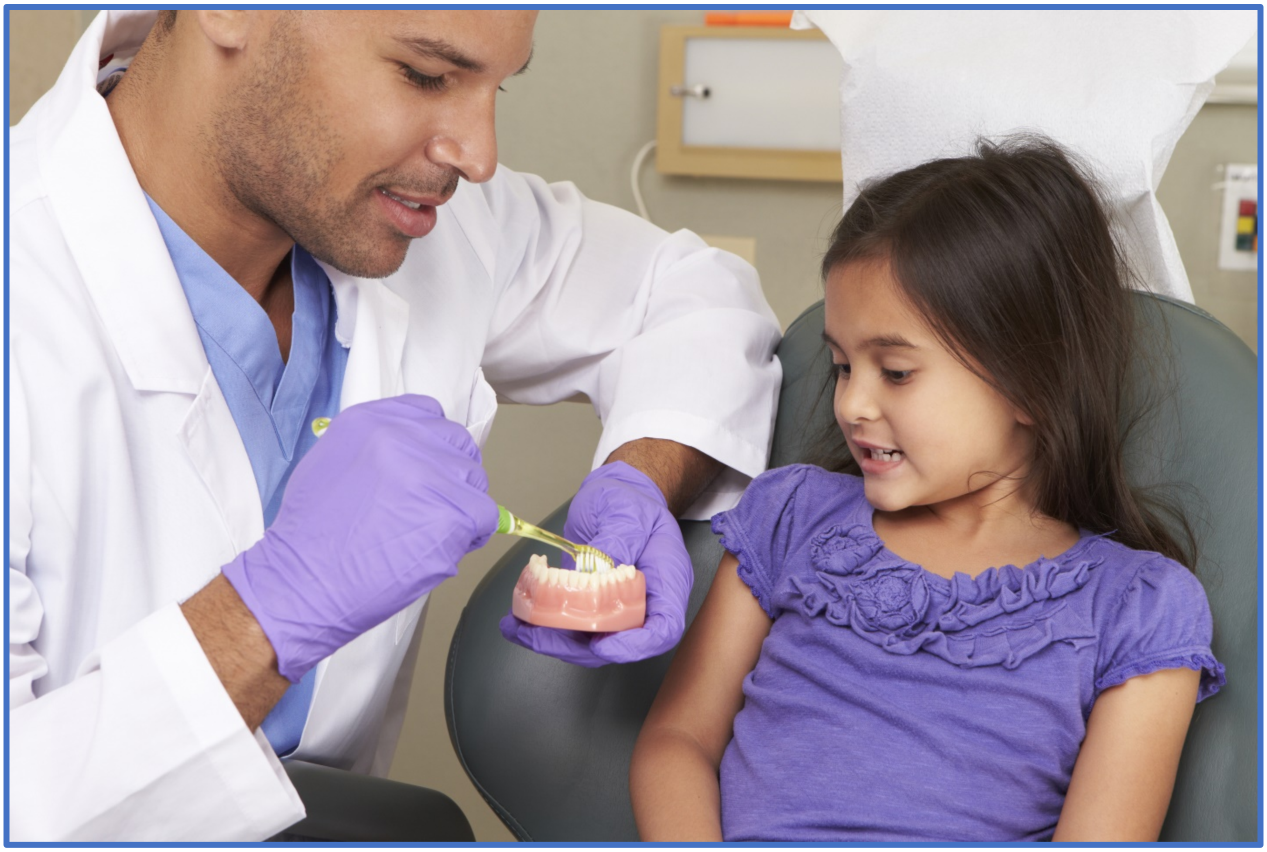

# DELAWARE ORAL HEALTH SURVEILLANCE PLAN, 2020-2025

January 2020

Delaware Department of Health and Social Services
Division of Public Health
Bureau of Oral Health and Dental Services

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

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January 2020

This report was prepared by the
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## Acknowledgement

Delaware's Oral Health Surveillance Plan is based on the surveillance plan template development by the Association of State and Territorial Dental Directors (ASTDD) with funding from CDC Cooperative Agreement SNU58DP004919-03.

## Suggested Citation


Delaware Department of Health and Social Services, Division of Public Health, *Delaware Oral Health Surveillance Plan, 2020-2025*, January 2020.

# Contents

## Executive Summary

Public health practitioners have long been aware of the importance of oral health. In 1979, the first publication explicating health objectives for the nation – *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* – included a section on dental health (DHEW, 1979). One year later, *Promoting Health/Preventing Disease: Objectives for the Nation* was published; this report included specific objectives related to dental health and set goals to be met by 1990 (DHHS, 1980).

Over subsequent years, additional goals were set and methods were devised to measure progress toward meeting them. As these efforts focused on oral health at a national level, they relied upon data collected by national surveys, such as the National Health Interview Survey. Such data were useful in describing the nation's oral health, but could not support state- or local-level assessment.

In 2000, the publication of a new report, *Oral Health in America: A Report of the Surgeon General*, spurred several agencies and organizations to work toward developing methods by which state or local jurisdictions could conduct oral health surveillance.

By 2015, the Council of State and Territorial Epidemiologists (CSTE), working with the U.S. Centers for Disease Control and Prevention (CDC), and the Association of State and Territorial Dental Directors, (ASTDD) had developed 36 oral health "indicators," i.e., items that could be monitored over time to assess oral health. Eight indicators were designated as the "core" indicators necessary for a minimally effective state oral health surveillance system.

CSTE, CDC, and ASTDD also worked to identify data sources which corresponded to (or approximated) the ones used for national purposes, but which were available to and valid for state and local jurisdictions. The ASTDD developed a template for states to use in developing an oral health surveillance plan.

Drawing on the groundwork laid by CSTE, CDC, and ASTDD, the Delaware Department of Health and Social Services, Division of Public Health's Bureau of Oral Health and Dental Services developed this five-year plan for the Delaware Oral Health Surveillance System (DOHSS). The plan provides for routine, ongoing data collection on the status of Delawareans' oral health, broad dissemination of that information, and periodic evaluation of the DOHSS itself.

The framework of the DOHSS relies on the eight core indicators identified by CSTE, and includes data sources and timelines relevant to Delaware. The plan itself satisfies a CSTE recommendation that a state have a written oral health surveillance plan in place. Finally, one component of the plan, the publication of periodic reports deriving from surveillance efforts, satisfies a CSTE recommendation for publicly available oral health data for use in guiding public health policy and programs. Implementation of the DOHSS described in this plan will provide Delaware with an ongoing, reliable source of information about Delawareans' oral health.

# Introduction

## The Purpose of Public Health Surveillance

Three core functions for public health, outlined in the 1988 Institute of Medicine (IOM) publication, *The Future of Public Health*, are assessment, policy development, and assurance. In the report, the IOM recommended that every public health agency regularly and systematically collect, assemble, analyze, and disseminate information on community health status to carry out its assessment function.

Public health agencies accomplish this task through public health surveillance: the ongoing, systematic collection, analysis, and interpretation of health data (Teutsch, 2000). Surveillance is essential for planning, implementing, and evaluating public health practice. Ideally, public health is closely integrated with data dissemination to public health decision makes and other stakeholders (Hall, 2012). The overarching purpose of public health surveillance is to provide actionable health information to guide public health policy and programs (Smith, 2013).

## The Public Health Importance of Oral Health

Public health practitioners have long been aware of the importance of oral health. In 1979, the first publication explicating health objectives for the nation – *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* – included a section on dental health (DHEW, 1979). One year later, *Promoting Health/Preventing Disease: Objectives for the Nation* was published; this report included specific objectives related to dental health and set goals to be met by 1990 (DHHS, 1980).

Efforts to measure progress toward meeting those goals relied on national-level data captured through initiatives such as the National Health Interview Survey (NHIS) and the Medical Expenditure Panel Survey (MEPS). These sources provided ongoing, reliable national data but did not support state- or local-level measurement efforts. As a result, during the last two decades of the 20th century, few state or local organizations had any capacity to measure progress toward oral health objectives or to monitor the impact of any attempted interventions (Barker, 2009).

In 2000, the U.S. Department of Health and Human Services (DHHS) released a new report, *Oral Health in America: A Report of the Surgeon General*, which renewed interest in measuring the nation's oral health progress. The report emphasized that oral health was more than just healthy teeth. Oral health also meant being free of diseases and disorders that affect the oral, dental, and cranio-facial tissues. The report's premise was that oral health is integral to general health, and it stressed the importance of good oral health at both the individual and population (i.e., public health) levels. It pointed out that poor oral health impacts the ability to eat, communicate, and learn, and affects how we look and interact with others (Phipps, 2013).

The report served to raise awareness of oral health among a broad array of stakeholders and spurred states and local entities to find ways they could conduct oral health surveillance. Several organizations and agencies responded, collaborating and contributing in various ways to the effort:

- Healthy People 2010 and Healthy People 2020 (HP2020) continued to identify oral health objectives toward which the U.S. could strive.
- The U.S. Centers for Disease Control and Prevention (CDC) and the Association of State and Territorial Dental Directors (ASTDD) jointly launched the electronic National Oral Health Surveillance System (NOHSS).
- The Council of State and Territorial Epidemiologists (CSTE) worked to identify "indicators" available at the state or local level which corresponded to (or attempted to approximate) the national measures the Healthy People initiatives tracked for nationwide purposes.
- The ASTDD collaborated with, and lent its expertise to, all parties, helping to identify and define goals and objectives, publicize the surveillance effort, develop assistive tools and repositories, and initiate or otherwise support surveillance efforts within members' jurisdictions (Phipps, 2013).

By 2015, CSTE, in partnership with CDC and ASTDD, had developed and approved 36 oral health indicators. Several of the indicators simply broadened the scope of previously existing indicators, such as expanding screening beyond an original target group (e.g., third-grade children) to include middle school and high school children, or expanding location-based information to include a site of service, such as school-based health centers.

CSTE designated eight of the indicators as "core" indicators that collectively constituted a minimally effective state oral health surveillance system (SOHSS) (ASTDD, 2017). These indicators appear in Table 1.

**Table 1. Key indicators for a minimally effective state oral health surveillance system, Association of State and Territorial Dental Directors, 2017.**

| # | Key Indicators |
|---|---|
| 1 | Oral health status data which meet criteria for inclusion in the NOHSS for a representative sample of third-grade children, collected at least every five years |
| 2 | Permanent tooth loss data for adults, obtained every two years |
| 3 | Annual data on oropharyngeal cancer incidence and mortality |
| 4 | Annual data on percent of Medicaid- and CHIP-enrolled children with a dental visit in the past year |
| 5 | Data on percent of children age 1-17 years who had a dental visit in the previous year, obtained every four years |
| 6 | Data on percent of adults (age 18+ years) and adults with diabetes who had a dental visit in the previous year, obtained every two years |
| 7 | Data on fluoridation status of public water systems in the state, updated every two years |
| 8 | Submission of annual data on state oral health programs and the environment in which they operate, including workforce and infrastructure indicators, to ASTDD |

*Source: Best Practices Approach for State and Community Oral Health Programs, ASTDD, 2017*

In addition to these eight core indicators, CSTE recommended that all states have: 1) a written oral health surveillance plan; and 2) publicly available, actionable data to guide public health policy and programs (ASTDD, 2017).

## Framework for a State Oral Health Surveillance System

CDC guidelines for evaluating public health surveillance systems recommend that health-related events be considered for surveillance if they: 1) affect many people; 2) require large expenditures of resources; 3) are largely preventable; and 4) are of public health importance (Phipps, 2013). Clearly, based on these criteria, oral health qualifies as an area that warrants surveillance.

### Operational Definition for a State Oral Health Surveillance System

HP2020 includes Objective OH-16, which is aimed at motivating the establishment of oral health surveillance systems throughout the U.S. Specifically, the objective strives to "…increase the number of states and the District of Columbia that have an oral and craniofacial health surveillance system." Various agencies and organizations (e.g., the CDC, ASTDD, and CSTE) have partnered over several years to help states meet this objective.

An effective SOHSS 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 (or representative samples of the population), and for priority sub-populations. In addition, a SOHSS should consider collecting information on the oral health workforce, infrastructure, financing, and policies impacting oral health outcomes. A SOHSS can access – and leverage – data from existing sources, then work to fill data gaps by using tools such as a Basic Screening Survey (Phipps, 2013).

While data collection is a necessary component of a SOHSS, data collection alone does not constitute a SOHSS. Rather, an adequate SOHSS also 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 ASTDD's 2017 *Best Practice Report on Oral Health System Surveillance Systems*, a SOHSS should include:

1. A clearly-defined purpose and objectives relating to the use of surveillance data for public health action;
2. A core set of measures/indicators (see Table 1) to serve as benchmarks for assessing progress in achieving good oral health;
3. Provision for trend analysis, when multiple years of data are available;
4. Provision for assuring surveillance data are communicated to decision makers and the public in a timely manner;

5. The intent to assure that surveillance data are used to improve the oral health of state residents;
6. Evaluation of the surveillance system to ensure oral health is being monitored effectively and efficiently; and
7. Regular submission of data to the NOHSS to support national data systems and assess national trends.

# Delaware's Oral Health Surveillance System (DOHSS)

## Historic Perspective

Like 45 percent of all states (ASTDD policy, 2015), Delaware has lacked a written oral health surveillance plan. While oral health data is periodically collected and reviewed, the approach has not included the systematic, ongoing approach to data collection, analysis, and publication outlined in this plan. It is anticipated that having a plan in place will help the BOHDS strengthen its efforts to improve Delawareans' oral health, as those efforts – and their results – are routinely monitored and reported.

In January 2020, the Delaware Department of Health and Social Services (DHSS), Division of Public Health's (DPH) Bureau of Oral Health and Dental Services (BOHDS) published *Delaware's Burden of Oral Disease Report*, a comprehensive oral health burden report. The report includes baseline data against which data collected going forward can be compared. Those comparisons, made possible by ongoing surveillance efforts, will serve to inform all Delawareans, including decision-makers, stakeholders, partners, and the general public of Delaware's progress toward improving its residents' oral health.

The need for the DOHSS is demonstrated by reviewing just a few examples of the oral health information included in the report:

- Nearly 16 percent of Delaware's children (age 1 through 17 years) had not seen an oral health care provider in the preceding 12 months (NSCH, 2016/2017).
- Forty-seven percent of third grade children experienced tooth decay in their primary or permanent teeth (DE Smiles, 2014).
- Just 54 percent of third grade children have dental sealants (DE Smiles, 2014).
- One-third of Delaware's adults (age 18 years or older) had not visited a dentist or dental clinic in the past year (BRFSS, 2016).
- Forty-five percent of adult Delawareans (age 18 years or older) have had at least one permanent tooth extracted due to dental caries or periodontal disease (BRFSS, 2016).
- The incidence rate of oral cancer among men in Delaware (19.7 per 100,000) is triple that of the rate among women in Delaware (6.5 per 100,000), and is more likely to be diagnosed at a later stage of disease (I&M 2010-2014).
- Nearly half (45 percent) of dentists in Delaware are 55 years of age or older; 23 percent are 65 years of age or older (Dentists, 2016).

- Thirty-one percent of Delaware's residents do not have fluoridated water. This group is composed of: 1) those who are not on community water systems (20 percent of Delaware's residents) and 2) those who are on such systems, but whose systems are non-fluoridated (DPC, 2018; Water, 2018).

The DOHSS will provide a mechanism through which these – and other – important indicators of Delawareans' oral health can be routinely monitored, with results used to guide policy and programming decisions.

## Purpose of the DOHSS

The purpose of the DOHSS is to assure Delaware has a consistent source of up-to-date, reliable, and valid information which can be used to develop, implement, and evaluate programs which strive to improve the oral health of Delaware's residents. The logic model for the DOHSS, which is modeled after the one developed by the CDC's Division of Oral Health, appears in the Appendix.

### Goals

The DOHSS aims to:

- Create an ongoing, sustainable, efficient system which will provide relevant and reliable oral health data for Delaware;
- Collect, analyze, and disseminate data to decision-makers, stakeholders, partners and others; and
- Use data on oral disease and related risk factors to plan, implement, and evaluate Delaware's oral health program.

### Objectives

The objectives of the DOHSS, which are consistent with those recommended by ASTDD, are to:

1. Estimate the extent and severity of oral disease and risk factors in Delaware;
2. Measure utilization of oral health services in Delaware;
3. Monitor utilization and effectiveness of community-based and school-based oral health promotion programs;
4. Identify populations at high risk of oral disease and the unmet needs of these populations;
5. Provide current, scientific, and reliable data to guide program and policy development and implementation;
6. Use oral health data to plan, implement, and evaluate the impact of Delaware's oral health programs and policies;
7. Provide information for decision making and public health resource allocations; and
8. Evaluate Delaware's strengths and limitations with regard to oral health surveillance measures (overall), especially to their use in surveillance of priority populations, identifying opportunities to improve the DOHSS.

## Strategies

Achieving the DOHSS's objectives depends upon taking a systematic, strategic approach. In brief, these are:

- Strategy 1: Routinely measure Delaware's progress against specific oral health indicators in order to document status (objectives 1-4).
- Strategy 2: Share this information with decision-makers, stakeholders, partners and others (objectives 5 and 7).
- Strategy 3: Develop plans and implement programs, as indicated, based on the results of those measurements, fiscal realities, and identified priorities (objectives 5, 6, and 7).
- Strategy 4: Evaluate the DOHSS's performance to identify gaps and introduce improvements (objective 8).

### *Strategy 1: Measure Delaware's progress against specific oral health indicators.*

<u>Oral Health Indicators</u>

For a public health surveillance system to be effective and responsive, it must adapt to new health challenges and data resources. Consequently, the indicators included in the DOHSS may change during the timeframe included in this plan.

The indicators forming the initial framework of the DOHSS, depicted in Table 2, include:

- The eight core indicators identified by CSTE as requisite to a minimally acceptable oral health surveillance system for HP2020 OH-16;
- Additional oral health indicators approved by CSTE for inclusion in the NOHSS; and
- One "exploratory" indicator that the BOHDS is evaluating for its utility in providing one measure of the impact on the healthcare system of non-preventive oral health care.

**Table 2. Indicators by Domain and Age Group, Delaware Oral Health Surveillance System, 2020-2025.**

<table>
<tr><th>Domain</th><th>Preschool Children</th><th>School Children</th><th>Adults</th><th>Older Adults</th></tr>
<tr><td rowspan="4">Oral Health Outcomes</td><td rowspan="2"></td><td rowspan="2"><u>3rd Grade</u><br>Decay experience<br>Untreated tooth decay<br>Sealant prevalence</td><td><u>18-64 Years</u><br>Any tooth loss</td><td><u>65+ Years</u><br>6+ teeth lost<br>Complete tooth loss</td></tr>
<tr><td colspan="2" rowspan="2"><u>18+ Years</u><br>Incidence of and mortality from cancers of the oral cavity and pharynx</td></tr>
<tr><td colspan="2"><u>1-17 Years</u><br>Parent's self report of child's oral health, oral health problems</td></tr>
<tr><td colspan="4">Emergency Department visits with a dental-related chief complaint</td></tr>
<tr><td rowspan="2">Access to Care</td><td colspan="2"><u>Medicaid/CHIP 0-20 years</u><br>Dental visit</td><td colspan="2"><u>18+ Years</u><br>Dental visit</td></tr>
<tr><td colspan="2"><u>1-17 Years</u><br>Dental visit & preventive dental visit</td><td colspan="2"><u>Adults 18+ Years with Diabetes</u><br>Dental visit</td></tr>
</table>

**Table 2 (continued). Indicators by Domain and Age Group, Delaware Oral Health Surveillance System, 2020-2025.**

| | | | |
|---|---|---|---|
| Intervention Strategies | | School-based or school-linked dental sealant programs | |
| | Topical fluoride programs | | |
| | Community water fluoridation | | |
| Workforce and Infrastructure | Number of dental professionals<br>Number of safety net dental clinics<br>Dental Health Professional Shortage Areas<br>Written oral health surveillance plan | | |

Blue cells: The core set of indicators recommended by CSTE for inclusion in a state OHSS
Green cells: Additional indicators (identified by CSTE) and added by Delaware's oral health program
Yellow cells: Exploratory indicator; to be developed within established statewide electronic surveillance system of emergency department visits
* These indicators may be modified or deleted based on the redesign of the National Survey of Children's Health
*Sources: The Council of State and Territorial Epidemiologists (CSTE) and the Delaware Department of Health and Social Services, Division of Public Health, Bureau of Oral Health and Dental Services (exploratory measure)*

## <u>Data Sources</u>

Just as indicators may change over time, so too may data sources. Currently, data relevant to the majority of the indicators in the DOHSS are available from existing, ongoing data sources, such as the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Survey (YRBS), and the Health Resources and Service's Administration (HRSA).

The indicators requiring primary data collection are: 1) the prevalence of decay experience and untreated decay in third grade children; 2) the prevalence of dental sealants in third grade children; 3) the number of school-based or school-linked dental sealant programs; and 4) the number of community-based topical fluoride programs.

Information on the oral health status of third grade children will be obtained using the ASTDD Basic Screening Survey (BSS) protocol. The survey was administered in Delaware during the 2012-2013 school year and it will again be administered during the 2019-2020 school year.

Sources of information on school-based or school-linked dental sealant programs include the Delaware Smile Check Program (DSCP), which provides school-based services and necessary referrals, and works to place children (and their families) into dental homes (DHSS, 2019).

Existing data sources that will be used for the other indicators include:

- BRFSS – tooth loss and dental visits among adults, older adults, and adults with diabetes;
- CDC's National Program of Cancer Registries (CDC/NPCR), Delaware's Central Cancer Registry (DCR) and the National Cancer Institute's Surveillance, Epidemiology and End Results Program (NCI/SEER) – incidence of cancer of the oral cavity and pharynx;
- CMS-416: Annual Early and Periodic Screening, Diagnostic and Treatment (EPSDT) Program Participation Report – dental visits among children eligible for Medicaid/CHIP;
- DHSS, DPH – emergency department visits with an oral health-related chief complaint (assessed using Essence® software);
- Delaware Division of Professional Regulation, Delaware Board of Dentistry and Dental Hygiene (Pro Reg/BOD/DH) – number of dental professionals;
- Health Resources and Services Administration (HRSA) – health professional shortage areas (HPSA), and federally qualified health centers (FQHC) with dental clinics;
- National Survey of Children's Health (NSCH) – oral health, oral health problems, dental visits, and preventive dental visits among children 1-7 years;
- National Vital Statistics System (NVSS) and the DPH Office of Vital Statistics (DPH-OVS) – mortality from cancers of the oral cavity and pharynx; and
- Water Fluoridation Reporting System (WFRS) – population served by fluoridated water systems.

A list of these data sources, along with the indicator(s) for which they will be used, is summarized in Table 3.

**Table 3. Data Sources for the Indicators Included in Delaware's Oral Health Surveillance System, 2020-2025.**

| Domain | Target Population | Indicator | Data Source |
|---|---|---|---|
| **Oral Health Outcomes** | 3rd Grade | Caries experience | Delaware BSS |
| | | Untreated tooth decay | Delaware BSS |
| | | Sealant prevalence | Delaware BSS |
| | 1-17 Years | Parent's self-report of child's oral health | NSCH |
| | | Oral health problem in last year | NSCH |
| | 18-64 Years | Any tooth loss | BRFSS |
| | 65+ Years | 6+ teeth lost | BRFSS |
| | | Complete tooth loss | BRFSS |
| | 18+ Years | Incidence of and mortality from cancers of the oral cavity and pharynx | NCI/SEER, NVSS, CDC/NPCR |

| | | | |
|---|---|---|---|
| | All Ages | Emergency Department visits with a dental-related chief complaint* | Delaware DPH – Essence® |
| **Access to Care** | Medicaid/CHIP | Dental visit | CMS-416 |
| | 1-17 Years | Dental visit | NSCH |
| | | Preventive dental visit | NSCH |
| | 18+ Years | Dental visit | BRFSS |
| | Adults with Diabetes | Dental visit | BRFSS |
| **Intervention Strategies** | All Ages | Community water fluoridation | WFRS |
| | School Children | School dental sealant programs | Delaware DPH / DSCP |
| | Children | Topical fluoride programs | Delaware DPH / DSCP |
| **Workforce & Infrastructure** | Dental Professionals | Number of dental professionals | Delaware Pro Reg/BOD/DH |
| | Low-income Communities | Number of safety net dental clinics | HRSA & DE DPH/BOHDS |
| | | Dental Health Professional Shortage Areas | HRSA |

*State-specific exploratory indicator

*Sources: The Council of State and Territorial Epidemiologists (CSTE) and the Delaware Department of Health and Social Services, Division of Public Health, Bureau of Oral Health and Dental Services (exploratory measure)*

## Data Collection Timeline

As data for many of the DOHSS indicators rely upon existing data collection activities – e.g., the BRFSS – the timeframe for collection is driven by the schedule in place for those activities. For example, the BRFSS' oral health module is administered sporadically (it was most recently used in 2018); the YRBS is administered in Delaware every two years, in odd-numbered years. (Table 4.)

**Table 4. Timeline for Collecting Oral Health Indicator Data, 2020-2025.**

| Data Source | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| **BRFSS** | X | | X | | **X** |
| **BSS – 3rd Grade** | Conduct 2019-2020 BSS | | | | |
| **CDC/NPCR/DCR/SEER** | X | X | X | X | **X** |
| **CMS-416** | X | X | X | X | **X** |
| **DE Pro Reg/BOD/DH** | X | X | X | X | **X** |
| **DE DPH / Essence** | Test feasibility of using Essence® software and historic chief | If feasibility demonstrated, implement ongoing assessment of ED visits related to | | | |

| | complaint data to capture ED visits due to dental complaints | dental complaints | | | |
|---|---|---|---|---|---|
| **HRSA / HPSAs** | X | X | X | X | **X** |
| **NCI/SEER** | X | X | X | X | **X** |
| **NSCH** | X | X | X | X | **X** |
| **NVSS/DPH-OVS** | X | X | X | X | **X** |
| **UDS** | X | X | X | X | **X** |
| **WFRS** | X | X | X | X | **X** |
| **YRBS** | | X | | X | |

* May be modified depending on the redesign of NSCH

*Sources: The Council of State and Territorial Epidemiologists (CSTE) and the Delaware Department of Health and Social Services, Division of Public Health, Bureau of Oral Health and Dental Services (exploratory measure)*

### *Strategy 2: Share oral health-related information.*

Surveillance results will be disseminated to interested programs and policy makers at the local, state, and national level through presentations, published reports, and issue briefs. Presentations, reports, and issue briefs will be used to increase awareness of oral diseases and their risk factors, monitor trends and disparities, inform the development of new interventions, and expand existing programs. Reports and issue briefs planned for distribution during the 2020-2025 timeframe include:

- 2020: *Delaware's Burden of Oral Disease Report, 2020,* a comprehensive report highlighting the current oral health of Delaware's residents;
- 2021: A report on the results of the Delaware Smile Check Program; and
- 2020-2025:
  - Issue briefs on topics such as the oral health of special population groups, including pregnant women and Delawareans with disabilities.
  - A report on the availability of dental providers in Delaware.

Publications will contain current oral health data and trend data as available, and will be distributed electronically to decision-makers, stakeholders, partners, and the general public. They also will be shared with the CDC and ASTDD. Reports will be available electronically on the BOHDS website and, as funds allow, a limited number will be printed for distribution.

Venues for presenting surveillance results include the Delaware Dental Association annual meeting, the Delaware Dental Hygienists' Association annual meeting, the National Oral Health Conference co-sponsored by ASTDD and the American Association of Public Health Dentistry, a CSTE annual meeting, the CDC's biennial

Maternal and Child Health epidemiology conference, and the Delaware Primary Care Association annual meeting.

*Strategy 3: Develop plans and implement programs.*

The BOHDS will work both within the BOHDS and with partners such as school-based wellness centers, community clinics, Delaware dental professionals, and other interested parties to improve the oral health of all Delawareans.

*Strategy 4: Evaluate the DOHSS's performance.*

The purpose of evaluating the DOHSS is to ensure that the oral health indicators are being monitored effectively and efficiently, and to increase the utility and productivity of the system. A biennial evaluation will be performed to determine the system's capacity to:

- Monitor oral health trends over time;
- Determine the effectiveness of interventions; and
- Plan future programmatic and policy initiatives.

The DOHSS will be evaluated based on the CDC's framework for program evaluation, including an assessment of how well the following six steps (outlined in *Updated Guidelines for Evaluating Surveillance Systems* [German, 2001]) were implemented:

1. Engage (Delaware's) stakeholders;
2. Describe the DOHSS;
3. Focus the evaluation design;
4. Gather credible evidence regarding the performance of the DOHSS;
5. Justify and state conclusions, and make recommendations; and
6. Ensure use of evaluation findings and share lessons learned.

## Privacy and Confidentiality

The DOHSS follows Health Insurance Portability and Accountability Act (HIPAA) standards for patient privacy and protected health information. The DOHSS limits identifiers collected to only essential data elements, and the data are stored on a secure, electronic server at DPH. Only program staff trained in HIPAA, data security, and confidentiality can see unique identifiers. Unique identifiers are not released to external partners and, consistent with other state reports, aggregate data are not reported for cell counts of less than five.

## Conclusion

This plan, which outlines the framework for and implementation of the DOHSS, serves as a guide to the BOHDS as it seeks to improve the oral health of Delaware's residents. It provides explicit guidance on what data will need to be collected, on what segment of the population, and in what timeframe. Further, it seeks to assure these data are then shared broadly, especially with those who develop or modify oral health policy and programs. The plan provides, as well, for its own evaluation; the initial evaluation is scheduled to occur two years after initial implementation of the plan.

Once in place, the DOHSS will provide for ongoing, systematic capture of oral health data, for regular publication of surveillance results, and for the use of these data in policy, planning, and programming activities. It will help to enable the BOHDS to fulfill its purpose: To assure Delaware has a consistent source of up-to-date, reliable, and valid information which can be used to develop, implement, and evaluate programs which strive to improve the oral health of Delaware's residents.

The BOHDS will implement portions of the DOHSS internally. It anticipates a need to rely on contractual capacity for some data capture, analysis, and interpretation tasks, and to prepare reports and other publications. Contractual work will depend upon the availability of funding.

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# Appendix

### Appendix Figure 1. Delaware Oral Health Surveillance System Logic Model.

| Logic Model | Surveillance |
|---|---|

**Inputs**

**Staff** (including contract and in-kind) for:
-Epidemiolgic support
-Data management
-Information technology (IT) support
-Oral health policy leadership
-Data collection

**Data Sources**
-National data sources
-State data sources
-Community data sources

**Equipment**
-IT hardware and software

**Other**
-Funding
-Community support
-Support for partners

**Activities**

**Components**

-Develop surveillance plan including data systems and data collection methods to support oral health program
-Establish surveillance objectives

-Identify indicators, using standard health indicators
-Link existing data sources
-Identify gaps in data
-Collect data to obtain community-level data (as possible)

-Analyze data and interpret findings

-Develop and write surveillance report
-Disseminate surveillance results
-Ensure data security and confidentiality
-Develop strategies for sustaining surveillance system
-Evaluate surveillance system

**Intermediate Outcomes**

**Proximal**

-Ongoing monitoring of trends in oral health indicators

-Increase in evidence-based interventions, planning, and evaluation

-Increase in programs for populations most in need

**Long-term (Distal) Outcomes**

**Improved oral health**

Source: https://www.cdc.gov/oralhealth/funded_programs/pdf/logic_models.pdf *(page 30)*