



Department of Health and Social Services  
William H. Hogan, MSW, Commissioner

Division of Public Health  
Ward Hurlburt, MD, MPH, CMO/Director

Editor:  
Beth Funk, MD, MPH  
Bradford D. Gessner, MD, MPH

3601 C Street, Suite 540  
Anchorage, Alaska 99503

<http://www.epi.Alaska.gov>

Local (907) 269-8000  
24 Hour Emergency (800) 478-0084

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## High Prevalence of Early Childhood Caries, Alaska, 2005 and 2007

### Background

Dental caries is an infectious disease that is the most common chronic disease of childhood. Early childhood caries (ECC) is a severe form of the disease defined as caries on the anterior maxillary primary teeth of infants and children under 6 years of age. ECC is found throughout the general population and is a significant public health problem in selected populations.<sup>1</sup> Prevention and management of ECC, which can lead to serious disability, extend beyond the dental office to medical and public health professionals.<sup>2</sup>

### Methods

In 2005 and 2007 the Alaska Oral Health Program contracted for dental assessments of children enrolled in kindergarten and Head Start to collect observational data on dental caries, including caries of maxillary anterior primary teeth (a measure of ECC). Dentists utilized the "Basic Screening Survey" protocol.<sup>3</sup> Forty seven percent of 1725 kindergarteners (n=801) at 30 randomly selected Alaska schools participated. Head Start children at 31 sites (n=571) were selected using a non-probability, quota sampling methodology.

### Results

Of the 801 surveyed kindergarteners, 41% (328) had evidence of current or treated tooth decay (caries experience [CE]). CE was identified in 67% of 133 Alaska Native children, compared to 31% of 415 white and 44% of 249 other non-Native children (race was not known for 4 children). ECC was over four times as prevalent among Alaska Native (27%) compared to white (6%) kindergarteners (Table 1). Sixty percent of kindergarteners with CE had untreated caries. The highest prevalence of untreated CE was observed among non-white, non-Native children who did not receive Medicaid (69%) (Figure 1).

Children enrolled in Head Start had prevalences of CE and ECC of 69% (n=393) and 50% (n=285), respectively. Eighty four percent of 423 Alaska Native children enrolled in Head Start had CE - twice the Healthy People 2010 Target. At 61%, Alaska Native children in Head Start had the highest ECC prevalence identified.

### Discussion

Overall measures of dental health in Alaskan kindergartens mask serious deficiencies in oral health status for Alaska Native and non-white, non-Native children. Overall estimates of dental caries experience and untreated dental decay meet Healthy People 2010 targets of 42% and 21%. For minority sub-populations and for Alaska Native children specifically, these indicators fall far short of 2010 targets.

The high prevalence of untreated caries among Head Start children demonstrates the need to provide dental coverage for children younger than age 3 years as recommended by the American Academy of Pediatrics (AAP).<sup>4</sup> Early prevention messages are critical as ECC can begin as soon as a child's teeth erupt and can progress rapidly. Manifestations of ECC may go beyond pain and infection, potentially affecting speech and communication, nutrition, productivity and quality of life. Because access to dental care is limited for children enrolled in Medicaid, particularly those under age 3 years, primary care providers should consider application of fluoride varnish as part of early preventive care for children age 1-3 years.<sup>4</sup>

### Recommendations

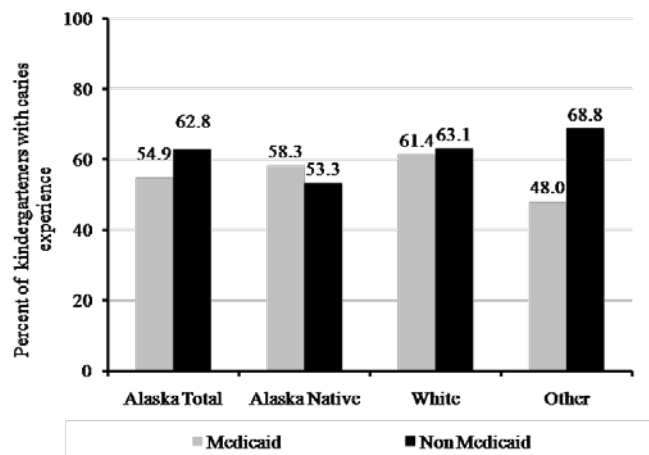
- In addition to early referral to dental services, medical providers should be involved in ECC prevention and treatment, including evaluation of dental health risks for children under age 3 years.<sup>5</sup>
- Medical providers should provide education to parents on appropriate dental care including promotion of water and milk (rather than juice or other sweetened drinks), daily tooth brushing, oral fluoride supplementation when appropriate and daily vitamin D supplementation at 400 IU per day.

**Table 1. Caries Experience (CE) untreated caries, and early childhood caries\*(ECC), per hundred children, Alaska, 2007 (kindergarten) and 2005 (Head Start).**

	Population prevalence of CE	Population prevalence of untreated caries	% children with CE who had untreated caries	Population prevalence of ECC	% children with CE who had ECC
Healthy People 2010 Targets	42 <sup>S</sup>	21 <sup>S</sup>	N/A	11 <sup>#</sup>	N/A
KINDERGARTEN					
Alaska Native	66.9	37.0	55.3	26.9	39.3
White	31.1	19.3	62.7	6.3	20.3
Other	43.8	25.7	59.6	16.4	36.7
HEAD START					
Alaska Native	84.0	51.0	60.7	61.0	72.4
White	48.0	24.0	50.0	19.0	39.6
Other	45.7	28.0	50.0	19.0	41.3

\* defined as cavities on anterior maxillary primary teeth, kindergarten and Head Start children  
S Targets for children 6-8 years. # Target for CE ages 2-4 years.

**Figure 1. Untreated dental caries rates by Medicaid and Alaska Native status, kindergarteners, Alaska 2007.**



### References

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