



# Dental Public Health Activities & Practices

**Practice Number:** 25004  
**Submitted By:** Michigan Department of Community Health, Bureau of Epidemiology  
**Submission Date:** August 2007  
**Last Updated:** June 2010

<b>SECTION I: PRACTICE OVERVIEW</b>		
<b>Name of the Dental Public Health Activity:</b>		
Michigan Oral Health Surveillance Plan – Guiding the Development of a State Surveillance System		
<b>Public Health Functions:</b>		
Assessment – Acquiring Data Assessment – Use of Data		
<b>Healthy People 2010 Objectives:</b>		
21-16 Increase number of states with State-based surveillance system		
<b>State:</b>	<b>Federal Region:</b>	<b>Key Words for Searches:</b>
Michigan	Midwest Region V	Oral health surveillance plan, surveillance system, surveillance, oral health data, data, surveillance plan, surveillance planning
<b>Summary:</b>		
<p>The Michigan Oral Health Surveillance Plan was prepared to guide the development of the state oral health surveillance system. The planning process directed the design of the Michigan oral health surveillance system through a collaborative effort between the Michigan Department of Community Health and the Michigan Oral Health Coalition. The implementation of the surveillance plan has built an oral health surveillance system for Michigan. Michigan's surveillance system integrates oral health into several population-based surveillance activities and information from these data sources is coordinated by the oral health epidemiologist. Surveillance data deficiencies were identified and resources have been applied to collect additional data. Financial resources primarily supported coordination activities (e.g., the oral health epidemiologist working with data partners to integrate oral health into existing surveillance systems and obtaining data from secondary sources) and supported the implementation an oral screening survey to assess oral health status in school age children. The new surveillance system provided oral health data that was used in the development of Michigan's Oral Health Plan and Michigan's Oral Disease Burden Document. Surveillance data has also been used in prioritizing state activities to improve oral health in Michigan. The development of Michigan's surveillance system is a response to the Healthy People 2010 objective 21-16 asking for every state to develop and maintain an oral health surveillance system.</p>		
<b>Contact Persons for Inquiries:</b>		
Christine M. Farrell, RDH, BSDH, MPA, Oral Health Program Director, Division of Family & Community Health, Michigan Department of Community Health, 201 Townsend St., Lansing, MI 48913, Phone: 517-335-8388, Fax: 517-335-8697, Email: <a href="mailto:farrellc@michigan.gov">farrellc@michigan.gov</a>		

## SECTION II: PRACTICE DESCRIPTION

### History of the Practice:

Dental caries is the most common chronic disease in children, five times more common than asthma<sup>1</sup>. Nationally, 51 million school hours and 164 million work hours are lost due to oral disease<sup>1</sup>. Oral health status is also linked to several common chronic conditions such as cardiovascular disease<sup>2</sup> and diabetes<sup>3</sup> which may result in premature mortality.

While there are clinic-based measurements of some oral diseases in Michigan as well as population-based surveys of adults, neither provides population-based oral health estimates for Michigan children. In addition, there are deficiencies in oral health information on special populations (e.g., special needs children, pregnant women, and the elderly).

The Michigan Department of Community Health (MDCH), in concert with oral health professionals around the state, has taken the lead in developing the needed oral health surveillance system. Because oral disease arises throughout the entire lifespan, surveillance will address age-specific oral health concerns. Further, the surveillance system will establish statewide baseline oral health information.

A cooperative agreement between the CDC and MDCH provided the opportunity and financial support to develop the Michigan oral health surveillance system as part of building infrastructure to improve oral health.

#### References:

<sup>1</sup> U.S. Department of Health and Human Services (HHS). *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: HHS, National Institutes of Health, National Institute of Dental and Craniofacial Research, 2000.

<sup>2</sup> Slavkin, H.C. Does the mouth put the heart at risk? *Journal of the American Dental Association* 130:109-113, 1999.

<sup>3</sup> Taylor GW, Manz MC, Borgnakke WS. Diabetes, periodontal diseases, dental caries, and tooth loss: a review of the literature. *Compend Contin Educ Dent*. 25(3):179-84, 186-8, 190. March 2004.

### Justification of the Practice:

Michigan needs a state oral health surveillance system. The creation of a Michigan oral health surveillance system will address Healthy People 2010 (HP 2010) objective 21-16, which calls for every state to have an oral and craniofacial health surveillance system. Oral health surveillance will enable measurement of several health outcomes such as prevalence of caries, untreated decay and periodontal disease. State surveillance data will enable Michigan to contribute data to the National Oral Health Surveillance System (NOHSS). The Michigan oral health surveillance system will also allow tracking the state's progress towards achieving HP 2010 oral health objectives related to:

- Reduction in dental caries prevalence among children,
- Reduction in untreated dental decay prevalence among children,
- Increased access to fluoridated water,
- Increased application of dental sealants,
- Adult and child dental visits for both treatment and preventive care, and
- Increased early detection of oral cancer.

A Michigan oral health surveillance system will track oral health indicators, monitor trends, and evaluate the impact of prevention initiatives. Surveillance data can be shared with stakeholders to enable evidence-based practice and implementation of Michigan's State Oral Health Plan. Surveillance information aids the development and implementation of new programs as well as the evaluation and improvement of existing oral health programs.

Preparing a state oral health surveillance plan was a critical step in directing efforts to effectively and efficiently develop a simple, effective, flexible, and sustainable surveillance system. The planning process provided the opportunity to consider the essential factors in the development,

implementation and maintenance of the state surveillance system, as well as developing a timeline and activities to incrementally build and expand the surveillance system with time.

## **Inputs, Activities, Outputs and Outcomes of the Practice:**

### ***A. The Process in Developing the Michigan Oral Health Surveillance Plan***

Michigan has a full-time epidemiologist dedicating 0.5 FTE of his time to oral health and 0.5 FTE of his time to children with special health care needs. The oral health epidemiologist is responsible for coordinating efforts to develop the state oral health surveillance system.

Planning of the state oral health surveillance system took approximately a year. The oral health epidemiologist worked with the Michigan Oral Health Coalition to obtain stakeholder input for the design of the surveillance system. Coalition members are key stakeholders who would contribute data to the surveillance system as well as use surveillance data to develop, expand and improve oral health programs and for policy development. The Coalition's Data Workgroup served as an advisory committee for planning the surveillance system. Members of the Data Workgroup included representations from Michigan Department of Environmental Quality (community water fluoridation), University of Michigan, Local Health Departments, Public Health Service, MDCH Oral Health Program (former oral health coordinator), Michigan Primary Care Association, and Michigan Department of Community Health. The oral health epidemiologist became the Chair of the Data Workgroup.

The Data Workgroup met monthly for a one-year period (2003-2004) to plan the surveillance system. Workgroup members helped establish indicators, set case definitions, identify data resources, discuss the benefits and limitations of data resources, etc. The epidemiologist provided routine feedback on the progress of the oral health surveillance plan to the state and coalition leadership as well as the at-large membership of the oral health coalition.

Several resources were used to plan the surveillance system and to identify essential elements of a surveillance system including the CDC Updated Guidelines for Evaluating Public Health Surveillance Systems (<http://www.cdc.gov/mmwr/PDF/rr/rr5013.pdf>). The ASTDD Best Practices Approach Report on State-based Oral Health Surveillance System (<http://www.astdd.org/docs/BPASurveillanceSystem.pdf>) was also a resource for planning. The oral health epidemiologist used the two state surveillance system examples from the Best Practices Approach Report as a reference for developing oral health indicators, identifying potential data partners, setting up data collection/management cycles, etc.

As the oral health epidemiologist worked with the Data Workgroup to address elements in building a surveillance system (e.g., existing data sources, data deficiencies, oral health indicators for surveillance, required resources, etc.), he captured key information and decisions in the Michigan Oral Health Surveillance Plan. The state MCH epidemiologist was consulted and he reviewed the surveillance plan. The Michigan Oral Health Coalition members voted and endorsed the surveillance plan along with the Michigan Oral Health Plan. In January 2005, the Michigan Oral Health Surveillance Plan was released as a guide for activities to build the state surveillance system during the initial 5-year period (2004-2008).

### ***B. Content Information of the Michigan Oral Health Surveillance Plan***

Based on communication from CDC Division of Oral Health and state efforts in developing oral health surveillance systems, important components of a state oral health surveillance plan include:

1. Introduction/background
  - Describe the rationale of needing a surveillance system
  - Summarize the information from previous data-collection experience in the state
2. Goals and objectives of the surveillance system
  - State the goals of the surveillance system
  - Write attainable objectives
3. Conditions to include in the surveillance system

- Identify indicators from the primary and secondary data sources
  - Consider indicators needed to report for NOHSS, track progress related to Healthy People 2010, monitor efforts in achieving state oral health objectives, etc.
  - Identify age-groups for which data will be collected
  - Identify the minimum level of representation of data (e.g., state/regional/local levels)
  - Prioritize the list of indicators
4. Resources needed to design, develop, implement and evaluate the surveillance system
    - Identify human resources needed (e.g., surveillance advisory committee, data manager, epidemiologist, biostatistician, communication specialist, etc.)
    - Identify infrastructure to support how data will flow into the surveillance system from original data sources to reporting the indicators such as preparing reports.
    - Assign estimated dollar figures to surveillance activities
  5. Stakeholders
    - Identify who will benefit from the surveillance system
    - Determine if an advisory committee is needed
    - Identify partners
  6. Additional information
    - Case definitions for conditions included in the surveillance system
    - Target populations
    - Prioritized list of indicators, age-groups, and sources
    - Data collection timeline
    - Data management (who and where will keep the data secure)
    - Data analysis
    - Data dissemination and use (timing and reporting)
    - Privacy, data confidentiality, storage and release policies
    - Regulatory consideration (e.g., Health Insurance Portability and Accountability Act)
    - Personnel
    - Budget
    - Evaluation of the surveillance system

The following are selected content information from the **Michigan Oral Health Surveillance Plan**:

### **1. Rationale**

The Michigan surveillance plan reflects on “Why does Michigan need an oral health surveillance system?” and “What information can the oral health surveillance system provide?” Justification for a Michigan oral health surveillance system include the burden of oral diseases and its impact across the lifespan affecting children, adolescents, adults and seniors, the lack of oral health information for the general and special population in Michigan, the need to monitor state progress in achieving Healthy People 2010 oral health objectives, the ability to report state data to the National Oral Health Surveillance System (NOHSS), evaluation of preventive initiatives, and tracking the effectiveness of the strategies set by Michigan’s State Oral Health Plan.

### **2. Stakeholders**

The Michigan Oral Health Coalition provides access and linkage to key stakeholders for the development and maintenance of the state oral health surveillance system. The Coalition includes representatives from the public and private sectors, state agencies and community organizations, program administrators, providers, businesses and their workers, and children’s advocacy groups.

### **3. Goals and Objectives of the Surveillance System**

The goal of the Michigan 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 objectives of the Michigan Oral Health Surveillance System are:

- Estimate the magnitude of oral disease in Michigan annually,

- Monitor trends in oral health indicators annually,
- Identify vulnerable population groups annually,
- Evaluate the effectiveness of implemented programs and policy changes as needed, and
- Provide information for evidence-based decision-making on an ongoing basis.

#### 4. Staffing and Support

The cooperative agreement between the CDC and MDCH supports a 0.5 FTE epidemiologist as well as the infrastructure development of the surveillance system. State funding is expected to replace CDC funding in the future. The epidemiologist's surveillance role requires interaction with multiple programs in assembling the data system. This typically involves data acquisition but also includes proposing questions for inclusion into other data systems. The epidemiologist develops analysis plans (frameworks for data analysis) for these different data systems in order to make the most effective use of different data systems and various analysis timelines provided by other programs. In addition, the epidemiologist is responsible for evaluation of existing oral health programs and their data systems and how they can contribute to statewide surveillance. The epidemiologist prepares acquired surveillance information for dissemination through documents and presentations.

#### 5. Surveillance Timeline

Michigan's oral health surveillance system will develop incrementally and the system will mature over time. Resources invested during the initial 5-year period will build a surveillance system to meet the need of the stakeholders.

##### ⇒ Year 1 activities (July 2003-June 2004) include:

- Identify available data resources and assess the importance of the information they contribute to surveillance.
- Identify gaps in existing data resources, and determine methods to overcome those gaps.
- Plan for Basic Screening Survey (BSS) implementation in 2005.
- Add oral health questions to population-based surveys: Pregnancy Risk Assessment Monitoring System (PRAMS), Behavioral Risk Factor Surveillance System (BRFSS), Youth Risk Factor Surveillance System (YRBS), and Youth Tobacco Survey (YTS).
- Establish baseline information for National Oral Health Surveillance System (NOHSS) and HP 2010 oral health indicators.
- Centralize oral health information at the state level.
- Develop oral health surveillance logic model.

##### ⇒ Year 2 activities (July 2004-June 2005) include:

- Plan implementation of a BSS for 3<sup>rd</sup> grade students for September 2005.
- Analyze oral health information from the 2004 BRFSS.
- Analyze dental need among children with special health care needs (CSHCN) using the National Survey of CSHCN.
- Disseminate results from 2004 BRFSS.
- Finalize the oral health surveillance plan.
- Develop oral health disease burden document.

##### ⇒ Year 3-5 activities (July 2005-June 2008) include:

- Enlist the assistance of dental insurers to provide service-utilization information
- Develop and implement a dental licensing survey based on other primary care licensing surveys conducted by the state.
- Coordinate with Michigan cancer registries to regularly update oral cancer data.
- Design an evaluation system and evaluation implementation plan for the surveillance system
- Disseminate results from BSS of 3<sup>rd</sup> grade students.
- Publish an oral health surveillance report.
- Report all 8 NOHSS indicators to CDC.
- Obtain child utilization of dental services.
- Assess oral cancer incidence and prevalence.

##### ⇒ Ongoing surveillance activities include:

- Assist Department of Environmental Quality (DEQ) in developing and maintaining monthly reporting of fluoride levels to Water Fluoridation Reporting System (WFRS) reporting.

- Maintain data collection and management from secondary data sources.
- Repeat BSS Implementation among 3<sup>rd</sup> grade students every 5 years.
- Conduct survey for dentists and hygienists during dental licensing renewal cycles.
- Maintain regular data reporting from cancer registry.
- Maintain regular reporting from dental insurers on utilization.
- Report BRFS, BSS, WFRS results annually to NOHSS.
- Make presentations on oral health surveillance data at state and local conferences.
- Provide annually published reports on oral health surveillance.
- Continually update oral health disease burden document.
- Conduct routine evaluation of the surveillance system.

## 6. Surveillance Indicators

The surveillance indicators were established after consideration of data resources available within the state as well as indicators desired at the national level to support the NOHSS and monitor progress towards achieving the HP 2010 oral health objectives. The Michigan Oral Health Surveillance System will initially report the following indicators:

### ⇒ Children

- *Caries experience* – 3<sup>rd</sup> grade children (BSS)
- *Untreated decay* – 3<sup>rd</sup> grade children (BSS)
- *Sealants present on first molars* – 3<sup>rd</sup> grade children (BSS)
- *Low-income preventive dental visit in the past year* – Medicaid children (Medicaid)
- *Any dental visit in the past year* – All children (Medicaid & Private Carriers)

### ⇒ Adults

- *No tooth loss* - Age 35-44 (BRFS)
- *Edentulous* - Age 65-74 (BRFS)
- *Periodontal Disease* - Age 35-44 (BRFS – subject to progress made by the working group at CDC)
- *Preventive dental visit* - All adults (BRFS)
- *Any dental visit* - All adults (BRFS)
- *Proportion of oral cancers detected at an early stage* – All adults (Michigan Cancer Registries)
- *Incidence of oral cancer* – All adults (Michigan Cancer Registries)
- *Mortality due to oral cancer* – All adults (Michigan Cancer Registries)

### ⇒ Other

- *Population served by adequately fluoridated water* (WFRS)
- *Distribution/density of dental providers* (Bureau of Licensing & Health Professions)
- *Number of critical access providers* (Medicaid)

## 7. Case Definitions

For consistency and comparison, the Michigan Oral Health Surveillance System adopted these case definitions established in the BRFS, WFRS, HP2010, and other sources where appropriate:

- ***Caries Experience*** (Source: HP2010, Objective 21-1): A clinical diagnosis of dental caries, presence of fillings in at least one primary or permanent tooth, or evidence of a missing tooth due to caries.
- ***Untreated Decay*** (Source: HP2010, Objective 21-2): A clinical diagnosis of dental decay in at least one tooth that has not been restored.
- ***Presence of Dental Sealants*** (Source: HP2010, Objective 21-8): A clinical confirmation of dental sealants applied to one or more permanent molars.
- ***Missing Teeth*** (Source: BRFS, 2004 Questionnaire 11-2): Permanent teeth that have been removed or lost because of tooth decay or gum disease, but not due to other reasons, such as injury or orthodontics.
- ***Preventive Visit*** (Source: BRFS, 2004 Questionnaire 11-3): Adult preventive visits will be determined by whether the person's teeth were cleaned by a dentist or dental hygienist. Child preventive visits will be determined by whether the services received were classified as preventive by the type of procedure performed.
- ***Dental Visit*** (Source: BRFS, 2004 Questionnaire 11-1): Visited a dentist or a dental clinic for any reason.

- **Water Fluoridation** (Source: WFRS): An adequately fluoridated community water supply is defined as having a level of fluoridation of 0.7 to 1.0 ppm. This can be naturally or artificially supplied.
- **Oropharyngeal Cancer** (Source: Silverman 1998): Cancers of the oral cavity and pharynx include cancers of the lip, tongue, floor of mouth, gingival, soft and hard palate, salivary gland, tonsil, nasopharynx, hypopharynx, oropharynx, and pharynx.
- **Periodontal Disease** (Source: BRFSS, 2001 Questionnaire, State-added question): Having been told by a doctor, dentist, or other health professional that the person has periodontal disease.
- **Critical Access Provider** (Source: ASTDD 2004 State Synopsis Questionnaire): A dental provider who has received Medicaid paid claims for dental services equaling or in excess of \$10,000 over the course of one year.

## 8. Data Resources

The Michigan Oral Health Surveillance System relies on several data sources to report on the oral health indicators. Table 1 shows the data sources the availability of data.

Data Source/Year	2004	2005	2006	2007	2008
WFRS	X	X	X	X	X
BRFSS	X		X		X
BSS		X			
Insurer Utilization Information				X	X
Workforce Licensing Survey				X	X
Medicaid	X	X	X	X	X
Cancer Registries			X		

## 9. Integration of the Surveillance System with Pre-Existing Oral Health Information Sources

Data from Michigan's BRFSS and WFRS will be routinely reported to the NOHSS. Additional data resources such as the BSS, Medicaid, and information provided through Michigan's cancer registries will be reported to NOHSS as they are updated.

## 10. Data Collection and Analysis

In the effort to measure the HP2010 oral health objectives, and not only the NOHSS indicators, the following coordination of data systems will be used:

- Behavioral Risk Factor Surveillance System (BRFSS)
- Water Fluoridation Reporting System (WFRS)
- Basic Screening Survey (BSS)
- Medicaid
- Michigan's cancer registries

The state oral health epidemiologist will organize the data collection, coordination, and analysis of these different systems. Surveillance data will be maintained by the state oral health epidemiologist at MDCH. Many programs in Michigan are willing to share results and accept data requests for their program data. While the oral health epidemiologist does not analyze the information directly, the analysis plans operate by effectively providing to programs a user-friendly method of analyzing the desired information.

## 11. Plan for Data Dissemination

Surveillance results will be disseminated to interested programs and policy-makers through presentations and annually published reports. These reports will contain current oral health

data and any notable trends. Results will also aid in updating Michigan's publicly available oral health disease burden document. Venues for oral dissemination of surveillance results include the State Oral Health Conference and State Information Integration Conference.

## 12. Evaluation of the Surveillance System

A preliminary evaluation plan of the oral health surveillance system was developed as part of the surveillance plan. Evaluation is needed to promote the best use of limited public health resources, help identify new indicators of public health importance, improve efficiency, help eliminate duplication of data collection, and identify whether surveillance is meeting 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. The preliminary evaluation plan for the Michigan Oral Health Surveillance System included the following ideas based on the CDC Updated Guidelines for Evaluating Public Health Surveillance Systems:

- **System Operation:** Assess the coordination process of information resources. Assess Health Insurance Portability and Accountability Act (HIPAA) compliance of the system. Examine institutional review board (IRB) concerns about the system. Assess the quality of information provided by the system. Assess the quality of information provided through dissemination. Examine how accurately the system addresses the NOHSS indicators and HP2010 oral health objectives.
- **Simplicity/Feasibility:** Examine the coordination of information sources contributing to the surveillance system, and the ease in operating, analyzing, and interpreting those sources. Assess technology and skill requirements in acquiring, entering, and transmitting data. Analyze resource costs in management of the surveillance system.
- **Flexibility:** Examine the impact of system adaptation and modification on resources, ease of use, stakeholder buy-in, etc. Assess flexibility by anticipating how the system can be adapted to achieve its objectives. Identify oral health indicators that can be added to surveillance. Assess the ability to measure and interpret differing case definitions.
- **Acceptability:** Survey schools about the time and resource effectiveness of in-school screenings. Assess screener perceptions about school screenings. Identify the use of surveillance data in programming. Assess stakeholder perceptions of data value. Identify survey questions used for policy and programming.
- **Sensitivity:** Assess screening response rates and characteristics of non-respondents and screening refusals. Examine how accurately case definitions identify disease. Examine how effectively and accurately the system identifies vulnerable populations. Validate system results to external measures.
- **Timeliness:** Examine frequency of surveillance information dissemination. Evaluate the impact time lag differences of data systems have on the value of the information.
- **Cost:** Assess resource efficiency in acquiring surveillance data. Examine staff time to run the surveillance system. Determine cost-effectiveness of information output by the system.

### C. Implementation of the Michigan Oral Health Surveillance Plan & Accomplishments

The oral health epidemiologist was able to closely follow the Michigan Oral Health Surveillance Plan to implement Year 1 and Year 2 surveillance activities, a critical period in setting up the new surveillance system. Additional demands and opportunities for surveillance resulted in some deviation from following and completing all the planned activities for Year 3 and Year 4.

The surveillance plan provided an organized approach to building the surveillance system. The plan helped the oral health epidemiologist set up his own annual work plans, monitor and review surveillance activities and progress, stayed on track in coordinating surveillance activities with data partners, and set up systems to manage surveillance data from primary and secondary sources. In addition, the surveillance plan was instrumental in justifying resources to set up the statewide Basic Screening Survey of 3<sup>rd</sup> grade children, a major surveillance component.

The following are accomplishments in carrying out the Michigan Oral Health Surveillance Plan and building the Michigan Oral Health Surveillance System:

- A Logic Model of the Surveillance System has been developed (see **Attachment A**).

- Data is being collected on an ongoing basis to report on the oral health indicators established for the surveillance system. **Attachment B** shows a data flowchart illustrating how Michigan is organizing and managing surveillance data from primary and secondary sources.
- The surveillance data have contributed to describing Michigan's oral disease burden through the development of an oral disease burden document for Michigan and in a presentation at the 2005 Michigan Oral Health Conference.
- Data sources used in establishing the surveillance system have been applied in the development of Michigan's Oral Health Plan.
- The surveillance system has become a resource of information for state and local agencies applying for grants related to oral health improvement.
- Surveillance activities have been useful in identifying at-risk populations and communities such as areas within the state with elevated risks of oral cancer incidence and mortality and provider shortage areas.
- Surveillance data are currently being incorporated into the development of state supported school-based, school-linked sealant programs and fluoride varnish programs.
- The surveillance system provided the oral health epidemiologist password-protected access to Medicaid data through the Michigan Data Warehouse. This Data Warehouse access allows the epidemiologists to evaluate several surveillance measures and will contribute to further expansion of surveillance activities.
- Security for all surveillance activities has been enhanced including establishing the oral health epidemiologist's work location in an electronically secured room.
- The surveillance system supports new data collection including the implementation a statewide survey (BSS) to assess oral health of the 3<sup>rd</sup> grade children that began in September 2005. Completion of this survey in 2006 yielded a report and provided information to update the burden of oral disease document.
- The surveillance system created opportunities to integrate additional oral health data collection in existing surveillance system. Oral health questions have been added to Michigan's PRAMS and YTS to expand knowledge of oral health in specific subpopulations. Michigan's April 2007 PRAMS newsletter focused on access to oral health care for pregnant women.
- A workforce survey of dentists and dental hygienists was developed in 2006 with significant input about content from the data workgroup. The survey was then designed in cooperation between the MDA, MDHA, and partner agencies within MDCH. Implementation of the survey in 2006 resulted in a report released in March 2007 and a presentation at the 2007 Michigan Oral Health Conference.
- Evaluation of oral health data from local health departments has been completed and feedback sent to help improve the efficiency, detail, and quality of the information they provide. These changes will enhance the quality of the information and lead to future efficiencies in data collection. For example, one health department has completely computerizing their data collection system.
- The Michigan Oral Health Coalition has been a key contributor in building the state oral health surveillance system and continues to strongly support the expansion of surveillance activities.

The Michigan Oral Health Surveillance Plan will be formally reviewed every five years. An update of the surveillance plan is scheduled during 2008-2009 and will use the findings from the evaluation of the surveillance system to make necessary adjustments. Surveillance activities will be planned for the next 5-year period continuing efforts to build a more mature surveillance system.

## Budget Estimates and Formulas of the Practice:

The cost of developing the Michigan Oral Health Surveillance Plan included the time of the oral health epidemiologist (0.5 FTE's time for approximately a one-year period) and the in-kind contribution of time and effort from the Michigan Oral Health Coalition's Data Workgroup members (e.g., monthly meetings for a year).

Estimated costs for collecting data for the oral health surveillance system include:

BSS (\$40,000 every five years) = \$8,000 per year

Dental licensing survey – supported by licensing fees collected by the MDCH Healthcare Workforce Center

BRFSS (\$4,000 for 2 questions ever 2 years) = \$2,000 per year

Total cost = \$10,000 per year

The funding source for the surveillance system is through a cooperative agreement between the CDC and MDCH, which also supports the 0.5FTE oral health epidemiologist position.

## Lessons Learned and/or Plans for Improvement:

An advisory committee was extremely useful for the planning of the surveillance system. At the start of the planning process, the oral health epidemiologist was new to the oral health community and the advisory committee provided oral health expertise and knowledge as well as helped establish linkages to available data sources.

The NOHSS and perceived data needs by stakeholders helped focus surveillance measures, and thus provided basic case definitions for the indicators of interest. Inclusion of stakeholders in the development of surveillance activities helps to ensure that the data collected will be of value upon output. Collaboration within the government can lead to integration of oral health into other chronic disease programs.

When retrieving information from multiple surveys, it is important to develop an analysis plan for each of those sources. These plans should address important topics such as regional, ethnic, and other social disparities in addition to the core information that is reported to NOHSS. Analysis plans also increase system efficiency by minimizing time spent on analysis by the programs that coordinate each survey.

## Available Information Resources:

Brooks K, El Reda D, Grigorescu V, Kirk G. Michigan Department of Community Health. "Oral health during pregnancy." MI PRAMS Delivery. Volume 6, Number 2. Family and Community Health, Michigan Department of Community Health, May 2007.

[http://www.michigan.gov/documents/mdch/OralHealthNewsletterJune2007\\_Final\\_195213\\_7.pdf](http://www.michigan.gov/documents/mdch/OralHealthNewsletterJune2007_Final_195213_7.pdf)

(CDC) Centers for Disease Control and Prevention. Framework for Program Evaluation in Public Health. MMWR 1999; 48(RR-1); 1-40.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4811a1.htm> (HTML version)

<http://www.cdc.gov/mmwr/PDF/rr/rr4811.pdf> (PDF version)

(CDC) Centers for Disease Control and Prevention. Updated Guidelines for Evaluating Public Health Surveillance Systems. Recommendations from the Guidelines Working Group. MMWR 2001; 50(RR-13); 1-35.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm> (HTML version)

<http://www.cdc.gov/mmwr/PDF/rr/rr5013.pdf> (PDF version)

(MDCH) Michigan Department of Community Health. Burden of Oral Disease in Michigan, 2006.

[http://www.michigan.gov/documents/OHBurdenDraft\\_135603\\_7.pdf](http://www.michigan.gov/documents/OHBurdenDraft_135603_7.pdf)

(MDCH) Michigan Department of Community Health. Count Your Smiles, 2005-06.

[http://www.michigan.gov/documents/mdch/CYS\\_Final\\_9-29-06\\_192491\\_7.pdf](http://www.michigan.gov/documents/mdch/CYS_Final_9-29-06_192491_7.pdf)

(MDCH) Michigan Department of Community Health. Survey of Dental Hygienists, 2006.  
[http://www.michigan.gov/documents/healthcareworkforcecenter/2006DENTHYGreport+tool\\_19109\\_9\\_7.pdf](http://www.michigan.gov/documents/healthcareworkforcecenter/2006DENTHYGreport+tool_19109_9_7.pdf)

(MDCH) Michigan Department of Community Health. Survey of Dentists, 2006.  
[http://www.michigan.gov/documents/healthcareworkforcecenter/2006DENTISTreport+tool\\_191101\\_7.pdf](http://www.michigan.gov/documents/healthcareworkforcecenter/2006DENTISTreport+tool_191101_7.pdf)

Teutsch SM, Churchill RE. Principles and Practice of Public Health Surveillance, 2<sup>nd</sup> edition. New York: Oxford University Press, 2000.

## SECTION III: PRACTICE EVALUATION INFORMATION

### **Impact/Effectiveness**

*How has the practice demonstrated impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence, outcomes of the practice and/or evaluation results)?*

The development of the Michigan Oral Health Surveillance Plan has successfully guided the development of the oral health surveillance system for the state and the implementation of surveillance activities. Surveillance data have contributed to describing Michigan's burden of oral disease and development of the state Oral Health Plan. Surveillance activities have also been useful in identifying at-risk populations and communities for different oral conditions. County level information has demonstrated areas within the state with elevated risks of oral cancer incidence and mortality as well counties with sub-par early detection rates. County information has also helped identify provider shortage areas, particularly for low-income individuals.

### **Efficiency**

*How has the practice demonstrated cost and resource efficiency where expenses are appropriate to benefits? How has the practice demonstrated realistic and reasonable staffing and time requirements? Provide unit cost analysis or cost-benefit analysis if appropriate.*

In developing the Michigan Oral Health Surveillance Plan, the Michigan Department of Community Health has been able to leverage off of the Michigan Oral Health Coalition to accessing stakeholders to help design the surveillance system. The Coalition has provided support and endorsement for the surveillance activities. The resulting benefit is that the surveillance system is integrated into several sustainable data systems. Partnerships with individuals who manage these data systems reduce the time and money spent tracking oral health surveillance. While the system itself is decentralized, it is centralized in its coordination by the epidemiologist.

### **Demonstrated Sustainability**

*How has the practice showed sustainable benefits and/or how has the practice been sustainable within populations/communities and between states/territories? What mechanisms have been built into the practice to assure sustainability?*

The surveillance plan has guided the development of a sustainable oral health surveillance system. The collaboration between MDCH and other constituents of the Michigan Oral Health Coalition in the development of the surveillance system has provided the oral health community throughout Michigan a stake in a successful surveillance system. Integration into well-established and sustained data systems also helps to assure a degree of sustainability.

### **Collaboration/Integration**

*How has the practice built effective partnerships/collaborations among various organizations and integrated oral health with other health projects and issues? What are the traditional, non-traditional, public and private partnerships/collaborations established by the practice for integration, effectiveness, efficiency and sustainability?*

Surveillance and data partnerships were identified and established in the planning process of the surveillance system. Michigan's oral health surveillance system was designed based on the collaboration between local agencies, MDCH, university partners and other stakeholders. This collaboration allowed for data integration that could meet the multiple needs of these diverse stakeholders. Collaboration within MDCH has also led to the addition of oral health questions to PRAMS and YTS. Collaboration between MDCH and the Michigan Department of Education has aided in school recruitment for Michigan's statewide BSS.

**Objectives/Rationale**

*How has the practice addressed HP 2010 objectives, met the call to action by the Surgeon General's Report on Oral Health, and/or built basic infrastructure and capacity for state/territorial oral health programs?*

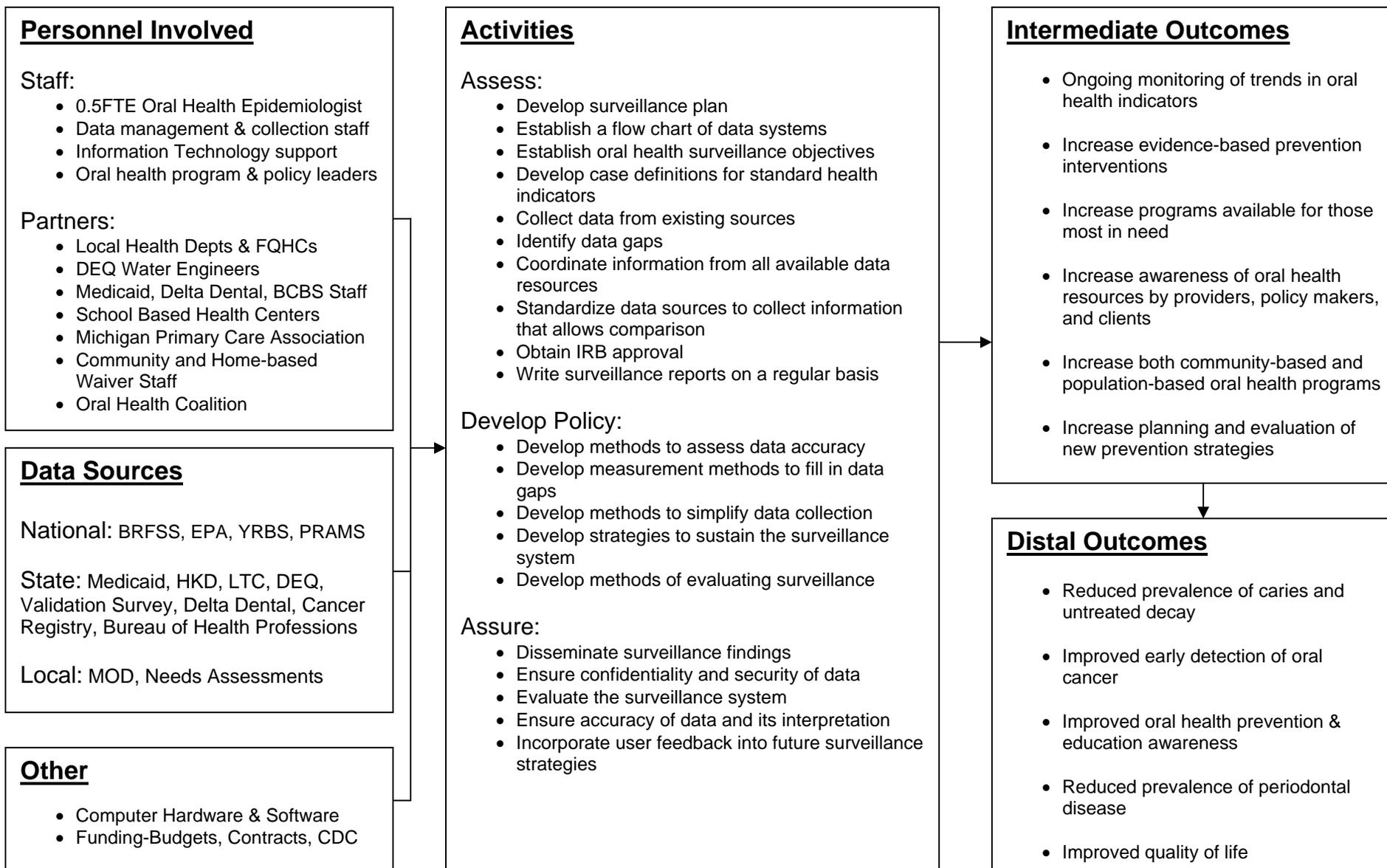
The development and implementation of Michigan's oral health surveillance system contributes to the Healthy People 2010 objective 21-16 calling for all states to develop a state oral health surveillance system. Michigan's surveillance system aims to meet both state and local agencies' needs by providing county and local information whenever feasible.

**Extent of Use Among States**

*Describe the extent of the practice or aspects of the practice used in other states?*

The CDC, Division of Oral Health through cooperative agreements provides funding to 12 states and a U.S. territory to strengthen their oral health programs and reduce inequalities in the oral health of their residents (12). The grantees (Alaska, Arkansas, Colorado, Illinois, Michigan, Nevada, New York, North Dakota, Oregon, Rhode Island, South Carolina, Texas, and the Republic of Palau) have or are in the process of developing their oral health surveillance plan and then implementing the plan to build their oral health surveillance system.

# Attachment A: Michigan Oral Health Surveillance Logic Model



# Attachment B: Michigan's Oral Health Data Resources Flowchart

