Good oral health allows us to speak, smile, taste, touch, chew, swallow, and share emotions. It greatly affects our overall quality of life.

Despite the critical role oral health plays in our lives, many people in Madison and Dane County go without dental care. Social and economic circumstances put many Dane County residents at disproportionate risk for poor oral health outcomes. Unfortunately, many of those at highest risk are children.

In Dane County, dental care financing and delivery models fail to meet population needs, and benefits are distributed inequitably. Multiple additional factors affect oral health:

- Access to affordable dental care
- Poverty and inequality
- Food security
FACTORS AFFECTING ORAL HEALTH

ACCESS TO AFFORDABLE DENTAL CARE

Because early dental care has significant implications for oral health across one’s lifetime, poor access to dental care hits children the hardest.

BADGERCARE BENEFITS UNDERUTILIZED

Currently, nearly 50,000 Dane County residents are enrolled in BadgerCare Plus, Wisconsin’s Medicaid program, including more than 25,000 children. In 2014 a total of 7,909 Dane County children age 0 – 5 were covered by BadgerCare. Even so, only 31% of these children received a fluoride varnish application—a simple, inexpensive procedure that helps prevent cavities and is covered by Medicaid.

FEW DENTAL PROVIDERS ACCEPT MEDICAID PAYMENT

Under the Affordable Care Act, children enrolled in Medicaid qualify for dental coverage but face challenges finding dental providers who accept Medicaid payment. Of the 311 dentists practicing in Dane County, just over a third (37%) currently are enrolled as Medicaid providers and only a small fraction of those practices accept new Medicaid patients. Low dental care services reimbursement rates from Medicaid are not conducive to filling this gap. An estimated eight out of ten Dane County adults visit a dentist each year, but just four out of ten Medicaid recipients received dental care in the past year.

DENTAL HEALTH PROFESSIONAL SHORTAGE AREAS

The distribution of dental practices is also skewed toward more affluent areas of the county. Much of Madison’s isthmus, as well as parts of the North and South sides, qualify as a Dental Health Professional Shortage Area, a designation by the federal Health Resources and Services Administration.

POVERTY AND INEQUALITY EXACERBATE POOR ORAL HEALTH

THE COSTS OF INADEQUATE ACCESS ARE SIGNIFICANT

In Dane County, the average charge in 2014 for a preventive dental visit for a child, including an exam, x-rays and a cleaning was $209.

The cost of seeking treatment for dental pain at a hospital emergency department or urgent care clinic ranged from $120 - $1251.

Actual dental treatment for these cases would still need to be addressed by a dentist which incurs additional costs.

The price of extensive restorative dental treatment under general anesthesia in a hospital operating room ranges from $10,000 - $14,000.

The Oral Health Crisis Report, released in 2012, reported that more than 11,000 preventable visits were made to emergency departments, urgent care and primary care clinics for dental pain in 2010. For Dane County emergency department dental visits alone that same year (2549), the total charges equaled more than $1.6 million.
OUTCOMES

Oral health is a visible marker of social and economic inequity, and people with poor oral health experience significant stigma.

Nationally, there are nearly three times more Americans going without dental coverage than those without medical coverage. Out-of-pocket costs for dental health care pose significant barriers, even to insured populations. In 2010 in the 10 largest US states, nearly half of dental health expenditures were paid out of pocket versus 14.2 percent for general health care.

ECONOMIC AND EDUCATIONAL INEQUITIES DISPROPORTIONATELY AFFECT PEOPLE OF COLOR

- Forty percent of all Blacks in Dane County are living below the federal poverty level.
- Fifty-three percent of young Black children and 37% of Latino children are living below poverty level, compared to 6% of young White children in the county.
- Twenty one percent of Black adults age 65 or older are living below the federal poverty level. This compares with 5% of all Whites and 5% of all Latinos in this age group.

In 2013, the rates for those visiting the hospital emergency department for dental pain are much higher for Blacks (229.7 per 10,000) than for Whites, Hispanics or other racial groups (25.8, 44.6, 18.9 per 10,000 respectively). These patterns suggest approaches are needed to address the root causes of systemic and structural factors that marginalize people of color in our community.

MADISON METROPOLITAN SCHOOL DISTRICT (MMSD), between September 2014 and June 2015

6,964 dental-related school health office visits occurred.

361 encounters were for urgent dental care needs relating to abscess, caries, and pain.

Black children made up the highest percentage of MMSD students reporting urgent dental care needs.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Black</td>
<td>47%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>19%</td>
</tr>
<tr>
<td>White</td>
<td>14%</td>
</tr>
<tr>
<td>Asian</td>
<td>5%</td>
</tr>
</tbody>
</table>
FACTORS AFFECTING ORAL HEALTH

FOOD SECURITY — Access by all people at all times to enough food for an active, healthy life.

Food security poses another challenge to achieving good oral health. In 2014, more than one in ten Dane County households were considered food insecure.\(^{13}\)

Children from households with low or very low food security are, respectively, 1.7 and 2 times more likely to experience dental decay than children living in fully food-secure households.\(^{14}\)

An increasingly sugar-saturated food environment makes healthy food and beverage choices less available than less healthy and sometimes cheaper alternatives, particularly for low-income people.

SUGAR-SWEETENED BEVERAGE (SSB) CONSUMPTION

CONSEQUENCES OF CONSUMPTION
- Toddlers who consume juice or soda three or more times a week are 2 to 4 times more likely to develop severe cavities by age 6.\(^{15}\)
- SSB intake is also significantly associated with weight gain and obesity.\(^{16}\)
- Evidence links the consumption of SSB to detrimental health impacts in all populations as well as an unequal burden among marginalized populations.\(^{17,18,19,20,21}\)

MARKETING\(^{22}\)
- Marketing juice and sport drinks as nutritious and healthy, the sugar-sweetened beverage industry has succeeded in raising consumption significantly over the past two decades.
- Sugar-sweetened beverages are often less expensive and easier to obtain than water and represent an increasing proportion of the caloric intake among children.
- The beverage industry spent over $3 billion in 2006 to promote consumption of carbonated beverages. Of this, almost $500 million was youth-directed marketing.

CONSUMPTION AT CHILD CARE CENTERS
In Dane County, child care providers serving low-income families were receiving reimbursement for sugar-sweetened beverages through the Child and Adult Care Food Program (CACFP), a USDA program that helps fund nutritious meals and snacks served to children and adults receiving day care.\(^{22}\) CACFP also provides funding for meals served to children and youths residing in homeless shelters, and for snacks provided to youths participating in eligible after-school programs.

On January 9, 2015, the USDA’s Food and Nutrition Service released a proposed rule to update the CACFP meal patterns: “Under the proposed changes, children and adults in day care will receive meals with a greater variety of fruits and vegetables, more whole grains, and less sugar and fat. These proposed changes will help ensure children have access to healthy, balanced meals throughout the day and may serve as a foundation for healthy choices for life. This is the first time the CACFP meal patterns have been significantly revised since the program was created in 1968. FNS is proposing incremental changes that are achievable and do not increase costs for providers.”\(^{24}\) USDA issued the final rule in April of 2016 and compliance began in October of 2016.
FACTORS AFFECTING ORAL HEALTH

PUBLIC HEALTH MADISON & DANE COUNTY STAFF CONDUCTED INTERVIEWS WITH COMMUNITY MEMBERS AND SERVICE PROVIDERS ABOUT ORAL HEALTH IN DANE COUNTY

THEMES:

CONCERN ABOUT INEQUALITIES
A general lack of awareness among providers about the special needs of those with mental health issues. A dental appointment, for example, can be stressful for any patient, but a dental appointment for a patient with special needs can become a very traumatic experience if the provider/staff are unaware of his or her distinct needs. This often leads to hesitancy in seeking future dental care.

Lack of cultural competency fosters inequities. People of diverse cultures have multiple barriers for access to care such as language, transportation, cultural differences and insurance issues.

People of different socio-economic backgrounds are faced with the stigma attached to poverty and may feel uncomfortable if they perceive judgment about their oral health.

LIMITED ACCESS TO DENTAL CARE IN RURAL COMMUNITIES
Interviews with community health care and social service providers also suggest that Dane County’s rural populations face particular challenges accessing dental care, having to travel significant distances at times that do not accommodate work schedules, particularly among low-wage workers who are more likely to work longer shifts. Low wage workers in urban settings face similar barriers.

LIMITED ACCESS TO DENTAL CARE FOR BADGER CARE PATIENTS
With just over one-third of Dane County dental providers reportedly accepting BadgerCare patients, many individuals go without dental care. Wisconsin law does not currently allow for mid-level licensure for dental providers. Innovative health care practice models in other states and communities have proven successful in increasing access to dental providers, especially therapists (mid-level providers) in a more diverse range of sites. Training Wisconsin’s primary care workforce could also seed future commitment to an integrated approach to dental and medical care.

As health care systems expand their investments in population health management, some around the country are also targeting oral health. Population-based approaches in health care identify patient groups with higher health risk, ensuring they obtain effective preventive services.
HOW WE MONITOR COMMUNITY ORAL HEALTH

CARIES EXPERIENCE (treated and untreated dental decay) and untreated decay inform about the oral health status of defined populations, and can also reveal access and availability of dental services/providers. When these indicators are tracked over time locally, it can show the effectiveness of and/or need for preventive dental programs. Although we may see data that indicates improvement, it’s important to look at the disparities within the data to inform us of a need for targeted efforts.

Oral health surveillance systems allow health officials to identify successes and areas for improvement. It’s important to monitor the oral health of our residents across the lifespan as it predicts community health outcomes.

SYSTEM CHANGES that make oral health services more accessible to those at highest risk for dental disease can result in positive outcomes for the entire population.

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>SOUTHERN REGION</th>
<th>WISCONSIN</th>
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</thead>
<tbody>
<tr>
<td>PERCENTAGE OF 3RD GRADE CHILDREN WITH UNTREATED DECAY. (2012-2013)</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>PERCENTAGE OF 3RD GRADE CHILDREN WITH CARIES EXPERIENCE. (2012-2013)</td>
<td>56%</td>
<td>53%</td>
</tr>
</tbody>
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INDICATOR28
MEDICAID MEMBERS WITH AT LEAST ONE DENTAL SERVICE
(Continuous enrollment, 12 months)

<table>
<thead>
<tr>
<th>DANE COUNTY</th>
<th>WISCONSIN</th>
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<tr>
<td>43.1% (SFY 2014)</td>
<td>NA</td>
</tr>
<tr>
<td>37.9% (SFY 2010)</td>
<td>35.9% (SFY 2010)</td>
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SFY* State Fiscal Year
SEVERAL POPULATIONS BEAR A DISPROPORTIONATE BURDEN OF POOR ORAL HEALTH OUTCOMES

YOUNG CHILDREN LIVING IN POVERTY
Oral hygiene among young children is often compromised when parents cannot access high-quality childcare or face significant daily stressors, including employment with irregular hours, or housing or employment instability. Exposure to proper oral hygiene education in childhood is correlated with educational attainment and whether parents had access to dental care early in life.  

The burden of oral diseases and conditions is disproportionately borne by individuals with low socioeconomic status at each life stage and by those who are vulnerable because of poor general health.  

PREGNANT WOMEN
Providing pregnant women with oral health care and educating them about preventing and treating dental caries (tooth decay) is critical, both for women’s own oral health and for the future oral health of their children. Preventive, diagnostic, and restorative dental treatment is safe throughout pregnancy and is effective in improving and maintaining oral health. In many cases, neither pregnant women nor health professionals understand that oral care is an important component of a healthy pregnancy. 

In Dane County, conversations with community members and service providers reveal that there is sometimes a misconception that women should delay dental treatment until after the birth of the baby. In fact, this belief is contrary to medical evidence. A specific focus on coordinated health and dental care during pregnancy would improve outcomes.

OLDER ADULTS
About 1 in 10 of Dane County’s population—nearly 54,000 people—are 65 years or older and this group is growing significantly. By 2035, the population 65 and over will nearly double to more than 115,000. Nearly one in four Wisconsin adults age 65 and older lives with diabetes, making this group particularly susceptible to oral health complications. Coverage for oral health among older adults is scarce. Medicare currently provides less than 1% of coverage required for dental care among beneficiaries, and dental coverage is not included in Medicare plans. Nationally, only 2% of recent retirees have retired with access to dental insurance benefits through their former employers or through private market dental plans. Almost half of older community-dwelling adults nationally reported no past-year dental visit, and research suggests that those in highest need are the least likely to receive care. 

While Blacks and Latinos in this age group were about half as likely to report a past-year dental visit, they were about twice as likely to have at least one tooth with a cavity in need of a restoration than were their nonminority counterparts—37% and 41%, respectively, for non-Hispanic Blacks and Mexican Americans versus 16% for non-Hispanic Whites.
PEOPLE LIVING WITH CHRONIC DISEASE AND/OR DISABILITIES

People without dental coverage are more likely to have extractions and dentures and less likely to have restorative care or receive treatment for gum disease. They are also 67 percent more likely to have heart disease; 50 percent more likely to have osteoporosis; and 29 percent more likely to have diabetes. Oral health is linked to many chronic conditions such as heart, diabetes, kidney and Alzheimer’s Disease. In Dane County hypertension, pre-diabetes and diabetes diagnoses are more prevalent in populations who are also less likely to receive dental care. This exacerbates the risk for disproportionate burden of chronic disease complications, health care costs and reduced quality of life.

Individuals with developmental disabilities are also at increased risk of experiencing oral disease. The presence of physical, cognitive, and behavioral limitations make it difficult to perform daily oral care and cooperate during dental visits; medications that affect oral health, and elevated rates of poverty. Inadequate access to dental care owing to financial disincentives, including some associated with Medicaid; the scarcity of dentists and dental hygienists trained to serve patients with special needs; and issues of consent, sometimes involving legal guardianship, also present barriers to dental care.

“Dental sealants are a plastic material placed on the pits and fissures of the chewing surfaces of teeth; sealants cover up to 90 percent of the places where decay occurs in school children’s teeth. Sealants prevent tooth decay by creating a barrier between a tooth and decay-causing bacteria. Sealants also stop cavities from growing and can prevent the need for expensive fillings. Sealants are 100 percent effective if they are fully retained on the tooth.

According to the Surgeon General’s 2000 report on oral health, sealants have been shown to reduce decay by more than 70 percent. The combination of sealants and fluoride has the potential to nearly eliminate tooth decay in school age children. Sealants are most cost-effective when provided to children who are at highest risk for tooth decay.”
THE ORAL HEALTH COALITION OF DANE COUNTY

The Oral Health Coalition of Dane County (OHCDC) is a multi-organizational, grass-roots effort.

MISSION — Improve oral health through prevention, education, and increased access to dental care for community members of all ages in Dane County.

CURRENT PROJECTS — The Coalition is currently working on strategies to help support, develop, and improve systems that will provide oral health care more efficiently and equitably. Some of the projects that the OHCDC is involved with include:

– Solving the issue of emergency department visits for non-traumatic dental pain
– Increasing the number of dentists who accept new patients with BadgerCare insurance
– Engaging decision-makers in oral health issues at multiple levels
– Providing a communication/networking system for the community regarding oral health issues and resources
– Developing a system for community dental care coordination

Other public health priorities in Dane County will continue to dovetail with efforts of the coalition. A few examples of Public Health Madison & Dane County’s priorities are:

– Food security and healthy eating
– Access to care
– Reducing the harm of drugs and alcohol
– Tobacco-free living
– Healthy aging
– Partnerships with primary care, schools, employers and other community organizations to improve population health

COST-EFFECTIVE STRATEGIES THAT LEAD TO BETTER ORAL HEALTH IN COMMUNITIES

Expand number of providers and qualified sites routinely providing dental sealants to all children, regardless of ability to pay.

Maintain access to fluoridated water. Despite being occasionally challenged, cost-effective evidence-based fluoride water policies cover about 99% of all Dane County residents on a public water system.  

Expanding the number of professionals who provide high-quality dental care to low-income children, ensuring coverage from Medicaid and the Children’s Health Insurance Program leads to quality care.
The following are examples of work already happening in Dane County to improve oral health outcomes and access to oral health care.

**INCREASING PREVENTATIVE CARE FOR CHILDREN**

**PREVENTIVE DENTAL CARE INTEGRATED INTO WELL-CHILD VISITS**

Early childhood caries (decay) sets the stage for a lifetime of dental disease. Young children see primary medical care providers much earlier and more frequently than they see dentists. This is especially true for children in low-income families who face barriers to accessing dental care. This makes the primary care or pediatric medical home an ideal setting for 0 to 5 year-olds to receive preventive dental services such as oral health assessment and application of fluoride varnish. Fluoride varnish is a concentrated topical fluoride that is painted on teeth to help prevent early childhood cavities and reduce or reverse the progression of cavities that have already started. It has been shown to reduce decay by 37%-43%, depending upon whether or not the fluoride treatment is coupled with dental health counseling.

This year, two of our largest local health care organizations are implementing a system-wide policy change to provide fluoride varnish treatments with well-child visits for children who have greater risk for decay. There are many pediatric and family practice medical providers who have provided this preventive service for years here, but there is a movement in progress to expand this integration of medical and dental preventive services throughout all of the health care organizations.

**SCHOOL-BASED DENTAL CARE**

The oral health disparity gap seems to be shrinking when it comes to access to dental sealants as children of all races and socioeconomic groups now have similar levels of dental sealants. School-based sealant programs play a major role in expanding availability of these preventive services to all children.

*Celebrate Smiles* is a mobile school-based dental program that brings licensed dental staff to select local schools to screen children in grades 4K-5 and provide dental sealants, fluoride varnish, and other treatment as needed. This program, administered by Access Community Health Center, currently visits 23 “high-risk” elementary schools each year (20 in Madison and 3 in Sun Prairie), screening 2,400 students. Non-profit organization Bridging Brighter Smiles, previously called Smiles4Life, runs a similar school-based mobile dental program that serves many school districts in Dane County by providing screening/preventive dental services and oral health education. Such school-based programs remove several barriers (i.e. lost time at work, loss of income for parents, missed class hours, transportation issues and cost of treatment) that would otherwise make access to dental care a hard reach for some families.

**A COMMUNITY-WIDE APPROACH**

**FLUORIDATED WATER SUPPLY**

According to the 2012 County Oral Health Wisconsin Surveillance System (COWSS) report, 99% of Dane County’s population on a public water system has access to optimally fluoridated water, which benefits everyone regardless of age and socioeconomic status, helping to prevent fluoridated water. For every dollar spent on community water fluoridation, up to $38 is saved on costs for treatment of tooth decay.
**INCREASING ACCESS TO CARE**

In Wisconsin, a recent survey found that the two main reasons reported for deferring dental care were: cost (nearly 60%) and lack of insurance (45%).

**AREA SUPPORT**

Access Community Health Centers
Many uninsured Dane County residents, including undocumented immigrants and migrant workers, receive dental care through Access Community Health Centers, which has 12 dentists and 15 registered dental hygenists.

Madison Dental Initiative
The Madison Dental Initiative, a nonprofit organization serves as a safety-net dental clinic for our vulnerable populations – low-income, uninsured, underinsured and homeless.

A Community Dental Care Coordinator (CDCC) position was created in 2015 with support from Public Health Madison & Dane County. The CDCC currently runs a pilot project, DANECares (Dental Access Network for Everyone) to serve the present needs of emergency department/urgent care center patients with dental infections who have no access to care by coordinating a dental appointment for them when they call.

The CDCC’s future role is to serve as a hub for dental care coordination and access for the whole county—connecting patients with providers and programs to help reduce the burden of disease for our most vulnerable residents.

**Adults who Live with Disabilities**

Adults who live with disabilities also face challenges in accessing care. Max W. Pohle Dental Clinic provided services to developmentally disabled adults requiring dental treatment under general anesthesia; however, the facility was closed in June 2015. Established special needs patients were given contact information for other available dental services, including Advanced Care Clinic at Marquette University in Milwaukee. Collaboration is taking place between the major health systems in Dane County to address this gap.

**IMPROVING ACCESS TO DENTAL CARE AND Reducing OPIOID PRESCRIPTIONS**

The collaborative Emergency Department/Urgent Care Center Dental Pain Initiative was convened in 2014 in order to determine a way to provide care to persons reporting to emergency departments (EDs) and Urgent Care Centers (UCCs) with non-traumatic dental pain and to reduce the volume of opioids prescribed for dental pain.

In Dane County there were 2,016 visits to EDs for dental pain and infection in 2014. One hospital report shows 26% of those patients returned because definitive dental treatment had not been obtained. Since treatment cannot, in most cases, be immediately provided, opioids are often prescribed for pain. This contributes to the growing supply of prescribed opioids in our community.

Increased supply of prescription opioids is associated with increased levels of opioid misuse, addiction and overdose death. In 2014 there were 290 hospital visits associated with acute opioid-poisoning and 846 hospital visits where opioid abuse disorder was indicated.

Public Health Madison & Dane County brought together all Dane County hospital EDs and UCCs, the Oral Health Coalition of Dane County, local dental providers, Safe Communities’ Task Force on Safe Prescribing of Opioids, and Dane County Emergency Medical Services (EMS). This collective effort is resulting in county-wide policy and system changes aimed at improved access to dental care as well as reduced volume of opioid prescriptions for dental pain out of EDs/UCCs. The intent is to reduce the harm associated with opioid medications, as well as to reduce the costs of care over the long run.
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ORAL HEALTH IN DANE COUNTY

Oral Health in Dane County is part of an ongoing effort by Public Health Madison & Dane County to assess, document and identify local prevention priorities. Community health assessment is one statutory role performed by local health departments.

Using categories of the Surgeon General’s National Prevention Strategy, along with priorities identified locally, Public Health Madison & Dane County staff work with community partners to identify challenges and opportunities to improve population health, with a specific focus on improving health equity. This report is based on examination of available local, state and national data sources, interviews with staff from health care and the social sector, and interviews with community partners serving clients who navigate the health care system every day.

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PUBLIC HEALTH MADISON & DANE COUNTY
DIVISION OF POLICY, PLANNING AND EVALUATION
http://www.publichealthmdc.com/