Michigan Oral Health Surveillance Plan

2019 to 2023

MDHHS
Michigan Department of Health & Human Services

Table of Contents

Acknowledgments

Association of State & Territorial Dental Directors (ASTDD)

Introduction:

The Purpose of Public Health Surveillance

THE 1988 INSTITUTE OF MEDICINE (IOM) REPORT ON THE FUTURE OF PUBLIC HEALTH OUTLINES THREE CORE FUNCTIONS FOR PUBLIC HEALTH: ASSESSMENT, POLICY DEVELOPMENT AND ASSURANCE (IOM). IN THAT REPORT (UPDATED IN 2003), the IOM recommended that every public health agency regularly and systematically collect, assemble, analyze, and disseminate information on community health status to carry out the assessment function. Public health agencies accomplish this task through public health surveillance -- the ongoing, systematic collection, analysis and interpretation of health data [Teutsch]. Surveillance is essential for planning, implementing, and evaluating public health practice and, ideally, is closely integrated with data dissemination to public health decision makers and other stakeholders [Hall]. The overarching purpose of public health surveillance is to provide *actionable health information to guide public health policy and programs* [Smith].

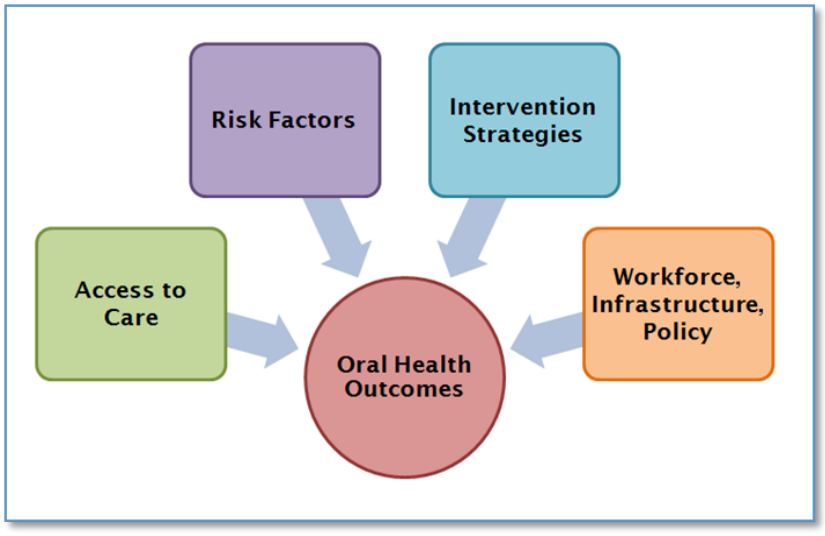
The Public Health Importance of Oral Health

The 2000 report, *Oral Health in America: A Report of the Surgeon General*, states that oral health is more than healthy teeth [DHHS]. That means being free of chronic oral-facial pain, oral and pharyngeal (throat) cancers, oral soft tissue lesions, cleft lip or other birth defects, oral injuries due to sports-related trauma or physical abuse, and scores of other diseases and disorders that affect the oral, dental, and craniofacial tissues. The report notes that oral health is integral to general health and stresses the importance of good oral health at both the individual and population (public health) level.

In the United States (US), the two most common oral diseases are dental caries (tooth decay) and periodontal (gum) disease. Although less common, cancers of the oral cavity and pharynx, orofacial clefts (cleft lip and cleft palate), malocclusion, oral-facial pain, and other oral health problems can severely affect general health and quality of life. For example, poor oral health impacts the ability to eat, communicate and learn, and affects how we look and interact with others, sometimes creating low self-esteem or making it difficult to find jobs where public interaction is important.

Each oral disease or condition, also referred to as an oral health outcome, is influenced by a variety of factors including access to dental care, individual risk factors and risk determinants, availability of interventions, workforce and financing issues, public health infrastructure and public policies (See Figure 1).

Figure 1: Factors Impacting Oral Health Outcomes



Dental Caries: Dental caries have been described as the single most common chronic childhood disease [DHHS]. In 2015-2016, approximately 21.4 percent of US children aged 2-5 years had experienced dental caries in primary teeth while 50.5 percent of children aged 6-11 and 53.8 percent of adolescents aged 12-19 had experienced dental caries in permanent teeth [Fleming]. The impact of dental caries accumulates over time; of those 20-64 years of age, 92 percent had caries experience (treated or untreated decay) [National Institute of Dental and Craniofacial Research]. The prevalence of dental caries experience is generally higher in low-income and minority populations, representing a significant health disparity.

There are effective preventive intervention strategies for dental caries. Caries prevalence and severity can be reduced by appropriate use of fluorides through community water fluoridation, personal or professional topical fluoride applications and use of toothpaste and mouthwash containing fluoride. Centers for Disease Control and Prevention (CDC) has recognized community water fluoridation as one of ten great public health achievements of the 20th century and in 2014 only 74.4 percent of the US population on public water systems had access. Dental sealants are another effective intervention, preventing caries development in the pits and fissures of molar (back) teeth [Ahovuo-Saloranta]. Dental sealants can be applied in dental offices or community settings (e.g., schools), yet far too few children are benefiting from this proven preventive service; in 2011-2012 in the US, only 31 percent of 6-8 year-olds, 49 percent of 9-11 year-olds and 43 percent of 12-19 year-olds had dental sealants on at least one permanent molar [Dye].

To reduce the prevalence of untreated dental decay, all individuals, regardless of income or dental insurance coverage, must have access to restorative dental care. Access to dental care, in turn, is influenced by infrastructure, workforce, financing and policy factors, including availability of low-cost clinics, dentist-to-population ratio, percent of dentists accepting government-funded dental insurance, reimbursement rates for government-funded programs, plus dental practice acts involving supervision, scope of practice and reimbursement.

Periodontal Disease: Periodontal disease is another common public health problem in the US. More than 47 percent of adults 30 years and older have destructive periodontal disease (periodontitis) with 8.5 percent having severe periodontitis characterized by loss of the bony structure supporting the teeth and resulting in partial or total tooth loss [Eke]. Among adults aged 65 years and older, nearly two-thirds (68 percent) have periodontitis with 11 percent classified as severe [Eke]. As with dental caries, substantial oral health disparities exist. The prevalence of periodontitis is higher in men, Hispanics, adults with less than a high school education, adults below 100 percent of the Federal Poverty Level, and current smokers [Eke]. The most common risk factor for periodontitis is smoking; tobacco use prevention and cessation could be a potentially effective population level intervention strategy.

Cancers of the Oral Cavity and Pharynx: Although substantially less common than dental caries and periodontitis, cancers of the oral cavity and pharynx have a significant impact on the health care system and should be included in public health surveillance. The National Cancer Institute estimates that in 2019 there will be 53,000 new cases of and 10,860 deaths from cancers of the oral cavity and pharynx [American Cancer Society, 2018]. Cancers of the oral cavity and pharynx are more common in men than women, among those with a history of tobacco or heavy alcohol use, and individuals infected with human papillomavirus (HPV). Based on data from 2009-2013, the number of new cases of oral cavity and pharynx cancer was 11.1 per 100,000 men and women per year [SEER]. Currently, the primary public health and personal prevention strategies are tobacco cessation and no more than moderate alcohol consumption. HPV vaccines might prevent oral cavity and pharynx cancers as the vaccines prevent an initial infection with HPV types that can cause these cancers, but studies have not yet been done to determine if HPV vaccines will prevent them.

Orofacial Clefts: For reporting purposes, orofacial clefts are generally classified as either (1) cleft palate without cleft lip or (2) cleft lip with and without cleft palate. Based on 2004-2006 data from 14 state birth defects tracking programs, the estimated incidence of cleft palate without cleft lip is 1 in 1,574 live US births

(2,651 cases annually), and the incidence of cleft lip with or without cleft palate is 1 in 940 live births (4,437 cases annually) [Parker]. Orofacial clefts in the US are most common among American Indian and Asian children. Risk factors include family history and maternal use of tobacco, alcohol and street drugs during pregnancy. Prevention strategies include folic acid supplementation plus tobacco, alcohol and drug use cessation during the prenatal period.

Disparities in Access to Dental Care: As previously mentioned, oral health disparities are profound in the US. Children in lower-income families have higher dental caries rates than higher-income children; minority populations have worse oral health than the population in general; and rural residents have worse oral health than urban residents [DHHS]. These disparities start in childhood and persist throughout the lifecycle.

Limited or infrequent access to dental care contributes to poor oral health. In 2016, approximately 15 percent of children aged 2-17 years and 35.6 percent of individuals older than 18 years of age reported not having a dentist visit in the last year [CDC, 2017]. Disparities became apparent with differing education levels, income status and race/ethnicity.

Financial Implications: The cost of treating dental disease is significant. According to the Centers for Medicare & Medicaid Services (CMS), spending for dental services in 2017 was $129.1 billion, with out-of-pocket personal spending accounting for approximately 41 percent of all dental spending [CMS].

Summary: In summary, the public health implications of poor oral health status are vast. Poor oral health impacts a person's ability to eat, speak, work, communicate and learn. Although most oral diseases and conditions are preventable, virtually all adults—and many children—have experienced some oral disease. Serious oral health disparities exist by race, age, geography, and income. The costs of oral disease treatment are significant, and most of those costs are paid by individuals or through private insurance. Much of the population can't afford dental care or doesn't take advantage of public insurance benefits.

CDC guidelines for evaluating public health surveillance systems recommend that health-related events (in this case oral diseases and conditions) be considered for surveillance if they affect many people, require large expenditures of resources, are largely preventable, and are of public health importance [German]. ***Based on these criteria, oral health outcomes, associated health behaviors, and other factors linked to oral health are included in Michigan's oral health surveillance system.***

Framework for a State Oral Health Surveillance System (OHSS)

According to the Council of State and Territorial Epidemiologists (CSTE), a state oral health surveillance system (OHSS) should provide information necessary for public health decision making by routinely collecting data on oral health outcomes, access to care, risk factors and intervention strategies for the whole population, representative samples of the population, or priority subpopulations. In addition, a state OHSS should consider collecting information on the oral health workforce, infrastructure, financing, and policies impacting oral health outcomes. A state OHSS can access data from existing sources, supplemented by additional information, such as data from a basic screening survey, to fill data gaps [Phipps].

Surveillance systems are not just data collection systems. They must include mechanisms to: 1) communicate findings to those responsible for programmatic and policy decisions and to the public; and 2) assure data are used to inform and evaluate public health measures to prevent and control oral diseases and conditions. According to the Association of State and Territorial Dental Directors' *Best Practice Report on State Based Oral Health Surveillance Systems*, a state oral health surveillance system should: 1) have an oral health surveillance plan; 2) define a clear purpose and objectives relating to the use of surveillance data for public health action; 3) include a core set of measures/indicators to serve as benchmarks for assessing progress in achieving good oral health; 4) analyze trends; 5) communicate surveillance data to decision makers and the

public in a timely manner; and 6) strive to assure that surveillance data is used to improve the oral health of state residents [ASTDD].

Operational Definition for a State Oral Health Surveillance System

Healthy People 2020 (HP2020) Objective OH-16 – "…increase the number of states and the District of Columbia that have an oral and craniofacial health surveillance system." – deserves special mention. In 2013, CSTE developed an operational definition for HP2020 OH-16. This operational definition is a core or foundational set of surveillance elements. A state is considered to have an oral health surveillance system if they have ***all of the following ten items*** [Phipps].

1. A written oral health surveillance plan that was developed or updated within the previous five years.
2. Oral health status data for a representative sample of third grade children, including prevalence of caries experience, untreated tooth decay, and dental sealants on permanent molars meeting criteria for inclusion in the National Oral Health Surveillance System. Data must have been collected within the previous five years.
3. Permanent tooth loss data for adults obtained within the previous two years.
4. Annual data on the incidence of and mortality from cancers of the oral cavity and pharynx.
5. Annual data on the percent of Medicaid- and Children's Health Insurance Program -enrolled children who had a dental visit within the past year.
6. Data on the percent of children 1-17 years who had a dental visit within the past year, obtained every four years.
7. Data on the percent of adults (≥18 years) and adults with diabetes who had a dental visit within the past year, obtained within the previous two years.
8. Data on the fluoridation status of public water systems within the state, updated every two years.
9. Annual data on state oral health programs and the environment in which they operate, including workforce and infrastructure indicators.
10. Publicly available, actionable data to guide public health policy and programs disseminated in a timely manner. This may take the form of an oral disease burden document, publicly available reports, or a web-based interface providing information on the oral health of the state's population developed or updated within the previous five years.

The Michigan Department of Health and Human Services (MDHHS), in concert with oral health professionals around the state, has taken the lead in developing the needed oral health surveillance system. The first Oral Health Surveillance Plan was created in 2009. The creation of the Michigan oral health surveillance system fulfilled the Healthy People 2010 objective 21-16 which called for every state to have an oral and craniofacial health surveillance system. The oral health surveillance system has enabled measurements of several health outcomes including:

1. Reduction in dental caries prevalence among children,
2. Reduction in untreated dental decay prevalence among children and adults,
3. Increased access to fluoridated water,
4. Increased use of dental sealants,
5. Increased use of the oral health care system by adults and children, and
6. Increased early detection of oral cancer.

Purpose and Objectives:

The purpose of the oral health surveillance system is to provide a consistent source of updated reliable and valid information for use in developing, implementing, and evaluating programs to improve the oral health of Michigan citizens. The oral health surveillance systems objectives include:

1. Estimate the magnitude of oral disease in Michigan,
2. Monitor trends in oral health indicators,
3. Evaluate the effectiveness of implemented programs and policy changes,
4. Identify vulnerable population groups, and
5. Communicate and provide information for decision-making.

The 2009 Surveillance Plan established a statewide baseline of oral health data. ***The 2019-2023 Surveillance Plan will update the previous surveillance plan with new national objectives and targets, statewide and national oral health surveillance sources, and Michigan's plan for the next five years for continuing its surveillance efforts and filling gaps that have been identified.***

Data compiled and maintained by the state will be shared with stakeholders to enable evidence-based practice and implementation of Michigan's State Oral Health Plan. This statewide data system will monitor oral health indicators and evaluate the impact of prevention initiatives. Ultimately, the system may provide opportunities to link with other data systems and yield additional oral health outcomes.

The vital information from surveillance will aid the development and implementation of new programs as well as the evaluation and improvement of existing oral health programs. Data is vital to the implementation and evaluation of oral health programs. Specifically, MDHHS Medicaid program, and their service populations will benefit through improved identification and targeting of vulnerable populations. Additionally, residents who maintain good oral health behaviors may reduce the burden on dental insurance companies thus enabling expansion of affordable dental insurance. Overall, there are many stakeholders that can benefit from a quality oral health infrastructure that includes surveillance.

Oral Health Indicators:

The Oral Health Program in Michigan follows national guidelines and standards that come from two main sources:

1. The National Oral Health Surveillance System (NOHSS): Developed in collaboration with the Centers for Disease Control and Prevention (CDC) and the Association of State and Territorial Dental Directors (ASTDD).
2. Healthy People: Provides science-based, 10-year national objectives for improving the health of all Americans.

Other national standards are also reviewed and utilized, including recommendations from the chronic disease indicators established by the Council of State and Territorial Epidemiologists (CSTE) and the American Cancer Society. Indicators that are being monitored in Michigan are listed in the table below and includes the surveillance indicator, who set the standard, and the data source Michigan is using to monitor the standard, Table 1.

Table 1. Oral Health Indicators Monitored by Michigan

Surveillance Indicator	Michigan Data Source	National Standard
Dental Visits		
Adults aged 18+ who have visited a dentist or dental clinic in the past year.	BRFSS	NOHSS CSTE
Complete Tooth Loss		
Adults aged 65+ who have lost all their natural teeth due to tooth decay or gum disease.	BRFSS BSS-Elderly	NOHSS CSTE
Lost 6 or More Teeth		
Adults aged 65+ who have lost six or more teeth due to tooth decay or gum disease.	BRFSS	NOHSS

Fluoridation Status		
Percentage of people served by public water systems who receive fluoridated water.	WFRS	NOHSS HP2020
Caries Experience		
Percentage of 3rd grade students with caries experience, including treated and untreated tooth decay.	CYS-BSS	NOHSS
Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth.	NHANES	HP2020
Reduce the proportion of adults who have ever had a permanent tooth extracted because of dental caries or periodontal disease.	NHANES	HP2020
Untreated Tooth Decay		
Percentage of 3rd grade students with untreated tooth decay.	CYS-BSS	NOHSS
Reduce the proportion of children and adolescents with untreated dental decay.	NHANES	HP2020
Reduce the proportion of adults with untreated dental decay.	NHANES	HP2020
Reduce the proportion of adults aged 45-74 with moderate or severe periodontitis.	NHANES	HP2020
Dental Sealants		
Percentage of 3rd grade students with dental sealants on at least one permanent molar tooth.	CYS-BSS	NOHSS
Increase the proportion of children and adolescents who have received dental sealants on their molar teeth.	NHANES	HP2020
Cancer of the Oral Cavity and Pharynx		
Increase the proportion of oral and pharyngeal cancers detected at the earliest stage.	MCSP	HP2020
Mortality from cancer of the oral cavity and pharynx.	Michigan Death Files	CSTE/Chronic Disease Indicators
Incidence of invasive cancer of the oral cavity or pharynx.	MCSP	CSTE/Chronic Disease Indicators
Health Care System		
Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year.	MEPS	HP2020
Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year.	MEPS	HP2020
Increase the proportion of adults who receive oral cancer screening in dental offices.	MI-BRFSS	HP2020 Developmental
Increase the proportion of patients who receive blood pressure checks in the dental office.	MI-BRFSS	

Data Collection Schedule:

In the next four years, the Michigan Oral Health Program is planning to continue and expand the surveillance of the Michigan population using several different data sources and methods. The projected collection timeline can be seen in Table 2, more information on each data source can be seen in the next section.

Table 2. Years in which oral health data sources are expected to provide data

Data Source/Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WFRS	X	X	X	X	X	X	X	X	X	X
SEAL! Michigan	X	X	X	X	X	X	X	X	X	X
MiBRFSS	X		X		X		X		X	
State-Added: HTN Question							X			X
Basic Screening Survey										
Head Start					X			X		
3rd Grade	X	X							X	
Seniors	X	X	X	X						X
Medicaid/HKD	X	X	X	X	X	X	X	X	X	X
Cancer Registry	X	X	X	X	X	X	X	X	X	X
Birth Defects	X	X	X	X	X	X	X	X	X	X
PRAMS	X	X			X	X	X	X	X	X
Youth Tobacco Survey		X		X						
Inpatient Hospital Database	X	X	X	X	X	X	X	X	X	X
Michigan Outpatient Database				X	X	X	X	X	X	X
Mortality	X	X	X	X	X	X	X	X	X	X
Workforce Licensing	X	X	X	X	X	X	X	X	X	X
HPV Vaccination Rates: MCIR	X	X	X	X	X	X	X	X	X	X
YRBSS		X		X		X		X		X
BRFSS-Minority Health Surveys	X		X							
Michigan Dental Program	X	X	X	X	X	X	X	X	X	X
Varnish! Michigan	X	X	X	X	X	X	X	X	X	X
Public Dental Prevention Program (PA161)				X	X	X	X	X	X	X
MI Assessment of BP and Diabetes Screening Practices among Oral Health Professionals			X							
MI Assessment of Oral Cancer Screenings and Knowledge of Human Papillomavirus (HPV) Among Oral Health Professionals					X		X			

Data Sources:

Name: Water Fluoridation Reporting System
Acronym: WFRS
Purpose and History: WFRS is a tool that helps states to manage the quality of their water fluoridation programs. WFRS was modeled after the US Environmental Protection Agency's Safe Drinking Water Information System to support exchange of data and updates on utility system configurations. Data has been collected since 1998.
Data Collection Process: WFRS is a web-based database where each state enters and maintains data.
Population Included: Each record is a community water system in Michigan.
Oral Health Topics: Data elements include water system type, water source, inspection dates, fluoride levels, and number of populations served.
Additional Information: For more information on fluoridation in Michigan visit http://www.michigan.gov/MDHHS/0,4612,7-132-2942_4911_4912_6226-267604--,00.html.

Name: SEAL! Michigan
Acronym: SEAL! MI
Purpose and History: SEAL! Michigan is a dental sealant school-based program designed to provide students attending eligible schools with dental sealants on their first and second permanent molars, with the overarching goal of preventing tooth decay. The SEAL! Michigan program has been in Michigan since 2007.
Data Collection Process: Each year, select Michigan schools are visited by SEAL! MI programs operating under the PA 161 law and will see each child that provides a positive parental consent form. The hygienist completes a paper-based screening form for each student seen that documents the condition of the teeth and any sealants that were placed, as well as sealants that were checked for retainment in the following months. Paper-based forms are also completed for each school they visit. The paper forms are later scanned into an electronic database to assist with analyzing data.
Population Included: For a school to be eligible to participate they must have at least 50 percent of the student population enrolled in the Free and Reduced Lunch Program (FRLP). Of the eligible schools, the students served are all students in first, second, sixth, and seventh grade (with parental consent) except for the Upper Peninsula (UP) and Wayne County. Students in kindergarten through eighth grade (with parental consent) in the UP or Wayne county are all eligible to participate in the program. At no point are individual students examined for individual FRLP participation.
Oral Health Topics: Current condition of teeth (i.e. decay, missing, sealant(s) present, experience of decay), preventive services applied to teeth (i.e. sealants and fluoride varnish placed), and retention/follow-up checks of sealed teeth.
Additional Information: For more information from Michigan's SEAL! Michigan program visit http://michigan.gov/MDHHS/0,4612,7-132-2942_4911_4912_6226-279800--,00.html.

Name: Michigan Behavioral Risk Factor Surveillance System
Acronym: MiBRFSS
Purpose and History: The MiBRFSS is a source of estimates of the prevalence of certain health behaviors, conditions, and practices that are associated with the leading causes of death. Michigan has conducted the BRFSS survey since 1987.
Data Collection Process: Annual estimates are based on data collected by telephone (landline and cell phone) from a sample of Michigan adults selected using random-digit dial methods. It is a population-based representative sample of non-institutionalized Michigan residents 18 years of age and older. The data are weighted to represent the general adult population in Michigan. MiBRFSS interviewers use a computer assisted telephone interviewing system, which provides the interviewer with prompts. The interviewer records the respondent's responses directly onto the computer screen.
Population Included: A record is a completed telephone interview. The selected respondent must be a Michigan resident, 18 years of age or older, living in a private residence or college housing, and owns a

telephone. One randomly selected adult from a household is interviewed.
Oral Health Topics: Core oral health questions are included on the national and Michigan BRFSS survey every two years. Topics include frequency of dental visits, tooth loss, and access to oral health care. In 2014 two new oral questions were added on the topic of oral health insurance and oral cancer screening and ran in 2016 and 2018. For the upcoming survey, questions will be asked about oral cancer screening and hypertension checks while attending dental visits.
Additional Information: For more information about the BRFSS and national data for comparison, visit https://www.cdc.gov/brfss/brfssprevalence/index.html. For a complete report of the Michigan BRFSS survey, visit https://www.michigan.gov/mdhhs/0,5885,7-339-71550_5104_5279_39424---,00.html

Name: Count Your Smiles Basic Screening Survey-3rd Grade
Acronym: BSS-3rd Grade
Purpose and History: The BSS is a standardized set of surveys designed to collect information on the observed oral health of participants. Michigan first administered the survey in 2005 and conducts the survey every five years, as funding allows.
Data Collection Process: One-hundred Michigan elementary schools are randomly selected and third grade students with parental consent are sampled within each school. Parents of the selected student complete a paper-based survey and a dental hygienist performs an oral screening of the selected student.
Population Included: Third grade students from randomly selected public schools in Michigan with parental consent.
Oral Health Topics: Cavitated lesions, caries experience, untreated decay, sealants, treatment urgency, fluorosis, history of toothache, time since last dental visit, reason for last dental visit, problems in obtaining dental care, and dental insurance.
Additional Information: For more information about the BSS, visit http://www.astdd.org/basic-screening-survey-tool/. For a complete report of the Michigan BSS or Count Your Smiles survey, visit https://www.michigan.gov/documents/mdhhs/Count_Your_Smiles_2016_Report-FINAL_578625_7.pdf

Name: Basic Screening Survey-Seniors
Acronym: BSS-Seniors
Purpose and History: The BSS is a standardized set of surveys designed to collect information on the observed oral health of participants. Michigan was one of the first states to complete a state-wide survey on seniors in long-term care (LTC) facilities in 2008, however due to extreme complications, the LTC population was not repeated. Moving forward, Michigan administered the survey on a regional bases in congregant meal site locations and expanded to a state-wide survey in 2016.
Data Collection Process: Michigan senior congregate meals sites were randomly selected through systematic probability proportional to size sampling from ordered lists of sites in four regions of the state: The Upper Peninsula, the Northern Lower Peninsula, the Southern Lower Peninsula, and Wayne/Oakland/Macomb counties (metropolitan Detroit). The sampling frame was based upon congregate site information from the Area Agencies on Aging (AAA) Association of Michigan pulled in 2015. The seniors complete a written survey and a dental hygienist completes an oral screening of the participating senior. All seniors attending the congregant meal site who consent to the screening will a participant in the BSS.
Population Included: Seniors attending AAA senior centers and congregate meal sites.
Oral Health Topics: Cavitated lesions, caries experience, untreated decay, treatment urgency, history of toothache, periodontal disease, tooth loss, dry mouth, time since last dental visit, reason for last dental visit, problems in obtaining dental care, and dental insurance.
Additional Information: The full 2016-2017 report can be found here: https://www.michigan.gov/documents/mdhhs/Michigan_Senior_Smiles_Report_2016-2017_609427_7.pdf

Name: MI Head Start Smiles: Basic Oral Health Screening Survey
Purpose and History: In 2018, the oral health status of a representative sample of children attending Head Start programs in Michigan was gathered. The data collect was to support the development of state policies and programs to ensure children of Michigan are receiving the preventative and restorative dental care they need.
Data Collection Process: The statewide sample was randomly drawn proportional to district size and stratified by geographic region, urbanicity, and Head Start site population and were asked to agree to participate in the assessment. MDHHS had IRB approval to provide the screenings using passive consent form. Dental hygienist screeners were recruited and trained for calibration purposes. A standard scannable screening form was used to collect the data for each child screened. Each screener, site, classroom and child had received a unique ID to ensure confidentiality. Data was collected on both the child's demographic characteristics and oral health status.
Population Included: Head Start Children, ages 3-5
Oral Health Topics: An education presentation was offered to all classrooms participating. Data was collected on untreated/potential decay, sealants, and the presents of any white spot lesion (non-cavitated).
Additional Information: For more information visit the website for Data Brief and Report:
https://www.michigan.gov/documents/mdhhs/Head_Start_Smiles_Data_Brief_2018_633309_7.pdf
https://www.michigan.gov/documents/mdhhs/Head_Start_Smiles_Report_2017_633306_7.pdf

Name: Healthy Kids Dental and Medicaid Utilization Information
Acronym: HKD-MA
Purpose and History: The HKD and Medicaid claims data provides utilization data on beneficiaries and dental providers that include services rendered and cost of care.
Data Collection Process: Claims and eligibility data are submitted to the MDHHS Data Warehouse on a regular basis. Queries on total utilization of services, the number of beneficiaries seen, the number of dentists providing services, the types of services rendered, and the amount paid for dental services are run on an annual basis to report the information.
Population Included: Medicaid beneficiaries
Oral Health Topics: Beneficiaries, enrollees, procedure codes, services rendered, amount paid, providers, and date of service.
Additional Information: For more information on CMS dental care, visit:
https://www.medicaid.gov/medicaid/benefits/dental/index.html. For more information on Early and Periodic Screening, Diagnostic and Treatment (EPSDT) data and the Form CMS-416 that is used to collect basic information on state Medicaid and CHIP Programs to assess the effectiveness of EPSDT, visit:
https://www.medicaid.gov/medicaid/benefits/epsdt/index.html, or
https://www.michigan.gov/documents/mdhhs/2017_Oral_Health_Medicaid_Rates_by_County_634093_7.pdf

Name: Michigan Cancer Surveillance Program
Acronym: MCSP
Purpose and History: MDHHS is mandated by Act 82 of 1984 to establish a cancer registry for the state of Michigan. This statute states the department shall establish a registry to record cases of cancer and other specified tumorous and precancerous diseases that occur in the state, and to record information concerning these cases as the department considers necessary and appropriate in order to conduct epidemiologic surveys of cancer and cancer-related diseases in the state.
Data Collection Process: Facilities in Michigan report cancer cases to the state central cancer registry either manually on paper or automated with computer data files. State cancer data is compiled and analyzed every year.
Population Included: Michigan residents diagnosed with cancer.
Oral Health Topics: Oral related cancers including lip, tongue, cheek, palate, pharynx, and palate.
Additional Information: http://michigan.gov/MDHHS/0,4612,7-132-2944_5323---,00.html

Name: Michigan Birth Defects Registry
Acronym: MBDR
Purpose and History: In 1987, the public health code was amended by Act 48 (Public Act 368) to require establishment of a birth defects registry. The Michigan Birth Defects Registry (MBDR) was established as a statewide reporting system in 1992 and continues today as a passive system that relies on reporting from hospitals and laboratories for case ascertainment. Data is collected and analyzed to conduct birth defect surveillance, conduct studies of birth defect causes and prevention, and to assess programs and services for children with birth defects and their families. Data from the MBDR has been used, for example, to effectively plan and implement prevention activities including multivitamin distribution.
Data Collection Process: Cases are reported to the MBDR either electronically or by completion of a report form. Cases are reported as soon as possible after the diagnosis has been recorded in the patient's medical record.
Population Included: Michigan residents diagnosed with a reportable defect from birth to two years of age; Administrative data from public health programs (Newborn Screening (NBS), Children's Special Health Care Services (CSHCS), and Early Hearing Detection and Intervention (EHDI) are supplemental sources of case data.
Oral Health Topics: Many oral defects are reported in MBDR including cleft palate and cleft lip. Every year, about 200 Michigan babies are born with an oral cleft.
Additional Information: http://www.michigan.gov/MDHHS/0,4612,7-132-2944_4670---,00.html and https://www.michigan.gov/mdhhs/0,5885,7-339-73971_4911_41657-162300--,00.html.

Name: Michigan Inpatient Database
Acronym: MIDB
Purpose and History: This data helps support the State of Michigan plan health activities that are used directly by facilities themselves for internal evaluation. MDHHS has purchased data from the Michigan Health and Hospital Association since 1982.
Data Collection Process: Data are collected throughout a patient hospital stay by clinical and administrative staff and filed within a medical record. Hospital medical record personnel ascertain and keypunch information from these records. Some small hospitals complete data collection forms and send these directly to Michigan Health and Hospital Association (MHA) for processing. Depending on the facility, data are submitted on a voluntary basis monthly, quarterly, or annually to MHA. Since data formats often differ by hospital, all coding is converted into standard formats at MHA. The public use file provided to MDHHS is stripped of all patient, provider, and hospital identifiers.
Population Included: Records include all hospital discharges from any of Michigan's reporting acute care hospitals or Michigan residents discharged from acute care hospitals in contiguous states. It includes virtually all hospitalizations in Michigan and for Michigan residents.
Oral Health Topics: All dental-related hospitalization diagnoses including preventable conditions (i.e. disorders of tooth development and eruption, etc.) and unpreventable conditions (i.e. diseases of the jaw and salivary glands).
Additional Information: http://www.michigan.gov/MDHHS/0,4612,7-132-2944_5324_43671---,00.html

Name: Michigan Resident Death Files
Acronym: MRDF
Purpose and History: The death certificate database is a high-quality computerized data set containing demographic and cause of death information for all Michigan residents (out-of-state deaths included) and non-Michigan residents dying in Michigan. Death certificates have been collected in Michigan since 1897.
Data Collection Process: A funeral director, or another individual responsible for disposing of the body, completes the demographic and disposition components of the death certificate. When applicable, an attending physician or other hospital medical staff completes the portion of the death certificate describing the death. A county medical examiner completes this section in all unexpected deaths including fatal injuries. The death certificate is then sent to the local registrar who verifies that the document has been properly filled out. If not, it

is returned to the appropriate person for revision. Certificates for Michigan residents dying out-of-state are provided by those states
Population Included: All instate occurrences regardless of the state of residence and all Michigan residents regardless of location of death are included.
Oral Health Topics: All oral cancer-related deaths including oral cancer.
Additional Information: http://www.MDHHS.state.mi.us/pha/osr/Index.asp?Id=4

Name: Pregnancy Risk Assessment Monitoring System
Acronym: PRAMS
Purpose and History: PRAMS is a surveillance project through CDC and state health departments. It is part of a national effort to reduce infant mortality and adverse birth outcomes by providing information useful for developing and implementing intervention programs and for evaluating existing programs to increase positive birth outcomes. PRAMS identify maternal experiences occurring before during and after pregnancy. The PRAMS survey was developed in 1987 through the cooperative effort of the CDC, the District of Columbia and several states conduct an annual PRAMS survey. About 83 percent of all US live births occur in regions under PRAMS surveillance.
Data Collection Process: A stratified, random sample of women with a recent live birth is drawn each month from the state's birth certificate file. Selected women are first contacted by mail and a paper survey. Up to three survey mailings are performed to attempt contact. If no response by mail they will be contacted and interviewed by phone. Most mothers respond to PRAMS between 3 and 6 months following the birth of their infant, although responses are accepted until 9 months postpartum.
Population Included: Michigan resident women with a recent live birth in the state, excludes non-residential women and Michigan residential mothers who deliver in other states.
Oral Health Topics: Teeth cleaning prior to getting pregnant, teeth cleaning during pregnancy, dental insurance during pregnancy, dental problem and visit to a dentist or dental clinic during pregnancy.
Additional Information: www.michigan.gov\prams or http://www.cdc.gov/prams/

Name: Youth Tobacco Survey
Acronym: YTS
Purpose and History: The YTS was created to support the design, implementation, and evaluation of state level tobacco control programs. Questions are oriented around tobacco use, secondhand smoke exposure, ability to purchase tobacco products, and attitudes about tobacco. Michigan first administered the YTS in 2001.
Data Collection Process: A two-stage sampling scheme is implemented, where public middle and high schools are first selected, followed by classes within the selected classes.
Population Included: Public school students in grades 6 through 12 are eligible to participate.
Oral Health Topics: Time since last dental visit, prevalence of cavities, prevalence of tooth pain, number of fillings, frequency of tooth brushing and oral piercings.
Additional Information: http://www.cdc.gov/TOBACCO/data_statistics/surveys/yts/index.htm

Name: Workforce Licensing Survey
Purpose and History: The Department of Licensing and Regulatory Affairs (LARA), Bureau of Health Professions purpose is to license the dentists and dental hygienists in Michigan.
Data Collection Process: On an annual basis the count by county data request is accessed from the LARA Health Professional Licensing webpage.
Population Included: Dentists and Dental Hygienists Licensees
Oral Health Topics: Dentists, Dental Hygienists, License, County, Board of Dentistry
Additional Information: For more information on the Michigan Board of Dentistry, visit
http://www.michigan.gov/lara/0,4601,7-154-35299_63294_27529_27533---,00.html
To verify a license, visit
https://aca3.accela.com/MILARA/GeneralProperty/PropertyLookUp.aspx?isLicensee=Y&TabName=APO

Name: Michigan Care Improvement Registry
Acronym: MCIR
Purpose and History: MCIR was created in 1998 to collect reliable immunization information and make it accessible to authorized users online. In 2006, MCIR was expanded to include adults. MCIR benefits health care organizations, schools, licensed childcare programs, and Michigan's citizens by consolidating immunization information from multiple providers. This reduces vaccine-preventable diseases, over-vaccination, and allows providers to see up-to-date patient immunization history.
Data Collection Process: Providers are required to report all immunizations administered to every child within 72 hours of administration. Data elements are recorded in various ways including; directly into an electronic system via a web interface, transfer from electronic medical records, transfer from billing systems, and paper scan forms.
Population Included: All Michigan residents with an immunization.
Oral Health Topics: Immunization records for the HPV vaccine.
Additional Information: http://www.mcir.org/

Name: Youth Risk Behavior Surveillance System
Acronym: YRBSS
Purpose and History: The YRBSS was developed in 1990 to monitor health behaviors that contributed to death, disability, and social problems among youth in the US. The system was designed to enable public health professionals to describe health-risk behaviors of youth assess trends, and both evaluate and improve health related policies and programs.
Data Collection Process: The YRBSS receives data biannually since 1991, through a one-time national school-based survey conducted by the CDC, education and health agencies to ensure a representative sample of high school students and their health-risk behaviors. State, territorial, tribal, and large urban school districts are selected and receive surveys based on a two-stage, cluster sample design to produce a representative sample of students by a random selection of school enrollment size followed by specific intact class period.
Population Included: The target population for YRBSS data collection is for students attending high schools that create a representative sample on state, territorial, tribal and large urban school district levels.
Oral Health Topics: YRBSS collects data on oral healthcare and more specifically the number of students who ever saw a dentist, for a check-up, exams, teeth cleaning or other dental work by demographic characteristics.
Additional Information: https://nccd.cdc.gov/Youthonline/App/Results.aspx?LID=MI

Name: Minority Health Behavioral Risk Factor Surveys
Acronym: MHBRFS
Purpose and History: To increase data access and reliability for minority populations, the first MHBRFS was conducted in 2012. Since implementation, two Hispanic, two Arab, one Asian/Pacific Islander and one American Indian/Alaska Native survey have been implemented. In addition, two years of MiBRFSS data were combined for a report specific to the Black, non-Hispanic population.
Data Collection Process: The Health Disparities Reduction and Minority Health Section work with advisory groups on community outreach in order to educate the population on the purpose of the survey to improve survey responsiveness. The MHBRFS follows similar methodology as the MiBRFSS. It is a randomized telephone survey that is weighted to be representative of the population being surveyed in the analysis stage.
Population Included: Dependent on year; populations surveyed thus far have includes: Asian/Pacific Islander, Hispanic, Arab, and American Indian/Alaska Native.
Oral Health Topics: Dental visit in past year; missing teeth
Additional Information: For more information on MHBRFS please visit https://www.michigan.gov/mdhhs/0,5885,7-339-71550_5104_5279_39424_39429-134736--,00.html

Name: Michigan Dental Program
Acronym: MDP
Purpose and History: Michigan Dental Program started as a pilot program in May of 2000. The purpose of the program is to reduce the unmet dental need for people living with HIV/AIDS in Michigan. This is a comprehensive dental access program funded through Ryan White Part B and MI Drug Assistance Program rebate funds.
Data Collection Process: Utilization is reported on a quarterly basis to HRSA for Ryan White Part B. This data is collected by Delta Dental Plan of Michigan and sent to MDHHS monthly and quarterly via an encrypted excel spreadsheet. Clients viral load suppression is measured, and the data is collected and stored in CareWare, the HRSA database. There is also an annual report created, with details including the yearly dollar amount spent in the program, how many clients enrolled by gender, and dental procedures that are used in the program. All this data is collected by Delta Dental Plan of Michigan and reported to the program monthly and quarterly.
Population Included: People living with HIV/AIDS
Oral Health Topics: Outreach to people who qualify throughout the state. Education to dental office staff about treatment of people living with HIV/AIDS.
Additional Information:
Attached is the link to the MDP program which will give more detail about the program and has the 2016-2017 annual report.
https://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2982_46000_46001-45691--,00.html

Name: Varnish! Michigan
Purpose and History: This program began in 2010 to encourage medical providers to provide oral screenings and apply fluoride varnish to children under age 3. The goal is to prevent tooth decay through preventive fluoride varnish application on babies and preschoolers through age 5.
Data Collection Process: Each quarter the participants submit a report that includes races served, number of oral screenings, number of varnish applications, number of children with previous treated decay, number of children with active decay, number of children with white spot lesions, and the number of children referred for dental care.
Population Included: Children 0-5
Oral Health Topics: Trainings to medical providers, early childhood caries, oral screenings, fluoride varnish applications, age one dental visits, anticipatory guidance for parents
Additional Information: For more information, https://www.michigan.gov/mdhhs/0,5885,7-339-73971_4911_4912_6226-449061--,00.html

Name: Public Dental Prevention Program
Acronym: PA 161 Program
Purpose and History: PA 161 Programs are public or non-profit agencies that operate a program utilizing dental hygienists to perform dental hygiene services and provide preventive care to underserved populations in this state.
Data Collection Process: Each PA 161 program is required to report all PA 161 activity and events to the Oral Health Program quarterly (State of Michigan fiscal year) using the PA 161 Event Data Form. The form can be completed electronically or printed on paper. Returned forms are stored as PDF's and export into excel for further analysis.
Population Included: All unassigned, underserved populations in Michigan (children, adults, seniors, persons with disability, migrant, tribal and any other population).
Oral Health Topics: Only preventive dental services allowed including: oral health assessment, dental cleaning, fluoride application (varnish, or other topical fluoride), sealants, sliver diamine fluoride application, patient education, nutritional counseling, tobacco cessation, referral for dental treatment and any urgent dental care needed.
Additional Information: For PA 161 annual reports and other resources on PA 161 visit the oral health website at: https://www.michigan.gov/mdhhs/0,5885,7-339-73971_4911_4912_6226-265001--,00.html.

Name: Michigan Outpatient Database
Acronym: MODB
Purpose and History: The purpose of MODB is to collect large amounts of hospital-submitted discharge data from across the state. Outpatient discharge information enables healthcare professionals to track patient utilization of health care services, health outcomes and evaluate current policy/procedure.
Data Collection Process: The hospitals who chose to participate and release outpatient discharge summaries creates the Michigan Outpatient Database; most hospitals in the state of Michigan voluntarily participate. The data is encrypted by the hospital to ensure confidentiality and forwarded to the MHA for processing and the final removal of any/all personal identifiers.
Population Included: Records include outpatient hospital services provided to Michigan residents.
Oral Health Topics: The MODB receives data from hospitals who have performed outpatient surgeries, laboratory and radiology test and all other oral health services provided to Michigan residents.

Name: 2016 Michigan Assessment of Blood Pressure and Diabetes Screening Practices among Oral Health Professionals
Purpose and History: An advisory team developed an assessment that would go out to dental providers throughout the state to gather information on dental provider practice and knowledge on hypertension and diabetes screening in the dental setting. The results are used to assist with educational efforts to increase awareness, the revision of guidelines for dental providers and increasing the number of Michigan residents screened for hypertension and diabetes.
Data Collection Process: The survey was dispersed to dental practices through a contact list provided by Delta Dental. Hard copy surveys were sent to locations, while electronic surveys, using Survey Monkey, were sent through email. The data was scanned from hard copies and imported from electronic copies to begin data cleaning and analysis.
Population Included: Dentists, Dental Hygienists, and Dental Assistants
Oral Health Topics: Hypertension, Blood Pressure, Diabetes screening in dental setting
Additional Information: For more information visit,
https://www.michigan.gov/documents/mdhhs/Oral_Health_Assessment_of_BP-Diabetes__Report_Feb_2017_550635_7.pdf
https://www.michigan.gov/documents/mdhhs/BP-Diabetes_OH_Assessment_Summary_10-16_550636_7.pdf

Name: Michigan Assessment of Oral Cancer Screenings and Knowledge of Human Papillomavirus (HPV) Among Oral Health Professionals Results Report
Purpose and History: The assessment was created to identify the number of Michigan residents who are screened for oral cancer (referred if needed) and the number of individuals who received the HPV vaccination. The assessment also was meant to review screening procedure, knowledge of oral health professions on oral cancer and HPV, HPV/vaccinations, and determine any follow-up visits after identifying patients with suspected oral cancer. The data collected from the assessment is being used to plan both educational and guidance opportunities for dental professionals.
Data Collection Process: In 2018, an advisory team created and dispersed a paper survey to Michigan dental practices identified from Delta Dental's contact list. The returned surveys were then scanned by the Scantron Survey Services.
Population Included: Primarily Dentists, Dental Hygienists, and Dental Assistants
Oral Health Topics: Oral cancer screening, human papilloma virus (HPV), vaccine, cancer prevention
Additional Information: For more information visit:
https://www.michigan.gov/documents/mdhhs/Oral_Cancer_Summary_Report_2019_654782_7.pdf

The state oral health epidemiologist will organize the data collection, coordination, and analysis of these different systems. Surveillance data will be kept with and maintained by the state oral health epidemiologist at MDHHS.

Dissemination:

Surveillance results will be disseminated to interested programs and policymakers through presentations, and published reports and briefs. Many reports are planned for distribution in the next 5 years including:

- Annual educational and statistical factsheets in collaboration with different chronic health programs, the first focusing on oral cancer followed by oral health and cardiovascular disease
- BRFS surveillance briefs utilizing core and state-added questions regarding oral health and oral cancer screenings.
- Annual SEAL! Michigan program specific reports and a state-wide report.
- Count Your Smiles report that summarizes the results of the 3rd grade basic screening survey.
- Medicaid Mapbook with dental utilization rates by county.

Reports will contain current oral health data and any trends available. Reports will be distributed electronically to our partners across the state. They will be shared with other state oral health departments across the nation. All reports will be available electronically on the state website and as funds will allow a limited number will be printed for distribution at meetings.

Venues for oral dissemination of surveillance results include, but are not limited to, the Michigan Oral Health Conference, the National Oral Health Conference, and The Michigan Public Health Association Epidemiology Conference.

Privacy and Confidentiality:

The Oral Health Surveillance System follows Health Insurance Portability and Accountability Act (HIPAA) standards for patient privacy and protected health information. The system limits identifiers collected to only essential data elements, and the data is stored on a secure, private, electronic server. Identifiers can only be seen by oral health staff that has been trained on HIPAA, data security, and confidentiality. The identifiers will never be released to external partners and aggregate data is never reported for counts less than five. All surveillance projects are reviewed by the MDHHS Institutional Review Board prior to initiation.

Evaluation:

Evaluation is important in that it promotes the best use of limited public health resources. Evaluation helps identify indicators that may no longer be of public health importance but may also identify much needed new indicators. Evaluation improves efficiency, helps eliminate duplication of data collection, and identify whether surveillance meets its objectives and the needs of public health programs. Continued evaluation will enhance surveillance activities not just for the data itself but for all the stakeholders who benefit from the surveillance system.

Michigan will be using the *Updated Guidelines for Evaluating Public Health Surveillance Systems* to evaluate the Michigan Surveillance Plan as a whole and the steps that encompass the plan (German 2001). The Michigan Oral Health Surveillance System will be evaluated the next 5 years. Four major evaluation activities will occur:

1. Examine and decide which oral health conditions should be under the surveillance system,
2. Determine the value of oral health data sources in the surveillance system,
3. Measure the effectiveness through measures such as cost, flexibility, data quality and timeliness, and
4. Assess the usefulness of the data for dissemination, prevention, and policy development. (German 2011 and Phipps 2013)

A summary report of the findings will be written and distributed to Michigan's oral health partners. Findings will be used to adopt new methods that will enhance the current surveillance system and will be incorporated into the next surveillance plan.

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List of Abbreviations

AAA: Area Agencies of Aging
ASTDD: Association of State and Territorial Dental Directors
BRFSS: Behavioral Risk Factor Surveillance System
BSS: Basic Screening Survey
CDC: Centers for Disease Control and Prevention
CHIP: Children's Health Insurance Program
CMS: Centers for Medicare & Medicaid Services
CSTE: Council for State and Territorial Epidemiologists
CYS: Count Your Smiles
EPSDT: Early and Periodic Screening, Diagnostic and Treatment
HIPAA: Health Insurance Portability and Accountability Act
HKD: Healthy Kids Dental
HP2010: Healthy People 2010
HP2020: Healthy People 2020
HPV: Human Papillomavirus
IOM: Institute of Medicine
MBDR: Michigan Birth Defects Registry
MCIR: Michigan Care Improvement Registry
MCSP: Michigan Cancer Surveillance Program
MDHHS: Michigan Department of Health and Human Services
MDP: Michigan Dental Program
MEPS: Medical Expenditure Panel Survey
MHA: Michigan Health and Hospital Association
MiBRFSS: Michigan Behavioral Risk Factor Surveillance System
MIDB: Michigan Inpatient Database
MODB: Michigan Outpatient Database
MRDF: Michigan Resident Death Files
NHANES: National Health and Nutrition Examination Survey
NOHSS: National Oral Health Surveillance System
OHSS: Oral Health Surveillance System
PRAMS: Pregnancy Risk Assessment Monitoring System
SEER: Surveillance Epidemiology and End Results Program
WFRS: Water Fluoridation Reporting System
YRBSS: Youth Risk Behavior Surveillance Survey