ILLINOIS
ORAL HEALTH SURVEILLANCE PLAN
2021-2025

OCTOBER 2021

ACKNOWLEDGEMENT

The Office of Division of Oral Health acknowledges the following individuals for their review and feedback in preparing the Illinois Oral Health Surveillance plan. We would like to express our sincere appreciation to Dr. Scott Tomar and the Oral Health Advisory Committee who provided valuable input to this plan.

Advisory Committee Members

Wandy Hernandez-Gordon
Gregory Jacob
Alejandra Valencia
Leslie Wise
Amy Meurs
Dani Brazee
Saema Qadri
Henry Lotsof
Christina McCutchan
Janae Price

Inquiries may be directed to:

Mona Van Kanegan, DDS, MS, MPH, FICD
Chief, Division of Oral Health
Illinois Department of Public Health
mona.vankanegan@illinois.gov

The plan was produced by the Illinois Department of Public Health Division of Oral Health in partnership with the Division of Oral Health Advisory Committee and funded in part by the Illinois Maternal and Child Health (Title V) Block Grant Program.

IDPH
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

TABLE OF CONTENTS

Abbreviations 4
Executive Summary 5
Introduction 5
The Purpose of Public Health Surveillance 5
Overview of Illinois' Oral Health Needs 6
Highlights of the Gaps and Disparities In Oral Health Among Illinoisans (Box 1) 7
Illinois' Oral Health Surveillance System 8
Purpose 8
Goals and Objectives 9
Oral Health Indicators 10
Data Sources and Data Collection Timeline 11
Data Dissemination and Use 16
Advisory Committee 17
Privacy and Confidentiality 17
Evaluation 18
Acknowledgements 18
Appendices 19
Appendix 1: Logic Model 19
Appendix 2: Data Sources for The Oral Health Indicators 20
References 21

Abbreviations

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
CHC	Community Health Center
CHIP	Children's Health Insurance Program
CMS	Centers for Medicare and Medicaid Services
CSHCN	Children with Special Health Care Needs
CSTE	Council of State and Territorial Epidemiologists
DOH	Division of Oral Health (within IDPH)
DPSQ	Division of Patient Safety and Quality (within IDPH)
FQHC	Federally Qualified Health Center
HFS	Department of Healthcare and Family Services (Illinois)
HIPAA	Health Insurance Portability and Accountability Act
HP2030	Healthy People 2030
HRSA	Health Resources and Services Administration
ICHWA	Illinois Community Health Worker Association
IDFPR	Illinois Department of Financial and Professional Regulation
IDPH	Illinois Department of Public Health
IDPH DPSQ	IDPH Division of Patient Safety and Quality
IOHP	Illinois Oral Health Plan
IOHSS	Illinois Oral Health Surveillance System
IL OHWS	Illinois Oral Health Workforce Survey
IL PMP	Illinois Prescription Monitoring Program
IOM	Institute of Medicine
ISBE	Illinois State Board of Education
ISCR	Illinois State Cancer Registry (within IDPH)
ISDS	Illinois State Dental Society
ITQL	Illinois Tobacco Quit Line
NOHSS	National Oral Health Surveillance System
NSCH	National Survey of Children's Health
OHSS	Oral Health Surveillance System
OMCFH	Office of Maternal, Child, and Family Health
PHI	Protected Health Information
PIR	Program Information Report (Head Start)
PRAMS	Pregnancy Risk Assessment Monitoring System
UDS	Uniform Data System
WFRS	Water Fluoridation Reporting System
YRBSS	Youth Risk Behavior Surveillance System

EXECUTIVE SUMMARY

The Illinois Oral Health Surveillance Plan provides a strategic approach to the development and implementation of Illinois oral health surveillance system. The infrastructure for this system was implemented in 2020 and continues to evolve with new measures added and existing measures refined. The plan aligns with the Illinois Oral Health Plan IV: *Eliminating Inequities in Oral Health* (2021 – 2025) and Healthy People 2030 (HP2030) Oral Conditions Objectives.[1]

The goal of the surveillance system is to monitor state-specific, population-based oral disease burden and trends, measure changes in program capacity and community water fluoridation quality. This information is vital to assist organizations throughout the state to plan, to implement, and to evaluate appropriate interventions that will truly improve the oral health of Illinoisans.

Overarching objectives of the Illinois Oral Health Plan IV and other oral health programs will be monitored through both long-term and short-term indicators. Indicators include the following groupings:

- Oral Health Outcomes
- Dental Caries
- Behavioral Health Risks
- Infrastructure
- Oral Health Workforce
- Population Health
- Other

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.[2] In that report (updated in 2003), the IOM recommended 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.[3] Public health surveillance, and as such oral health 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.[4] The overarching purpose of public health surveillance is to provide ***actionable health information to guide public health policy and programs***.[5]

CDC guidelines for evaluating public health surveillance systems recommend 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.[6] ***Based on these criteria, oral health outcomes, associated health behaviours, and other factors linked to oral health are included in the Illinois Oral Health Surveillance System.***[7]

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.[8]

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) to assure data are used to inform and to evaluate public health measures to prevent and to control oral diseases and conditions. In addition, 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 surveillance data is used to improve the oral health of state residents.[9]

Oral diseases or conditions, also referred to as oral health outcomes, are influenced by a variety of factors, including access to dental care and the cost to individuals to obtain it, individual risk factors and risk determinants, availability of interventions, workforce issues, public health infrastructure, and public policies. Oral health surveillance system is needed to identify population needs, protect and promote population-wide oral health, and monitor the impact of those efforts.

Overview of Illinois' Oral Health Needs

Although the oral health status of Illinoisans has seen modest improvements in recent decades, significant and consequential health disparities still exist. Access to oral health care remains a persistent challenge in Illinois among select populations, children, and families with low income and in rural areas, racial and ethnic minorities, pregnant women, and individuals with special care needs.

Box 1 *(below) highlights gaps and disparities in oral health and access to care among Illinoisans:*

Box 1: Highlights of the gaps and disparities in oral health among Illinoisans

- Many children in Illinois do not receive the dental care they need: Approximately 1 in 5 third-grade children (22%) have untreated dental caries, which is above the national target of 10.2% and means they have not received adequate treatment in a timely manner. In addition, untreated dental caries is significantly higher among non-Hispanic (NH) Asian children (28.8%) followed by non-Hispanic Black children (26.7%).*

- Regular visits to the dentist can help prevent oral diseases and related problems. According to the Illinois Behavioral Risk Factor Surveillance System, approximately 68.1% of Illinois adults indicated they had visited a dental professional within the year; 27.9% indicated they had 1 to 5 permanent teeth removed.†

- Oral and pharyngeal cancers affect areas like the lips, cheeks, gums, throat, and tongue. It is estimated that 42% of all cancer cases probably caused by HPV in Illinois are in the back areas of the throat, base of tongue and tonsils and account for 81% of cancers likely caused by HPV in men.‡ Screening for these cancers at every dental visit can lead to earlier diagnosis, especially in people at higher risk because of alcohol or tobacco use and certain types of viral infections. In Illinois, only 34.8% of adults indicated they had an oral cancer screening within the last year.

- From 2017 to 2019, less than half of women had their teeth cleaned during pregnancy. Oral health maintenance and care is not made a priority in pre-natal, during pregnancy, and post-natal care. Annually from 2017 to 2019, less than one-third of women with Medicaid insurance had their teeth cleaned during pregnancy, which is notably less than the 1 in 2 privately insured women who had their teeth cleaned during pregnancy. *

- There are 529 dentists accepting Medicaid in Illinois who provide dental care through 10 or more visits per year.** Fee-for-Service Medicaid reimbursement for pediatric oral health services is 46.8% of commercial insurance reimbursement.§

- Reimbursement for adults covered through Fee-for-Service Medicaid is even worse than for children, with reimbursement rates at just 38.2% of commercial insurance reimbursement. The traditional Medicare plan, which provides health coverage for Americans aged 65 and over, does not cover most dental care or procedures, such as cleanings, fillings, extractions, or dentures.§

* https://dph.illinois.gov/sites/default/files/publications/oral-health-data-brief-comparing-il-3rd-grade-hshg-survey-national-data-22020.pdf.
† http://www.idph.state.il.us/brfss/statedata.asp?selTopic=ORAL&area=il&yr=2018&form=strata&show=freq
‡ https://www.dph.illinois.gov/sites/default/files/publications/hpv-associated-cancers-illinois-part-1-final-01282021.pdf.
*https://dph.illinois.gov/content/dam/soi/en/web/idph/publications/idph/topics-and-services/prevention-wellness/oral-health/oral-health-data/2017-2019-pramsoral-health-infographic.pdf
** Report of Medicaid Dental Service Providers, January 1, 2019 to December 31, 2019.
§ https://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIgraphic_1021_1.pdf?la=en.

ILLINOIS' ORAL HEALTH SURVEILLANCE SYSTEM

Purpose

The purpose of Illinois' oral health surveillance system (IOHSS) 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 Illinois' residents. Assessment is the key objective of Illinois' public health efforts to address the nature and extent of oral diseases and their risk factors by collecting, analyzing, interpreting, and disseminating oral health data. These activities provide a mechanism to routinely monitor state-specific oral health data and the impact of interventions within specific priority populations over time. Continual assessment and evaluation support development of oral health programs and policies, hence a surveillance system is a critical requirement for the oral health program. The logic model for the IOHSS is located in Appendix 1.

Goals and Objectives (*in alignment with Goal 4 of the Illinois Oral Health Plan IV*)

Objective	Strategy
4.A. Develop an Illinois-specific data collection, tracking, and analysis plan (Illinois Oral Health Surveillance System-IOHSS) that incorporates and aligns with national initiatives (e.g., HRSA, HP 2030, and pending Surgeon General's report).	4.A.1. Recruit a diverse and interdisciplinary Advisory Committee to the DOH that provides expertise, recommendations, and guidance to IOHSS and IOHP IV on an ongoing basis. 4.A.2. Publish the IOHSS plan for public comment by December 2021. 4.A.3. Create a regular process with Advisory Committee (AC) to provide strategic guidance on oral health to IDPH and review progress. 4.A.4. Collaborate with state survey programs (e.g., PRAMS, BRFSS staff) to continuously improve the breadth of oral health data. 4.A.5. Work with ISBE to increase regular reporting of school examination data for programmatic improvements that impact access to care and to disease burdens. 4.A.6. Collaborate with other divisions within IDPH and other state agencies on primary data collection through such activities as basic screening surveys for Head Start and third-grade children, pregnant individuals, and older adults. 4.A.7. Incorporate real-time monitoring of oral health problems in IOHSS through Syndromic Surveillance data. 4.A.8. Partner with HFS to draft a brief of Managed Care Organizations and fee-for-service dental program.

Objective	Strategy
4.B. Organize a data display/distribution system that tracks oral health indicators to provide state, regional, and local oral health data.	4.B.1. Identify and secure general funding for epidemiology services that provide data review and analysis for programmatic improvements. 4.B.2. At the state and local level, advocate for consistent funding for surveillance, reporting, and data sharing. 4.B.3. Collaborate with academic institutions and other experts on oral health data surveillance and analysis. 4.B.4. Identify public platform for Illinois' oral health data for stakeholder and public use. 4.B.5. Assemble oral health and social services resources by county.
4.C. Partner and distribute data briefs and reports that highlight inequities in disease burden between different population groups to spur action.	4.C.1. Identify and establish partnerships for published data distribution to reach wide audiences ready to act. 4.C.2. Work with community stakeholders on the appropriate use of and data contribution. 4.C.3. Support regular regional or local meetings with key partners and stakeholders centered on programmatic solutions identified in data reports and address oral health inequities. 4.C.4. Promote collection and use of local data to design programs that meet local oral health priorities.

Oral Health Indicators

The indicators that form the framework of IOHSS include the full set of indicators outlined in the CSTE operational definition of an oral health surveillance system for HP2020 OH-16. The IOHSS also includes a subset of oral health indicators approved by CSTE for inclusion in NOHSS. The CSTE approved indicators are being used because CSTE is the organization responsible for defining and recommending which diseases and conditions should be reportable within states and which should be voluntarily reported to the Centers for Disease Control and Prevention.

For a public health surveillance system to be effective and responsive, it must adapt to new health challenges and data sources. Consequently, the indicators included in the IOHSS may change during the five-year time frame outlined by this plan. The indicators currently included in the OHSS are outlined in Table 1. Refer to Appendix 2 for a list of the indicators with their data sources.

Table 1: IOHSS Indicators (Summary) by Domain and Target Population Group

<table>
<tr><th>Domain</th><th>Preschool Children</th><th>School Children</th><th>Adults</th><th>Older Adults</th></tr>
<tr><td rowspan="3">Oral Health Outcomes</td><td><u>Head Start</u>
Decay experience
Untreated tooth decay</td><td><u>Third Grade</u>
Decay experience
Untreated tooth decay
Sealant prevalence</td><td><u>18-64 Years</u>
Any tooth loss</td><td><u>65+ Years/LTC*</u>
6+ teeth lost
Complete tooth loss</td></tr>
<tr><td colspan="2"><u>1-17 Years</u>
Oral health status assessed at K, second, sixth, and ninth grades.
Use of general anesthesia in children.</td><td colspan="2" rowspan="2"><u>All Ages</u>
Incidence of and mortality from cancers of the oral cavity and pharynx.
Emergency department visits and hospital admissions for non-traumatic dental issues.</td></tr>
<tr><td rowspan="2">Access to Care</td><td colspan="2"><u>Medicaid/CHIP 0-20 years</u>
Dental visit and preventative care.</td></tr>
<tr><td colspan="2"><u>1-17 Years</u>
Dental visit and preventive dental visit.</td><td colspan="2"><u>18+ Years</u>
Dental visit
Dental care delayed due to cost. *
<u>Adults 18+ with diabetes and pregnant women</u>
dental visit.</td></tr>
<tr><td rowspan="2">Intervention Strategies</td><td rowspan="2"></td><td>School-based or school-linked dental sealant programs.
<u>13-17 Years</u>
HPV vaccinations</td><td colspan="2" rowspan="2"></td></tr>
<tr><td colspan="2">Community water fluoridation</td></tr>
<tr><td>Workforce and Infrastructure</td><td colspan="4">Number of dental professionals
Number of safety net dental clinics
Dental Health Professional Shortage Areas
Number LTC staff who complete “oral health” training
Number of providers who actively participate in Medicaid
Number of general dentists who care for children under 3 years of age
Number of community health workers trained in oral health concepts
Number of non-oral health licensed professionals completing “Smiles for Life” curriculum</td></tr>
</table>

Blue cells: The core set of indicators recommended by CSTE for inclusion in a state OHSS
Green cells: Additional indicators included in the IOHSS Plan
LTC = Long Term Care
*Developmental measure(s)

Data Sources and Data Collection Timeline

Many of the indicators in the IOHSS are available from existing ongoing data sources, such as the Behavioral Risk Factor Surveillance System (BRFSS). The indicators that will require primary data collection are: (1) the prevalence of decay experience and untreated decay in Head Start and third grade children, (2) the prevalence of dental sealants in third grade children, (3) the number of school-based dental sealant programs, (4) the number of community-based topical fluoride programs, (5) the number of safety-net dental programs, and (6) the oral health workforce. Information on the oral health status of Head Start, third[d] grade children, and during pregnancy will be obtained using the ASTDD Basic Screening Survey (BSS) protocol. The remaining information will be obtained through surveys of state, local, and safety-net programs. Existing data sources that will be used for the other indicators include the following:

- Illinois BRFSS – Oral Health Module (tooth loss and dental visit among adults, older adults, and adults with diabetes, etc.).
- CMS-416: Annual Early Periodic Screening, Diagnosis, and Treatment (EPSDT) Program Participation Report – dental visit among children eligible for Medicaid/CHIP.
- Annual utilization data request from Illinois Department of Healthcare and Family Services.
- Illinois Department of Financial and Professional Regulation (IDFPR) – number of licensed dental professionals.
- Illinois Department of Public Health's Division of Patient Safety and Quality - patient level discharge data from all Illinois acute care hospitals, specialty hospitals, and ambulatory surgical treatment centers.
- Illinois Primary Health Care Association – health professional shortage areas.
- Illinois State Cancer Registry (ISCR) – incidence of cancers of the oral cavity and pharynx.
- CDC's National Program of Cancer Registries (CDC/NPCR) – incidence of and mortality from cancers of the oral cavity and pharynx.
- National Survey of Children's Health (NSCH) – oral health, oral health problems, dental visit, and preventive dental visit among children 1-17 years.
- National Vital Statistics System (NVSS) – mortality from cancers of the oral cavity and pharynx.
- Uniform Data System (UDS) – number of federally qualified health centers with dental clinics.
- Water Fluoridation Reporting System (WFRS) – population served by fluoridated water systems.

Table 2: IOHSS Indicators - Detail *(As of August 2021)*

2021-2025 Indicators				
IOHP IV Objective	**General Oral Health**	**Source**	**Year**	**Frequency**
	Proportion of Illinoisans who delayed dental care due to cost in the past 12 months	NHIS, BRFSS (TBD)	Developmental Objective	
1E, 2D	Increase the proportion of children enrolled in Medicaid who received fluoride application (0-3 years).	HFS Data Request	2019	Annual
3C	Increase the proportion of Medicaid enrolled children under the age of 6 years who received oral health services provided by a non-dentist provider. (IOHSS Ref# 2.1.1)	HFS CMS-416	2019	Annual
2C, 2D	Increase the proportion of children under the age of 6 who received at least one prevention visit. (IOHSS Ref # 1.1.1 and 1.1.2)	HFS Data Request	2019	Annual
2C, 2D	Increase the proportion of children and young adults between 6-17 years of age who received at least one prevention or periodontal service. (IOHSS Ref# 2.2.2)	HFS Data Request	2019	Annual

2C, 2D	Increase the proportion of adults between 18-64 years of age who received at least one prevention or periodontal service.	HFS Data Request	2019	Annual
2C, 2D	Increase the proportion of adults over the age 18 who have a dental visit within the past year. (IOHSS Ref# 2.3.1)	BRFSS	2018	Biennial
1B, 2C	Percentage of adults who have had teeth cleaned in the last year.	BRFSS	2018	Biennial
2C	Increase the percentage of pregnant Medicaid members who received at least one preventive or periodontal service in the 365 days before delivery. (IOHSS Ref# 2.5.1)	HFS Data Request	2019	Annual
2E	Increase the percentage of persons with a diabetes diagnosis who received an oral health service (examination and/or dental cleaning/periodontal treatment). (IOHSS Ref # 2.4.1)	HFS Data Request	2019	Annual
2C	Increase the percentage of individuals who reported having their teeth cleaned by a dentist or dental hygienist during pregnancy.	PRAMS	2017	Annual
2D	FQHCs: Proportion of children who are 6 through 9 years of age at moderate to high risk of caries who received a sealant on a first permanent molar.	HRSA UDS	2019	Annual
2D	Increase the proportion of children 6-11 years of age with a dental sealant on permanent first molar, per year. (IOHSS Ref # 1.2.3 and 3.2.1)	HFS CMS-416	2019	Annual
2D	Medicaid: Children age 0-20 years who received a fluoride varnish application.	HFS Data Request	2019	Annual
2D	Increase the proportion of children who have had their oral health status assessed at kindergarten, second, sixth, and ninth grade. (IOHSS Ref# 1.3.1)	ISBE	2013-2014	Annual
IOHP IV Objective	**Dental Caries**	**Source**	**Year**	**Frequency**
2D	Decrease the proportion of third grade children with caries experience. (IOHSS Ref# 1.2.1)	IDPH DOH	2018-2019	Every 5 Years
2D	Decrease the proportion of third grade children with untreated dental caries. (IOHSS Ref# 1.2.2)	IDPH DOH	2018-2019	Every 5 Years
2D	Decrease the proportion of third grade children with urgent dental treatment needs.	IDPH DOH	2018-2019	Every 5 Years
2D	Increase the proportion of dental providers who report utilizing silver diamine fluoride to arrest dental caries.	IDPH DOH	Developmental Objective	
IOHP IV Objective	**Other**	**Source**	**Year**	**Frequency**
2D	Increase the proportion of individuals of child-bearing age (18-44 years) who report having a visit to a dentist or dental clinic in the past year.	BRFSS	2018	Biennial
2D	Decrease the proportion of adults 35-44 years of age reporting loss of permanent tooth (teeth).	BRFSS	2018	Biennial

2D	Reduce the proportion of older adults 45 years of age and over who have lost all their teeth [HP2030Oral Health-05].	BRFSS	2018	Biennial
2D	Decrease the number of adults over the age of 65 reporting the loss of all teeth. (IOHSS Ref# 1.5.2)	BRFSS	2018	Biennial
1D	Increase the number referrals by oral health providers to the Illinois Tobacco Quitline of patients who use tobacco or e-cigarettes/vaping devices.	ITQL	Developmental Objective	
2F	Decrease the proportion of children under the age of 18 who use emergency department visits for non-traumatic dental issues. (IOHSS Ref# 1.6.2)	IDPH DPSQ, or BRFSS	2018	TBD
2D	Decrease the number of children under the age of 6 years treated under general anesthesia under codes (D9222 and D9239).	HFS	2019	Annual
IOHP IV Objective	**Behavioral Risk Factors**	**Source**	**Year**	**Frequency**
1E, 3C	Cancer of the oral cavity and pharynx incidence. (IOHSS Ref# 1.6.1)	IDPH ISCR	2017	Annual
2D	Increase the proportion of oral and pharyngeal cancers detected at the earliest stage [HP2030 Oral Health-7].	IDPH ISCR	Developmental Objective	
1E, 3C	Increase HPV series completion (3 dose) of eligible adolescents 13-17 years. (IOHSS Ref# 3.3.1)	CDC TeenVaxView	2015	Annual
1D	Prevalence of current tobacco use.	BRFSS	2019	Biennial
1D	Prevalence of heavy alcohol use.	BRFSS	2019	Annual
1D	Prevalence of sugar sweetened beverages consumption.	BRFSS	2018	TBD
2A	Prevalence of opioid prescriptions for dental issues in adolescent/young adult.	IL PMP	2019	Annual
IOHP IV Objective	**Infrastructure Indicators**	**Source**	**Year**	**Frequency**
2E	Increase the number of free, non-profit, FQHCs, LHDs, and look-a like sites with comprehensive oral health services.	ISDS	2021	Annual
2E	Increase the proportion of FQHC patients who also receive oral health services within the FQHC.	HRSA UDS	2018	Annual
2E	Increase the number of local health department sites providing risk-based prevention activities.	IDPH survey	Developmental Objective	
2E	Increase the number of free, non-profit, FQHC, LHDs, and look-a like oral health services sites with direct bi-lateral communication through EHR to primary care.	IDPH Survey	Developmental Objective	

IOHP IV Objective	**Workforce Indicators**	**Source**	**Year**	**Frequency**
2B	Decrease the number of counties that are federal Dental Health Profession Shortage areas.	IDPH Center for Rural Health	2019	Annual
2B	The number of oral health providers who serve low-income and Medicaid eligible residents needed to remove shortage area designation.	IDPH Center for Rural Health	2020	Annual
2B	Increase the number of dental providers practicing in Dental Health Profession Shortage areas. (IOHSS Ref# 4.2.2)	IDPH Center for Rural Health, IDFPR	Developmental Objective	
2A, 2B	Increase the number of Public Health Dental Hygienists practicing in Dental Health Profession Shortage areas.	IDPH report	Developmental Objective	
	Increase the proportion of dental providers who report caring for pregnant individuals.	IDPH Workforce survey	Developmental Objective	
	Increase the proportion of general dentists who care for children under the age of 3 years. (IOHSS Ref # 4.1.3)	IDPH Workforce survey	Developmental Objective	
2B	Increase the number of dentists who actively participate (<50 claims/year) in Medicaid per 1,000 EPSDT eligible enrolled children. (IOHSS Ref# 4.1.2)	HFS Data Request	2019	Annual
3B	Increase the number of community health workers trained in oral health concepts using IDPH OH 101 curriculum. (IOHSS Ref # 4.3.1)	IDPH Report	2020	Annual
3B	Increase the number of community health workers, licensed health care providers, etc., trained in oral health concepts through online modules, such as Smiles for Life or Bright Smiles from Birth.	Smiles for Life Report	Developmental Objective	
IOHP IV Objective	**Population Health Indicators:**	**Source**	**Year**	**Frequency**
1E	Maintain the number of community water systems that consistently fluoridating at optimal levels. (IOHSS Ref# 3.1.1)	IDPH DOH	2020	Annual
1E	Maintain the proportion of population with access to optimally fluoridated water.	CDC	2018	Annual
1A	Increase the proportion of people with dental insurance (HP2030 Access to Health Services-02).	National Association of Dental Plans Annual State Report	2020	Annual

1A, 1B	Reduce the proportion of people who cannot get the dental care they need when they need it, reported as Non-Traumatic Dental Conditions Emergency Department use.	IDPH DPSQ	2017-2019, three-year average	Annual

Source: Illinois Oral Health Plan IV: *Eliminating Inequities in Oral Health*
Note: Review of indicators will be completed annually and modified in alignment with state and local program needs.

Data Dissemination and Use

Surveillance results will be displayed using data visualization tools, such as the Illinois Public Health Community Map** (or equivalent), to the extent possible. In addition, data briefs, published reports, presentations, and infographics will be developed and disseminated to interested programs and policy makers at the local, state, and national level. These materials will be used to increase awareness about oral diseases and their risk factors, monitor trends and disparities, develop new interventions, and expand existing programs. Reports/briefs planned for distribution in the next 3-5 years may include and are not limited to the following:

- The Burden of Oral Disease in Illinois – a report highlighting the current oral health of Illinois residents.
- Illinois Health Smiles Healthy Growth – a report on the oral health of Illinois' Head Start and third grade children.
- Illinois data briefs on the oral health of special population groups, such as pregnant women and adults with diabetes.
- Oral Health in Illinois: A Focus on Pregnancy and Early Childhood *(A Resource Guide and Toolkit)*; and
- Illinois Oral Health Workforce report – a report on the oral health workforce and workforce needs across Illinois.

Reports will contain current oral health data and trend data as available. Reports will be distributed electronically to partners within IDPH and across the state and shared with other state oral health programs, CDC, and ASTDD. 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 presentation of surveillance results may include and are not limited to the Division Oral Health Advisory Committee; oral health academic programs; Illinois State Dental Society's Access to Care Committee meeting (s); Illinois Dental Hygienists' Association meeting (s); the ASTDD/AAPHD co-sponsored National Oral Health Conference; and appropriate meeting (s) of CSTE, Maternal and Child Health (MCH), Illinois Primary Health Care Association, and the Illinois Public Health Association. In

** http://www.healthcarereportcard.illinois.gov/maps

addition, enhanced efforts will be made to share surveillance results across other IDPH programs (e.g., comprehensive cancer control, diabetes, heart disease, minority health, men's health, tobacco, etc.) to support better collaboration and integration across programs.

Advisory Committee

To ensure IOHSS serves its purpose and addresses the needs of both internal and external stakeholders, a multi-disciplinary IOHSS Advisory Committee has been formed. The committee has been instrumental in the development of the surveillance plan and will continue to meet semi-annually (January and July) to review progress and assist in ongoing surveillance and evaluation efforts.

The IOHSS Advisory Committee includes representatives from the following programs, agencies, and organizations:

Tracey Smith and Perry Maier Illinois Public Health Association tsmith@ipha.com pmaier@ipha.com	Wandy Hernandez-Gordon Illinois and National Community Health Worker Association and health stakeholder wandyhg@outlook.com
Alejandra Valencia Oral Health Forum Dental public health expert Avalencia@heartlandalliance.org	Gregory Jacob, DDS Private practitioner, dentist GregoryJacobDDS@msn.com
Dani Brazee Molina Healthcare Insurance plan danielle.brazee@molinahealthcare.com	Henry Lotsof, DDS Avēsis Incorporated Insurance plan hlotsofdds@avesis.com
Saema T. Qadri, DDS Dental director for the Town of Cicero saema386@gmail.com	Gopal Rao, MD AMITA Alexian Bros., Elk Grove Village rao@elkgrovemed.com
Christina McCutchan Illinois Healthcare and Family Services Christina.McCutchan@Illinois.gov	Open position WIC/Head Start child health
Leslie Wise, PhD (staff) Epidemiologist Division of Oral Health Leslie.Wise@illinois.gov	Janae Price, MPH (contracted staff) Epidemiologist J. Price Consulting janaedprice@gmail.com

Privacy and Confidentiality

The IOHSS 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 are stored on a secure, private, electronic server at the Illinois Department of Public Health. Unique identifiers can only be seen by IDPH staff who have been trained on HIPAA, data security, and confidentiality. Unique identifiers will never be released to external partners and aggregate data will never be reported for counts less than 10.

Evaluation

The purpose of evaluating IOHSS is to ensure the oral health indicators are being monitored effectively and efficiently and to increase the utility and productivity of the system. An annual evaluation will be performed to determine the system's usefulness in monitoring oral health trends over time, determining the effectiveness of interventions, and planning future programmatic and policy initiatives. The Illinois Department of Public Health will evaluate the OHSS based on CDC's framework for program evaluation, including how well the following six steps outlined in *Updated Guidelines for Evaluating Surveillance Systems* were implemented[10].

- Engage Illinois' stakeholders
- Describe the OHSS
- Focus the evaluation design
- Gather credible evidence regarding the performance of the OHSS
- Justify and state conclusions, make recommendations
- Ensure use of evaluation findings and share lessons learned

The evaluation of the OHSS will focus on providing recommendations for improving the quality, efficiency, and usefulness of the system. OHSS will also be evaluated to determine the system's sustainability, the timeliness of analysis of surveillance data, dissemination and use of the reports by stakeholders, and the surveillance system's impact on policy and legislative actions.

Acknowledgements

Illinois' oral health surveillance system is based on the surveillance plan template developed by ASTDD, which receives funding from the Centers for Disease Control and Prevention through a Cooperative Agreement.

Appendix 1: Logic Model for Illinois' Oral Health Surveillance System (OHSS)

Inputs

Staff
- State agencies (IDPH, etc.)
- Program managers, coordinators and support staff, epidemiologists, etc.
- IT support
- Data collection and data entry staff

Data Sources
- National, state, and lLocal
- Primary and secondary data

Equipment
- Hardware (computers/laptops, printers, IT server)
- Software (SAS, MS Office Suite, MS Access, SmartSheet, RedCap, etc.)

Other
- Internal and external stakeholder and community support
- Funding
- ASTDD

Activities

Implementation of Surveillance Plan
- Annual review of surveillance plan and indicators.
- Assess data and information needs and identify data gaps.
- Link existing data sources *(automate and standardize where possible)*.
- Collaborate with other agencies (internal and external).

Data Management
- Standardize and validate data elements to meet industry standards.
- Identify and address data gaps.
- Set up processes (data feeds and/or manual acquisition of datasets) from select sources.
- Enture data security and confidentiality.
- Analyze data and interpret findings at select intervals for select audiences/groups.
- Maintain/update data regularly

Reporting
- Routine dissemination of surveillance reports at local, state, and national level.
- Incorporate findings into existing oral health reports and update every 3 - 5 years.
- Report BSS results to NOHSS.

Outputs

Evaluation
- Engage stakeholders.
- Evaluate surveillance plan.
- Evaluate performance and progress of Ill. OHSS by gathering credible evidence.
- Justify and state conclusions, make recommendations as needed.
- Develop sustainability strategies.

Data Dissemination
- Burden document updated every 3-5 years.
- Surveillance plan updated every 3-5 years.
- Routine surveillance reports, data briefs, and/or infographics.
- Data management plans that align with Ill. OHSS

Outcomes

Short-Term
- Increase in monitoring of oral health trends.
- Increase use of data by stakeholders.
- Targeted program activities for populations most in need as identified by surveillance data.

Long-Term
- Increase in use of data by policymakers for developing and implementing oral and health policies.
- Encourage consistent collaboration between public health professionals and policy makers.
- Increase in programs for high-risk populations.

Distal Outcomes

Reduce disease burdens and optimize health and well-being:
- Dental caries
- Oral cancers
- Periodontal disease
- Total tooth loss
- Oral health

BSS = Basic Screening Survey
IOHSS = Illinois Oral Health Surveillance System
NOHSS = National Oral Health Surveillance System

Develop evaluation plan → Evaluate IOHSS

Appendix 2: Data Sources for the Indicators Included in Illinois' Oral Health Surveillance System

Domain	Target Population	Indicator	Reference #	IOHP Objective	Data Source
Oral Health Outcomes	Head Start	Caries experience (decay)	1.1.1	*2C, 2D*	Illinois BSS
		Untreated tooth decay	1.1.2	*2C, 2D*	Illinois BSS
	Third Grade	Caries experience (decay)	1.2.1	*2D*	Illinois BSS
		Untreated tooth decay	1.2.2	*2D*	Illinois BSS
		Sealant prevalence	1.2.3	*2D*	Illinois BSS
	1-17 Years	Parent's self-report of child's oral health*	1.3.1	*2D*	NSCH
		Oral health problem in last year*	1.3.2		NSCH
	18-64 Years	Any tooth loss	1.4.1		BRFSS
	65+ Years	6+ teeth lost	1.5.1		BRFSS
		Complete tooth loss	1.5.2	*2D*	BRFSS
	Long-Term Care (LTC)	6+ teeth lost	1.5.3	*2D*	LTC Survey
		Complete tooth loss	1.5.4	*2D*	LTC Survey
	All Ages	Incidence of and mortality from cancers of the oral cavity and pharynx	1.6.1	*1E, 3C*	NCI/SEER, NVSS, CDC/NPCR
		Emergency department (ED) visits for non-traumatic dental issues	1.6.2	*2D*	Illinois Discharge Data
		Hospital admissions for non-traumatic dental issues (resulting from ED visit)	1.6.3	*2D*	Illinois Hospital Discharge Data
Access to Care	Medicaid/CHIP	Dental visit	2.1.1	*3C*	CMS-416
	1-17 Years	Dental visit*	2.2.1		NSCH
		Preventive dental visit*	2.2.2	*2C, 2D*	NSCH
	18+ Years	Dental visit	2.3.1	*2C, 2D*	BRFSS
		Dental care delayed due to cost*	2.3.2		NHIS/BRFSS
	Adults with Diabetes	Dental visit	2.4.1	*2E*	BRFSS
	Pregnant Women	Dental visit	2.5.1	*2C*	PRAMS
Intervention Strategies	All Ages	Community water fluoridation	3.1.1	*1E*	WFRS
	School Children	School dental sealant programs	3.2.1	*2D*	Illinois DOH
	Adolescents (13-17)	HPV vaccination uptake	3.3.1	*1E, 3C*	CDC Teen Vax View

* May be modified depending on the redesign of NSCH

Appendix 2: Data Sources for the Indicators Included in Illinois' Oral Health Surveillance System (con't)

Domain	Target Population	Indicator	Reference #	IOHP Objective	Data Source
Workforce and Infrastructure	Dental Professionals	Number of dental professionals	4.1.1		Illinois OHWS
		Number of providers who actively participate in Medicaid	4.1.2	*2B*	Illinois OHWS
		Number of general dentists who care for children under 3 years of age	4.1.3	2B	Illinois OHWS
	Low-income Communities	Number of safety net dental clinic	4.2.1		Illinois OHWS
		Dental Health Professional Shortage Areas	4.2.2	*2B*	HRSA
	Community-Clinical Linkages	Number of community health workers trained in oral health concepts	4.3.1	*3B*	Illinois CHWA
		Number of non-oral health licensed professionals completing "Smiles for Life" curriculum*	4.3.2	*3B*	Smiles for Life Oral Health
	Training	# LTC staff who complete "oral health" training*	4.4.1	*3B*	LTC Survey

* Indicator is a developmental measure and is subject to modification or elimination.

REFERENCES

[1] Office of Disease Prevention and Health Promotion. (n.d.). Oral Health. *Healthy People 2030*. U.S. Department of Health and Human Services.https://health.gov/healthypeople/objectives-and-data/browse-objectives/oral-conditions.

[2] Institute of Medicine. The Future of Public Health. Washington, DC: National Academy Press, 1988.

[3] Teutsch SM, Churchill RE, Eds. Principles and Practice of Public Health Surveillance. New York: Oxford University Press, 2000.

[4] Hall HI, Correa A, Yoon PW, Braden CR. Lexicon, definitions and conceptual framework for public health surveillance. MMWR Surveill Summ 2012;61 Suppl:10-4.

[5] Smith PF, Hadler JL, Stanbury M, Rolfs RT, Hopkins RS; CSTE Surveillance Strategy Group. "Blueprint version 2.0": updating public health surveillance for the 21st century. J Public Health Manag Pract 2013;19:231-9.

[6] German RR, Lee LM, Horan JM, Milstein RL, Pertowski CA, Waller MN; Guidelines Working Group Centers for Disease Control and Prevention. Updated guidelines for evaluating public health surveillance systems: recommendations from the Guidelines Working Group. MMWR Recomm Rep 2001;50(RR-13):1-35.

[7] http://dph.illinois.gov/topics-services/prevention-wellness/oral-health/oral-health-data

[8] Phipps K, Kuthy R, Marianos D, Isman B. State-Based Oral Health Surveillance Systems: Conceptual Framework and Operational Definition. Council of State and Territorial Epidemiologists, 2013. Available at: www.cste.org/resource/resmgr/Chronic/StateBasedOralHealthSurveill.pdf.

[9] Association of State and Territorial Dental Directors. Best Practice Approach: State-based Oral Health Surveillance System [Online]. Available at: www.astdd.org

[10] German RR, Lee LM, Horan JM, Milstein RL, Pertowski CA, Waller MN; Guidelines Working Group Centers for Disease Control and Prevention. Updated guidelines for evaluating public health surveillance systems: recommendations from the Guidelines Working Group. MMWR Recomm Rep 2001;50(RR-13):1-35.