



Indiana State Department of Health

Oral Health Metrics - Indiana

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INTRODUCTION

Dental Caries

Dental caries has been described as the single most common chronic disease in **children** [DHHS]. The impact of dental caries accumulates over time [Dye, NCHS brief 197]. There are effective preventive interventions for dental caries. Caries prevalence and severity can be reduced by appropriate use of fluorides through community water fluoridation, personal or professional topical fluoride applications, and the use of toothpaste with fluoride. Dental sealants are another effective intervention, preventing caries development in the pits and fissures of molar teeth [Ahovuo-Saloranta]. Dental sealants can be applied in dental offices or community settings, yet far too few children are benefiting from this proven preventive service [Dye, NCHS brief 191].

Periodontal Disease

Periodontal disease is another common public health problem in the U.S., mostly in **adults**. Periodontal disease can result in partial or total tooth loss [Eke], and most forms of periodontal disease are preventable. A risk factor for periodontal disease is smoking. There is also evidence that uncontrolled diabetes can exacerbate periodontal disease. Programs that reduce smoking and control diabetes would likely also benefit oral health.

Cancers of the Oral Cavity and Pharynx

Although substantially less common than dental caries and periodontal disease, cancers of the oral cavity and pharynx are associated with significant morbidity and mortality and have a significant impact on the health care system [SEER]. Cancers of the oral cavity and pharynx are more common in men, those with a history of tobacco or heavy alcohol use, and individuals infected with the human papillomavirus (HPV). Addressing these risk factors could lessen the occurrence of oral cancers.

Orofacial Clefts

Based on 2004-2006 data from 14 state birth defects tracking programs, the estimated incidence of cleft palate without cleft lip is one in 1,574 live U.S. births and the incidence of cleft lip with or without cleft palate is one in 940 live births [Parker]. Prevention strategies include folic acid supplementation, as well as the cessation of the use of tobacco, alcohol, and illicit drugs during the prenatal period.

Disparities and Socioeconomic Factors

Significant oral health disparities exist in the U.S., and socioeconomic factors contribute to this disparity. Children in lower-income families have higher rates of dental caries than children from more affluent families, minority populations have worse oral health than the population in general, and rural residents have worse oral health than urban residents [DHHS]. Limited or infrequent access to dental care contributes to poor oral health [CDC]. Thus, improving access to oral health care for all Hoosiers would improve oral health in Indiana.

Oral Health and General Health

Poor general health can impact oral health. Poor nutrition, alcohol consumption, smoking, diabetes, hypertension, and various other systemic conditions can impact oral health. Poor oral health can impact general health; for example, chronic infection and inflammation associated with untreated and uncontrolled periodontal disease can impact the general health of an individual. Efforts to better integrate oral health and general health would likely prove beneficial to patients and the community.

Oral Health Data and Community Health

The CDC recommends public health agencies assemble and distribute oral health metrics on access to care and the prevalence of oral diseases [German]. Health data is essential for planning, implementing, and evaluating public health activities. These data can help stakeholders and government officials when considering which policies and programs to support [Hall].

PURPOSE

Population-based oral health metrics that are of high quality and are periodically available can be helpful when trying to evaluate the current oral health status of a population and how this status changes over time. Oral health status encompasses the prevalence and/or occurrence of oral diseases, access to oral health care providers, and access to various preventive interventions to reduce the occurrence of oral diseases. Fortunately, state and federal agencies have developed oral health metrics that are reported periodically, which include information about the oral health status of Indiana’s residents.

The purpose of this report is to present various oral health metrics that are of high quality and reported periodically to provide insights into the oral health status of the population of Indiana (Table 1). Also, metrics specifically for children from low-income households that are eligible for Medicaid/CHIP have been included (Table 2).

These oral health metrics provide information that is valuable when developing, implementing, and evaluating policies and programs to improve the oral health of the people of Indiana.

Table 1 Oral Health Metrics for Indiana Residents for Various Age Groups

- Percent of children aged 1-17 years who had a dental visit during the year
- Percent of children aged 1-17 years who had dental decay/cavity during the year
- Percent of adults who had a dental visit during the year
- Percent of adults who have had any teeth extracted
- Percent of adults, aged 65 years or older, who have had all their teeth extracted
- Percent of people in Indiana on community water systems (CWSs)
- Percent of CWSs that have optimal levels of fluoride in their drinking water
- Percent of people in Indiana who get optimum fluoride levels from a CWS
- Incidence of cancers of the oral cavity and pharynx
- Deaths from cancers of the oral cavity and pharynx
- Number of dentists with a current Indiana dental license
- Number of dental hygienists with a current Indiana dental hygiene license

Table 2 Oral Health Metrics for Children Eligible for Early and Periodic Screening, Diagnostic and Treatment

- Percent of children and adolescents aged 1-18 years enrolled in Medicaid/CHIP who had any dental service
- Percent of infants aged less than 1 year enrolled in Medicaid/CHIP who had a preventive dental visit
- Percent of children aged 1-2 years enrolled in Medicaid/CHIP who had a preventive dental visit
- Percent of children aged 6-9 years enrolled in Medicaid/CHIP who received a dental sealant on a permanent molar

Table 1 Oral Health Metrics for Indiana Residents for Various Age Groups

	Age Group	Source	2016	2017	2018	2019
Preschool and School						
VISIT TO ORAL HEALTH CARE PROVIDER DURING YEAR *	1 thru 17	NSCH	81.4%	81.2%		
ORAL HEALTH PROBLEM DURING YEAR **	1 thru 17	NSCH	13.4%	13.8%		
Adults and Older Adults						
DENTAL VISIT DURING YEAR	18+	BRFSS	61.8%		64.4%	
ANY TEETH EXTRACTED	18+	BRFSS	45.0%		43.5%	
ALL TEETH EXTRACTED	65+	BRFSS	19.1%		18.4%	
Community Water Systems (CWS) and Optimum Levels of Fluoride						
PEOPLE GET DRINKING WATER FROM A CWS	All ages	ISDH				73.5%
CWS WITH OPTIMUM LEVELS OF FLUORIDE	All ages	ISDH	94.3%			92.3%
PEOPLE GETTING OPTIMUM FLUORIDE FROM A CWS	All ages	ISDH				67.8%
Cancer						
INCIDENCE OF ORAL AND PHARYNGEAL CANCER (per 100,000)	All ages	ISCR	11.9			
DEATHS FROM ORAL AND PHARYNGEAL CANCER (per 100,000)	All ages	ISCR	2.5			
Workforce and Infrastructure						
DENTISTS WITH CURRENT INDIANA LICENSE	All ages	IPLA	4232			4384
HYGIENISTS WITH CURRENT INDIANA LICENSE	All ages	IPLA	5325			5366

NSCH - National Survey of Children's Health

* (4.2) Dentist or other oral health care provider

** (1.2a) Toothache, bleeding gums, decayed teeth or cavity

BRFSS - Behavioral Risk Factor Surveillance Survey

ISDH - Indiana State Department of Health

ISCR - Indiana State Cancer Registry

IPLA - Indiana Professional Licensing Agency

Table 2 Oral Health Metrics for Children Eligible for Early and Periodic Screening, Diagnostic and Treatment (EPSDT)

	Age Group	Source	2016	2017	2018	2019
Preschool and School (Medicaid/CHIP)						
ANY DENTAL SERVICE DURING YEAR *	1 thru 18	CMS	50.2%	47.8%		
PREVENTIVE DENTAL VISIT DURING YEAR	<1	CMS	0.1%	0.0%	0.2%	
PREVENTIVE DENTAL VISIT DURING YEAR	1 thru 2	CMS	17.5%	17.5%	17.9%	
DENTAL SEALANT ON PERMANENT MOLAR DURING YEAR	6 thru 9	CMS	18.7%	17.5%	16.3%	

CMS – Center for Medicare and Medicaid Services

* ANY DENTAL SERVICE DURING YEAR averaged for 2017 and 2018 to allow comparison with above data.

DISCUSSION

Two common oral diseases are dental caries and periodontal disease. Dental caries occurs in both children and adults, while periodontal disease occurs mostly in adults. Both of these diseases are subject to prevention through good oral hygiene, good nutrition, and exposure to appropriate levels of fluoride through community water systems and professional applications, as well as through other professional preventive care. This would include the application of dental sealants to permanent molars by oral health care providers soon after these teeth erupt.

Part of the mission of the ISDH Oral Health Program is to promote good oral health through prevention. Many people in Indiana obtain routine oral health care, including preventive care. However, there is still a large portion of people in Indiana who are unable to avail themselves of these services.

Drinking water from community water systems, which include federally determined optimum levels of fluoride, can be important in helping prevent dental caries, especially among those with limited access to routine oral health care. The ISDH monitors community water systems that add fluoride to their water to ensure that optimal levels of fluoride are maintained in these systems.

The ISDH also works with other agencies in the state to help ensure children from low-income households benefit from good oral hygiene, good nutrition, and preventive care. However, the data available in this report indicate that more work needs to be done to allow children from low-income households to receive preventive oral health care as recommended (Table 1 and 2).

Promoting good oral health for the people of Indiana is a team effort. Oral health metrics are one way to see how we are doing.

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