CareQuest Institute for Oral Health®

Oral Health's Role in Identifying Undiagnosed Diabetes

Periodontal disease and diabetes have a suggested bidirectional relationship driven by systemic inflammation.[1] Diabetes, a condition characterized by elevated blood sugar, puts people at higher risk of developing periodontal disease, among other serious complications.[2] Meanwhile, individuals with both diabetes and periodontal disease face an increased risk of diabetes-related complications, such as neuropathy (nerve damage) and retinopathy (damage to the retina of the eye), compared to those without diabetes.[3]

Oral Health Providers' Role in Screening for Diabetes

Many people with diabetes living in the United States (US) may not know they have it. Approximately 80% of individuals with prediabetes[4] and 22% of those with diabetes[4] are unaware of their diagnosis.[5, 6]

A common diagnostic test for diabetes is the hemoglobin A1c (HbA1c) test, which provides a measure of blood sugar levels over roughly the last 90 days. Individuals are considered to have prediabetes if their HbA1c is between 5.7% and 6.4%, and diabetes is diagnosed at HbA1c levels at or greater than 6.5%. HbA1c can be measured from a single blood test analyzed in a laboratory or by a point-of-care testing machine.

An estimated 9% of individuals who visit a dentist annually do not also visit a medical provider,[7] emphasizing the important role that oral health professionals can play in educating patients with periodontal disease about their diabetes risk.

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Researchers have studied the effectiveness of screening dental patients for diabetes who have periodontal disease and other diabetes risk factors. These studies find that screening for diabetes in the dental office can help identify patients at risk for prediabetes or diabetes based on HbA1c screenings who were previously unaware of their diabetes risk.

Research Supports Oral Health Providers Screening for Diabetes

- The US Preventive Services Task Force recommends that adults aged 35 to 70 years who have overweight or obesity should be screened regularly for diabetes.[8]
- A large-scale systematic review and meta-analysis found that dental chairside HbA1c screening identified over 11% of previously undiagnosed dental patients as having type 2 diabetes and an additional 47% as having prediabetes.[9]
- The accuracy of predicting prediabetes or diabetes increased from 73% to 92% when chairside HbA1c screening was combined with identifying patients' risk factors such as deep periodontal pockets or the presence of four or more missing teeth.[10]
- Effective screening of dental patients at risk for diabetes hinges on the use of reliable tools to identify those most likely to have diabetes or prediabetes. Algorithms, or sets of rules to guide decision-making,[11] have been employed in health care settings to enhance the efficiency of diabetes screening.[12–15]
- Dental patients overall have demonstrated willingness to be screened for diabetes in the dental office. Acceptance rates range from 42% in a dental student training clinic[16] to over 95% in other dental school and community clinics.[10, 17–18]

Benefits of HbA1C Testing in the Dental Office

As noted above, many individuals with prediabetes or diabetes are unaware of their condition, and so HbA1c screening in the dental office can alert patients to their elevated blood glucose levels and allow them to seek medical care earlier than if they had not been screened. Other benefits include:

- **Better oral health management and reduced complications:** Diabetes increases patients' risk of periodontal disease,[2] dry mouth,[19] and delayed healing after procedures.[20] Oral health providers who know their patients' HbA1c levels can better tailor treatment plans and recommend appropriate preventive care.
- **Increased awareness and proactive behaviors:** As patients learn more about how a chronic condition like diabetes can have direct effects on their oral health, they are empowered to take a more active role in managing their oral and overall health.
- **Improved coordination and adherence with medical care:** As oral health providers refer patients with elevated HbA1c levels to medical providers for follow-up care, this can both create a more integrated approach to health care and increase the likelihood that patients will follow up with their medical providers. This connection to medical care is particularly important for patients who don't regularly see a primary care provider.

Considerations for Oral Health Providers

Oral health providers can play a valuable role in screening patients for diabetes and referring them for appropriate follow-up medical care. The American Dental Association has published a "Quick Guide to In-Office Monitoring and Documenting Patient Blood Glucose and HbA1c," to which oral health providers should refer before beginning HbA1c screenings.[21] Overall, oral health providers thinking about including HbA1c screening in their offices should consider the following:

- Refer to the Dental Practice Act in the state where they practice, ensuring HbA1c testing falls within the scope of their license.
- Their dental office may require a CLIA (Clinical Laboratory Improvements Amendments of 1988) Certificate of Waiver in order to use CLIA-waived test kits.
- Oral health providers and, as appropriate, staff members need to be trained in all proper sample collection, device use, and infection control procedures.
- Prior to screening patients with an existing relationship with a medical provider, oral health providers should get written consent from their patients to share HbA1c screening results with their medical providers.
    - **For patients without a medical provider, oral health providers should have a list of medical resources to provide to patients to facilitate a prompt medical follow-up visit.**
- When choosing a chairside testing method, it is important to identify a testing method that fits within the practice setting. For example, practices should not use testing methods that require freezing or other special processing needs if the practice does not support these needs.
- CDT codes D0411 (HbA1c in-office point-of-service testing) and D0412 (blood glucose level test — in-office using a glucose meter) should be used to bill for these screening procedures.

Incorporating HbA1c screening into dental practices offers a valuable opportunity to identify patients with undiagnosed diabetes and prediabetes, especially among those who may not regularly seek medical care. By leveraging their unique position, oral health providers can help bridge gaps in health care, promote early intervention, and support better overall health outcomes.

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