The Oral Health of American Indian and Alaska Native Dental Clinic Patients Aged 1 to 5 Years: Results of the 2024–2025 IHS Oral Health Survey

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Key Findings

1. Since 1999, the oral health of AI/AN dental clinic patients aged 2 to 5 years has improved, but the pace of progress remains slower than that seen in other racial and ethnic groups.
2. The prevalence of early childhood caries increases with age; by the age of 5, over 80 percent of AI/AN dental clinic patients have ECC.
3. Over 40 percent of AI/AN preschool children receiving care at IHS or Tribal dental clinics have untreated tooth decay requiring restorative treatment, such as a filling, crown, or extraction.
4. Dental sealants on primary molars are an underutilized preventive measure, with only 11 percent of AI/AN dental clinic patients aged 3 to 5 years having at least one protective dental sealant.

Introduction

Early childhood caries (ECC), defined as the presence of tooth decay in children aged 0 to 5 years, is the most widespread health problem among American Indian and Alaska Native (AI/AN) children. If left untreated, ECC can lead to serious health consequences, including impaired growth, oral pain, potentially life-threatening infections, psychosocial effects, and a reduced overall quality of life. Due to the young age of affected children and their limited ability to cooperate during treatment, dental care for ECC often requires general anesthesia in a hospital-based operating room, contributing to substantial health care costs. ECC is largely preventable through a combination of individualized and population-level interventions. These include the application of dental sealants, regular use of fluoride toothpaste, professionally applied topical fluorides such as fluoride varnish, appropriate infant feeding practices, a balanced diet low in sugar and refined carbohydrates, and establishing a dental home—having a regular dentist to see on an ongoing basis—with the first dental visit occurring by the eruption of the first tooth, typically between the ages of 4 and 12 months.

Among all racial and ethnic groups in the United States, AI/AN preschoolers have the highest prevalence of ECC, with rates more than four times those of non-Hispanic White children.[1] The underlying causes of this disparity are not fully understood but may involve a combination of biological, microbial, behavioral, sociodemographic, and environmental risk factors.

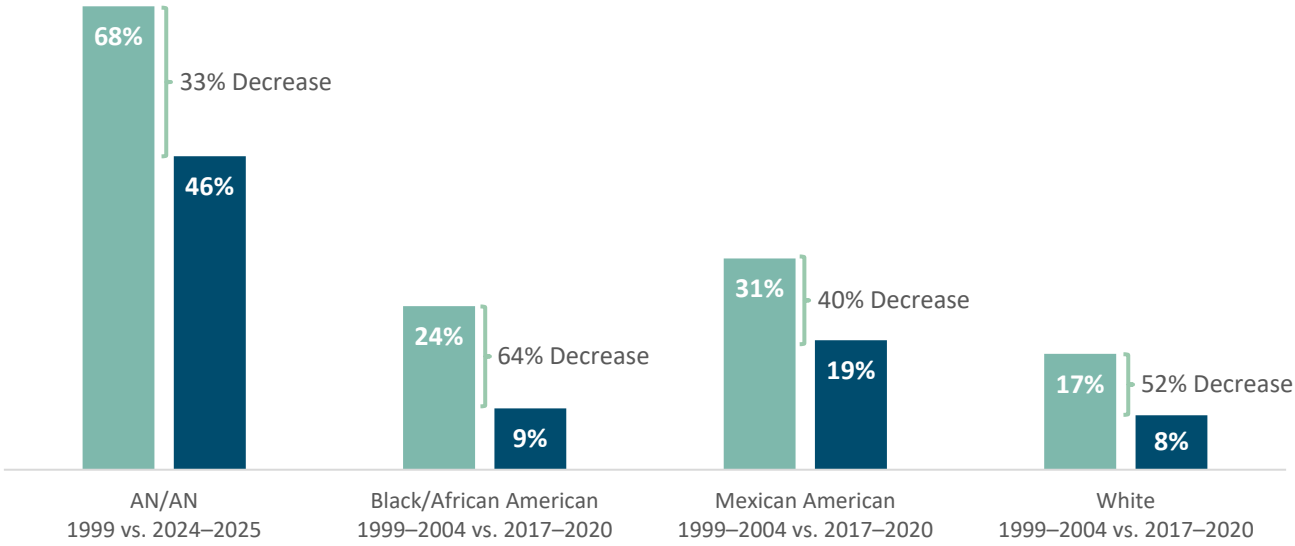
This brief examines the oral health status of AI/AN preschool children who received care at a randomly selected sample of IHS and Tribal dental clinics, from August 7, 2024, to June 30, 2025. It reports on the prevalence of ECC, untreated tooth decay, and the presence of dental sealants in the primary teeth of AI/AN children aged 1 to 5 years during 2024–2025. In addition, it evaluates changes in oral health indicators over time by comparing current findings with those from the last IHS clinic-based survey (1999).

Summary

IHS oral health survey data from 1999–2025 indicate that oral health among some AI/AN preschool children is improving. However, despite these gains, AI/AN children continue to experience a disproportionately high burden of oral disease. Closing this gap will require sustained efforts from IHS and Tribal programs to engage individuals, families, communities, Tribal leaders, and health and social service providers.

Key Finding 1: Since 1999, the oral health of AI/AN dental clinic patients aged 2 to 5 years has improved, but the pace of progress remains slower than that seen in other racial and ethnic groups.

Figure 1: Percentage of children aged 2 to 5 years with untreated decay by race/ethnicity and percentage reduction from baseline to current
1999/1999–2004 vs. 2024–2025/2017–2020



The last clinic-based survey of AI/AN children aged 2 to 5 years was conducted in 1999.[2] Since that time, the proportion of AI/AN preschool children with ECC has decreased from 79 percent to 60 percent (not displayed), and the proportion with untreated decay has declined from 68 percent to 46 percent (Figure 1). National surveys conducted in 1999–2004[3] and 2017–2020[4] show that other racial and ethnic groups also experienced reductions in untreated decay, but at a faster pace than AI/AN children. During this period, AI/AN dental clinic patients saw a relative reduction of 33 percent in untreated decay, compared with a 64 percent reduction among Black/African American children and a 52 percent reduction among White children (Figure 1). These differences should be interpreted with caution, as AI/AN data were obtained from surveys of dental clinic patients, whereas data for other racial/ethnic groups were derived from community-based surveys.

Key Finding 2: The prevalence of early childhood caries increases with age; by the age of 5, over 80 percent of AI/AN dental clinic patients have ECC.

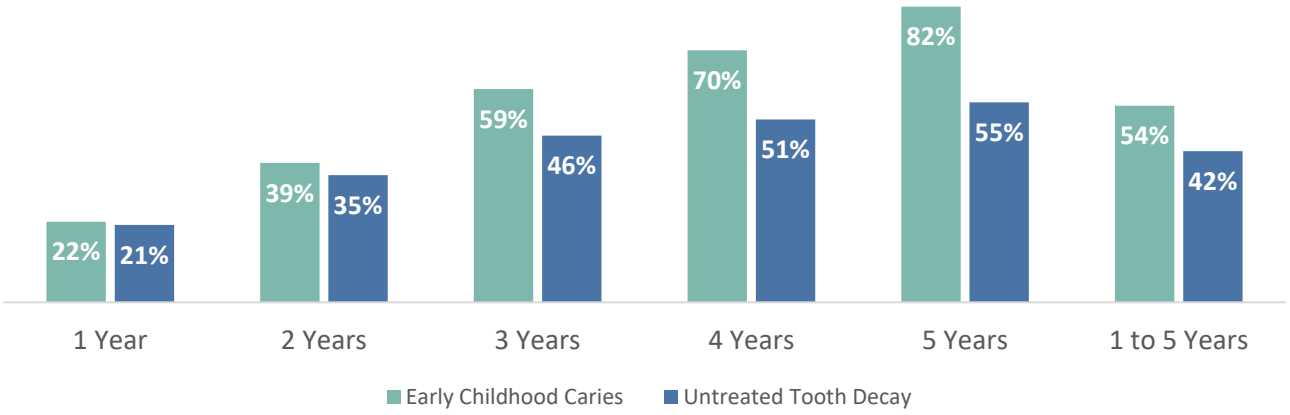
For AI/AN children, early primary and secondary prevention efforts are critical because more than one out of every five 1-year olds (22 percent) already have ECC and the percentage with decay rises significantly with age (Figure 2). For the primary prevention of tooth decay, the American Academy of Pediatric Dentistry[5] recommends several strategies for enhancing the oral health of infants and children, including

- establishment of a dental home by 12 months of age,
- anticipatory guidance on oral hygiene practices including daily parental brushing with fluoridated toothpaste,

- dietary counseling which emphasizes avoidance of foods and drinks with added sugars, and
- professional application of fluoride varnish for children at risk for ECC.

Secondary prevention, the prompt and efficacious use of non-invasive ECC management techniques such as silver-ion products, interim therapeutic restorations, and Hall crowns must also be encouraged because it provides an opportunity to stop ECC from ever progressing to the stage at which surgical intervention is required. Both primary and secondary ECC prevention should be a priority and fully integrated into routine medical and dental practice.

Figure 2: Percentage of AI/AN dental clinic patients with ECC and untreated tooth decay by age, 2024–2025



Key Finding 3: Over 40 percent of AI/AN preschool children receiving care at IHS or Tribal dental clinics have untreated tooth decay requiring restorative treatment, such as a filling, crown, or extraction (Figure 2).

When left untreated, ECC can lead to significant health consequences, including persistent pain, difficulty chewing—which may impact nutrition and growth—and delayed speech development. In addition, negative dental experiences as a child can lead to dental avoidance, also known as dentophobia, or a general fear of dentists and dental care. Due to the young age of many affected children, treatment often requires hospital-based care under general anesthesia. Comprehensive dental rehabilitation in such cases can cost up to $10,000 per child.[6]

Meeting the needs of this high-risk population requires an adequate number of clinical dentists in IHS and Tribal dental clinics. As of August 12, 2025, there were 1,106 dentists serving approximately 2.8 million AI/AN people—equating to 40 dentists per 100,000 patients.[7,8] By comparison, in 2023 the American Dental Association reported 60 dentists per 100,000 U.S. residents.[9] Achieving dentist-to-population equity would require 1,680 full-time dentists in IHS and Tribal programs. However, even matching national ratios would not eliminate access disparities, as the oral health care needs of the AI/AN population exceed those of the general U.S. population.

Key Finding 4: Dental sealants on primary molars are an underutilized preventive measure, with only 11 percent of AI/AN dental clinic patients aged 3 to 5 years having at least one protective dental sealant.

Dental sealants are thin protective coatings placed on the grooves of back teeth to help prevent tooth decay. Most cavities in children start on these chewing surfaces. Sealants work by blocking bacteria and food from getting into the deep grooves of the teeth. Both the American Dental Association and the American Academy of Pediatric Dentistry recommend putting sealants on primary molars for children who are at higher risk for decay.[10] Only 11 percent of AI/AN children aged 3 to 5 years have at least one sealant on a primary molar.

Monitoring the Oral Health of the AI/AN Population: Where Do We Go from Here

The AI/AN children continue to have some of the highest rates of oral disease in the U.S. Regular monitoring is essential to track progress, identify inequities, promote Tribal sovereignty, and guide investments at the Federal, Tribal, and local levels.

Current Challenges: Since 2010, oral health data for AI/AN populations have been gathered through open-mouth surveys in schools, community programs, and dental clinics. Community-based surveys provide valuable population-level information but take providers away from clinical care. Clinic-based surveys keep providers in their work setting but reduce efficiency since staff must conduct extra exams and enter data into a separate module of the electronic dental record (EDR). Unfortunately, both community- and clinic-based surveys may have become less representative of the AI/AN population as the number of participating schools, community programs, and clinics has steadily decreased. For example, the number of participating children aged 1 to 5 years decreased from 11,873 in 2014 to 4,949 in 2025.

A New Model: A more informed and sustainable approach would use continuous monitoring through standardized EDR queries of data entered during typical clinical encounters. This method is cost-effective, automated, and minimizes the additional workload for dental staff. It also provides data for rapid quality improvement as a clinic's outcomes are updated after encounters are concluded.

Core Indicators: Monitoring would focus on a concise set of measures that are both practical, meaningful, and already captured in the EDR. For young children (aged 1 to 5 years), measures could include the prevalence of early childhood caries and/or untreated decay, receipt of fluoride varnish, receipt of dental sealants on primary molars, type and frequency of annual dental visits, and the number of cases requiring general anesthesia.

Implementation Roadmap: Implementation could move forward in stages. In the first year, indicators would be finalized, governance structures established, and pilot testing conducted in a small group of Federal and Tribal clinics. The second year would expand passive monitoring to more clinics and focus on the creation of outcome-based measures that clinics could use to improve their quality of care. By the conclusion of the third year, actionable results could be shared with IHS and Tribal partners through automated dashboards or digital reports.

Conclusion: An EDR-based surveillance system offers a sustainable and actionable path forward. By balancing efficiency, accuracy, and Tribal sovereignty, this model can deliver information to appropriate leadership circles so that evidence-based decisions can be implemented. Ultimately, the goal is to drive measurable improvements in the oral health of AI/AN populations.

Data Source and Methods

The primary data source for this brief is the 2024–2025 IHS oral health survey of AI/AN dental clinic patients aged 1 to 5 years. The sampling frame included IHS and Tribal Service Units with dental clinics using the IHS Dentrix electronic dental record. Service Units were eligible if they had at least 20 children aged 1 to 5 years, based on their 2023 estimated user population.

A stratified probability proportional to size (PPS) cluster sampling design was used to select Service Units. The sampling frame was stratified by IHS Area, with Service Units sorted within each Area by operational status (Tribal or IHS) and/or state. A systematic PPS scheme was used to select 46 Service Units. If a selected Service Unit was unable to participate, a replacement was randomly chosen from the same sampling interval. Forty (40) Service Units provided data for 5,100 Native and non-Native children aged 0 to 5 years. Analyses were limited to the 4,949 AI/AN children aged 1 to 5 years.

Within each Service Unit, staff examined children in the dental clinic following the clinic's standard examination protocols and entered results into the oral health surveillance module within Dentrix. This module captures age, sex, race, tooth-specific caries and sealant status, and treatment urgency. Set diagnostic criteria were not used; instead, dental staff applied clinical judgment to determine the status of each tooth using available diagnostic tools such as loupes, explorers, and radiographs. Statistical analyses were conducted using the complex survey procedures in SAS (Version 9.4; SAS Institute Inc., Cary, NC), with sample weights applied to produce population estimates based on selection probabilities.

Limitations

The sampling frame for this survey was limited to dental clinics that use IHS Dentrix for their electronic dental record. Approximately 75 percent of IHS and Tribal clinics use Dentrix. Because some Tribal programs do not use Dentrix, the results may not be representative of all AI/AN children seeking care at IHS and Tribal dental clinics. For a variety of reasons, two IHS Areas, Portland and California, were underrepresented (Table 1).

Definitions

- Early childhood caries (ECC):_Refers to having treated or untreated decay including teeth that were extracted because of tooth decay.
- Untreated decay: Describes dental cavities or tooth decay that have not received appropriate treatment.
- Dental sealants: Describes plastic-like coatings applied to the chewing surfaces of back teeth. The applied sealant fills the grooves of teeth to form a protective physical barrier.

Acronyms

- AI/AN: American Indian or Alaska Native
- CL: Confidence limit
- ECC: Early childhood caries
- EDR: Electronic dental record
- IHS: Indian Health Service
- PPS: Probability proportional to size

Data Tables

Table 1: Number of AI/AN dental clinic patients screened by IHS Area and age, 2024–2025 (not weighted)

IHS Area	1 Year	2 Years	3 Years	4 Years	5 Years	Total
Alaska	139	192	181	161	153	826
Albuquerque	19	27	45	34	30	155
Bemidji	38	52	63	71	32	256
Billings	40	47	37	57	88	269
California	2	1	4	4	3	14
Great Plains	37	42	65	77	73	294
Nashville	66	90	76	94	69	395
Navajo	102	141	147	156	110	656
Oklahoma City	170	211	271	277	335	1,264
Phoenix	111	121	114	130	119	595
Portland	9	16	21	23	16	85
Tucson	10	17	27	47	39	140
Totals	**743**	**957**	**1,051**	**1,131**	**1,067**	**4,949**

Table 2: Percentage of AI/AN dental clinic patients aged 1 to 5 years with early childhood caries, untreated decay, and primary molar sealants by age, 2024–2025

Age	Early Childhood Caries			Untreated Decay			Primary Molar Sealants		
	Percent	Lower 95% CL	Upper 95% CL	Percent	Lower 95% CL	Upper 95% CL	Percent	Lower 95% CL	Upper 95% CL
1 Year	22.3%	15.1%	29.5%	21.4%	14.7%	28.1%	*	*	*
2 Years	38.6%	31.8%	45.4%	35.2%	28.6%	41.7%	*	*	*
3 Years	59.0%	52.5%	65.6%	46.1%	40.1%	52.2%	10.6%	5.4%	15.7%
4 Years	69.7%	63.4%	75.9%	50.6%	45.1%	56.2%	11.2%	6.4%	16.0%
5 Years	81.8%	77.1%	86.4%	55.3%	49.2%	61.4%	11.8%	7.7%	15.8%
1–2 Years	30.5%	23.9%	37.1%	28.3%	22.3%	34.4%	*	*	*
3–5 Years	70.2%	64.8%	75.5%	50.7%	45.5%	55.9%	11.2%	6.7%	15.6%
1–5 Years	54.4%	48.6%	60.2%	41.8%	37.0%	46.6%	7.6%	4.4%	10.7%

*Unstable estimate. Relative standard error of the estimate is greater than 30%.

NOTE: Information on the presence of early childhood caries was missing for 22 children, information on the presence of untreated decay was missing for 40 children, and information on the presence of primary molar sealants was missing for 42 children.

CL: Confidence limit

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