Organizing Diabetes Care: Identify, Monitor, Prioritize, Intensify

The need for radical and rapid improvement in diabetes care was clearly articulated by Williams in 1967 (1), but progress toward that laudable goal has been painfully slow. Only recently have population-based reports from primary care settings documented significant progress toward the goal of better diabetes care (2–5). In these and other studies (6), multiple interventions that address office systems, provider behavior, and patient behavior were usually needed to improve diabetes care (7,8). Successful interventions often used common strategies to improve care. These strategies included *1*) accurately *identifying* patients with diabetes (9); 2) *monitoring* one or more important clinical parameters, such as glycosylated hemoglobin (HbA_{1c}) or cholesterol levels; *3*) *prioritizing* patients based on their clinical status and readiness to change (10); and *4*) *intensifying* care through active outreach or visit planning.

Although identification of diabetic patients can be accomplished in most settings, stratification of patients by risk presents greater challenges. Risk information can be used to prioritize patients and to match interventions to level of risk, which may substantially increase the effectiveness of interventions (11). In this issue, Selby et al. (12) present an automated method to systematically identify patients at high risk. Selby et al. show that the predictive value of their multivariate risk measurement strategy is somewhat superior to simpler risk measurement strategies. They propose a multivariate risk measure that includes previous complications, high HbA_{1c} levels, and elevated serum creatinine levels. The authors thereby contribute a useful and inexpensive tool to identify, monitor, and prioritize risk of diabetic complications on a population basis.

However, there are a number of factors that limit the usefulness of the proposed multivariate risk measure. First, many patients will not have up-to-date HbA_{1c} or serum creatinine tests. Second, the authors do not separate risk of macrovascular and microvascular complications. Lifetime cumulative prevalence of end-stage microvascular complications is 4–15% depending on risk factors (13), yet 75% of adults with type 2 diabetes die from macrovascular causes (14,15). Macrovascular complications are also the leading driver of excess costs associated with diabetes in adults (16), and the number of patients that need to be treated to prevent one major cardiovascular event is much smaller than the number needed to treat to prevent one end-stage microvascular complication (17). Third, the sophisticated risk measure proposed by Selby et al. may be difficult to apply in smaller practice settings. Some smaller practices have successfully used much simpler systems to assess risk and tailor interventions (e.g., patients with a high HbA_{1c} level) (2,3).

It seems clinically sensible to focus attention on high-risk patients because they lay claim to a disproportionate fraction of our time and energy and because they are the patients who may benefit most from intensified therapy (18). Furthermore, patients with high risk of major complications generally have more favorable short-term return on investment than lower-risk patients (19). Therefore, payers may be willing to devote more resources to the care of high-risk patients, because fewer such patients need to be treated with an effective intervention to prevent each complication.

On the other hand, what about younger, average-risk patients who may have more years ahead of them to develop and endure serious diabetes-related complications? Prioritization of risk is no benefit if average-risk patients are neglected. Most major cardiovascular events come from the large fraction of average-risk patients than from the smaller fraction of high-risk patients (20). Only by aggressively addressing the needs of average-risk diabetic patients will health plans and medical groups be able to slow down the pipeline that inexorably transforms our average-risk patients into high-risk patients who require higher resource use but achieve poorer outcomes. Effective interventions for average-risk patients present special challenges and offer important opportunities (21,22).

We are fortunate that many effective strategies to improve population-based diabetes care are now available, and several large primary care clinics have achieved median HbA_{1c} levels near or below 7% on a population basis (2,3,5). Broad dissemination of the methods used to achieve these results in primary care practices is now needed. A more balanced clinical approach to the care of adults with type 2 diabetes—with much greater emphasis on multifactorial risk reduction, including blood pressure control, lipid control, use of aspirin, smoking cessation, and gylcemic control—is also needed.

We suffer the curse of living in interesting times. Thirty-four years after Williams' prescient report (1), the proven efficacy of metformin (23), aspirin (24), angiotensin-converting enzyme inhibitors (25), and statins (26) offer our patients unprecedented hope for better clinical outcomes. Integrated, multifaceted primary care interventions that target organization of care, patient behavior, and provider behavior have been dramatically successful (2–5, 18). Yet <20% of diabetic patients in the richest country on earth have achieved simultaneous control of glucose, lipids, and blood pressure, while 75% of adults with diabetes continue to die prematurely of macrovascular disease. The clinical and population health tools we need to get the job done are now available, but our practices are not well organized, and too few of us have adopted the systematic strategy of "identify, monitor, prioritize, and intensify." Will we take advantage of this powerful improvement strategy? Or will we wait for another generation of our patients to die premature deaths often caused by preventable macrovascular complications? The choice is ours today. Let us work together

to organize, integrate, and coordinate all of our care—primary and subspecialty, doctor and nurse, inpatient and outpatient—without violating the confidentiality or privacy rights of our patients. We *can* do it, if we choose to.

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