered within typical health care or health-education settings. Similarly, there are compelling data that appropriate management of glucose levels, blood pressure, and other risk factors can substantially reduce diabetes complications, but evidence-based guidelines for diabetes are seldom implemented at anything approaching recommended levels (10).

Based on the impact of diabetes on health and economic outcomes, the current high prevalence and projected proliferation of diabetes, and the lack of dissemination of efficacious interventions into regular practice, it is clear that there is a need to understand and address the issues and challenges of translating promising findings into regular practice. The purpose of our chapter is to investigate the issues associated with how to successfully translate diabetes management research into regular practice. We have organized the chapter to (1) identify the issues and challenges related to translation, (2) highlight priority areas for translational work, (3) present possible solutions to addressing translational issues and challenges, and finally (4) provide some conclusions regarding the effective translation of research into practice.

ISSUES IN AND CHALLENGES FOR TRANSLATION

The current medical practice environment is characterized by limitations and demands that differ substantially from the controlled setting of a research environment. Patients with diabetes rarely, if ever, carry a single diagnosis. Caring for persons with diabetes mandates that the provider think about multiple potential comorbidities: hyperlipidemia, coronary artery disease, renal disease, and the potential for other endocrinopathies, to name a few. As previously discussed, the US population with diabetes is both aging and becoming more sociodemographically diverse, requiring individualized adaptations of treatment recommendations. Patients with diabetes also participate in unhealthy eating patterns, sedentary behavior, and cigarette smoking, all of which further increase their risk for cardiovascular disease and premature death. Therefore, disease management in diabetes is not simply about managing a single disease or encouraging one behavior change. Given the comprehensive nature of diabetes care, brief clinical visits can feel inadequate and frustrating to both patients and providers. Finally, collaboration between specialty and primary care, sometimes across entirely different health care systems, puts a premium on effective professional communication.

In the face of these competing demands, the amount of clinical evidence and guidelines is skyrocketing. It behooves the clinician to carefully assess the quality and practicality of the evidence before translating it into practice (11). Or, put another way, to