The Oral Health of Michigan's 3-5 Year Old Head Start Children Compared to 3-5 Year Old Children in the General U.S. Population
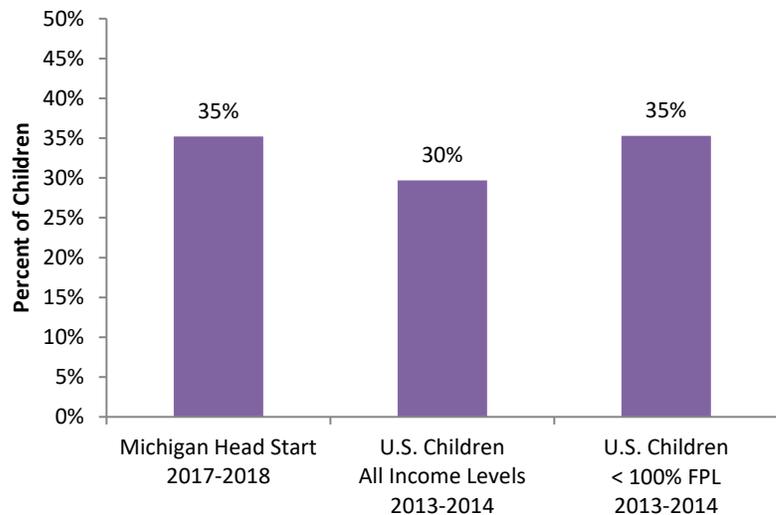
Data from *MI Head Start Smiles*, 2017-2018

- More than one-of-three Head Start children (35%) in Michigan have a history of tooth decay, compared to 30% of the general U.S. population and 35% of the low-income U.S. population aged 3-5 years.

- About two-of-ten Head Start children (22%) in Michigan have untreated tooth decay; higher than the national average of 14% and the average among the low-income U.S. population (19%).

- Almost one-of-four Head Start children in Michigan (24%) need dental care including 5% needing urgent dental care because of pain or infection.

- Among Michigan's Head Start children there are no racial or ethnic oral health disparities.

- Children whose families speak a language other than English or Spanish have more untreated decay, but the difference is not statistically significant.

Good oral health is important to a child's social, physical and mental development. Even though tooth decay can be prevented, most children in Michigan still get cavities. To assess the oral health of Michigan's Head Start children, the Michigan Department of Health and Human Services Oral Health Program coordinated a statewide oral health survey of preschool children enrolled in Head Start; referred to as the *MI Head Start Smiles* survey. Head Start provides comprehensive early childhood education, health, nutrition, and parent involvement services to low-income children and their families. The family income for most Head Start children is below the federal poverty level. A total of 2,009 Head Start children aged 3-5 years received a dental screening at 50 Head Start centers throughout Michigan during the 2017-2018 school year. This data brief presents information on the prevalence of tooth decay in Michigan's low-income Head Start children compared to the general U.S. population aged 3-5 years and the low-income U.S. population aged 3-5 years.

Prevalence of decay experience

Figure 1. Prevalence of decay experience in the primary teeth of Michigan's Head Start children compared to 3-5 year old children in the general U.S. population by household income.
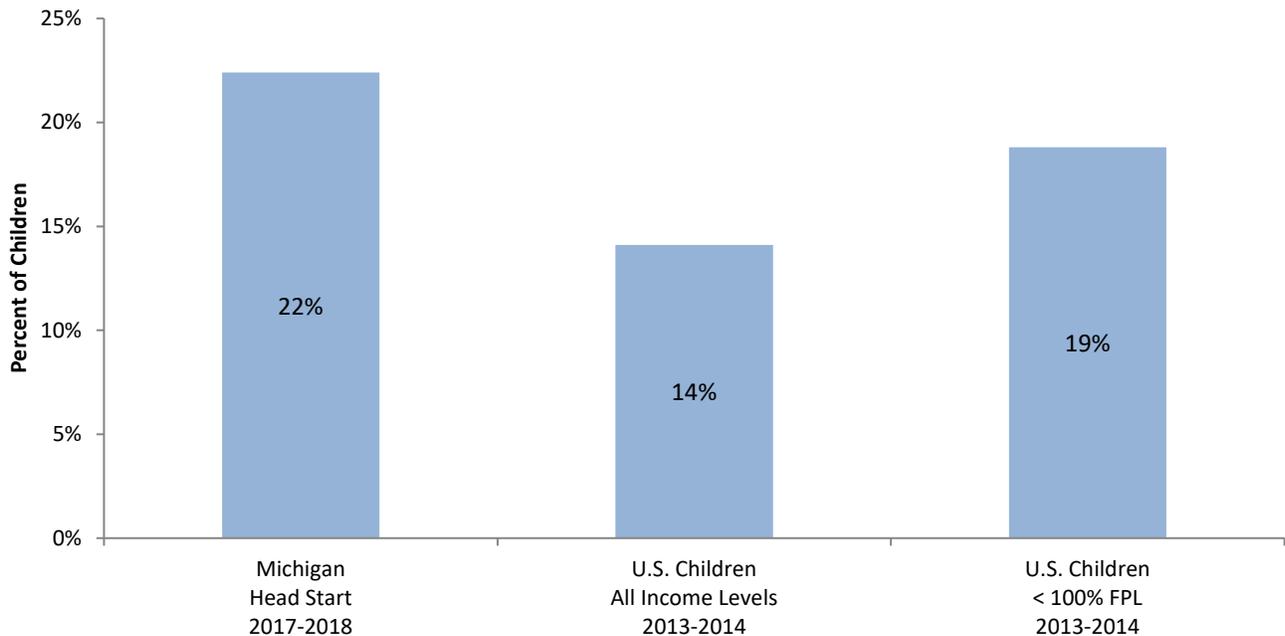

Data Sources: Michigan *MI Head Start Smiles*, 2017-2018
National Health and Nutrition Examination Survey, 2013-2014
FPL: Federal poverty level

** Prepared for the MI Department of Health and Human Services by Kathy Phipps, DrPH, ASTDD

Decay experience means that a child has had tooth decay in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). More than one-of-three Michigan Head Start children (35%) aged 3-5 years have decay experience; compared to 30% of children aged 3-5 years in the general U.S. population and 35% of similarly aged U.S. children living in households with incomes below 100% of the federal poverty level (NHANES, 2013-2014). The association between decay experience and income is well documented, with low-income children having significantly more decay experience than higher-income children. According to the U.S. Census Bureau, about 24% of Michigan's children less than 5 years of age live below the federal poverty level compared to 21% of all U.S. children.[1]

Prevalence of untreated decay

Left untreated, tooth decay can have serious consequences, including needless pain and suffering, difficulty chewing (which compromises children's nutrition and can slow their development), difficulty speaking and lost days in school. About two-of-ten Michigan Head Start children (22%) have untreated tooth decay; compared to 14% of children aged 3-5 years in the general U.S. population and 19% of U.S. children living in households below 100% of the federal poverty level (NHANES, 2013-2014).

Figure 2. Prevalence of untreated decay in the primary teeth of Michigan's Head Start children compared to 3-5 year old children in the general U.S. population by household income.

Data Sources: Michigan *MI Head Start Smiles*, 2017-2018
　　　　　　　　National Health and Nutrition Examination Survey, 2013-2014
FPL: Federal poverty level

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[1] U.S. Census Bureau, SAIPE State and County Estimates for 2016. https://www.census.gov/data/datasets/2016/demo/saipe/2016-state-and-county.html
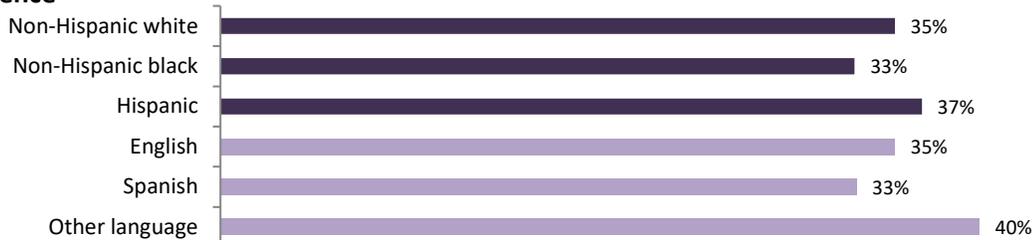
Need for dental treatment

Children need dental treatment for a variety of reasons including untreated tooth decay, broken fillings and oral infections such as a dental abscess. Almost one-of-four Michigan Head Start children (24%) need dental care including 5% needing urgent dental care because of pain or obvious infection. The *MI Head Start Smiles* survey did not include complete diagnostic dental examinations. Instead, dental screenings were performed. This is a quick look inside the mouth with a dental mirror, without x-rays and the more advanced diagnostic tools. Because of this, some problems were likely missed. It is reasonable to assume that these findings actually underestimate the number of children needing dental care. National data on need for dental treatment is not available.
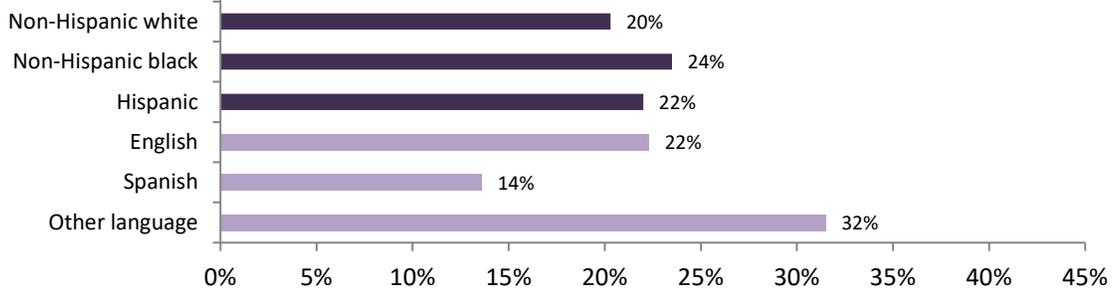
Oral health disparities

Influential sociodemographic indicators for oral health disparities in the United States include poverty status, race and ethnicity and geographic location. Among Michigan's Head Start population, there are no statistically significant oral health disparities, although children whose parents speak a language other than English or Spanish have a higher prevalence of untreated decay.

Figure 3. Prevalence of decay experience and untreated tooth decay among Michigan's Head Start children by race/ethnicity and language spoken at home, 2017-2018

Decay experience

Group	Percentage
Non-Hispanic white	35%
Non-Hispanic black	33%
Hispanic	37%
English	35%
Spanish	33%
Other language	40%

Untreated decay

Group	Percentage
Non-Hispanic white	20%
Non-Hispanic black	24%
Hispanic	22%
English	22%
Spanish	14%
Other language	32%

Data source and methods.

This data brief is based on data from the Michigan *MI Head Start Smiles* survey. *MI Head Start Smiles* sampled children in Head Start, the target preschool population for the National Oral Health Surveillance System. All Head Start centers in Michigan with a funded enrollment of 10 or more children were included in the sampling frame. The sampling frame was stratified by geographic region and a systematic probability proportional to size cluster sampling scheme was used to select 50 Head Start centers. If a center closed (n=2) or refused to participate (n=7),

another center from the same sampling interval was randomly selected. Data is available for all 50 sampling intervals.

Screenings were completed during the 2017-2018 school year using a passive consent process. Letters were sent home to parents/guardians explaining the goals of the survey. If a parent/guardian did not want their child screened, they were asked to sign and return the form. All children were screened unless a parent/guardian specifically requested that their child not be screened. Parent reported race, ethnicity and primary language spoken at home was obtained from the Head Start center staff. Of the 2,488 children invited to participate, 2,009 were screened for an overall response rate of 81%. Trained dental hygienists completed the screenings using gloves, penlights, and disposable mouth mirrors. The diagnostic criteria and survey protocols outlined in the Association of State and Territorial Dental Director's publication *Basic Screening Surveys: An Approach to Monitoring Community Oral Health* were used. [2]

All statistical analyses were performed using the SAS software complex survey procedures (Version 9.4; SAS Institute Inc., Cary, NC). Sample weights were used to produce population estimates based on selection probabilities and indicating the number of children in the sampling interval each screened child represented.

Definitions

Untreated decay: Describes dental cavities or tooth decay that have not received appropriate treatment.
Decay experience: Refers to having untreated decay or a dental filling, crown, or other type of restorative dental material. Also includes teeth that were extracted because of tooth decay.

Data tables

Table 1: Prevalence of decay experience and untreated tooth decay among Michigan's Head Start children by selected characteristics, 2017-2018

Characteristic	Decay Experience			Untreated Decay		
	Percent	Lower 95% CL	Upper 95% CL	Percent	Lower 95% CL	Upper 95% CL
All children (n=2,009)	35.2	32.0	38.4	22.4	19.5	25.2
Race/ethnicity						
White non-Hispanic (n=696)	35.1	29.8	40.3	20.3	15.4	25.2
Black non-Hispanic (n=869)	33.0	28.8	37.2	23.5	19.5	27.5
Hispanic (n=204)	36.5	26.9	46.1	22.0	15.3	28.8
Language spoken at home						
English (n=1,867)	35.1	31.8	38.3	22.3	19.5	25.1
Spanish (n=61)	33.1	13.4	52.8	13.6	6.4	20.8
Other (n=67)	39.5	16.6	62.4	31.5	14.0	49.1

CL: Confidence Limit

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[2] Association of State and Territorial Dental Directors. Basic screening surveys: an approach to monitoring community oral health. http://www.astdd.org/basic-screening-survey-tool

Table 2: Prevalence of decay experience and untreated tooth decay among Michigan's Head Start children and the U.S. population aged 3-5 years by household income (NHANES, 2013-2014)[3]

Characteristic	Decay Experience			Untreated Decay		
	Percent	Lower 95% CL	Upper 95% CL	Percent	Lower 95% CL	Upper 95% CL
Michigan Head Start (2017-2018)	35.2	32.0	38.4	22.4	19.5	25.2
U.S. Population All Income Levels (2013-2014)	29.7	24.2	35.8	14.1	10.7	18.2
U.S. Population < 100% FPL (2013-2014)	35.3	28.3	42.9	18.8	11.7	28.8

CL: Confidence Limit

FPL: Federal poverty level

NHANES: National Health and Nutrition Examination Survey

** For more information see the full *MI Head Start Smiles* Report at www.michigan.gov/oralhealth

The Michigan
Oral Health Program
Increasing Access to Prevention

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3 Healthy People 2020. https://www.healthypeople.gov/2020/data-search/Search-the-Data#topic-area=3511