Automated Approach for State and Local Health Departments (LHD) and Federally Qualified Health Centers (FQHC) to Identify Under 19 Medicaid/Children Health Insurance Program (CHIP) Beneficiaries at an Increased Risk for Caries (Cavities) and Type 2 Diabetes

The Opportunity

The problem that demands a resolution is the increased number of beneficiaries who are at risk for caries (cavities) and Type 2 diabetes. Caries is caused when you eat and drink, and the food particles and carbohydrates (sugar) linger on teeth and become bacteria in the mouth. Bacteria creates acid. Acid attacks the protective enamel. This cycle causes a cavity.

Moreover, higher sugar levels (pre-diabetic or diabetic) in a person's blood translates to it being high in the saliva. Bacteria in one's plaque uses sugar as food and can also be a cause for cavities.

According to the Centers for Disease and Control Prevention (CDC) in its 2019 report, "based on data from 2011–2016, for children aged 2 to 5 years, about 33% of Mexican American and 28% of non-Hispanic Black children have had cavities in their primary teeth, compared with 18% of non-Hispanic White children."[1] Furthermore, these statistics demonstrate an inequity, as according to a CDC 2021 press release, new research has uncovered "the greatest increases in type 2 diabetes prevalence were seen in youth who are Black or Hispanic."[2]

Below are a few reasons as to why the problem continues to persist (and frankly, continues to get worst):

- Lack of recognition of the role an oral health provider can play in not just addressing caries, but also addressing un-diagnosed Type 2 diabetes in this population.
- Lack of systemic coding for caries risk assessment, as many oral health providers chart or note the caries in the patient's record, but do not code the caries using Current Dental Terminology (CDT). Therefore, there is no certainty as to what procedures were performed without the proper coding.
- Lack of an automated approach to hold oral health providers accountable to the dental strategies (i.e., again ensuring coding of the caries (and not just charting or noting in the dental record) of the caries risk assessment).
- Lack of systemic coding for persons with identified cavities.
- Lack of system coding for persons with identified cavities, who would benefit from targeted dental case management.

And who is affected by this problem:

- Medicaid/CHIP beneficiaries and their parents or care providers because proactive caries treatment and diabetic screening can mean less days out of school, less time missed from work, better oral health **and** overall general health outcomes at a younger age. Remember, the mouth is the gateway to our bodies and a healthy mouth makes a healthy body.
- American Taxpayers because preventative (versus reactive) caries treatment can lower overall oral health costs (e.g., +Deamonte Driver's $80 dental treatment vs. $250,000 medical care[3]), as well as a significant amount out of the total $327 billion (about $1,000 per person in the US) for

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diabetes cost.

- Department of Health and Human Services Office of Minority Health because oral health has an impact on overall health[4]; we must advance oral health equity for all.

Sadly, if a solution to this problem is not found, the healthcare system will continue to be unsuccessful at addressing caries and diabetes seen in this underserved population. Those affected will continue to experience suboptimal care, with pain and infections, which translates to other issues such as eating, speaking, playing, learning, and missing more school.[5]

The Impact of Doing Nothing

When considering the failing health of children in underserved populations, the impact of doing nothing should not be an option. But if no action is taken, the potential impact to under 19 Medicaid/CHIP beneficiaries are as follows:

- Neglected Population Segments**:** Healthcare professionals are in the healthcare field to make a difference and save lives. But the sad reality is that carries, and diabetes can be deadly. +Deamonte Driver died in Washington, DC on February 28, 2007, because of a tooth abscess, which occurred because of untreated caries.[3] To lose a life is heartbreaking, but to lose a life when these 2 conditions are preventable and reversible, is unacceptable.

- Strain on Healthcare Services: Healthcare professionals know resources are limited, so there's a critical need to find innovative ways to not only deliver better care, but to make the healthcare spending dollar stretch. +Deamonte Driver's treatment was estimated to cost $80, but instead his reactive medical treatment ending up costing $250,000[3] – which equates to 6,250 $40 dental sealants or 3,125 $80 tooth extraction. CDC notes that "in 2017, the total estimated cost of diagnosed diabetes was $327 billion (about $1,000 for every person in the US) in medical costs and lost productivity."[6] Although this cost includes adults, the cost for this chronic condition for persons under 19 would still be staggering.

- Continued Health Inequity: Healthcare professionals know that healthcare inequity exists, particularly caries disparities amongst Medicaid beneficiaries,[7] but the work to provide equal and quality access care to all continues to remain the call. All underserved beneficiaries deserve no less than to receive regular preventive dental care, so that problems can be addressed early when it is less costly to treat. Equitable quality care is critical to achieving optimal oral and overall health for Medicaid/CHIP beneficiaries.

Again, doing nothing should not be an option! Rather taking the necessary steps to disrupt health structures that impose premature death should be the only option.

The Drawbacks of Other Solutions

Over time, there have been other approaches to resolve this problem. As an example, the Centers for Medicare and Medicaid (CMS) issued a Brief in 2015 that identified the following dental strategies to address early childhood caries[8]:

1. Ensure caries risk assessment is performed; and
2. Ensure the appropriate preventative treatment (e.g., sealant, fluoride varnish, or silver diamine fluoride) is performed.

Moreover in 2020, CMS launched the Advancing Prevention and Reducing Childhood Caries in Medicaid and CHIP Learning Collaborative to support Medicaid and CHIP to improve beneficiaries' oral health.[9]

Furthermore, there is the Healthy People 2030 and its oral health objective research that notes "Type 2 Diabetes was the chronic systemic disease that had the most frequently observed correlations with dental conditions." [10]

But these approaches were lacking because the approaches lacked automation that would provide actionable insights to support patient care, from a different perspective.

How This New Solution Solves the Problem Best

First, this white paper recommends the following over-arching methodology to address solving the problem:

- Adopt a “wholistic mindset” to recognize that a visit to an oral health provider is as much an entry point into the medical care system as a visit to a primary care physician.

- Use an "eating an elephant one-bite at a time" approach. This problem is complex. By having a very limited scope, it allows for focus on these 2 chronic conditions with a specific population group – that is Medicaid/CHIP beneficiaries under 19.

Moreover, and recognizing that no technology can be the panacea, this white paper recommends the following new technology adoption to simply begin to address the problem:

- To use Artificial Intelligence on dental datasets (thus avoiding a change of workflow, as well as eliminating the need for any government entity to mandate the creation of new data) to reveal patterns.

This new approach to solve the problem provides for an opportunity to not only identify the beneficiaries who may be at an increased risk for caries and possibly Type 2 diabetes but affords an opportunity to monitor with targeted dental case management, that may include a diabetic screening. Targeted case management is important to supporting the beneficiaries in improving their dental and overall health outcomes.

The Solution-Hello AIDANT!

AIDANT is the solution. Its purpose is to predict those beneficiaries who are at an increased risk not just for caries, but also for diabetes, as better oral health can lead to better overall health. The vision of this solution is to mitigate the caries and diabetes epidemic through effective prevention and targeted case management care.

For oral health provider at LHD and FQHC communities, this solution has the following potential:

- To increase witnessing better oral and general health outcomes for Medicaid/CHIP beneficiaries.

- To decrease witnessing first-hand the unnecessary caries pain and suffering of Medicaid/CHIP beneficiaries (which could lead to burnout)

- To actively play a role in being a better steward of the limited oral and medical funding for Medicaid/CHIP. As an unintended consequence, healthcare spending for cavities can realize a savings.

- To actively play a role in providing equal and quality access to both oral care and medical diabetes care to this underserved population.

In closing, AIDANT's positioning statement is for dental providers who want better health outcomes for their underserved patients, DATA DOC, MD is a health information technology company that offers an automated solution to disrupt the prevalence of diabetes, so that dental providers can make a small impact on the world because DATA DOC, MD has shown innovation and a willingness to make a difference.

Call To Action

To find out how your health organization can have insights into predicting underserved Medicaid/CHIP beneficiaries who are at an increased risk for caries and diabetes, contact DATA DOC, MD L.L.C. to request more information by completing our Get In Touch with Us form.

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