

## POLICY BRIEF:

# Diabetes Screening and Monitoring in the Dental Office

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### KEY FINDINGS

- Diabetes affects 9.5% of American adults, resulting in more than \$100 billion in annual medical costs. More than a quarter of adults with diabetes and 9 out of 10 with prediabetes are unaware of their condition.
- Complications of diabetes are associated with significant morbidity and increased mortality. One of the earliest clinical manifestations of diabetes is periodontal disease, which is diagnosed and treated by dentists.
- More than 60% of Americans see a dentist each year. Further, an estimated 20 million people had an annual dental visit but did not have a medical visit. The dental office represents an unrealized health care opportunity to screen and monitor patients for diabetes.

### WHAT IS THE ISSUE?

Diabetes<sup>3</sup> is a chronic and potentially debilitating condition affecting more than 29 million people in the United States.<sup>i</sup> An additional 86 million Americans have prediabetes with moderately elevated blood sugar levels, putting them at higher risk for developing diabetes. Altogether, more than 4 out of 10 American adults have diabetes or are at risk for developing diabetes.<sup>ii</sup> The most common form of diabetes—Type 2—can be prevented or its onset delayed through a healthy diet and increased physical activity, but doing so poses a significant challenge for most people. In New York State, between 1994 and 2012, the percentage of adults with diagnosed diabetes more than doubled from 4% to 9% (see Figure 1).

Diabetes requires patients to regularly monitor their diet and blood sugar. Screening patients for Type 2 diabetes can lead to early intervention and reduce future complications, but because of the long asymptomatic period, diagnosis often does not occur until complications of the condition occur.<sup>iii</sup>

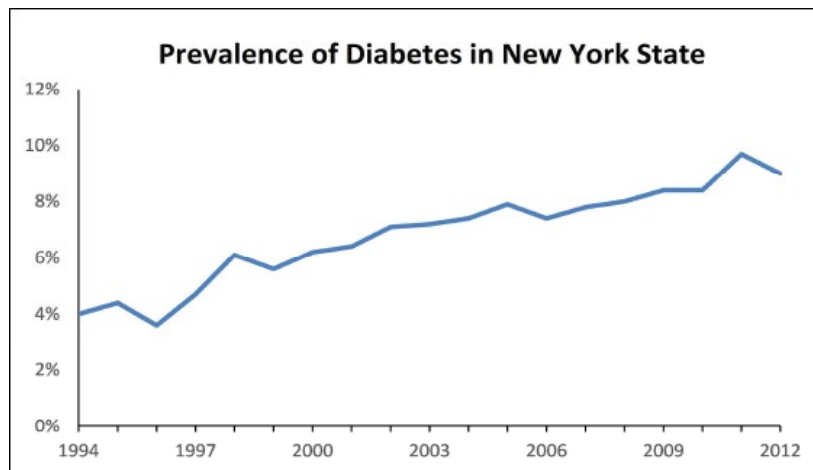
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<sup>3</sup> This brief defines diabetes broadly to include Type 1 and Type 2, as well as gestational diabetes.

## Main Findings *(continued)*

FIGURE 1: Prevalence of Diabetes in New York State



Source: Centers for Disease Control and Prevention, "Diagnosed Diabetes Prevalence State Estimates," [http://www.cdc.gov/diabetes/atlas/obesityrisk/county\\_state\\_indicators.html](http://www.cdc.gov/diabetes/atlas/obesityrisk/county_state_indicators.html).

**Complications from diabetes can be severe and costly.** Uncontrolled diabetes can lead to blindness, kidney failure, heart disease, and stroke, as well as require the amputation of toes, feet, or legs.<sup>iv</sup> The average annual medical costs for patients with diabetes are more than twice that of the general population.<sup>v</sup> If diabetes prevalence continues unchecked, diabetes-related medical expenses are estimated to nearly triple from \$113 billion in 2009 to \$336 billion in 2034.<sup>vi</sup> In addition to medical expenses, the burden of diabetes results in decreased worker productivity, increased absenteeism, and higher rates of disability.

**The wide reach of diabetes and the resulting costs to patients and society demand creative approaches to identifying and managing the condition.** This policy brief explores the opportunity of using dental providers to screen for and monitor diabetes during routine dental visits.

### WHAT'S THE CONNECTION BETWEEN ORAL HEALTH AND DIABETES?

**Oral health and diabetes have a two-way relationship.** Diabetes is a known risk factor for periodontal disease (also known as gum disease), a common chronic inflammatory disease, and periodontitis can have a negative effect on glycemic control.<sup>vii</sup> Patients with diabetes are about three times more likely to develop periodontitis than persons without diabetes.<sup>viii</sup> The severity of periodontal disease is linked to how well patients with diabetes control their blood sugar.<sup>ix</sup> In addition, a growing body of research has focused on the role of oral inflammation as it relates to diabetes and its complications.<sup>x</sup> A long-term study found people with diabetes who had moderate or severe periodontitis were at least twice as likely to have kidney complications, including end-stage renal disease, than people with diabetes but without periodontitis.<sup>xi</sup>

**Diabetes and oral health are interrelated, and dental treatment can improve the management of diabetes.** Treatment of periodontal disease and the reduction of oral inflammation are associated with improved glycemic control.<sup>xii</sup>

## Main Findings (continued)

Periodontal disease is one of the earliest complications of diabetes.<sup>xiii</sup> As a result, dentists may be among the first health care providers to see patients showing complications from diabetes, even if diabetes has not yet been diagnosed. Beyond periodontitis, there are a number of other oral complications associated with diabetes, including increased root caries, *Candida* infection (commonly known as thrush), burning mouth syndrome, and enlarged salivary glands.

Dental care, particularly periodontal therapy, is less effective in patients with uncontrolled diabetes. Consequently, it is important for dental providers to know a patient's medical history and health status, including glycemic control, prior to developing a treatment plan and beginning dental care. Testing patients' blood sugar levels prior to oral surgical procedures can also help avoid emergency situations, such as severe hypoglycemia before, during, and after a procedure.<sup>xiv</sup>

### WHY SHOULD DENTISTS SCREEN FOR AND MONITOR DIABETES?

Nearly 28% of those with diabetes and 90% of those with prediabetes are not aware of their condition. The dental office provides an opportunity for early detection for patients who might not otherwise be screened. Dentists have long focused on prevention as it relates to oral health by encouraging reduced consumption of sugary foods to prevent dental decay and, more recently, by offering smoking cessation counseling. Diabetes screening and monitoring is a natural extension of that focus.

The majority of Americans see a dentist at least once a year. In 2013, 83% of children ages 2–17, 62% of adults ages 18–64, and 61% of seniors had an annual dental visit.<sup>xv</sup> Although the majority of Americans also see a physician annually, there are some who see one provider but not the other. In 2008, nearly 20 million people in the United States had a dental visit but not a medical visit.<sup>xvi</sup> Patients who are not yet experiencing symptoms of diabetes may be going to physicians for unrelated health issues and may not be screened. The dental office provides an additional point of contact with the health care system where a diabetes screening can be offered.

Case studies of diabetes screening in the dental office found abnormal blood sugar levels in 30–50% of previously undiagnosed patients.<sup>xvii</sup> One of the studies found a high prevalence of dysglycemia (abnormal blood sugar levels) even in patients who had health insurance and a primary care physician and had seen their physician at least once in the past year.<sup>xviii</sup>

Diabetes screening and monitoring in dental offices can improve patient care coordination. Oral health and general health, while inextricably linked, often have been treated independently. Having dentists screen for diabetes and monitor blood sugar levels can help change that historical divide. When dentists screen patients and find elevated blood sugar levels, they will make a referral to the patient's primary care provider. It is important to note that dental providers are screening and monitoring—not diagnosing diabetes—which would be left to the patient's primary care provider.

Dental providers can play an important role in helping patients monitor their condition. Only about half the patients diagnosed with diabetes are adequately managing their condition.<sup>xix</sup> Dentists can help patients by monitoring their blood sugar levels at each dental visit, and providing the results to patients and their primary care medical providers. High glycemic levels can signal to patients that they need intervention and remind them to follow up with their primary care provider in an effort to avoid complications.

## Main Findings *(continued)*

Screening for and monitoring diabetes is safe, effective, and easily done in a dental visit. There are two types of simple blood tests that can be used to screen for and monitor diabetes: glycosylated hemoglobin (HbA1c) and serum glucose. Both can be measured using a chairside test with only a drop of blood. HbA1c levels are particularly important because they are a measure of blood glucose levels during the previous three months. Results can be quickly analyzed at the dental office. An abnormal test result would trigger a referral to a medical provider.

### WHAT ARE THE POTENTIAL BARRIERS TO DENTISTS SCREENING PATIENTS?

- **Scope-of-practice laws:** In many states, including New York, it is not clear if screening for and monitoring of diabetes are within the scope of practice for dentists and dental hygienists. The New York definition says that “[t]he practice of dentistry may include performing physical evaluations in conjunction with the provision of dental treatment.”<sup>xx</sup> An explicit clarification that this language includes screening for and monitoring of diabetes would be helpful, much like smoking cessation was deemed to be within that definition.
- **Reimbursement:** If New York clarifies the scope-of-practice definition to allow dental providers to perform diabetes screening and monitoring for at-risk patients, dentists are more likely to perform such tests, as they can receive reimbursement from Medicaid and private health insurers. Policy changes in New Jersey (see sidebar) provide evidence that private insurers understand the importance of early detection of diabetes and are willing to pay for the screening by dental providers.
- **Dentist buy-in:** To have dental providers perform screening for and monitoring of diabetes, they must be on board. Nearly all dentists agree that screening for diabetes is important, and a substantial majority report a willingness to use a blood test to screen for diabetes, with approval ranging from 55% to 78%.<sup>xxi</sup>
- **Patient attitudes:** Diabetes screening in the dental office would be selective rather than a standard practice. Dentists could use a risk assessment tool to determine who would be offered screening based on factors such as age, race/ethnicity, self-reported weight, and family history of diabetes. Studies have found patients overwhelmingly support diabetes screening by dental providers because it was convenient, saved time, and provided an additional opportunity to receive important health information.<sup>xxii</sup>

#### NEW JERSEY ALLOWS DENTISTS TO SCREEN FOR DIABETES

Recently a major dental insurer, Delta Dental of New Jersey, announced that it will begin a pilot program to reimburse dentists for screening at-risk patients for diabetes using a finger-prick blood test to measure HbA1c. This policy change was prompted by a New Jersey State Board of Dentistry ruling that determined in-office diabetes screenings are within the scope of practice for dentists.

### CONCLUSIONS

Diabetes is a rising epidemic in the United States, and it will take a large, coordinated effort to reduce its effect on patients, health care costs, and society as a whole. The earlier prediabetes and diabetes can be detected and treated, the more successfully these conditions can be managed. Not only could dentists screen for diabetes, they also could help patients manage their conditions by checking blood sugar levels on every visit and coordinating with primary care providers. The dental office provides an unrealized health care opportunity to screen and monitor patients who are at risk for or are affected by diabetes.

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