

WHITE PAPER

# American Indian and Alaska Native Communities Face a 'Disproportionate Burden of Oral Disease'

**Reversing Inequities Involves Challenges and Opportunities**

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## Contributing Organizations

### **National Indian Health Board**

Established by the Tribes to advocate as the united voice of federally recognized AI/AN Tribes, [the National Indian Health Board](#) (NIHB) seeks to reinforce Tribal sovereignty, strengthen Tribal health systems, secure resources, and build capacity to achieve the highest level of health and well-being for our People. Elevating the visibility of Indian health care issues has been a struggle shared by Tribal governments, the federal government and private agencies. NIHB consistently plays a major role in focusing attention on Indian health care needs, resulting in progress for Tribes. NIHB advocates for the rights of all federally recognized AI/AN Tribes through the fulfillment of the trust responsibility to deliver health and public health services. Since 1972, the NIHB has advised the US Congress, IHS federal agencies, and private foundations on health care issues of American Indians and Alaska Natives. NIHB staff maintains communication with Area Health Boards, national Indian organizations, and Tribes along with AI/AN people. The NIHB gives voice to AI/AN health policy concerns through participation in national organizations ranging from the National Association of Medicaid Directors to the Indian Health Service Leadership Council.

### **Society of American Indian Dentists**

[Society of American Indian Dentists](#) (SAID) is a national nonprofit organization dedicated to supporting the unique needs of Indigenous dentists while also increasing the number of Indigenous dentists in the United States. Since its founding in 1990, SAID has promoted dental health in American Indian communities, encouraged AI/AN youth to pursue careers in the profession of dentistry, provided role-model leadership, and promoted and supported the unique concerns of AI/AN dentists.

### **Southern Plains Tribal Health Board**

The [Southern Plains Tribal Health Board](#) (SPTHB) is a premier non-profit organization located in Oklahoma City, Oklahoma. Founded in 1972, its primary purpose is to serve as a unified voice for the public health needs and policy of the 43 federally recognized tribes across the states of Kansas, Oklahoma, and Texas.

### **Northwest Portland Area Indian Health Board**

Established in 1972, the [Northwest Portland Area Indian Health Board](#) (NPAIHB or the Board) is a non-profit tribal advisory organization serving the forty-three federally recognized tribes of Oregon, Washington, and Idaho. Each member tribe appoints a Delegate via tribal resolution, and meets quarterly to direct and oversee all activities of NPAIHB.

# American Indian and Alaska Native Communities Face a ‘Disproportionate Burden of Oral Disease’

## Reversing Inequities Involves Challenges and Opportunities

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# Executive Summary



## Members of the American Indian/Alaska Native (AI/AN) community experience a disproportionate oral disease burden.

- Structural racism places AI/AN communities at high risk of poor overall and oral health outcomes. The historical and intergenerational traumas that form the foundation of this structural racism include genocide, geographic relocation, exposure to infectious diseases, forced boarding school attendance, poverty, homelessness, and lack of access to nutritious, affordable food, and routine preventive care.
- The prevalence of early childhood caries (tooth decay) in AI/AN communities is three times higher than it is for white children.
- AI/AN adults are twice as likely to have untreated decay as the overall United States (US) population, and 83% of AI/AN adults report tooth loss, compared with 66% of the overall US population.
- Fewer AI/AN adults report having seen an oral health provider in the previous 12 months (68.8%) than other adults (79.3%).
- Three and a half times as many people who identified as AI/AN report having visited the emergency department (ED) for dental care or mouth pain in the last year (13.5%) compared with those who do not identify as AI/AN (3.9%).
- More than half of AI/AN adults (54.1%) report being denied health care or oral health care at some point due to discrimination, compared with 40% of non-AI/AN respondents.
- According to the American Dental Education Association, the number of AI/AN students applying to dental school nationally has decreased dramatically over the past decade, from a record high of 92 in 2006 to record lows within the past 20 years of 16 AI/AN applicants in 2019 and 19 in 2021.\* This decline in applications reduces the likelihood that AI/AN individuals will be able to receive care from AI/AN dentists.

## Solutions to oral health disparities in AI/AN communities must be grounded in diversity, equity, inclusion, and justice.

- A better understanding is needed of the unique social determinants of health that affect the oral health of the AI/AN community, such as income, insurance, and geographic location, as well as experiences of discrimination in dental settings.
- Organizations and collaboratives such as the Society of American Indian Dentists (SAID), National Indian Health Board (NIHB), and the Native Oral Health Network (NOHN) help drive increased representation of AI/AN professionals in the dental profession.

- Through organizations such as the American Dental Therapy Association and National Indian Health Board, the expansion of dental health aide and dental therapy programs has increased the number of AI/AN dental professionals providing oral health care in tribal and Alaska Native communities.
- Research improves the understanding of the role of discrimination in lack of access to care and oral health disparities in AI/AN communities. It is also crucial to examine the effects of community-based interventions to improve the oral health of AI/AN individuals.
- Increased investments in AI/AN communities, with support for members of the AI/AN community to advance policy and systems change, will drive equitable solutions that must be defined, proposed, and implemented in partnership with those who have the most at stake.

**Strategic recommendations to reduce oral health disparities in AI/AN communities include:**

- Researchers and funding organizations need to develop and sustain authentic partnerships with AI/AN communities and organizations to increase AI/AN representation in research and funding decisions/strategies.
- To better understand and address disparities, accurate data collection regarding the oral health of AI/AN communities could combine clinical examination data with self-reported oral health outcomes, inclusion of AI/AN as an individual category, and the ability to choose more than one racial category in self-report data to avoid misclassification. Additionally, methods such as targeted oversampling (including more AI/AN survey respondents than is nationally representative) would increase AI/AN representation in research until inclusive data collection strategies are adopted more broadly.
- Increasing representation of AI/AN individuals in dental education settings — as both students and faculty — is a key component of developing an equitable, inclusive, and diverse oral health profession. Concurrently, curricula should be developed by AI/AN faculty aimed at providing culturally driven care for AI/AN communities. Existing curricula should be reviewed to ensure its cultural responsiveness.
- Developing career pathway programs for AI/AN individuals to enter all dental workforce positions (as dentists, dental therapists, dental hygienists, and dental assistants) should be a priority.
- Philanthropic institutions, grantmakers, and public funders must increase investments in AI/AN communities, with a specific focus on community-led efforts, with support for engaging in policy and systems-change strategies.
- Entities that create or advance oral health care policies, such as state and federal legislatures, the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), Centers for Medicaid and Medicare Services (CMS), and the Health Resources and Services Administration (HRSA) must collaborate and consult with tribal leaders to ensure that the needs of AI/AN communities are incorporated into all policies affecting the oral health of these communities.





## American Indian and Alaska Native Communities Face a ‘Disproportionate Burden of Oral Disease’

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# Historical and Current Sources of Health Inequities

The AI/AN population faces significant overall and oral health challenges compared with the non-AI/AN population. On average, the AI/AN population is younger than the US general population and has a life expectancy that is 5.5 years shorter (73.0 versus 78.5).<sup>1</sup> In 2019, the AI/AN infant mortality rate was the third highest in the country, after that of Black infants and Native Hawaiian or other Pacific Islander infants.<sup>2</sup> AI/AN individuals experience higher rates of diabetes, infectious diseases, obesity and alcoholism than other US population sub-groups.<sup>3</sup> The prevalence of early childhood caries is three times higher than it is for white children.<sup>4</sup> AI/AN adults are twice as likely to have untreated decay as the overall US population, and 83% of AI/AN adults report tooth loss, compared with 66% of the overall US population.<sup>5</sup>

Health disparities within AI/AN communities can be traced back to the arrival of European settlers in the 15th century.<sup>6</sup> At that time, it is estimated that between 9 million and 18 million Indigenous persons were living in North America.<sup>7</sup> Due to atrocities inflicted upon them by European colonizers, including genocide, intentional and unintentional introduction of infectious diseases, forced geographic relocation, and warfare, by the late 19th century the Indigenous population of North America was estimated at only 200,000.<sup>6,8</sup> In the late 19th and early 20th centuries, an estimated two-thirds of AI/AN children were required by the US government to attend off-reservation boarding schools.<sup>9</sup> Life in these boarding schools intentionally separated AI/AN children from their families, forced them to abandon their languages and traditions, and often exposed them to physical, sexual, and emotional abuse.<sup>9,10</sup>

In addition to these sources of historical and intergenerational trauma, AI/AN communities are currently exposed to “poor-quality, high-calorie foods with inadequate nutritional value” through the US Department of Agriculture’s Food Distribution on Indian Reservations program.<sup>6</sup> Many AI/AN reservations overlap with food deserts in which healthy and affordable foods are inaccessible.<sup>11</sup> Nearly 10% of AI/AN households lack adequate sanitation facilities. More than one in four (27%) AI/AN families with children live in poverty,<sup>12</sup> and AI/AN young adults are three times as likely to experience homelessness as their white peers.<sup>13</sup> More than two-thirds of the roads in the Indian Reservation Roads system are dirt or gravel roads, making travel for health care difficult, if not impossible, for many in AI/AN communities.<sup>14</sup> This lack of basic necessities such as food, housing, and sanitation among many in the AI/AN community contributes significantly to the oral health disparities experienced by the AI/AN population.

A 2022 IHS report indicates that AI/AN oral health is improving, and that at least one oral health disparity gap between AI/AN adults and the rest of the US population is narrowing.<sup>15</sup> Specifically, there has been a 16% relative improvement in the percentage of AI/AN adults aged 35–44 with untreated decay from 1999 (68%) to 2022 (57%). This improvement was even greater in older adults, with a 26% relative improvement in the percentage of AI/AN adults aged 55 and above with untreated decay (61% in 1999 to 45% in 2022).<sup>15</sup> Similar improvements are seen in the percentage of AI/AN adults who have retained all their teeth (i.e., have a functional dentition). In fact, the IHS report suggests that the disparity gap in the percentage of adults with a functional dentition has been eliminated between AI/AN adults and adults in the general population. This same report suggests that AI/AN adults still experience more gum (periodontal) disease, missing teeth, and oral pain than other US adults, highlighting the need to continue moving forward to address oral health disparities in AI/AN communities.<sup>15</sup>



**It’s hard to brush your teeth every day if you’re trying to figure out how to live and . . . you know, it’s hard to pick healthy foods if you don’t have healthy options.”**

“Dr. Tama” (AI/AN dentist) elaborated on challenges faced by some individuals in the AI/AN community where she practices.<sup>‡</sup>

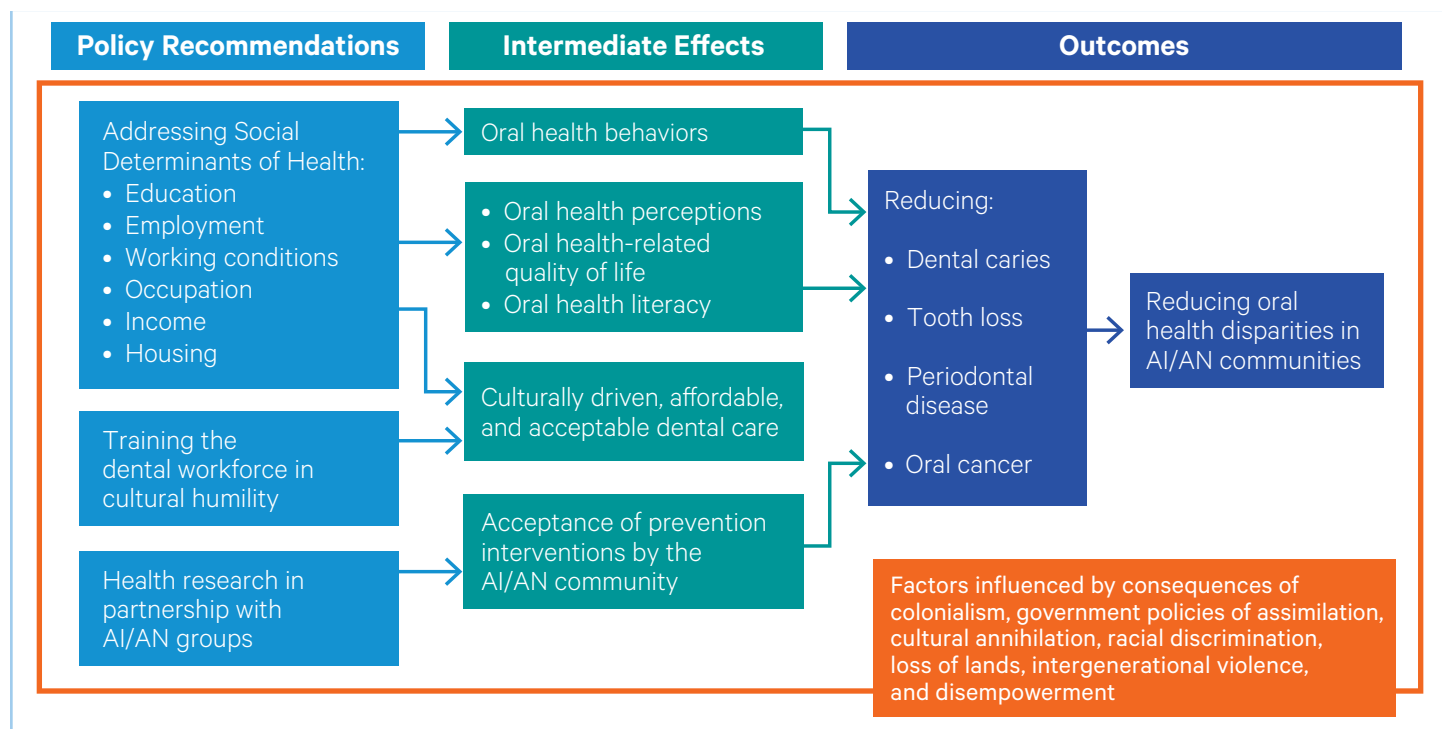


# Addressing Oral Health Disparities in the AI/AN Population

To begin to address oral health disparities in the AI/AN population, a comprehensive approach must be taken. In 2018, Tiwari and colleagues developed a conceptual model (see Figure 1) that emphasizes social determinants of health as the root of inequities in dental disease experienced by AI/AN communities.<sup>16</sup> This model also suggests finding the best ways of supporting preventive care and healthy practices for

individuals and families in the context of their often-extreme environmental conditions. Upstream histories of social, psychological, and economic conditions often impede the ability to access health care and maintain healthy habits at home.<sup>17</sup> Successful interventions must take this context into account.<sup>16</sup> Furthermore, having a culturally responsive dental workforce is crucial to reducing AI/AN oral health inequities.

**Figure 1: Conceptual model of inequities in dental disease experienced by AI/AN communities**





# Addressing Social Determinants of Health

## The State of Oral Health Equity in America Survey

To better understand the oral health disparities faced by AI/AN individuals, CareQuest Institute for Oral Health® examined issues related to oral health care access, oral health-related quality of life, medical-dental integration, discrimination, and socioeconomic instability experienced by AI/AN adults through a nationally representative survey.

### Survey Description and Methodology

The State of Oral Health Equity in America (SOHEA) survey assesses adult consumers' attitudes, knowledge, and experiences with oral and overall health care. CareQuest Institute designed the survey, and results were collected by NORC at the University of Chicago in January–February 2022 from adults 18 and older on the AmeriSpeak® panel. AmeriSpeak is a probability-based panel designed to be representative of the US household population. Randomly selected US households were sampled using area probability and address-based sampling, with a known, nonzero probability of selection from the NORC National Sample Frame. Sampled households were contacted by US mail, telephone, and field

interviewers. A sampling unit of 17,603 was used, with a final sample size of 5,682 and a final weighted cumulative response rate of 4.0%. All data presented account for appropriate sample weights, and the margin of error for the survey was 1.75%. An additional non-probability, opt-in sample of AI/AN individuals was recruited for the 2022 round of data collection, for a total of 564 AI/AN participants (9.9% of the total sample; [Appendix A](#)).<sup>§</sup> Unless otherwise noted, all results presented are statistically significant at the  $p < 0.05$  level.

Bivariate descriptive analyses were run for key outcome variables examining differences between those identifying as AI/AN and other survey respondents. Bivariate results were categorized based on the type of outcome variable (access to dental care; oral health–related quality of life; medical-dental integration; experiences with discrimination; and experiences with socioeconomic instability). Multivariable logistic regression models (adjusted for gender, age, education, income, urban vs. rural residence, and reporting brushing twice a day regularly) were run for key outcome variables, comparing outcomes for those identifying as AI/AN and other survey respondents.

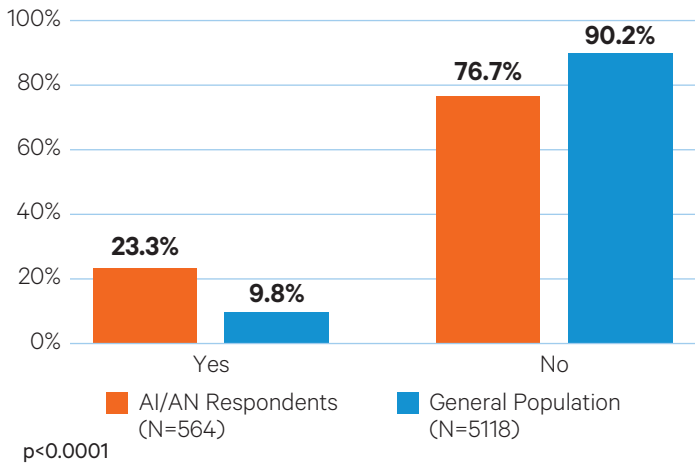
## Survey Results

### Access to Oral Health Care

Adults identifying as AI/AN face numerous barriers to receiving oral health care compared with non-AI/AN individuals. Fewer AI/AN adults reported seeing an oral health provider in the previous 12 months (68.8%) than other adults in the survey (79.3%). Similarly, fewer AI/AN individuals reported having dental insurance (61.5%) than non-AI/AN adults (70.3%). A smaller proportion of AI/AN individuals reported having a dental home (usual source of care; 72.1%) compared with non-AI/AN respondents (79.8%). Nearly twice as many AI/AN adults said they had not been able to visit an oral health provider since the beginning of the COVID-19 pandemic (33.6%) compared with non-AI/AN individuals (18.4%). In addition, more than twice as many AI/AN respondents reported difficulties with transportation to dental visits (23.3%) compared with non-AI/AN respondents (9.8%; Figure 2).

**Figure 2: Differences in transportation barriers to oral health care between AI/AN and non-AI/AN respondents**

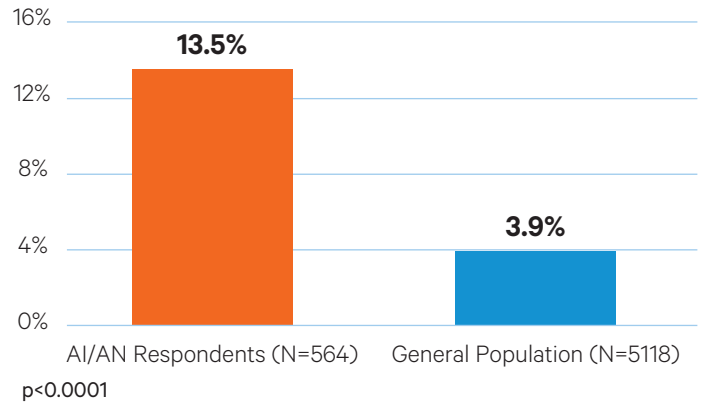
Within the last year, have you ever delayed care, missed an appointment, or been unable to obtain needed health care because of problems with your transportation?



More AI/AN adults reported that, based on where they live, if they were having an oral health problem, getting care from a dentist would be extremely difficult, very difficult, or moderately difficult (39.0%) compared with non-AI/AN adults (24.3%). In addition, three and a half times as many people who identified as AI/AN reported going to the ED for dental care or mouth pain in the last year (13.5%) compared with those who did not identify as AI/AN (3.9%; Figure 3). These two results, taken together, suggest that when individuals experience dental pain and access to dental care is difficult, individuals are likely to choose the ED as a solution for pain relief.

**Figure 3: Percentage of AI/AN respondents reporting visiting an ED for dental care**

In the last year, have you visited a hospital emergency department (ED) or an emergency room (ER) for dental care or pain/discomfort in your mouth? (Yes)

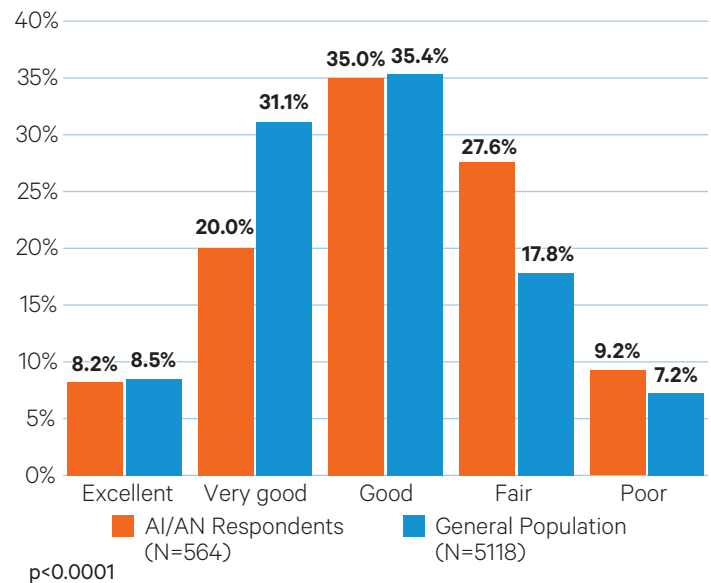


### Oral Health–Related Quality of Life

Adults in the SOHEA sample who identified as AI/AN reported poorer oral health–related quality of life than others in the sample. A greater proportion of individuals identifying as AI/AN (N=564) indicated that their oral health was “fair” (27.6%), and a smaller proportion rated their oral health as “very good” (20%) compared with those not identifying as AI/AN (17.8% and 31.1%, respectively; Figure 4). As a side note, this same pattern was observed for overall health. One in five (19.9%) AI/AN individuals rated their overall health as “fair,” compared with 12.7% of non-AI/AN individuals, while only 27.9% of AI/AN individuals rated their overall health as “very good” (37.9% for non-AI/AN adults).

**Figure 4: Differences in self-reported oral health between AI/AN and non-AI/AN respondents**

In general, how would you rate your oral health?

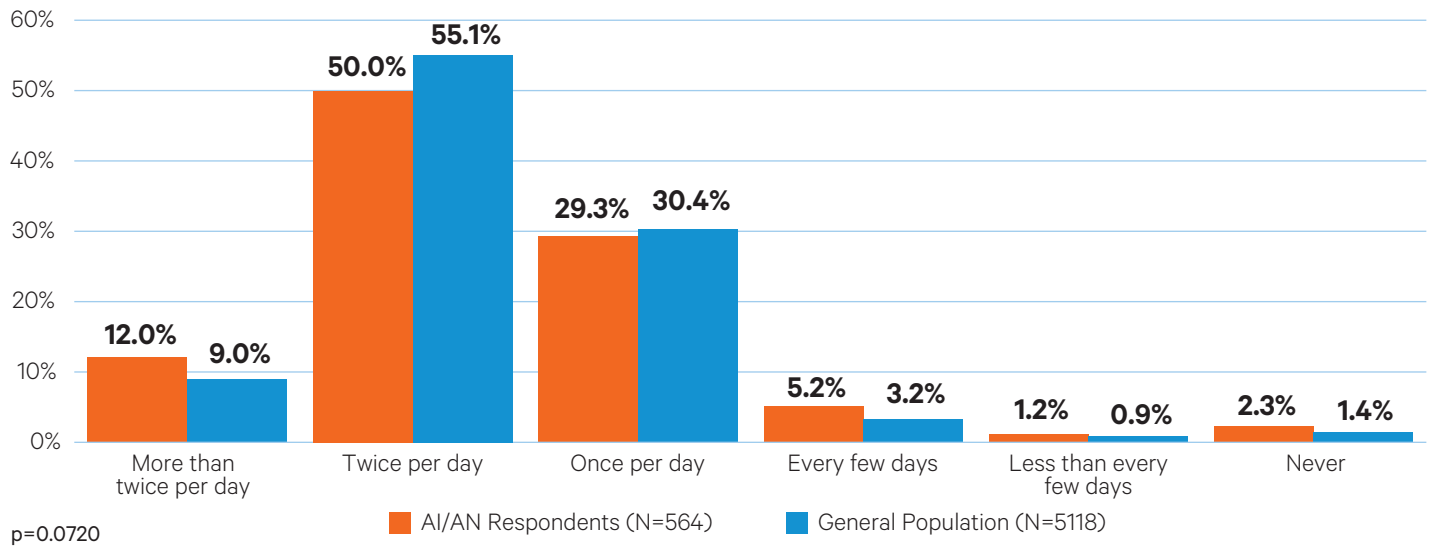


A higher proportion of AI/AN adults reported having at least one oral health symptom in the past year (67.5%) compared with non-AI/AN (54.6%) respondents. Perhaps relatedly, more AI/AN respondents reported feeling self-conscious very often, fairly often, or occasionally because of their teeth in

the past year (46.2%) compared with non-AI/AN individuals (29.6%). However, there were no significant differences between the number of AI/AN individuals who reported brushing their teeth twice a day or more (62%) compared with non-AI/AN adults (64.1%;  $p=0.0720$ ; Figure 5).

**Figure 5: Differences in self-reported toothbrushing frequency between AI/AN and non-AI/AN respondents**

How often do you brush your teeth?



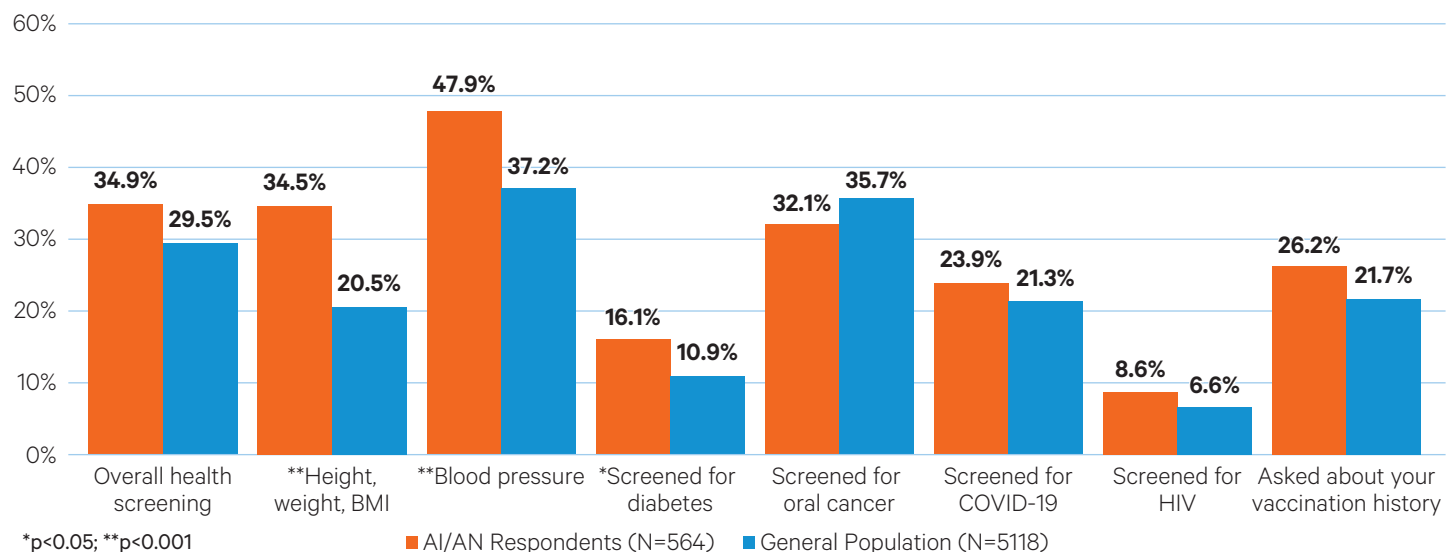
**Experiences with Integrated Care Models**

While fewer AI/AN adults reported that their oral health provider asked about their overall health, more AI/AN individuals reported having medical screenings during their dental visits than non-AI/AN respondents (Figure 6). Compared with non-AI/AN adults (32.1%), more individuals identifying as AI/AN said their primary oral health provider had “rarely” or “never” asked about their overall health (38%). However, individuals who identify as AI/AN reported

receiving certain medical screenings integrated into their dental visits at a greater proportion than non-AI/AN individuals. Specifically, higher percentages of AI/AN adults reported having their oral health care provider ask about their height, weight, and body mass index (BMI) (34.5%) compared with non-AI/AN respondents (20.5%). Similar findings emerged for blood pressure (47.9% vs. 37.2%) and diabetes (16.1% vs. 10.9%) screenings.

**Figure 6: Differences in experiences of integrated care models between AI/AN and non-AI/AN respondents**

Has your oral health provider ever checked any of the following?

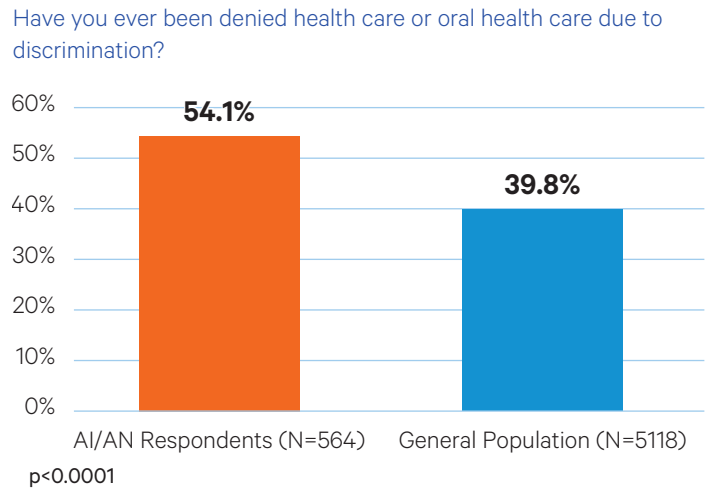


### Experiences with Discrimination

Adults who identified as AI/AN in the SOHEA study described experiencing discrimination in various ways. For example, more than half of AI/AN adults (54.1%) reported that they had been denied health care or oral health care at some point due to discrimination, compared with 39.8% of non-AI/AN respondents (Figure 7). Similarly, AI/AN respondents were more likely to report experiencing discrimination on a weekly basis (26.1%) compared with non-AI/AN respondents (10.4%). Perhaps relatedly, a significantly higher proportion of the AI/AN panelists reported having high dental anxiety (18.7%) compared to those who did not identify as AI/AN (12.2%;  $p=0.0016$ ).

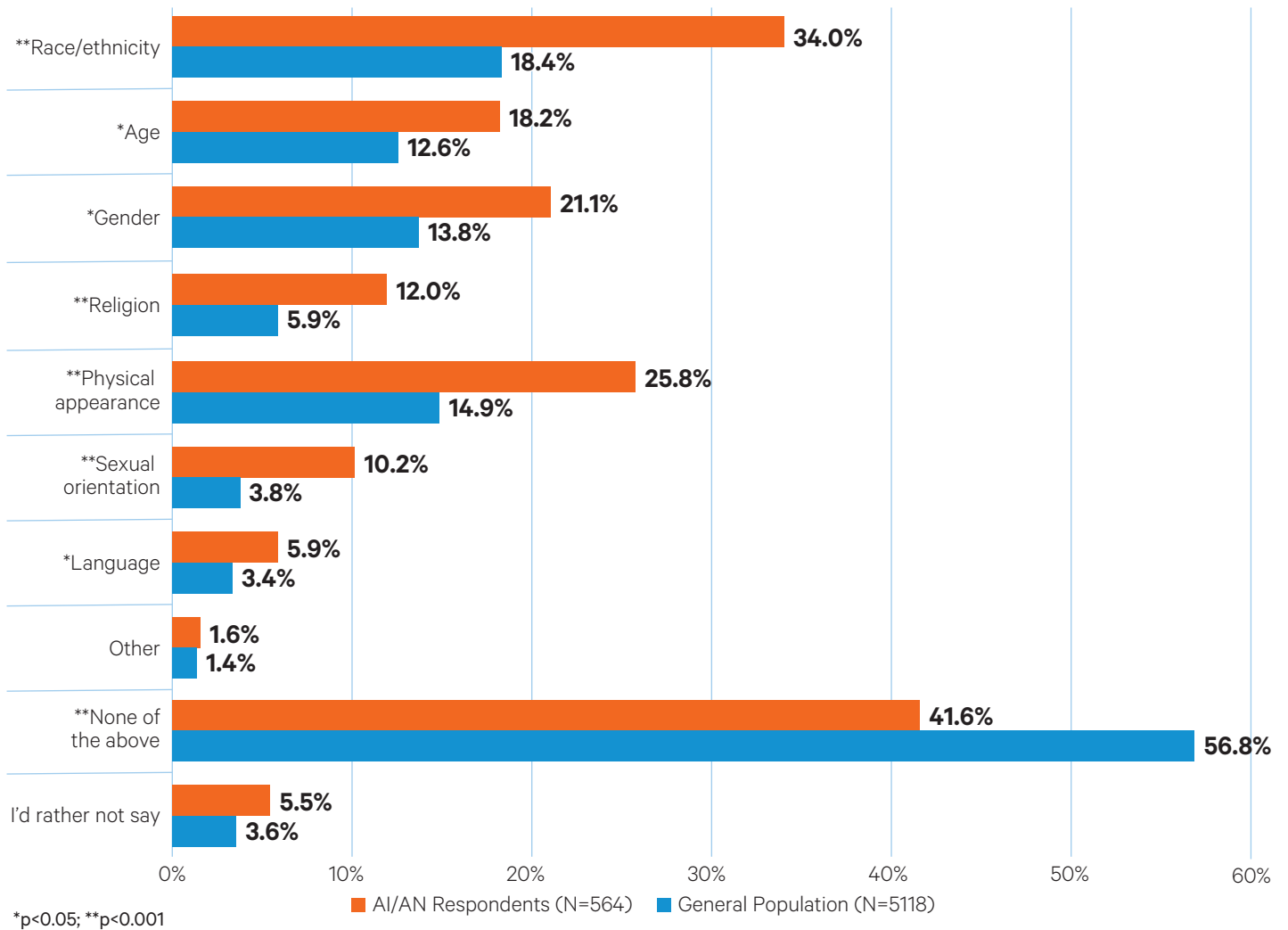
Regarding areas in which they felt discriminated against at any point in their lifetime (Figure 8), a greater proportion of AI/AN individuals identified race/ethnicity (34% vs. 18.4%), age (18.2% vs. 12.6%), gender (21.1% vs. 13.8%), physical appearance (25.8% vs. 14.9%), sexual orientation (10.2% vs. 3.8%), and language (5.9% vs. 3.4%) as sources of discrimination they had faced.

**Figure 7: Percentage of AI/AN and non-AI/AN respondents reporting denial of health or oral health care due to discrimination**



**Figure 8. Differences in experiences with lifetime discrimination between AI/AN and non-AI/AN respondents**

Have you experienced discrimination as a result of any of the following in your lifetime?





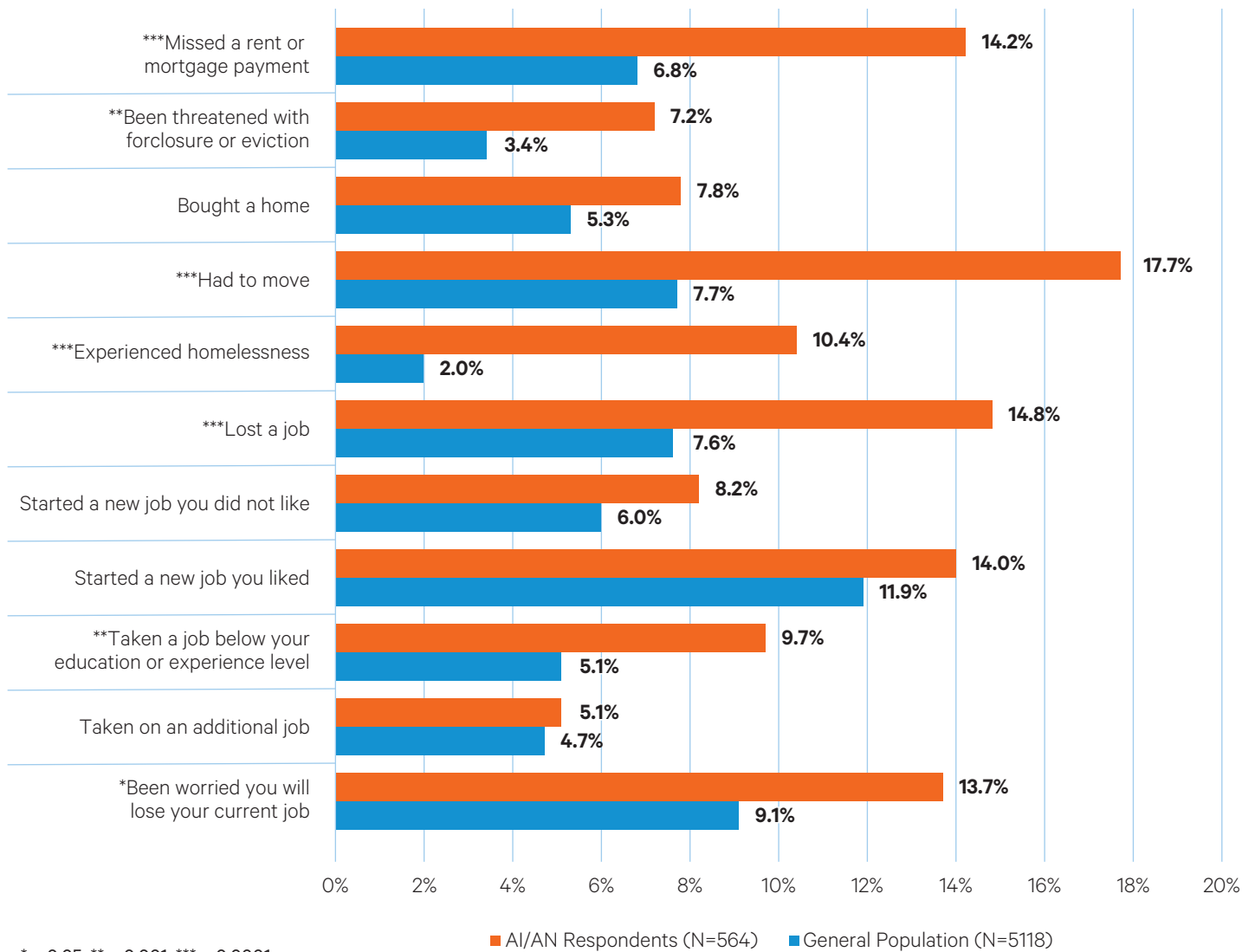
### Experiences with Socioeconomic Instability

In the SOHEA survey, AI/AN adults described experiencing instability regarding food, housing, and jobs (Figure 9). Individuals identifying as AI/AN reported the following types of food insecurity “very often” at greater proportions than non-AI/AN: being worried that their household’s food would run out before they got money to buy more (12.8% vs. 5.5%); finding that the food they bought wouldn’t last, and they didn’t have money to buy more (12.9% vs. 5.2%); and reporting that their household couldn’t afford to eat healthy, balanced meals (16.7% vs. 7.8%). Similarly, greater proportions of AI/AN individuals than

non-AI/AN individuals reported experiencing factors related to housing insecurity in the last year, including missing a rent or mortgage payment (14.2% vs. 6.8%); being threatened with foreclosure or eviction (7.2% vs. 3.4%); having to move (17.7% vs. 7.7%); and experiencing homelessness (10.4% vs. 2.0%). Finally, individuals identifying as AI/AN reported the following types of job insecurity at greater proportions than non-AI/AN: losing a job (14.8% vs. 7.6%); taking a job below their education or experience level (9.7% vs. 5.1%); and being worried that they would lose their current job (13.7% vs. 9.1%).

**Figure 9: Differences in experiences with instability regarding food, housing, and jobs between AI/AN and non-AI/AN respondents**

In the last year, which of the following has happened to you?

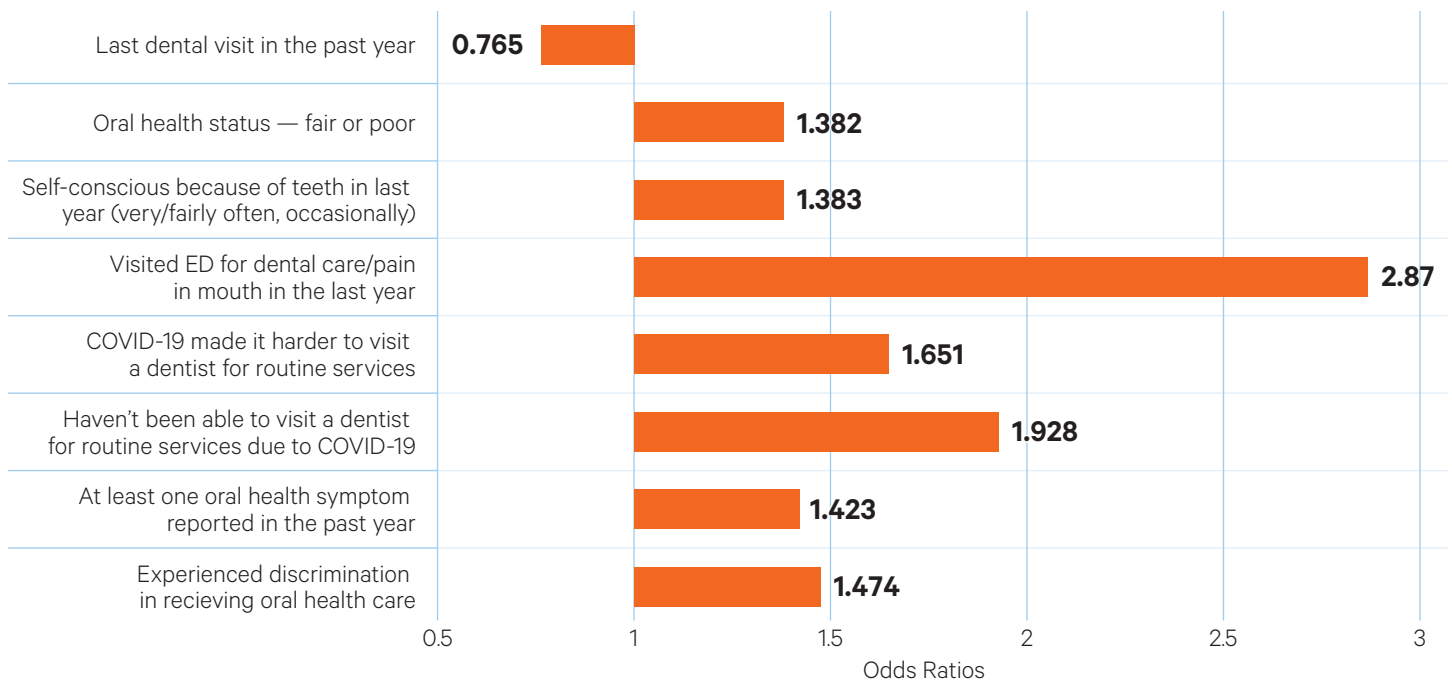


### Results from Multiple Regression Models

Multiple regression analyses (adjusted for gender, age, education, income, urban vs. rural residence, and reporting brushing twice a day regularly; Figure 10) found that in the previous year, compared with non-AI/AN individuals, adults identifying as AI/AN were less likely to have visited a dentist in the last year (OR=0.765, 95% CI=0.587–0.998,  $p<0.05$ ) and more likely to have visited an ED for dental care or pain in their mouth in the last year (OR=2.87, 95% CI=1.848–4.458,  $p<0.0001$ ). AI/AN adults were also more likely to describe their oral health as “fair” or “poor” (OR=1.382, 95% CI=1.046–1.825,  $p<0.05$ ), to have at least one oral health symptom in the past year (OR=1.432, 95% CI=1.093–1.851,  $p<0.01$ ), and to

indicate that they felt self-conscious very often, fairly often, or occasionally in the past year due to their oral health (OR=1.383, 95% CI=1.073–1.782,  $p<0.05$ ). In addition, individuals identifying as AI/AN were more likely to say that the COVID-19 pandemic had made it more difficult to visit a dentist for routine care (OR=1.651, 95% CI=1.269–2.147,  $p<0.0001$ ) and that they had not been able to visit a dentist since the start of the pandemic (OR=1.928, 95% CI=1.454–2.555,  $p<0.0001$ ). Finally, AI/AN respondents were more likely to report having experienced discrimination in an oral health setting compared with non-AI/AN respondents (OR=1.474, 95% CI=1.129–1.925,  $p<0.01$ ).

**Figure 10: Results of multiple regression analyses on oral health disparities among AI/AN adults**



All models adjusted for gender, age, education, income, urban vs. rural residence, and reporting brushing twice a day regularly; other (non-AI/AN) respondents are the reference; all models shown significant at  $p<0.05$ .

## Survey Conclusions

### Access to Oral Health Care

In the SOHEA sample, individuals identifying as AI/AN reported experiencing several disparities related to oral health, overall health, and socioeconomic factors compared with those who did not identify as AI/AN. These results mirror those of other studies that find significant health disparities in the AI/AN community.<sup>1, 18</sup> The Indian Health Service (IHS) acknowledges that AI/AN individuals consistently experience poorer health, including “lower life expectancy and . . . disproportionate disease burden . . . perhaps because of inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences.”<sup>1</sup> There have been calls for more data to better understand the health disparities experienced by the AI/AN population<sup>19</sup> and for AI/AN health care delivery to be designated as mandatory spending by the federal government, the same way Social Security is funded.<sup>20</sup> Ongoing efforts to improve the oral health of AI/AN communities, such as the implementation of dental therapist programs,<sup>17</sup> will be described in more detail later in this report.

When asked how to make oral health care better for AI/AN individuals, “Dr. Tama” responded,



**I think step one is that we have to work towards creating safe spaces for our patients and our families and our communities . . . I see it daily . . . the history of dental trauma and having no steady provider that you can form a relationship with, or somebody coming in who isn't culturally safe . . . .”<sup>±</sup>**

# Creating and Expanding a More Representative Dental Workforce

Currently, there are 574 AI/AN tribes recognized by the federal government in the US.<sup>21</sup> In the 2020 census, the total population of people identifying as AI/AN was 6.79 million, or 2.09% of the US population.<sup>22</sup> A majority of AI/AN people (60%) reside in metropolitan areas, and up to 22% live on reservations or trust land (defined as land controlled by AI/AN entities).<sup>23</sup> Individuals living on trust land are more likely to reside in rural areas with fewer dental providers to serve their population than those who live in metropolitan areas.<sup>24</sup> For example, the Pine Ridge Reservation in South Dakota has three dental clinics serving an area nearly the size of Connecticut with an estimated population between 20,000 to 30,000.<sup>25</sup> (The census historically undercounts people living on this reservation.)<sup>26</sup> There are seven dentists working in three locations, which is a ratio of one dentist for approximately 2,875–4,285 people. In comparison, the estimated dentist-to-population ratio for the overall US population is one for every 1,644 people.<sup>27</sup>

This workforce problem is common across reservations and in Alaska, resulting in too few dental providers to serve village and reservation populations adequately, and exacerbating the prevalence and severity of oral disease.<sup>28</sup> There are many barriers faced by AI/AN communities that can make the rigorous process of qualifying for, applying for, and attending dental school difficult for prospective AI/AN dentists.<sup>29</sup> AI/AN individuals are considered underrepresented minorities in the field of dentistry, with only 0.2% of active US dentists in 2012 identifying as AI/AN.<sup>30</sup> Improvements in oral health require access to professional care, especially in culturally driven clinics from AI/AN providers with similar cultural backgrounds to their patients.<sup>28</sup> Evidence suggests that improving workforce diversity promotes social justice as well as increasing access, health equity, and health care quality, particularly for minority populations.<sup>31</sup> Organizations such as the the Society of American Indian Dentists (SAID) are working to increase the representation of AI/AN individuals in the dental profession.

When asked about her college and dental school journey “Dr. Tama” responded,



**I just didn't know how to navigate . . . academia. My parents had no idea. They pretty much discouraged me from anything past undergrad just because taking out student loans freaked them out, they couldn't financially help me in any way.”<sup>32</sup>**

## Society of American Indian Dentists

Dr. George Blue Spruce Jr. is the first American Indian dentist in the United States, graduating from Creighton University School of Dentistry in 1956. He is also the founder of SAID. In discussing the need for an organization like SAID, Dr. Blue Spruce said, “I looked behind me, and I saw very few American Indians going through to become doctored health professionals. And so I thought that I would think very seriously about an organization that would help promote that effort.”<sup>32</sup>

Since its founding in 1990 with just a few members, SAID has promoted dental health in American Indian communities, encouraged AI/AN youth to pursue careers in the dental professions, provided role-model leadership, and promoted and supported the unique concerns of AI/AN dentists. Membership has doubled over the last few years, and about half of new SAID members are dental students.

As an organization dedicated to increasing the number of AI/AN dentists, SAID:

- coordinates an annual conference that provides opportunities:
  - to connect with peers, dental students, and pre-dental students, as well as other oral health professionals
  - for continuing education on topics of particular interest to those working in AI/AN communities, both rural and urban
  - to engage in the diverse cultural traditions of sovereign tribal nations across the continent
  - to engage together in community service to AI/AN communities in the region of the conference
- provides Dental Admissions Test (DAT) preparation funding awards to AI/AN pre-dental students to support their applications to dental schools
- provides travel stipends to the annual conference to pre-dental and dental students as opportunities to network with other AI/AN students and develop mentorship relationships with experienced dentists
- offers a formal mentorship program to further enhance and support the dental journey of their students



**I think given that we don't have a lot of compassionate interdisciplinary care in the dental field . . . there's a lot of really negative experiences. So, people don't even think of [dentistry] as being a profession because it's just this thing that no one likes. . . . we just need more Native dentists on Native land giving good care . . .”**

“Dr. Abey” (AI/AN dentist) spoke about why she thinks more AI/AN individuals don't consider dentistry as a profession.<sup>±</sup>



## Provider Perspectives: The Society of American Indian Dentists\*

Today's Indigenous peoples of what is now the United States of America are a proud and strong surviving people. In writing this article from our perspective as "Native Dentists," we have the solemn awareness that our ancestors were decimated by the early US government under the banner of "Manifest Destiny."<sup>33</sup> Our perspective also includes the belief that no one can be as uniquely qualified to treat our peoples as we are. It remains of utmost importance for Native American people to gain equal representation as providers in the field of dentistry in order for our people to achieve oral health parity. American Indians and Alaskan Natives (AI/AN) (also referred to as Native Americans) currently suffer from the worst oral health outcomes in comparison to any racial or ethnic group within the United States. Our organization, the Society of American Indian Dentists (SAID), is a national nonprofit organization for dentists and dental students dedicated to promoting and improving the oral health of the AI/AN community and advocating for the AI/AN dental professionals across the US.

Due to the limited number of AI/AN dentists in the US, it can be challenging for our voices to be heard. Unlike other dental organizations, it can be difficult to find a voice who is able to deliver our concerns to those in power. We are often left out of data sets and research in the dental profession through misclassification and erasure. As we aim to improve the oral health outcomes of our people, exclusion from data sets is worrying as it signifies to larger ethnic groups that our people are nonexistent.<sup>34</sup> During the 2020 election polls, CNN classified AI/AN voters as other, a blatant and modern example of misclassification and erasure. Exclusion from data sets leads to loss of recognition of public health needs in AI/AN communities and loss of funding, and further exacerbates disparities in health care.

It's an understatement to say that health care for Native peoples was not a consideration in establishing the United States. The War Department in the 1800s created federal Indian policy that focused on military confinement of tribes while ancestral lands were taken.<sup>35</sup> In 1921, over a century after treaty rights were established, the Snyder Act provided a clear mandate for health care rights and improved health care to the AI/AN community.<sup>36</sup> Since then, care provided continues to be underfunded and under-delivered. Currently, the prevalence of untreated caries in AI/AN adults is twice that of an average American adult, and our people have the highest rate of caries of any ethnic group in the United States.<sup>5</sup> AI/AN adults compared to the general US population

are more likely to have severe periodontal disease, more missing teeth, and are more likely to report poor state of oral health, higher prevalence of oral pain, and avoidance of certain foods due to the status of their oral health.<sup>5</sup> The oral health of AI/AN children is also of concern as the likelihood that they have untreated dental caries in primary teeth is twice that of an average American child in addition to having a fivefold likelihood to have permanent teeth with untreated dental caries.<sup>37</sup> Consider the violent history of colonization as part of the context of why Native Americans currently suffer from the worst oral health outcomes in comparison to any racial or ethnic group within the United States. Consider, additionally, how AI/AN providers can uniquely address these traumas through shared experiences and working towards elevating fellow tribal members into our profession.

Although SAID has worked toward the inclusion of AI/ANs in dentistry for over 30 years, there has been very little improvement in the representation of AI/AN people in the profession of dentistry. According to the American Dental Education Association, the number of AI/AN students applying to dental school has actually decreased significantly over the past decade with a record high of applicants, 92, in 2006, and a record low of 16 AI/AN applicants in 2019 and 19 in 2021.<sup>38+</sup> The AI/AN students also see a lower matriculation rate in comparison to other minority groups.<sup>38</sup> This is unacceptable. The Society of American Indian Dentists needs additional support from allies in our mission. We cannot reach our goals without the help of the gatekeepers to the profession of dentistry. We call to action leaders in our tribal communities, grade-school educators, and current American Indian dentists to mentor young people as they consider pursuing a dental education. We call for the support of leaders in higher education to be aware of Native issues and guide those Indigenous youth who have already begun the process of attaining the coursework and grades needed to gain acceptance into dental school. We call for support from college pre-dental advisors, our dental peers and colleagues, dental school deans and admissions committees, and leadership from majority dental organizations. Diverse organizations like ours play a key role in advocating for and providing resources to Indigenous students throughout their pre-dental career as well as once they start dental school, and other dental organizations can help us in our goal to increase our numbers. Our perspective and our presence provide hope for the next generation — that they may see structural changes within the dental profession to include and hear Indigenous voices.

## Dental Therapists

Dental therapists provide basic services such as restorations, simple extractions, and preventive care, a subset of the procedures that dentists can provide.<sup>39</sup> Dental therapy was first introduced in the US in Alaska under the umbrella of the [Community Health Aide Program \(CHAP\)](#). CHAP is a system of community-based health care providers who receive training in their communities to be the health care providers for their communities. Dental therapists within CHAP are the most advanced level of dental health aides and are called dental health aide therapists. In 2006, the [American Dental Therapy Association](#) was founded to support its dental therapist members through educational and career advancement opportunities and to provide education to the public about the value of dental therapists. In 2010, Congress authorized CHAP to expand nationally, as part of the Indian Health Care Improvement Act. In 2020, IHS released the national policy describing CHAP expansion in the form of [Circular 20-06](#). As IHS and tribes are in the process of implementing CHAP expansion, tribal communities will have the option to add dental health aides of all levels to the workforce.

### What is CHAP?

The Community Health Aide Program (CHAP) consists of a system of community-based health care providers who receive training to deliver care within their communities. The CHAP system includes Dental Health Aides and Behavioral Health Aides and provides high-quality, effective, and cost-efficient care to the communities they serve. The program began in 1968 in Alaska and is in the process of expanding to several additional states. CHAP demonstrates that [“when tribes are provided with the freedom to meet the needs of their people, they are able to meet the challenge to increase access to care while maintaining the quality of care.”](#)

Improved access to dental care in Alaska Native communities was seen with the implementation of AN dental therapists in 2005.<sup>40</sup> In 2015, the Commission on Dental Accreditation (CODA), the governing body that sets accreditation standards for dental schools, established accreditation standards for dental therapy education programs.<sup>39</sup> This addition to the dental workforce is an important benefit to the AI/AN population because it is a more accessible career option and increases access to high-quality care. Dental therapists work under the supervision of a supervising dentist. When they are able to provide services via general supervision, meaning the supervision is occurring remotely, it further enables dental therapists to bring accessible care to those who need it most. The practice of dental therapy in the US is most prevalent in Alaska and Minnesota.



**I think the lack of Native providers is definitely an issue and we have two [Native] dental therapists here . . . they provide for our patients every day, and it’s amazing.”<sup>±</sup>**

**“Dr. Tama” spoke about her experience with the AI/AN dental workforce.**

A total of 13 states have legalized dental therapy with varying educational requirements and varying delivery of care settings.<sup>39</sup>

The National Indian Health Board (NIHB) is a 501(c)(3) nonprofit serving all federally recognized tribes in the areas of health care and public health. In 2011, through its Board of Directors, NIHB passed a resolution endorsing dental therapy based on the success communities in Alaska had seen from integrating this provider type into their oral health care teams. In 2016, NIHB launched the Tribal Oral Health Initiative, a hub for tribal dental therapy information, resources, and technical assistance. NIHB began coordinated education and outreach efforts, connecting tribes throughout the country to communities that have benefited from dental therapy, and connecting state-based dental therapy licensing campaigns to tribal communities to work together in coalition. Beginning in 2018, NIHB co-chaired the National Partnership for Dental Therapy to elevate the tribal experience with dental therapy and advocate for equity-based solutions to tribal oral health challenges like provider shortages, disproportionate rates of tooth decay, and lack of culturally competent care. NIHB offers funding to tribes and tribal organizations for education, outreach, and implementation of dental therapy on tribal oral health care teams. Finally, NIHB provides funding for tribes and tribal organizations to sponsor dental therapy students at either of the CODA-accredited education programs at Ilisagvik College or Skagit Valley College.

[The Native Oral Health Network \(NOHN\)](#) was established in 2017 and is administered through the [Southern Plains Tribal Health Board \(SPTHB\)](#). SPTHB is conducting a variety

of assessment activities and creating workgroups to better understand and support the needs of the tribes in the Southern Plains area. SPTHB has partnered with NIHB through its Dental Therapy Education and Outreach grant. Through this opportunity, SPTHB has created [Expanding the Oral Health Workforce: A Dental Therapy Toolkit for Oklahoma](#) to provide information about dental therapy and how the model could help ease the state’s long-standing struggle with oral health care access. This toolkit follows the passage of a resolution in 2021 by the SPTHB Board of Directors that affirmed support for dental therapy as a solution to Indian Country’s oral health challenges. Thereafter, SPTHB published “[Policy Brief: Oral Health Policy and Improvement Strategies in Oklahoma](#)” to offer advocates policy-based solutions to improve oral health in Oklahoma, including the addition of dental therapy.<sup>41</sup>

In 2015, based on the success of dental therapy in Alaska, the Northwest Portland Area Indian Health Board, which serves the three-state region of Washington, Oregon, and Idaho, introduced the [Native Dental Therapy Initiative \(NDTI\)](#). The mission of NDTI is to connect tribal communities with innovative approaches to address AI/AN oral health disparities; to remove barriers impeding the creation of efficient, high-quality, modern dental teams; and to provide opportunities for AI/AN people to become oral health providers. During the past seven years, NDTI has enabled 13 dental therapists to work with tribes in the Northwest, and all three states (Washington, Oregon, and Idaho) have passed legislation authorizing the practice of dental therapy in some or all settings. Additionally, the dental therapy education program at Skagit Valley College — called [d̥əx̥ʷx̥ayəbus](#), which means “place of smiles” in the Lushootseed language — was developed in partnership between Skagit Valley College and the Swinomish Indian Tribal Community with support from NDTI. [d̥əx̥ʷx̥ayəbus](#) was the second dental therapy education program in the US to gain accreditation from CODA and welcomed its first class in 2022.

Also in 2022, the Health Resources and Services Administration (HRSA) Advisory Committee on Training in Primary Care and Medicine and Dentistry presented [recommendations to Congress](#) to explicitly include authorization and funding appropriations for dental therapy programs and trainees in existing legislation.

NDTI has expanded to include all levels of dental health aides within the expansion of CHAP in the Northwest, and now comes under the umbrella of the broader Dental Health Aide Program (DHAP) at NPAIHB. DHAP, along with the Behavioral Health Aide Program (BHAP) and Community Health Aide Program (CHAP), make up the [Tribal Community Health Provider Program \(TCHPP\)](#). TCHPP, which is housed at NPAIHB, is working to implement the full CHAP in the three-state region. DHAP now works with tribes across

“Dr. Abey” explained how to make an impact for future AI/AN generations.



**I’m working with the [state] dental association right now on a piece of legislation that addresses our workforce shortage . . . to develop a program that encourages youth in the tribes to start to pursue [dentistry] because . . . exposure is just not out there.”\***

the Northwest to provide education for and support the implementation of all dental health aide levels.

### **The Indian Health Service (IHS) and its Role in Oral Health**

All AI/AN individuals are eligible to participate in public, private, and state health programs in the same manner as all other US citizens. In addition, the US government, through the Department of Health and Human Services, has a responsibility to provide AI/AN individuals with federal health care services through [treaty rights](#). As part of this responsibility, the IHS Division of Oral Health funds several [Clinical and Preventive Dental Support Centers](#) around the US, with the goal of supporting Centers who serve AI/AN communities in their efforts to “coordinate regional resources, train dentists and other dental health personnel, and advise health programs in order to improve dental health care for American Indians and Alaska Natives.” The Northwest Tribal Dental Support Center (NTDSC), operating since 2000, is an example of one of these Dental Support Centers. The overall goals of NTDSC are to provide training, quality improvement, and technical assistance to the 39 IHS/tribal dental programs in the Portland Area (Washington, Oregon, and Idaho) and to ensure that NTDSC’s

services result in measurable improvement in the oral health status of the AI/AN people served in the area. The objectives are to continue oral health assessment, ensure quality of care, implement clinical and community-based prevention programs, and provide continuing dental education. Furthermore, NTDSC works closely with IHS and other dental support centers toward meeting national health promotion and disease prevention objectives. NTDSC's objectives are supported through ongoing communication with local dental programs via site visits, email lists, telephone consultations, and an [annual area-wide dental meeting](#). NTDSC also partners with the [Arcora Foundation](#) to implement area-wide collaborative programs that aim to increase access to oral health care, improve health, and increase patient satisfaction.

Dental hygiene care is also underutilized within the AI/AN community. IHS reported that 2.2 million AI/AN individuals are being served by 400 dental hygienists.<sup>42</sup> Often these dental

hygienists are providing care in community settings using mobile equipment without important resources such as cellular service, internet service, and basic utilities, affecting the level of care provided.<sup>42</sup> Dental hygienists play a key role in providing preventive and therapeutic oral health care and oral health education to patients. The entry-level requirement to become a dental hygienist is graduating with an associate degree from a two- to four-year CODA-accredited dental hygiene program, generally offered through a community or technical college. [Admission requirements for dental hygiene school](#) include a high school diploma or GED along with passing a college entrance examination. Engaging young people in positive dental-related experiences and providing the educational resources and skills to succeed in advanced educational settings, including dental schools and dental hygiene programs, can help increase the AI/AN oral health workforce.<sup>43</sup>

# Collaborating to Create More Accurate and Inclusive Research

[Accurate data are crucial to understanding the population burden of disease and injury](#), identifying disparities among population subgroups, monitoring trends over time, and prioritizing programs and resource allocation. Misclassification of race is a significant problem when describing health disparities and equity. Many policy decisions, such as appropriately directed funding and organizational process and quality measures, rely on accurate data collection. This has been problematic for policies affecting AI/AN individuals, as they are often [racially misclassified](#) in data sets.<sup>44</sup> Furthermore, AI/AN data may be altogether omitted from data reporting. This complicates outreach efforts to a historically marginalized population.

## Improving Accuracy of Data Collection

Due to traditionally small sample sizes, AI/AN individuals are routinely misclassified as another race/ethnic group, put in the "other" category, or simply not included during health-related data collection efforts.<sup>44, 45</sup> The Urban Indian Health Institute (UIHI) guidelines state the importance of including AI/AN as an individual category and allowing for combination with other racial groups for individuals who identify as more than one race/ethnicity. UIHI further emphasizes the importance of including tribal influence and leadership when designing research protocols and collecting data designed to reflect rural and urban AI/AN populations.<sup>44, 45</sup>

"Dr. Len" (AI/AN dentist) explains the importance of accurately identifying race and ethnicity.



**That was life for me, life was living in [a Native Community] and being [Native] and I know that as proud, in my heart as I was, my skin color took on my mother's tone, so that [not resembling other members of the tribe] became sort of like an awkward thing growing up."**<sup>±</sup>

## Improving Accuracy of Data Reporting

After careful and accurate data collection, researchers must utilize protocols for accurately reporting small sample sizes.<sup>45</sup> UIHI emphasizes best practices for reporting on AI/AN populations, such as:

- aggregating data across longer times
- weighted sampling
- limiting stratification
- including appropriate confounding variables
- oversampling
- using mixed methods
- reporting limitations

Researchers must respect that tribes have sovereignty over any data that is collected on their behalf and a data use agreement with the tribe needs to be in place. This ensures that the data collection and reporting accurately reflect tribal conditions and allows for correct interpretation of data.<sup>45</sup>

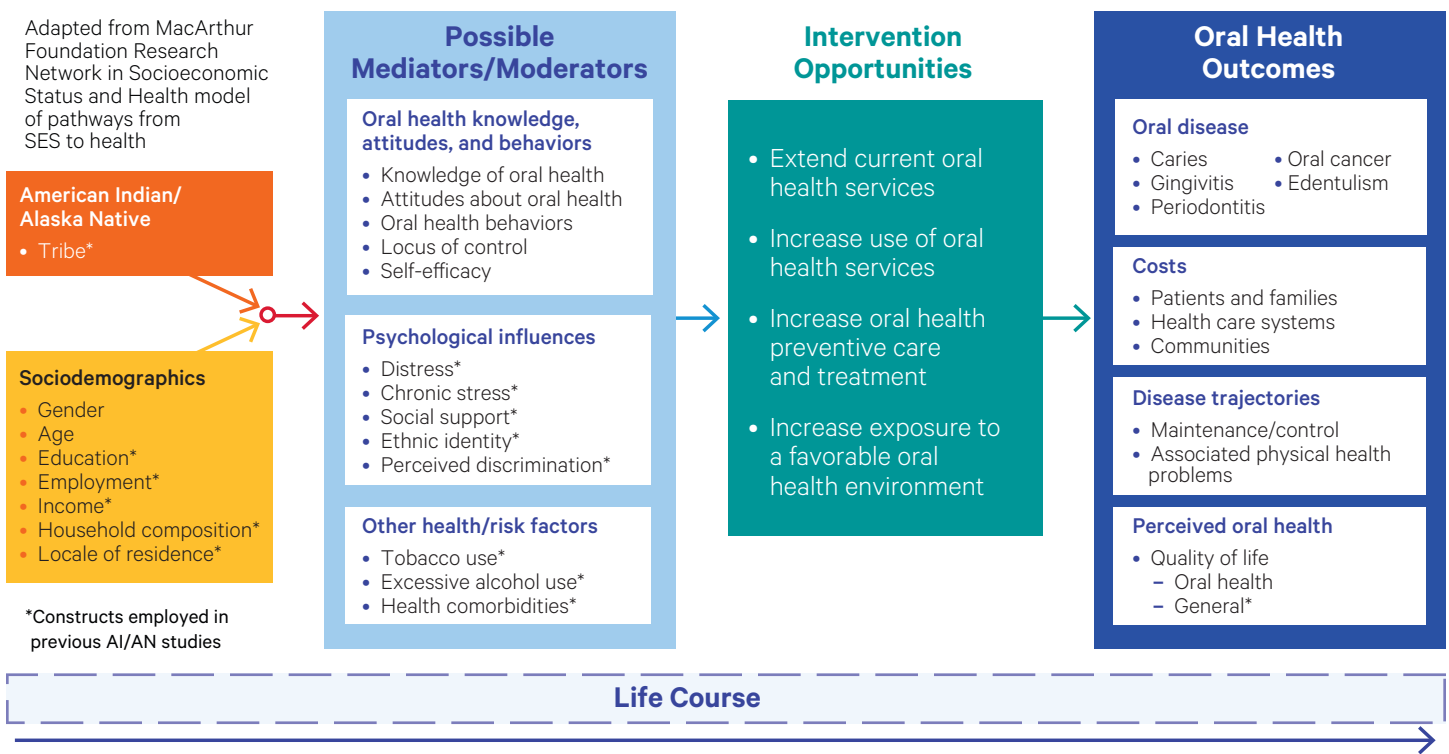
SPTHB, in close partnership with tribes, tribal organizations, and the Oklahoma State Department of Health, revitalized the American Indian Data Community of Practice (AIDCoP). The AIDCoP is a voluntary and evolving forum engaging data experts and stakeholders to exchange information, seek and offer consultation, share ideas, brainstorm for innovation, and pursue peer-to-peer collaborative initiatives related to American

Indian people in Oklahoma. Furthermore, in 2022, the Native Oral Health Network (NOHN), in collaboration with other SPTHB programs and the University of Oklahoma Hudson College of Public Health, and in partnership with CareQuest Institute, is investigating AI/AN racial misclassification and its impact on oral health equity. NOHN expects to release a report in summer 2023.

## Intervention Studies

In the past decade, a number of population-based interventions have worked to reduce oral health disparities in the AI/AN population. The Center for Native Oral Health Research (CNOHR), funded by the National Institute of Dental and Craniofacial Research at the National Institutes of Health (NIH/NIDCR), conducted a randomized controlled trial to determine if using motivational interviewing with AI/AN new mothers resulted in fewer caries in children younger than three years.<sup>46</sup> Motivational interviewing, which was first used in the treatment of addiction, has been used to elicit behavior change in patients and has been readily accepted in AI/AN communities. CNOHR used a community-based participatory research methodology to design and implement the randomized controlled trial. To date, this has been the only study that has used a motivational interviewing intervention to elicit behavior change in an AI/AN population. CNOHR, along with AI/AN partners and stakeholders, developed a conceptual framework that guided the studies (see Figure 11).

**Figure 11: Conceptual framework describing community-based participatory randomized controlled trial on motivational interviewing to reduce early childhood caries in an AI/AN community**





The framework identified a series of factors — demographic, behavioral, psychological, health, and others, as well as intervention opportunities — that could improve both oral health and responses to oral health interventions. The framework begins with factors that affect oral health at the macro level but are largely outside the influence of the intervention. The mediators/moderators in the second column in Figure 11 can provide greater understanding of responses to interventions, thereby suggesting valuable strategies for developing maximally effective interventions. The potential intervention opportunities specify future directions for influencing oral health.

A randomized controlled trial that took place on the Pine Ridge Reservation enrolled 600 mothers. The control group for this study received enhanced community services (or health promotion services), including oral health supplies for the child and immediate family members, informational handouts with culturally specific artwork and designs, public service announcements in the newspaper and on the tribal radio, and billboards placed in strategic locations on the reservation focusing on the important early childhood caries risk factors. The motivational interviewing intervention consisted of four visits, the first shortly after childbirth, then at 6, 12, and 18 months of age. The intervention was delivered by tribal laypersons who were trained in motivational interviewing related to oral health. At each of the four motivational interviewing visits, the mother selected two topics from a list of eight options to discuss with the motivational interviewing interventionist. The study outcomes, shown in Figure 11, included decayed, missing, or filled tooth surfaces (dmfs in primary teeth) in children, and oral health knowledge in primary caregivers.

The results of the study found no statistically significant differences in changes in dmfs over time or in time-averaged dmfs levels between the two groups (motivational interviewing and control). Oral health knowledge in mothers was significantly higher in the motivational interviewing group at 12 months and 24 months, but the groups no longer significantly differed at 36 months. No statistically significant differences were seen in oral health behavior scores between the two groups. Overall, therefore, motivational interviewing was not effective in reducing dental caries in AI children in this study. Behavioral pathways, although important in reducing dental caries and improving maternal knowledge and behaviors, are only a part of the larger schema that connects upstream factors to these more proximal factors. As noted above, AI/AN survey respondents reported brushing their teeth at similar rates as non-AI/AN individuals, suggesting that improving oral health knowledge alone is not sufficient for reducing oral health disparities in AI/AN communities



**Finding that . . . sense of cultural awareness to a level that gets an individual [patient] involved and . . . talking about oral health awareness . . . and if they have a motivation and they have a sense of excitement, they'll share it with their friends and family.”<sup>±</sup>**

“Dr. Len” explained what he thinks could help reduce oral health inequities for AI/AN individuals and communities.

The AI community living on the Pine Ridge Reservation faces extreme socioeconomic inequalities and other issues creating psychosocial distress, and these demands, along with a lack of oral health providers and other barriers to care, must be addressed in order to improve oral health and reduce oral health disparities in this and other AI/AN communities.<sup>47</sup>

A community-based three-year cluster-randomized clinical trial was the second trial conducted by CNOHR. It was conducted with Navajo children attending 52 Head Start locations (26 intervention and 26 usual care), where children received an oral health promotion intervention, with outcomes measured as relative caries (dental decay) increments.<sup>48, 49</sup> The intervention was delivered by Navajo tribal laypersons who received a one-week training in oral health and oral hygiene home care, as well as instructional approaches. More than 1,000 mother-child pairs (518 in intervention group; 498 in control group) were enrolled in the study. The behavioral intervention included a set of five child oral health promotion interventions and four caregiver oral health promotion interventions along with the delivery of four fluoride applications for children in the Head Start locations.

While children in both groups saw an increase in dental decay over the study period, children receiving the oral health intervention had a smaller increase in the number of decayed, missing, and filled surfaces than those in the usual care group. This study concluded that the prevalence and severity of dental disease were extremely high in the Navajo population assessed, and recommended that more highly personalized intervention approaches needed to be developed that could be shaped by cultural perspectives attentive to social determinants of health. Parents often did not attend the oral health sessions due to living mostly in remote areas, having very low incomes, and facing additional challenges, such as lack of transportation. The importance of parental engagement cannot be emphasized enough, because when parents were more engaged, study results showed better oral health outcomes for their children.<sup>50</sup>

Other intervention trials using chlorhexidine mouthwash with and without chewing gum containing xylitol, a naturally occurring sugar substitute, were either not successful or discontinued due to difficulties with recruitment, retention, and/or support from the community.<sup>51,52</sup> It is critical to ensure that AI/AN communities are true partners in all research efforts involving their participation. Community-based participatory research approaches centralize the relevance of the research data to the specific community; expedite efforts to effectively translate community interventions into public health policies; and facilitate widespread adoption of preventive practices at the community level. AI/AN communities are strongly supportive of community-based participatory research and are less enthusiastic about research processes that are not based on participatory practices. In fact, as tribal nations assert their sovereignty in research, the use of community-based participatory research has become less optional and more of a prerequisite for research.<sup>53</sup>

## Creating More Equitable and Representative Grant and Philanthropic Efforts

Area Health Boards are regional tribal advisory organizations who serve the local tribes and aim to increase access and funding for health services for their local AI/AN communities. One example of an Area Health Board is [the Southern Plains Tribal Health Board \(SPTHB\)](#), which is a 501(c)(3) nonprofit organization established in 1972 and based in Oklahoma City, Oklahoma. SPTHB provides a unified voice for federally recognized tribes in the Oklahoma City Indian Health Service Area (Oklahoma, Kansas, and Texas; hereafter IHS OKC Area). SPTHB is dedicated to serving the tribal nations of the Southern Plains by improving health outcomes for American Indians through partnerships, advocacy, education, and training. In 50 years of serving tribal nations, SPTHB has given more than \$89 million grant dollars back to tribal communities through a variety of public health initiatives and programs.

More recently, SPTHB has partnered with the Oklahoma State Department of Health Office of Minority Health to provide funds to tribal communities that have been adversely affected by the COVID-19 pandemic. Through technical assistance provided by NOHN, funds were awarded to tribes and tribal-serving community-based organizations that are implementing oral health care delivery and prevention strategies to address socioeconomic factors exacerbated by COVID-19. These funds are identifying innovative ways to bring oral health care to

where people are, to assist with workforce recruitment and retention, to support transportation to dental appointments, to purchase equipment that improves oral health, and to support AI/AN students who are interested in a career in oral health.

CareQuest Institute is a national nonprofit that leverages grantmaking, among other areas of activation, to drive systems change in ways that are informed by, and in partnership with, historically marginalized communities. For the past eight years, CareQuest Institute has invested in AI/AN-driven solutions to respond to the historic and pervasive inequities disproportionately affecting the oral health of AI/AN communities. This has included work with grassroots nonprofits, such as Native American Connections, based in Arizona, to understand the specific needs of low-income AI/AN communities and to increase the engagement of AI/AN communities in local and state policy advocacy efforts.

As previously discussed, systems of oppression that cause disparate health, economic, and social outcomes in AI/AN communities have existed since the colonization of the United States. In addition to grappling with prejudice, institutional racism, persistent challenges to tribal sovereignty, and lack of representation in positions of leadership,<sup>54</sup> AI/AN communities have a long history of being underfunded by the field of philanthropy.<sup>55</sup>

Between 2000 and 2009, the share of overall giving from foundation sources that targeted AI/AN communities declined. Furthermore, when funding opportunities were identified, the vast majority of funding was allocated for specific projects and programs, with very little support for general operations or organizational capacity.<sup>55</sup> Evaluations of funding programs have highlighted a concern that AI/AN leaders have fewer positive experiences with foundation funders compared with nonprofit leaders of other races/ethnicities.<sup>56</sup>

Despite this reduction in grant opportunities, there are several positive indicators that AI/AN communities in and outside of philanthropy are becoming more organized and represented in new spaces, including foundations focusing on reparations for historical injustices and land acknowledgement.<sup>57</sup> There are critical opportunities for the field of philanthropy to become a strategic partner in advancing solutions to historic oral health inequities.

CareQuest Institute has also leveraged grantmaking to strengthen and diversify the oral health workforce to be more representative of, and to better serve, AI/AN communities,

## Summary

AI/AN communities face structural and social barriers to achieving adequate oral health and access to care. These barriers include shortages of oral health providers in the rural areas where many live, as well as discrimination in the dental setting. The poor oral health outcomes experienced by AI/AN individuals as a result of these barriers must be addressed with multifactorial solutions that place AI/AN communities both at the center and as drivers of these effective and culturally driven solutions. Organizations such as the Society of American Indian Dentists are working to improve the oral health system for AI/AN communities by increasing AI/AN representation among dental students and the dental profession. The American Dental Therapy Association, as well as collaboratives such as the Native Oral Health Network, work to develop and expand dental therapy programs. Research efforts aim to better understand the sources of oral health disparities experienced by AI/AN communities and develop effective and culturally responsive community-based strategies for improving oral health. It is also critical to shift from the narrative of personal responsibility, which places blame on historically marginalized AI/AN communities, to one of systemic inequities with opportunities for structural change. As effective solutions are ideally led by and centered on AI/AN communities, grantmaking efforts focused on providing resources to AI/AN partners ensure that these solutions advance community-driven policies.

a proven benefit of racially concordant patient-provider relationships. This includes grant funding to advance community-driven policies and practices expanding culturally meaningful dental provider roles, such as AI/AN dental therapists. Currently, this work in expanding dental provider roles is supported at the federal level as well as through community-driven efforts in Colorado, Florida, Washington, Connecticut, California, and Michigan. Over the past two years, CareQuest Institute funding to the [Northwest Portland Area Indian Health Board](#) has supported some of its efforts to develop and grow the first Dental Health Aide Program in the lower 48 states.

These cross-sectoral funding opportunities are representative of a holistic approach to expanding the capacity of AI/AN communities to promote and achieve optimum oral health, while supporting and prioritizing the development of Native-led solutions. Fundamental to these efforts is ensuring that AI/AN communities are building sustainable oral and overall health systems that shape health, economic, and social policies to reduce and ultimately eliminate inequities.

Multifactorial solutions hold the promise to improve oral health and access to care for AI/AN communities and to create a more accessible, equitable, and integrated health care system.

**The poor oral health outcomes experienced by AI/AN individuals as a result of structural and social barriers must be addressed with multifactorial solutions that place AI/AN communities both at the center and as drivers of these effective and culturally driven solutions.**





# Call to Action

In light of the structural racism and historical and generational trauma that underlie health disparities experienced by AI/AN communities, there is a pressing need for broad distributive justice to ameliorate these inequities. This paper aims to discuss the nature and scope of oral health disparities that AI/AN communities experience, and to provide recommendations to address oral health challenges specifically. It is our hope that recommendations presented in this paper and those of others working in this field are included in much broader discussions for addressing health inequities for those in AI/AN communities.

## 1. Oral Health Research in Partnership

Researchers and funding organizations need to develop collaborative partnerships with AI/AN communities and organizations to actively plan, design, and implement research studies as well as interpret results and co-author publications with AI/AN communities. Members of AI/AN communities are the true experts on the oral health issues affecting their communities, and researchers should serve as partners with community leaders in all research undertaken in AI/AN communities. Additionally, in order to best understand and address disparities, accurate data collection regarding the oral health of AI/AN communities must involve the addition of clinical examination data in order to precisely calculate the

burden of disease in the AI/AN population. Furthermore, inclusion of AI/AN as an individual category and the ability to choose more than one racial category in self-report data are needed to avoid misclassification. Funding AI/AN researchers and organizations directly, engaging communities and participants in all phases of the research process, and having a flexible agenda responsive to environmental demands should be key priorities.

## 2. Education Recommendations

Increasing representation of AI/AN individuals in dental schools — as both students and faculty — is a key component of developing an equitable, inclusive, and diverse oral health profession. Career pathway programs that introduce AI/AN students early in their career exploration to the oral health professions across roles (dentists, dental therapists, dental hygienists, dental assistants) are one potential solution to increase the likelihood of more AI/AN individuals considering the oral health field as a career, although such programs should be a part of broader efforts to increase representation in the oral health professions. Increasing investments in new educational institutions that train dental therapists will ensure that capacity is being built within educational settings to support broader workforce

models. Scholarships and grant funding should focus on the unique needs and recruitment of AI/AN students in the oral health professions. Furthermore, it is key to engage AI/AN oral health providers as mentors for AI/AN students applying for dental educational programs. These programs, in turn, must recruit and retain high-quality AI/AN graduates on their faculty to increase the representation of and support for subsequent generations of AI/AN oral health providers.

### 3. Workforce Recommendations

Enhancing the availability of dental care services through the expansion of the oral health workforce is critical to address oral health disparities in AI/AN communities. Developing career pathway programs for AI/AN individuals to enter all dental workforce positions (dentists, dental therapists, dental hygienists, and dental assistants) should be a priority as part of a larger effort to expand the oral health workforce. In villages in Alaska and some reservations, providing advanced services involves both increases in travel funds, to send patients to specialists who can provide needed complex care, and recruitment of selected specialists to periodically visit the remote areas with sufficient support staff and equipment. Finally, oral health providers caring for members of AI/AN communities but who were not born and/or raised in such communities MUST receive training in cultural competency and humility.

### 4. Community/NonProfit/Grantmaking Recommendations

The field of philanthropy should invest more in AI/AN communities to strengthen their capacity to design, elevate, and implement sustainable solutions to historic inequities. Investments in AI/AN communities should allow for strategies that address the regulatory, policy, and systemic problems that drive health and oral health

disparities so as to not just focus on philanthropic band-aids. Efforts in the areas of grant funding for AI/AN communities must focus on programs led by these communities themselves. As noted above, members of AI/AN communities are most knowledgeable about the unique needs of their own communities. Furthermore, educational efforts of grantmaking partners should include education on historical and intergenerational trauma, cultural competency and humility, and holistic approaches to improving the health of AI/AN communities.

### 5. Policy Recommendations

In late 2022, Congress approved a spending package that included advance appropriations for the IHS, meaning that services provided by IHS will remain intact in the face of any disruptions in federal funding in Fiscal Year 2024.<sup>58</sup> While this is important, another valuable step would be increasing the budget for the Purchased/Referred Care Program, which would allow IHS to refer more patients for specialty care, expanding access to specialized care that may not be readily available at local tribal or IHS facilities.<sup>59</sup> State and federal oral health care policies must be made in collaboration and consultation with tribal leaders and IHS. These engagements can take various forms: “hot topics” meetings, weekly newsletters, one-pagers communicating policy language, and community review processes. Many states have established a tribal consultation policy, similar to that in Oklahoma, in which the state Department of Health regularly engages in consultation with the state’s sovereign tribal governments on all Medicaid policies that affect AI/AN communities.<sup>60</sup> Similarly, the Arizona Health Care Containment System (Arizona’s Medicaid program) includes a Tribal Liaison who regularly communicates with tribes in Arizona, IHS, and tribal-operated health care facilities to address issues affecting the health of its AI/AN members.<sup>61</sup>

## Endnotes

+ In earlier versions of this report, we erroneously reported the number of AI/AN dental school applicants in 2021 as eight. This number (eight) reflects the number of first-time, first-year dental school enrollees identifying as AI/AN in 2021. This reflects a decline from 35 enrollees in 2006 and a slight increase from 5 in 2019. We have corrected the text to reflect that there were 19 AI/AN dental school applicants in 2021.

± After informed consent was received, qualitative data were collected using semi-structured interviews from dentists affiliated with the Society of American Indian Dentists (SAID). Each of the dentists who participated is an AI/AN dentist currently or recently working as an IHS employed dentist, an IHS-affiliated practice, or at tribal practice. Participants were invited via email by a SAID correspondent to participate in an interview about their journey to become a dentist. Interviews were conducted and recorded using Microsoft Teams and lasted approximately 30 minutes. The recordings were then transcribed by the interviewer and coded using Dedoose software. This research received an exempt determination from WCG IRB in November 2022.

§ Nearly half (48.2%) of the AI/AN panelists came from the AmeriSpeak® probability panel, and 51.8% came from an additional opt-in non-probability online sample (Lucid Holdings, Inc.) for the sake of oversampling. It should be noted that those included in the AI/AN sample for this paper included those who reported other races or ethnicities in addition to AI/AN race. Of the AI/AN sample, 36.0% were classified as “other, non-Hispanic” (meaning AI/AN), 30.6% identified as Hispanic ethnicity in addition to AI/AN race, and 33.4% identified as at least one other race besides AI/AN (excluding Hispanic ethnicity).

\* This discussion is representative of the personal experiences and thoughts of Dr. Felicia Frizzell (SAID immediate past President), Dr. Cristin Haase (SAID President), and Mr. Tommie Chavis II (student dentist and SAID student board member), and in this capacity, they do not represent any organization other than the Society of American Indian Dentists.



# Native Oral Health Network

The Native Oral Health Network (NOHN), established in 2017, is a program administered through the Southern Plains Tribal Health Board (SPTHB). NOHN membership includes tribes, tribal nations, and other public health partners that connect around the vision of health, wellness, and quality of life through oral health advancement. With momentum and capacity building since 2017, NOHN now consists of more than 160 members who bring more than 31 unique areas of expertise. NOHN has collaboratively developed resources and partnerships that have strengthened efforts to improve the oral health of AI/AN communities.

Last year's evaluation of NOHN found that its members now span 19 states and Canada. Starting in 2022, NOHN's Core Team now includes state representatives from Alaska, Oklahoma, Washington, Oregon, New Mexico, and Tennessee, as well as representatives from SAID.

From 2017–2020, NOHN crafted and implemented structural operations and processes to sustainably serve their communities. In 2019, NOHN conducted their first strategic planning session, which included identifying research priorities, communication and outreach strategies, peer-to-peer training and collaboration opportunities, and data projects to accompany core founding qualities. To date, NOHN has worked collectively to complete a variety of resources and tools, which can be found at <https://nohn.spthb.org>.

Over the last several years, NOHN has built capacity to promote oral health in communities by establishing and strengthening partnerships with tribes, tribal organizations, and other salient partners. The next step in their capacity building is to evaluate the internal work and processes to date and focus on needs assessments to identify socioeconomic factors that impede access or attainment of good oral health in tribal communities. By leveraging the work and partnerships built, NOHN will administer two key assessments that complement the efforts of their regional partners. Although these assessments will target tribes in the IHS Oklahoma City Area, in addition to consumers and nontraditional partners, the tools will be made available to all NOHN members to support their area efforts. These assessments will include, but will not be limited to, financial, transportation, psychological, and workforce barriers to obtaining oral health care. NOHN will also evaluate community-based structures in place that bring oral health care and prevention strategies directly to tribal communities, outside of a dental office. These efforts

**NOHN membership includes tribes, tribal nations, and other public health partners that connect around the vision of health, wellness, and quality of life through oral health advancement.**

will assist NOHN in: 1) identifying opportunities to improve the social determinants of oral health care; and 2) identifying and promoting efforts by tribal and tribal-serving organizations and communities that are incorporating innovative ways to improve the overall health of their communities through oral health promotion and care strategies.

In addition to internal and external evaluation activities, NOHN's 2023–2026 Strategic Plan includes objectives that display the growth and reach of SPTHB's progress in addressing oral health in tribal communities. Those include:

- Bring together NOHN members and partners through the establishment of an annual summit.
- Establish a process to collect and share success stories and best practices in tribal oral health.
- Create a toolkit that provides information and resources for organizing community-based projects or services within tribal communities.
- Prioritize sustainability and continued expansion of NOHN.
- Continue to develop resources and provide support to tribes and tribal-serving organizations.
- Continue to provide training and facilitate peer-to-peer collaboration and networking opportunities.
- Advocate for policies and systems-change efforts that promote the improvement of oral health in tribal communities.

In 2022, the five states with the largest Native populations (in descending order) were California, Oklahoma, Arizona, Texas, and New Mexico.<sup>22</sup>

Los Angeles County (California) is the county with the most Native American residents in the US.<sup>22</sup> The five metropolitan areas with the highest proportion of Native American residents are Tulsa, Oklahoma (14%), Stockton, California (7.8%), Albuquerque, New Mexico (7.7%), Oklahoma City, Oklahoma

(7.6%), and Tucson, Arizona (6.1%).<sup>62</sup> The most populous reservations are Navajo Nation in Arizona and New Mexico (169,321), Pine Ridge in South Dakota (16,906), Fort Apache in Arizona (13,014), Gila River in Arizona (11,251), and Osage in Oklahoma (9,920).<sup>63</sup>

	States with Largest AI/AN Populations <sup>22</sup>		Metropolitan Areas with Highest Percentage of AI/AN Residents		Most Populous Reservations
<b>1</b>	California:	806,874	Tulsa, OK:	14%	Navajo Nation (AZ/NM): 169,321
<b>2</b>	Oklahoma:	535,675	Stockton, CA:	7.8%	Pine Ridge (SD): 16,906
<b>3</b>	Arizona:	405,281	Albuquerque, NM:	7.7%	Fort Apache (AZ): 13,014
<b>4</b>	Texas:	370,697	Oklahoma City, OK:	7.6%	Gila River (AZ): 11,251
<b>5</b>	New Mexico:	229,071	Tucson, AR:	6.1%	Osage (OK): 9,920

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# Appendix

## Appendix A. Weighted Percentages of AI/AN Probability and Non-Probability Samples in State of Oral Health Equity in America Survey

Sample	Opt-In Non-Probability Sample	AmeriSpeak Probability Sample	AI/AN Total
Totals	282	282	564
<i>Race/Ethnicity</i>			
White, non-Hispanic	0	0	0
Black, non-Hispanic	0	0	0
Other, non-Hispanic	168 (48.5%)	66 (22.7%)	234 (36.0%)
Hispanic	60 (36.6%)	41 (24.2%)	101 (30.6%)
2+, non-Hispanic	54 (15.0%)	175 (53.2%)	229 (33.4%)
Asian, non-Hispanic	0	0	0
<i>Age group</i>			
18–29	94 (34.4%)	27 (15.2%)	121 (25.1%)
30–44	106 (33.7%)	77 (24.4%)	183 (29.2%)
45–59	56 (20.8%)	71 (25.5%)	127 (23%)
60+	26 (11.1%)	107 (34.9%)	133 (22.6%)
<i>Gender</i>			
Female	141 (47.6%)	149 (51.6%)	290 (49.5%)
Male	131 (48.8%)	129 (46.4%)	260 (47.6%)
Transgender	4 (1.8%)	1 (0.5%)	5 (1.2%)
Does not identify as male, female, or transgender	5 (1.7%)	3 (1.5%)	8 (1.6%)
<i>Education</i>			
Less than high school	22 (17.5%)	19 (14.3%)	41 (15.9%)
High school graduate or equivalent	92 (37.4%)	31 (24.6%)	123 (31.3%)
Vocational/tech school/associate	120 (31.1%)	141 (34.8%)	261 (32.9%)
Bachelor's degree	38 (9.7%)	50 (14.0%)	88 (11.8%)
Post grad study/professional degree	10 (4.2%)	41 (10.7%)	51 (8.1%)



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## CareQuest Institute for Oral Health

CareQuest Institute for Oral Health® is a national nonprofit championing a more equitable future where every person can reach their full potential through excellent health. We do this through our work in grantmaking, research, health improvement programs, policy and advocacy, and education as well as our leadership in dental benefits and innovation advancements. We collaborate with thought leaders, health care providers, patients, and local, state, and federal stakeholders to accelerate oral health care transformation and create a system designed for everyone. To learn more, visit [carequest.org](https://carequest.org).

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