

WISCONSIN — DEPARTMENT OF HEALTH SERVICES



**2009 — Healthy Smiles
for a Healthy Head Start
The Oral Health of Wisconsin's
Head Start Children**

Current Status, Trends and Disparities



ACKNOWLEDGEMENTS

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For additional information on the Wisconsin Oral Health Program please contact Melissa Olson at (608) 267-3945 or visit our website at http://dhs.wisconsin.gov/health/Oral_Health/



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INTRODUCTION

Introduction

According to the Surgeon General's report, *Oral Health in America: A Report of the Surgeon General*, tooth decay is the single most common chronic childhood disease.¹ However, new research from the Centers for Disease Control and Prevention (CDC) generally showed improvement in important oral health indicators of the United States population in the past ten years. Yet, one notable change is an increase in the percentage of children aged two to five years with dental caries, from 24 percent in 1988-1994 to 28 percent in 1999-2004.² As with general health, oral health status tends to vary based on socioeconomic factors, like income and education. Children enrolled in Head Start, like other children from low-income families, experience more tooth decay than children from families with higher incomes. The impact of oral disease on children is significant. Early tooth loss caused by tooth decay can result in delays in growth and development. Children experiencing chronic dental pain are unable to focus, may have more difficulty learning, and are more likely to miss school.

Head Start is a comprehensive child development program that serves children from birth to age five, pregnant women, and their families. Head Start works with low-income families to help children develop socially, cognitively, emotionally, and physically in order to succeed in school and throughout life. Children enrolled in Head Start take part in a variety of educational activities, eat healthy meals and snacks, receive medical and oral health care, and have the benefit of playing in safe indoor and outdoor environments. In Wisconsin there are 42 Head Start and 20 Early Head Start programs managed by 44 unique organizations. See Appendix B for a table of the programs in Wisconsin.



Methods

Healthy Smiles for a Healthy Head Start is a representative sample of Wisconsin's 16,000 Head Start children. The sampling frame for the survey consisted of all Head Start programs in Wisconsin including tribal and migrant/seasonal programs. The sampling frame was stratified by the Department of Health Services (DHS) five regions and then probability proportional to size sampling was used to randomly select programs within each region. Passive consent was used for the survey with a response rate of 84 percent.

Dental hygienists completed the screenings using gloves, flashlights, and disposable mouth mirrors. The diagnostic criteria outlined in the Association of State and Territorial Dental Director's publication *Basic Screening Surveys: An Approach to Monitoring Community Oral Health* were used.³ The screeners attended a training session, which included a didactic review of the diagnostic criteria along with a hands-on calibration session.



The four clinical indicators collected included: caries experience, untreated decay, Early Childhood Caries (ECC), and treatment urgency. Untreated decay is defined as a one-half millimeter or larger hole in the tooth surface. Caries

experience is the presence of untreated decay, a filling or crown (which presumably once was a cavity), or a permanent molar tooth that is missing because it was extracted as a result of caries. Any child with one of his or her six upper front teeth either decayed, filled, or missing due to caries was considered to have ECC. Children with no obvious problems were coded as having no treatment needs. Children with caries without accompanying signs or symptoms of pain, infection, or swelling were coded as having early treatment needs while those with accompanying signs or symptoms were coded as having urgent treatment needs. In addition, demographic indicators including date of birth and gender were obtained from the Head Start staff while the child's race/ethnicity was determined by the screener.

The data were adjusted to account for the complex sampling scheme and non-response. Data analysis, which included frequencies, cross tabs, and 95 percent confidence intervals was completed using SAS version 9.1.

Results

A total of 1,212 Head Start children had an oral health screening at 13 different sites. Table 1 shows the demographics of the children included in the sample. The age range was three to five years old, where 56 percent of children at the time of the screening were four years old. The largest racial/ethnic group was white (36%) followed closely by Hispanic (33%). Thirty-nine percent of Head Start children screened lived in the Southeastern region, the region of the state with the greatest population density and the largest number of children enrolled in Head Start.

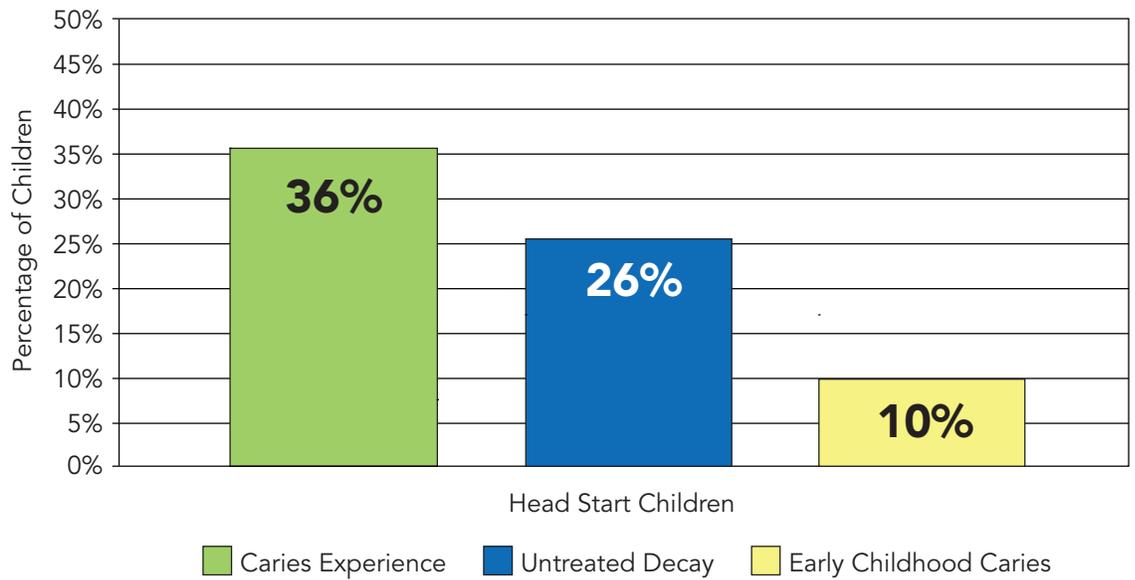
Table 1: Age, Gender, and Race/Ethnicity of Head Start Children with an Oral Health Screening

Variable	Number of Children	Percentage of Children
Total	1,212	100
Age		
3 years	299	24.7
4 years	681	56.2
5 years	232	19.1
Gender		
Female	587	48.4
Male	612	50.5
Missing	13	1.1
Race/Ethnicity		
White	437	36.1
Hispanic	398	32.8
African American	188	15.5
Other*	189	15.6
Region		
Northeast	221	18.2
North	155	12.8
Southeast	474	39.1
South	204	16.8
West	158	13.0

* Other includes: American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multi-racial and unknown.

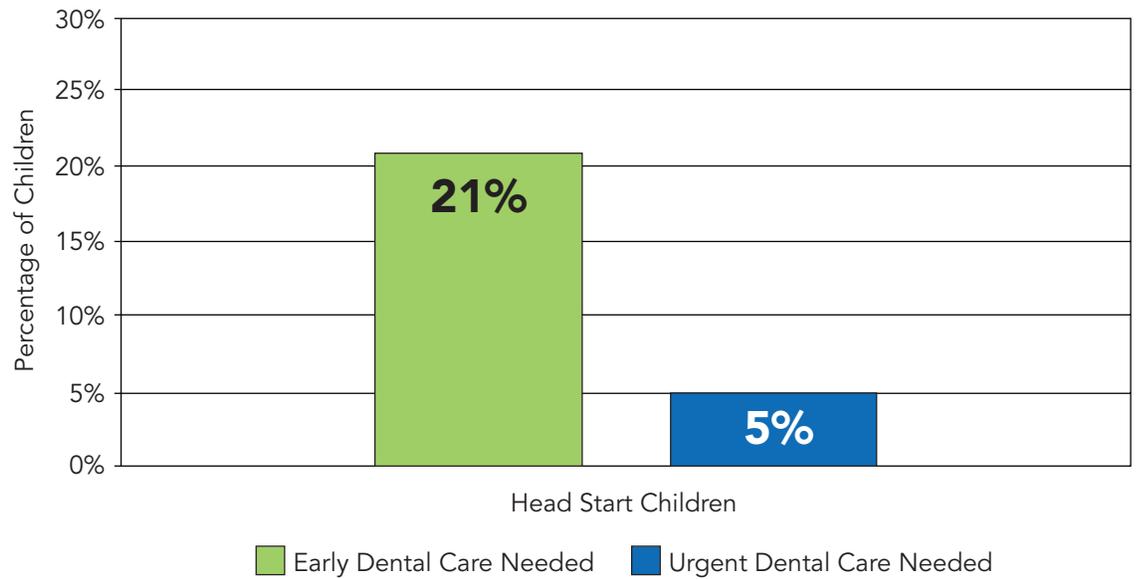
Although Head Start mandates that all enrolled children receive dental care, in Wisconsin more than one out of every four Head Start children screened had untreated tooth decay. In addition, almost 10 percent had Early Childhood Caries and nearly 36 percent had caries experience.

Figure 1: Percentage of Wisconsin's Head Start Children with Caries Experience, Untreated Decay and Early Childhood Caries 2008-09



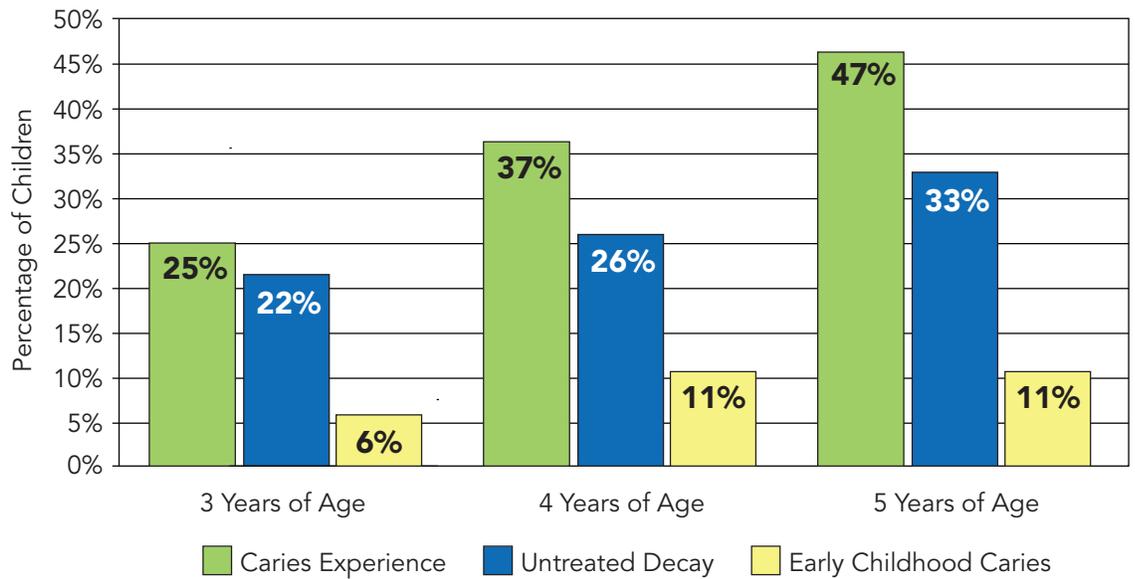
More than one out of every four children screened needed dental care. About 21 percent of the children had early treatment needs, meaning that they had untreated decay without accompanying signs or symptoms of pain, infection, or swelling. Five percent of the children had urgent treatment needs, which means they needed care within 24 to 48 hours due to decay with accompanying signs and symptoms (Figure 2).

Figure 2: Percentage of Wisconsin's Head Start Children Needing Early or Urgent Dental Care 2008-09



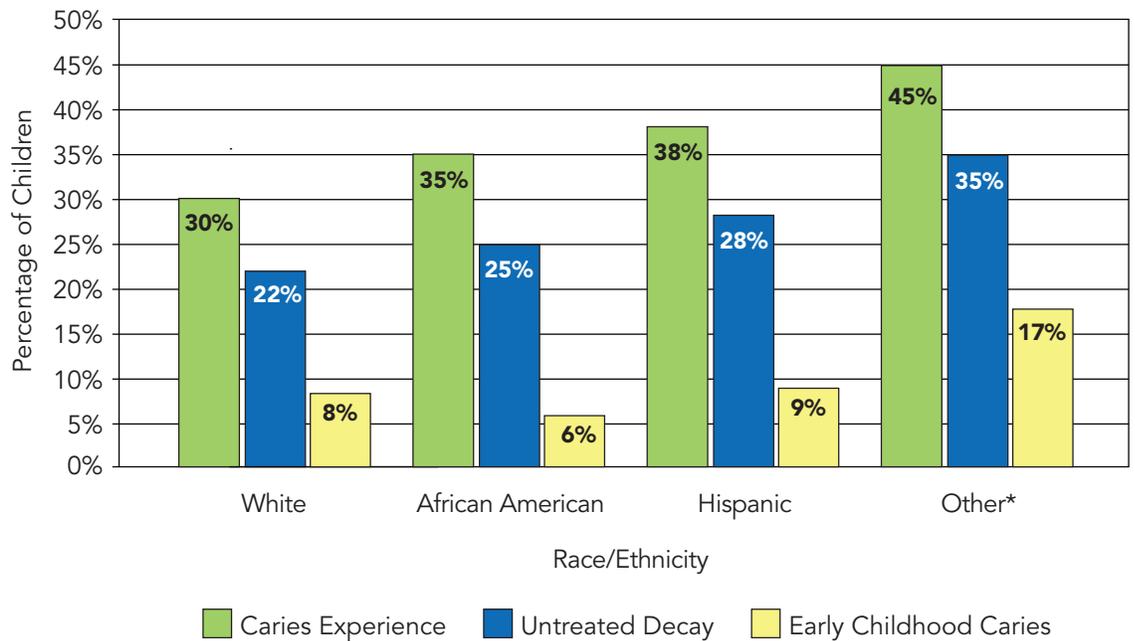
As expected the older children in the sample had more caries experience and untreated decay compared to the younger children. Five year olds who were screened were almost twice as likely to have caries experience (47%) compared to the three year olds screened (25%). In addition, about 33 percent of five year olds had untreated decay compared to 22 percent of three year olds (Figure 3).

Figure 3: Percentage of Wisconsin's Head Start Children with Caries Experience, Untreated Decay and Early Childhood Caries by Age 2008-09



Although all enrolled Head Start children are from low income families, racial/ethnic disparities in oral health status persist. Only 30 percent of white children screened had caries experience compared to 35 percent among African Americans, 38 percent among Hispanics, and 45 percent among children of other racial/ethnic groups. Prevalence of untreated decay and ECC was also much higher among children in the Other category (which included American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multi-racial, and unknown) compared to white children (Figure 4).

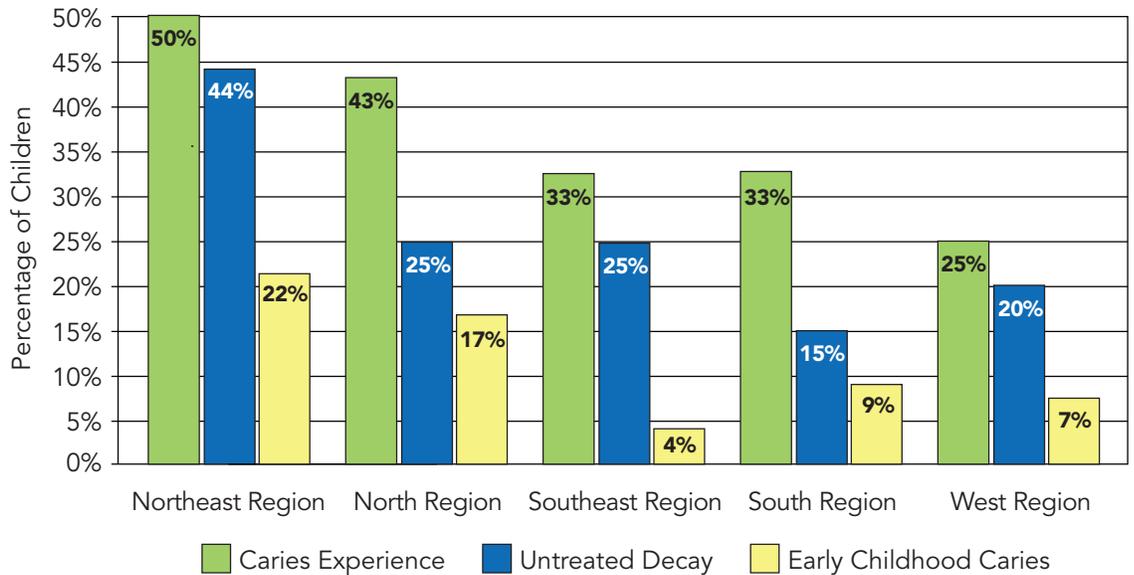
Figure 4: Percentage of Wisconsin's Head Start Children with Caries Experience, Untreated Decay and Early Childhood Caries by Race/Ethnicity 2008-09



* Other includes: American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multi-racial and unknown.

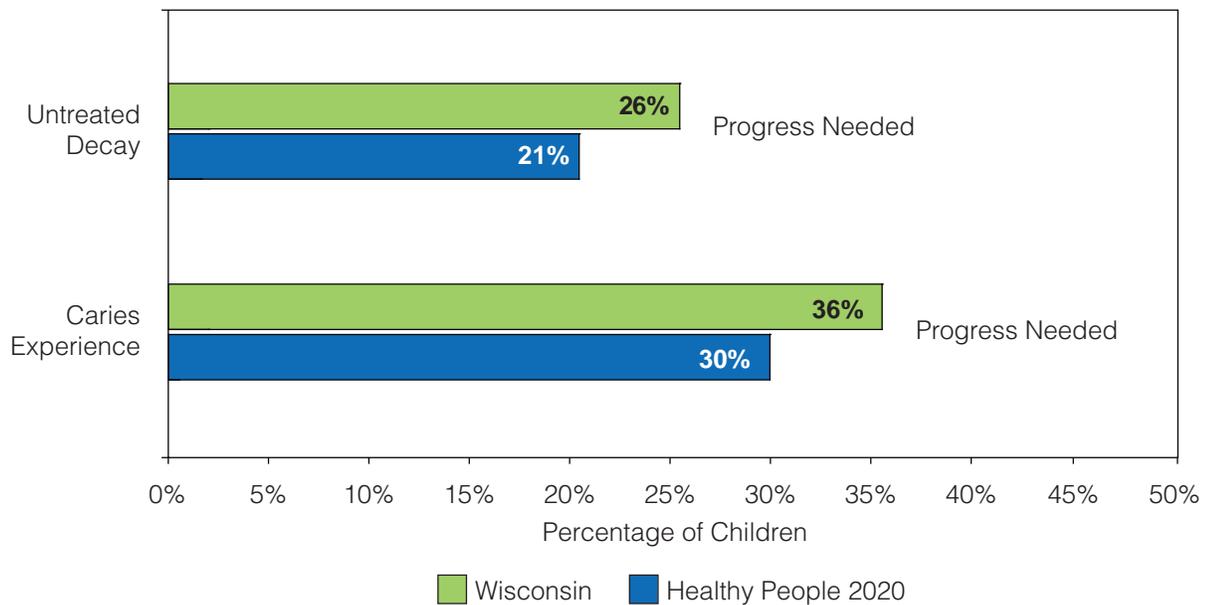
Disparities in oral health status also exist by region of the state. Children in the Northeastern and Northern regions tended to have poorer oral health compared to Head Start children in other regions of the state. Children screened in the Northeastern region were almost three times as likely to have untreated decay (44%) compared to those screened in the Southern region (15%). In addition, children in the Northeastern region were five times as likely to have Early Childhood Caries (22%) compared to children in the Southeastern region (4%) (Figure 5).

Figure 5: Percentage of Wisconsin's Head Start Children with Caries Experience, Untreated Decay and Early Childhood Caries by Region 2008-09



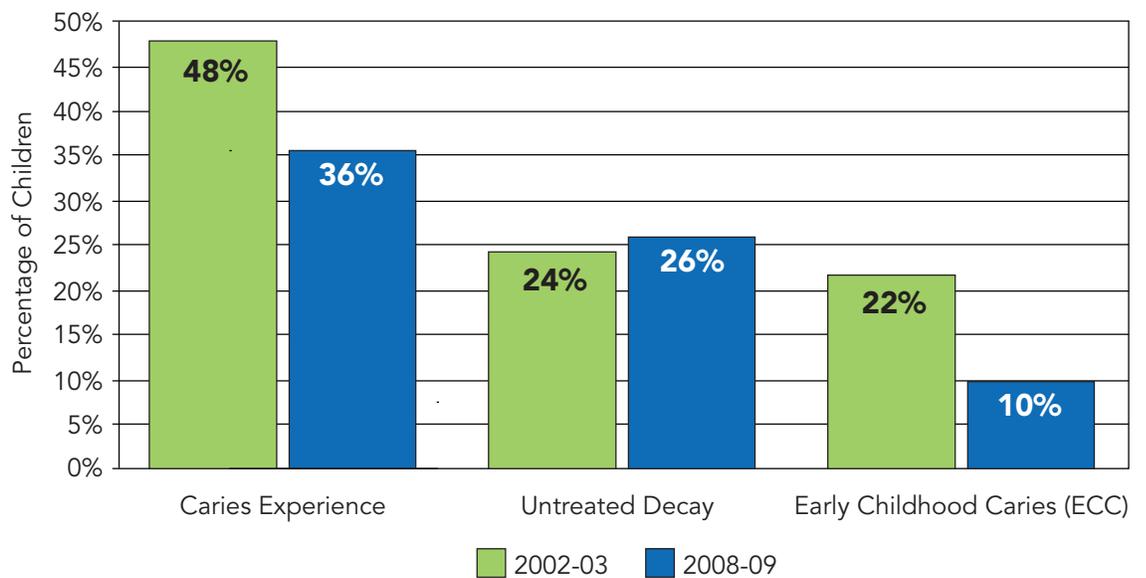
Healthy People 2020 includes two objectives regarding the oral health status of children between the ages of three and five.⁴ Much progress needs to occur for Wisconsin to meet the *Healthy People 2020* objectives for untreated decay and caries experience. The objective for untreated decay is 21.4 percent; while about 26 percent of children screened had untreated decay. Likewise, the objective for caries experience is 30.0 percent; while nearly 36 percent of children screened had caries experience (Figure 6).

Oral Health of Wisconsin's Head Start Children Compared to Healthy People 2020 Objectives



The first *Healthy Smiles for a Healthy Head Start* survey was conducted during the 2002-03 school year.⁵ There has been improvement in caries experience and Early Childhood Caries since the first study. However, the prevalence of untreated decay still remains unchanged. It is important to note that the first survey had a much smaller sample size, used active consent, and included children between the ages of three and six instead of three and five. These factors may have contributed to some of the changes observed between the 2002-03 and 2008-09 surveys.

Figure 7: Percentage of Wisconsin's Head Start Children with Caries Experience, Untreated Decay and Early Childhood Caries 2002-03 and 2008-09



Conclusion

Much progress is still needed to improve the oral health status of Wisconsin's Head Start children and to meet the *Healthy People 2020* objectives. One in every four children had untreated decay and one in three children had caries experience. In addition, racial/ethnic disparities and geographic disparities need to be addressed. Almost one out of every two children (45%) in the Other race/ethnicity category had caries experience compared to 30 percent among white children. In addition, children in the Northeastern region were almost three times as likely to have untreated decay compared to children in the Southern region



Table 2: Oral Health of Wisconsin Head Start Children (N=1,212)

Variable	Percent of Children	95% Confidence Interval
Caries Experience	35.7	33.0 – 38.5
Untreated Decay	26.4	23.9 – 28.9
Early Childhood Caries (ECC)	9.6	8.0 – 11.1
Needing Early Dental Care	21.3	18.9 – 23.6
Needing Urgent Dental Care	5.3	4.0 – 6.6

Table 3: Oral Health of Wisconsin Head Start Children, by Age Percent (95% Confidence Interval)

Variable	Age		
	3 Years (n=299)	4 Years (n=681)	5 Years (n=232)
Caries Experience	25.3 (20.1 – 30.4)	36.7 (33.1 – 40.3)	46.6 (39.9 – 53.3)
Untreated Decay	21.6 (16.7 – 26.5)	26.3 (23.1 – 29.6)	32.7 (26.5 – 39.0)
Early Childhood Caries (ECC)	6.0 (3.3 – 8.6)	10.7 (8.6 – 12.9)	10.9 (6.8 – 14.9)
Needing Early Dental Care	15.2 (11.0 – 19.5)	21.6 (18.5 – 24.7)	28.1 (22.1 – 34.2)
Needing Urgent Dental Care	6.4 (3.5 – 9.3)	5.1 (3.4 – 6.7)	4.6 (1.8 – 7.5)

**Table 4: Oral Health of Wisconsin Head Start Children, by Race/Ethnicity
Percent (95% Confidence Interval)**

Variable	Race/Ethnicity			
	White (n=437)	African American (n=188)	Hispanic (n=398)	Other* (n=189)
Caries Experience	30.0 (25.6 – 34.4)	34.8 (27.8 – 41.9)	38.0 (33.2 – 42.9)	45.0 (37.9 – 52.2)
Untreated Decay	21.8 (17.8 – 25.7)	25.1 (18.7 – 31.6)	28.1 (23.6 – 32.6)	34.7 (27.9 – 41.5)
Early Childhood Caries (ECC)	8.2 (5.7 – 10.8)	5.7 (2.1 – 9.2)	9.4 (6.8 – 12.1)	17.3 (12.5 – 22.1)
Needing Early Dental Care	17.3 (13.6 – 20.9)	23.1 (16.9 – 29.4)	24.0 (19.8 – 28.3)	22.2 (16.0 – 28.4)
Needing Urgent Dental Care	5.1 (2.9 – 7.2)	2.0 (0.0 – 4.2)	4.0 (2.0 – 6.0)	12.5 (7.8 – 17.1)

* Other includes: American Indian/Alaska Native, Native Hawaiian/Pacific Islander, multi-racial and missing/unknown

**Table 5: Oral Health of Wisconsin Head Start Children, by Region
Percent (95% Confidence Interval)**

Variable	Region				
	Northeast (n=221)	North (n=155)	Southeast (n=474)	South (n=204)	West (n=158)
White Non-Hispanic	32.1	65.8	20.7	14.7	86.1
Caries Experience	49.5 (42.9 – 56.2)	43.2 (35.3 – 51.1)	32.9 (28.7 – 37.2)	32.8 (26.3 – 39.3)	25.3 (18.5 – 31.2)
Untreated Decay	43.9 (37.3 – 50.5)	25.1 (18.3 – 32.1)	24.9 (21.0 – 28.8)	15.2 (10.2 – 20.2)	19.6 (13.4 – 25.9)
Early Childhood Caries (ECC)	21.7 (16.2 – 27.2)	17.4 (11.4 – 23.5)	4.4 (2.6 – 6.3)	9.3 (5.3 – 13.3)	7.1 (3.0 – 11.1)
Needing Early Dental Care	34.1 (27.8-40.4)	19.4 (13.1-25.6)	20.7 (17.0-24.3)	13.2 (8.5-17.9)	15.2 (9.5-20.8)
Needing Urgent Dental Care	10.0 (6.0 – 14.0)	5.8 (2.1 – 9.5)	4.4 (2.6 – 6.3)	2.0 (0.0 – 3.9)	5.1 (1.6 – 8.5)

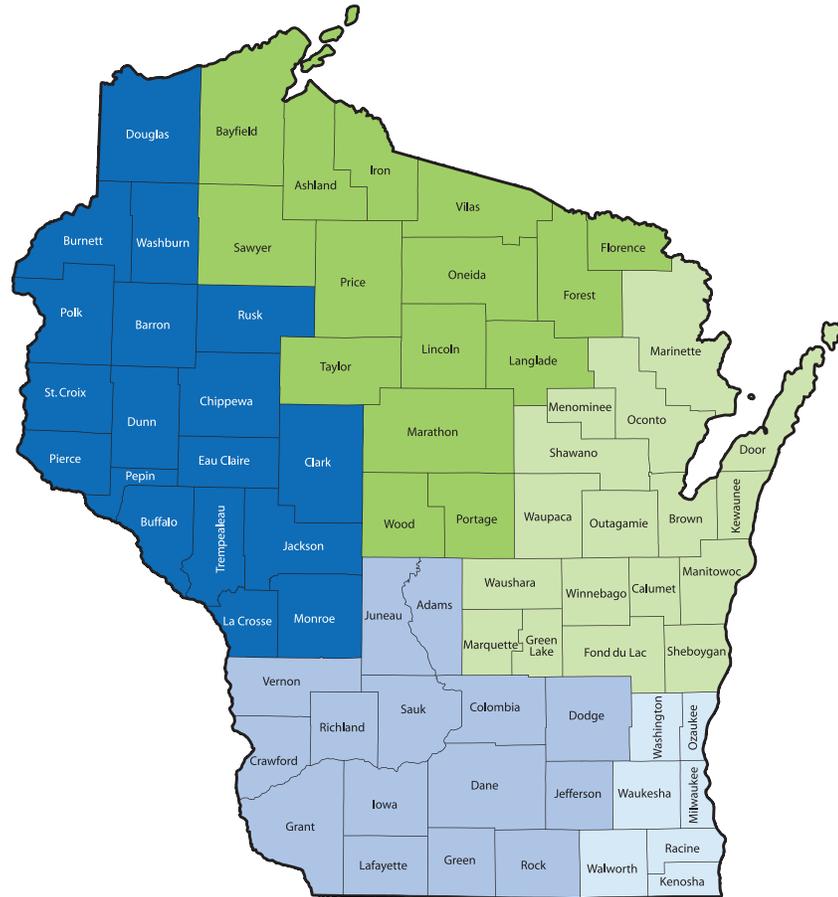
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4. U.S. Department of Health and Human Services. *Healthy People 2020, Summary of Objectives*. Available at: <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicid=32>
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APPENDIX A

Wisconsin Department of Health Services Regions by County



■ Northeastern ■ Northern ■ Southeastern ■ Southern ■ Western

Appendix B: Head Start and Early Head Start Program Names and Locations

Program Name	County Location(s)
ADVOCAP, Inc. Head Start	Fond du Lac, Green Lake
Bad River Tribal Council Head Start	Ashland (Tribe Only)
CAP Services, Inc. Head Start & Early Head Start	Marquette, Portage, Waupaca, Waushara
CESA 7 Head Start & Early Head Start	Manitowoc, Brown
CESA 11 Head Start & Early Head Start	Barron, Chippewa, Dunn, Pepin, Pierce, Polk, St. Croix
Council for the Spanish Speaking Guadalupe Early Head Start	Milwaukee
Dane County Parent Council, Inc. Head Start & Early Head Start	Dane, Green
Family & Child Learning Centers of N.E.W. Head Start & Early Head Start	Door, Florence, Forest, Kewaunee, Langlade, Lincoln, Marinette, Oconto, Oneida, Vilas
Family Forum, Inc. Head Start & Early Head Start	Ashland, Bayfield, Douglas, Iron, Price
Green Bay Public Schools Head Start	Brown (School District Only)
Head Start Child & Family Development Centers, Inc.	Crawford, La Crosse, Monroe, Vernon
Ho-Chunk Head Start	Jackson, Juneau, Marathon, Monroe, Sauk, Shawano, Wood (All Tribe Only)
Indianhead Community Action Agency Head Start	Burnett, Clark, Rusk, Sawyer, Taylor, Washburn
Jefferson County/CESA 2 Head Start	Jefferson, Kenosha (West Kenosha County Only)
Kenosha Achievement Center Early Head Start	Kenosha
Kenosha Unified School District Head Start Child Development Center	Kenosha (School District Only)
La Casa de Esperanza, Inc. Early Head Start	Waukesha
Lac Courte Oreilles Head Start & Early Head Start	Sawyer (Tribe Only)
Marathon County Child Development Agency, Inc. Head Start	Marathon
Menominee Nation Early Childhood Head Start & Early Head Start	Menominee (Tribe Only)
Merrill Area Public Schools/Little Learners' Head Start	Lincoln (School District Only)
Milwaukee Public Schools Head Start	Milwaukee (School District Only)
National Centers for Learning Excellence, Inc. Head Start & Early Head Start	Waukesha, Washington
Next Door Foundation Early Head Start	Milwaukee
Oneida Head Start & Early Head Start	Brown (Tribe Only), Outagamie (Tribe Only)
Racine/Kenosha Community Action Agency, Inc. Head Start	Racine
Red Cliff Head Start & Early Head Start	Bayfield (Tribe Only)
Renewal Unlimited Inc. Head Start & Early Head Start	Adams, Columbia, Dodge, Juneau, Sauk
Rock-Walworth Comprehensive Family Services, Inc. Head Start & Early Head Start	Rock, Walworth
Sheboygan Human Rights Association Head Start	Sheboygan

Program Name	County Location(s)
Social Development Commission (SDC) Head Start	Milwaukee
SDC Delegate - Council for the Spanish Speaking Guadalupe Head Start	Milwaukee
SDC Delegate - Day Care Services for Children, Inc. Head Start	Milwaukee
SDC Delegate - Next Door Foundation Head Start	Milwaukee
SDC Delegate - Northcott Neighborhood House Head Start	Milwaukee
SDC Delegate - Urban Day School Head Start	Milwaukee
Southwestern WI Community Action Program, Inc. (SWCAP) Head Start & Early Head Start	Grant, Iowa, Lafayette, Richland
St. Croix Tribal Head Start	Barron, Burnett, Washburn (All Tribe Only)
Stockbridge - Munsee Head Start	Shawano (Tribe Only)
United Migrant Opportunity Services, Inc. (UMOS) Migrant/Seasonal Head Start (0-5)	Adams, Barron, Columbia, Dodge, Door, Fond du Lac, Green Lake, Jefferson, Manitowoc, Marquette, Ozaukee, Oconto, Portage, Rock, Sauk, Sheboygan, St. Croix, Walworth, Waukesha, Waupaca, Waushara, Winnebago, Wood (All Migrant/Seasonal Only)
UW – Oshkosh Head Start	Calumet, Outagamie, Shawano, Winnebago
West Bend Joint School District Head Start	Washington (School District Only)
Western Dairyland EOC, Inc. (WDEOC)	Buffalo, Eau Claire, Jackson, Trempealeau
WDEOC Delegate – Eau Claire Area School District Head Start	Eau Claire (School District Only)
Wood County Head Start & Early Head Start	Wood
Zaasijiwan/Lac du Flambeau Head Start & Early Head Start	Vilas (Tribe Only)





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