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Dental Care for Oregon's Medicaid-Enrolled Children in 2018

Dental care is an important component of children's health care. What level of dental care is being provided for children covered by Oregon's Medicaid program?

Oral Health and Dental Care

Dental care is an important part of children's health care. Routine dental exams and preventive services—including sealants, fluoride treatments, and cleanings—can prevent costly problems from occurring. Difficulty accessing these services at a dentist's office or in the community can place children at risk of complicated problems later on. Low-income children are less likely to visit a dentist than their higher-income peers, making policies to improve dental care access especially important for this population.

This brief examines dental care for Oregon children covered by Medicaid. Medicaid provides health care coverage for low-income children and adults. We present five measures of dental care calculated using data from the Oregon Health Authority (OHA), which administers Oregon's Medicaid program. Measures were calculated for 2018, the most recent year available. Together, these measures indicate opportunities to improve access to preventive services, close gaps in care, and control spending.

KEY POINTS

- Sixty percent of Medicaid-enrolled children received at least one dental service.
- Fifty-four percent of children received at least one preventive dental service.
- An estimated eight percent of children received preventive dental services *only* through school-based dental health programs.
- The rate of emergency department visits for avoidable dental problems among young adults (age 19 to 34) was nearly six times the rate among children age 15-18.
- Black children had the lowest rate of access to preventive services and the highest rate of ED visits for avoidable dental problems.
- Among children age 6-14, annual spending per child on *non-preventive* dental services was 73 percent higher than annual spending per child on *preventive* dental services.

OHSU

Introduction

Oral health is essential to children's overall health. Oral health affects speech, nutrition, growth and function, social development, and quality of life. Oral disease can result in chronic pain, poor nutrition, lost school days, poor school performance, and inappropriate use of the emergency department (ED).[1,2] Complications from oral disease can extend into adulthood and have been linked to other physical health problems, including adverse pregnancy outcomes, respiratory disease, cardiovascular disease, and diabetes.[1]

Dental care is an important component of children's health care. Routine dental exams and preventive services—such as sealants, fluoride treatments, and cleanings—can prevent costly problems from occurring. Difficulty accessing these services at a dentist's office or in the community can place children at risk of complicated problems later on. Low-income children are less likely to visit a dentist than their higher-income peers,[3] making policies to improve dental care access especially important for this population.

This brief examines dental care for Oregon children covered by Medicaid. Medicaid provides health care coverage for low-income children and adults. We present five measures of dental care calculated using Medicaid enrollment and claims data from the Oregon Health Authority (OHA), which administers Oregon's Medicaid program. Measures were calculated for 2018, the most recent year available. They include:

Access to Any Dental Service

The percentage of children who received at least one dental service of *any* kind. This measure represents access to dental services overall. It includes routine and preventive services provided by dentists' offices and school-based dental health programs (described below), as well as more serious dental procedures that can occur in dentists' offices, emergency departments, or hospitals.

Access to Preventive Dental Services

The percentage of children who received at least one *preventive* dental service. Examples of preventive dental services include sealants or fluoride treatments to protect teeth, dental cleanings, and oral hygiene instruction.

Access to Preventive Services through School-Based Dental Health Programs

The percentage of children who received the kinds of services provided by school-based dental health programs, but who did *not* receive a dental cleaning. School-based dental health programs provide preventive dental services using portable equipment within a school, school-based clinic, or mobile dental van on school property.[4] This measure represents an estimate of the percentage of children whose only dental care was through a school-based dental health program.

Some services provided by school-based dental health programs may not be reflected in the data used to prepare this report. As a result, this estimate represents the *minimum* percentage of children who received preventive dental services only through a school-based dental health program. See the Methods section at the end of this brief for details.

Emergency Department (ED) Visits for Avoidable Dental Problems

The rate of ED visits for dental problems that could have been treated through timely care at a dentist's office (number of visits per 1,000 enrollees). This measure may reflect difficulty accessing routine and preventive dental services.

Annual Spending

Annual spending per enrollee on preventive services, other non-emergency services, and ED visits for avoidable dental problems.

Together, these measures paint a picture of dental care for Medicaid-enrolled children that can help inform health care policy.

Access to Any Dental Service

Percentage of children who received at least one dental service of any kind

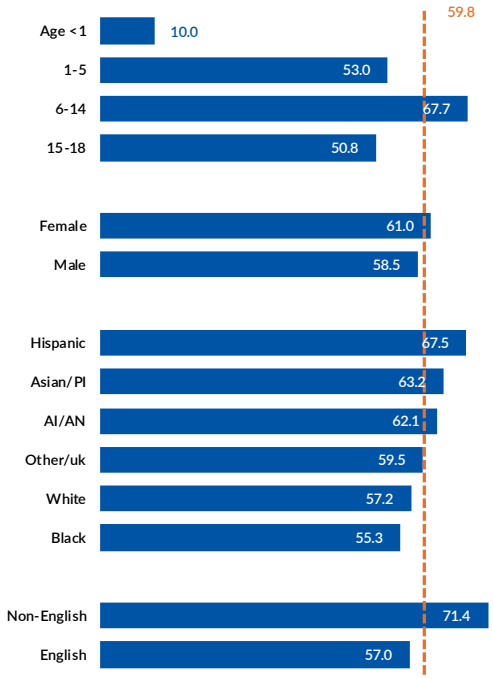
Sixty percent of Medicaid-enrolled children received at least one dental service in 2018. However, the percentage varied substantially among demographic groups and counties. For example:

- There was a 12-percentage-point gap between Hispanic children and black children, the race/ethnicity groups with the highest and lowest percentages, respectively.
- There was a 21-percentage-point gap between Malheur County and Columbia County, the counties with the highest and lowest percentages, respectively.

Notably, some rural counties, such as Malheur, Harney, and Morrow, had relatively high percentages of children who received at least one dental service, while some predominantly urban counties, such as Clackamas, had relatively low percentages.

In 2018, 60 percent of Medicaid-enrolled children received at least one dental service.

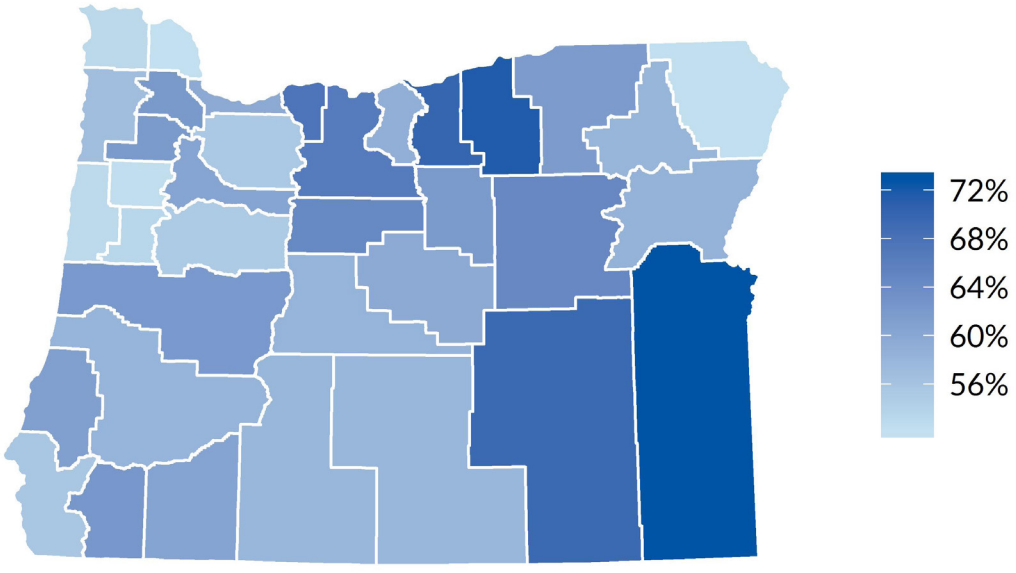
There was a 12-percentage point gap between Hispanic children and black children, the race/ethnicity groups with the highest and lowest rates, respectively.



AI/AN = American Indian or Alaska Native, Asian/PI = Asian or Pacific Islander, English/Non-English = language spoken at home, Other/uk = other or unknown

In 2018, the proportion of Medicaid-enrolled children who received at least one dental service ranged from 52 percent in Columbia County to 73 percent in Malheur County.

In the Tri-County area, 60 percent of Medicaid-enrolled children received at least one dental service.



See page 11 for rates by county.

Access to Preventive Dental Services

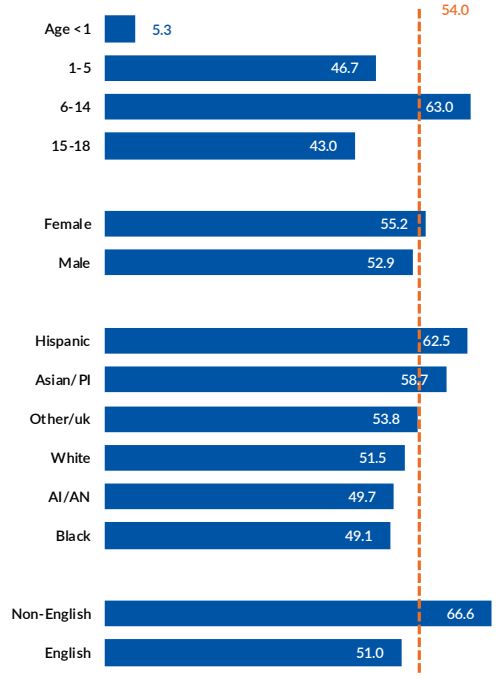
Percentage of children who received at least one preventive dental service

Fifty-four percent of Medicaid-enrolled children received at least one preventive dental service in 2018. However, less than half of children in some demographic groups received a preventive service. The percentage also varied substantially by county.

- Less than half of American Indian or Alaska Native children, and less than half of black children, received a preventive service.
- There was a 25 percentage-point gap between Malheur County and Curry County, the counties with the highest and lowest percentages, respectively.

In 2018, 54 percent of Medicaid-enrolled children received at least one preventive dental service.

Less than half of American Indian or Alaska Native children, and less than half of black children, received a preventive service.



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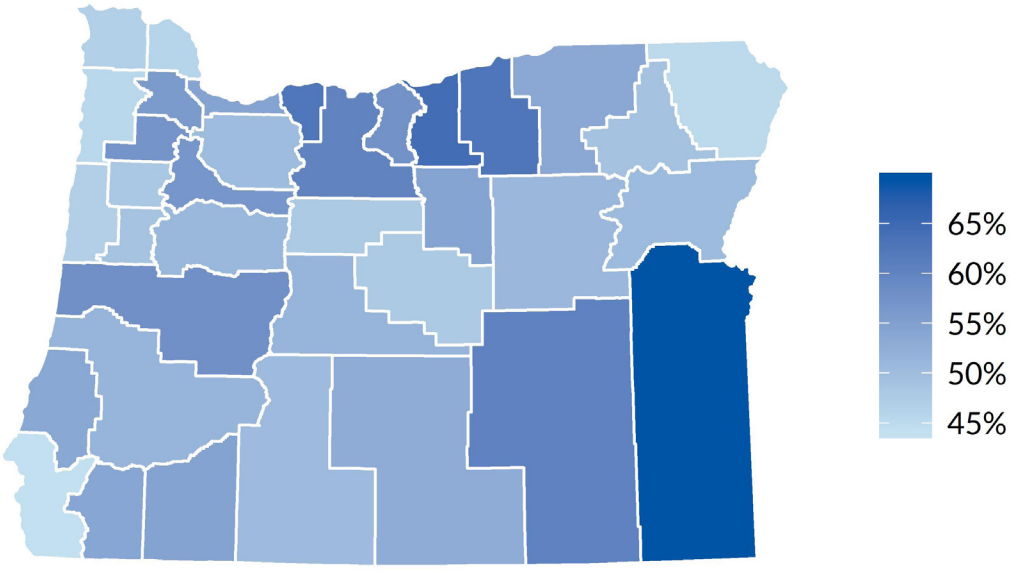
In 2018, the proportion of Medicaid-enrolled children who received at least one preventive dental service ranged from 44 percent in Curry County to 69 percent in Malheur County.

In the Tri-County area, 54 percent of Medicaid-enrolled children received at least one dental service.



See page 11 for rates by county.

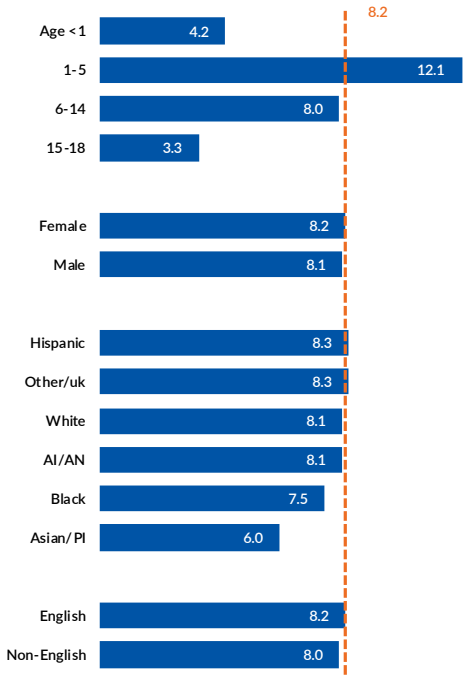
Access to Preventive Services through School-Based Dental Health Programs

Percentage of children who received the kinds of services provided by school-based dental health programs, but who did not *receive a dental cleaning*

This measure represents an *estimate* of the percentage of children who received preventive dental services *only* through a school-based dental health program. These programs provide preventive services but not dental cleanings or more intensive services, such as fillings or root canals.

Eight percent of Medicaid-enrolled children received *only* the kinds of preventive dental services provided by school-based dental health programs. These 29,125 children received fluoride, sealants, oral hygiene instruction, nutritional counseling or tobacco counseling to prevent oral disease, or a combination of these services—but they did not receive a dental cleaning.

In 2018, eight percent of Medicaid-enrolled children received *only* the kinds of preventive dental services provided by school-based dental health programs.



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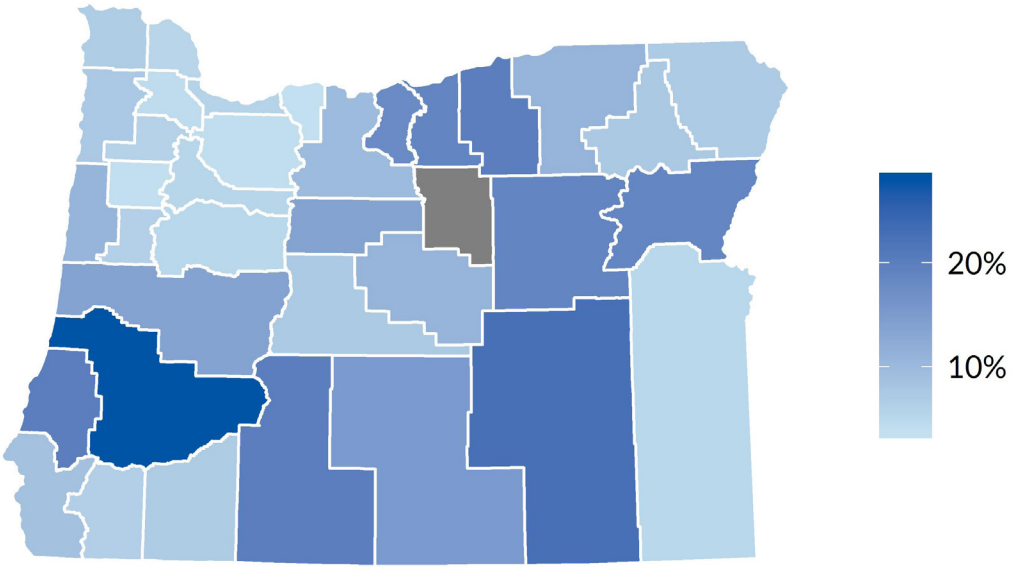
In 2018, the percentage of Medicaid-enrolled children age 6-14 who received *only* the kinds of preventive dental services provided by school-based dental health programs ranged from four percent in Hood River County to 28 percent in Douglas County.

In the Tri-County area, five percent of Medicaid-enrolled children received *only* the kinds of preventive dental services provided by school-based dental health programs.



Grey indicates that there were fewer than 11 Medicaid-enrolled children in the numerator of the measure for a county, or that no children received the kinds of services provided by school-based dental health programs, but did not receive a cleaning, in the county. See page 11 for rates by county.

Emergency Department (ED) Visits for Avoidable Dental Problems

Rate of ED visits for dental problems that could have been treated through timely care at a dentist's office (visits per 1,000 enrollees)

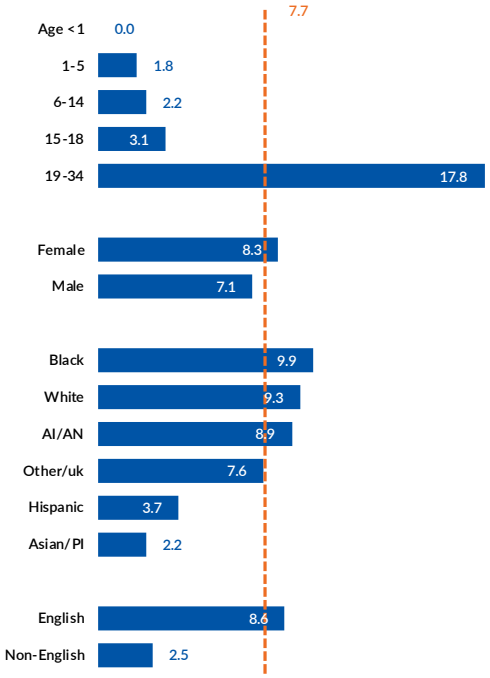
To capture the relationship between preventive dental care and ED visits for avoidable dental problems later on, we present this measure separately for children and young adults (age 19-34).

The rate of ED visits for avoidable dental problems increased by age group, and the rate among young adults was nearly six times the rate among children age 15-18. This suggests that untreated dental problems early on may manifest as ED visits later in life.

The rate also varied substantially by demographic groups and geographic regions. For example, the rate among black children was nearly five times the rate among Asian or Pacific Islander children, the race/ethnicity groups with the highest and lowest rates, respectively.

In 2018, there were 7.7 emergency department (ED) visits for avoidable dental problems per 1,000 Medicaid-enrolled children and young adults (age 19-34).

The avoidable ED visit rate among young adults was nearly six times the rate among children age 15-18.



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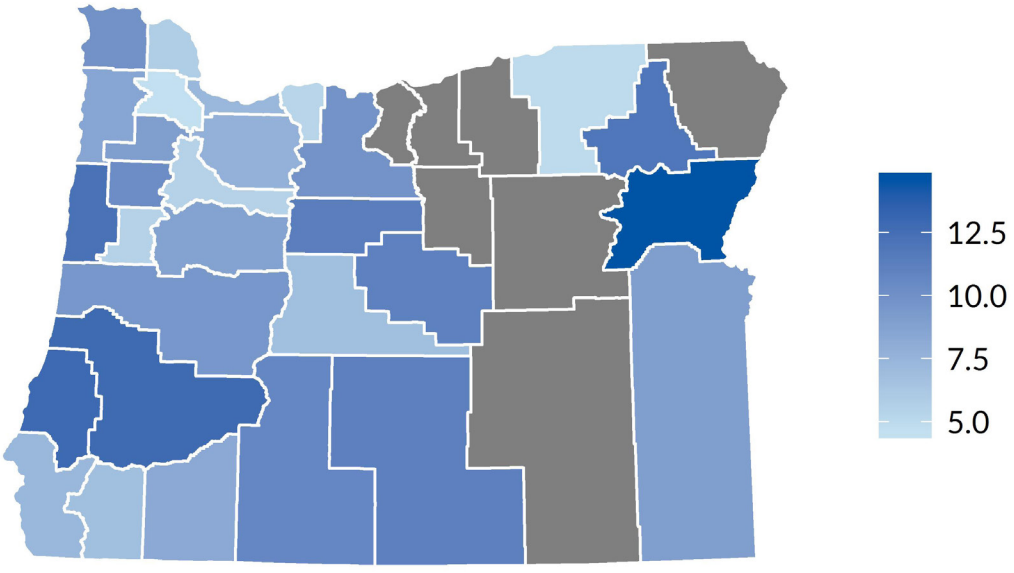
In 2018, the rate of emergency department (ED) visits for avoidable dental problems per 1,000 Medicaid-enrolled children and young adults (age 19-34) ranged from 4.6 in Washington County to 14.6 in Baker County.

In the Tri-County area, there were 6.5 ED visits per 1,000 Medicaid-enrolled children.



Grey indicates that there were fewer than 11 visits for avoidable dental problems in the county. See page 11 for rates by county.

Annual Spending

Annual spending per Medicaid enrollee on preventive dental services, non-preventive dental services outside the emergency department (ED), and ED visits for avoidable dental problems

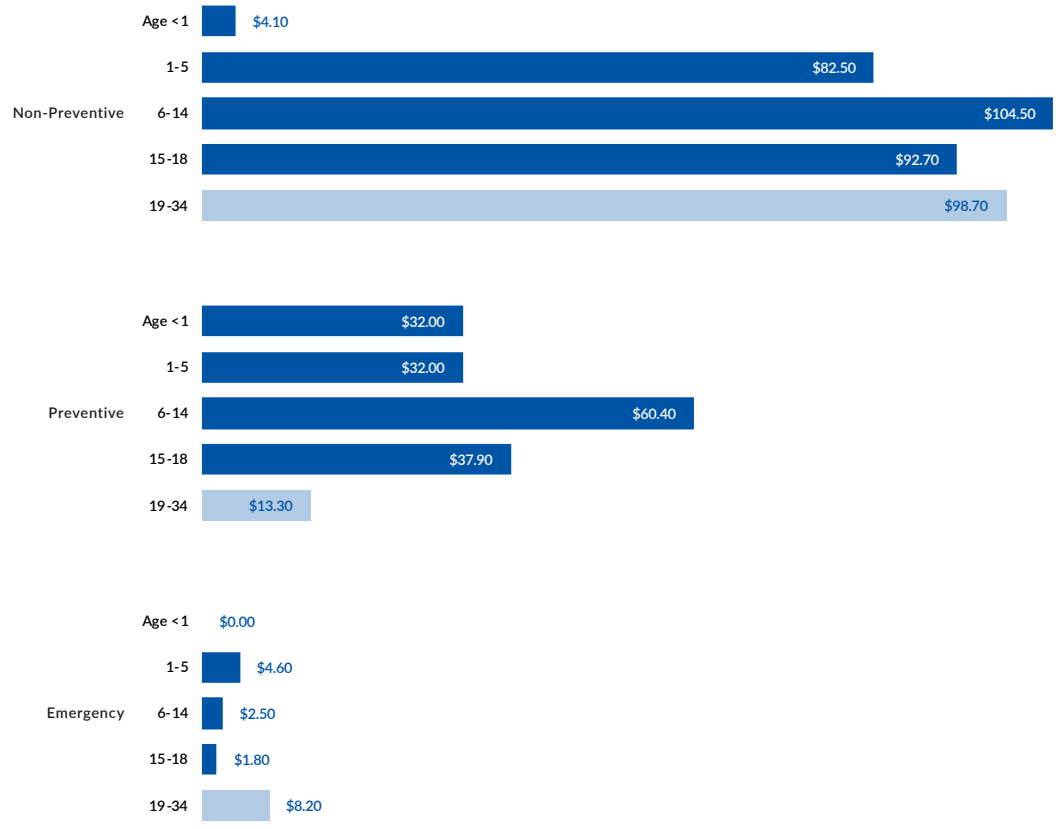
Examples of preventive dental services include sealants or fluoride treatments to protect teeth, dental cleanings, and oral hygiene instruction. Examples of non-preventive services often provided outside the ED include diagnostic imaging, restorative services, and root canals or tooth extraction.

Among children age 6-14, annual spending per child on *non-preventive* dental services was 73 percent higher than spending on *preventive* services. This suggests that greater spending on preventive services that reduce the need for more intensive services to treat dental problems, such as fillings and root canals, could yield net savings for Oregon's Medicaid program.

Spending per young adult on ED visits for avoidable dental problems was four times greater than spending per child age 15-18, and three times greater than spending per child age 6-14. Spending per enrollee on ED visits for avoidable dental problems was low relative to preventive services and non-preventive services outside the ED because ED visits for avoidable dental problems were much less frequent than other services. Nevertheless, ED visits can be very costly relative to the cost of routine or preventive care to treat dental problems before they worsen.

In 2018, annual spending per child on *non-preventive* dental services was 73 percent higher than annual spending per child on *preventive* services among children age 6-14.

Annual spending per young adult (age 19-34) on ED visits for avoidable dental problems was four times greater than annual spending per child age 15-18, and three times greater than annual spending per child age 6-14.



Non-preventive and preventive = all dental services outside the ED, Emergency = ED visits for avoidable dental problems

Conclusion

Dental care is an important component of children's health care. This brief presents five measures that paint a picture of dental care for Oregon's Medicaid-enrolled children in 2018. Together, these measures indicate opportunities to improve access to preventive services, close gaps in care, and control spending.

Oregon's Medicaid-enrolled children experienced racial and geographic disparities in access to dental services and ED visits for avoidable dental problems. These include the following disparities:

- While 54 percent of children received at least one preventive dental service, less than half of American Indian or Alaska Native children, and less than half of black children, received a preventive service.
- Black children had the lowest rate of access to preventive services and the highest rate of ED visits for avoidable dental problems. The rate of ED visits for avoidable dental problems among black children was nearly five times the rate among Asian or Pacific Islander children.
- The proportion of children who received a preventive dental service ranged from 44 percent in Curry County to 69 percent in Malheur County.

These outcomes suggest that Oregon should focus on expanding access to routine and preventive dental services among specific populations and counties.

Some rural counties exhibited relatively high rates of access to dental services among Medicaid-enrolled children. While transportation issues and dental provider shortages can create barriers to access in rural areas, these counties had high percentages of children who received any dental service and preventive dental services compared to other counties. To help expand access to dental services, Oregon could investigate how these rural counties have surmounted potential challenges with access.

School-based dental health programs were an important source of preventive dental services for Medicaid-enrolled children. Eight percent of Medicaid-enrolled children—29,125 children—received only the kinds of preventive dental services provided by school-based dental health programs in 2018.

Expanding access to routine and preventive dental services may offer opportunities for savings in Oregon's Medicaid program. These services may generate savings if they reduce the need for more intensive services at the dentist's office or in the ED.

- Among children age 6-14, annual spending per child on *non-preventive* dental services was 73 percent higher than annual spending per child on *preventive* dental services.
- The rate of ED visits for avoidable dental problems among young adults was nearly six times that among children age 15-18, the next highest age group.
- Annual spending per young adult on ED visits for avoidable dental problems was four times greater than annual spending per child age 15-18, and three times greater than annual spending per child age 6-14.

Untreated dental problems early on may manifest in the form of ED visits and increased costs later in life. Expanding access to comprehensive dental care—including dental cleanings, other preventive services, and oral health exams—may be a means to avoid ED visits and costs in the future.

Methods

Study Data and Population

We used Medicaid enrollment and claims/encounters data from the Oregon Health Authority (OHA) Health Systems Division to identify the study population and calculate dental care measures for this brief. For the study population, we selected all children age 0-18 with at least 11 months of Medicaid enrollment in 2018. For two measures (Emergency Department Visits for Avoidable Dental Problems and Spending) we also selected young adults age 19-34 with at least 11 months of Medicaid enrollment in 2018. We used dental claims and emergency department (ED) claims incurred in 2018 to calculate measures for this population.

Exclusions

The measures in this brief exclude children and young adults not covered by Medicaid, including those with commercial insurance. In addition, the measures likely exclude some services provided by school-based dental health programs. Since 2014, the number of programs supported by philanthropic funding has expanded, while the number of programs supported directly by OHA has contracted.[4] Programs supported by philanthropic funding may not bill Medicaid for services they provide, meaning that these services may not be reflected in claims data used to calculate measures for this brief. As a result, measures in this report may under-represent access to these services.

Dental Measures

We used the following definitions to calculate measures for this brief.

Access to Any Dental Services: The percentage of children age 0-18 years enrolled in Medicaid who received one or more dental procedures, as indicated by any dental procedure code.

Access to Preventive Dental Services: The percentage of children 0-18 years enrolled in Medicaid who received one or more preventive dental procedures, as identified by dental procedure codes D1000 to D1999.

Preventive Services through School-Based Dental Health Programs: The percentage of children age 0-18 years who received one or more services commonly provided by school-based dental health programs, as identified by dental procedure codes D1203, D1204, D1206, D1310, D1320, D1330, and D1351; and who did *not* receive a dental cleaning, as identified by codes D1110 and D1120. The following table lists services associated with these codes. We worked with representatives of the Oregon Community Foundation, which supports school-based dental health programs, to define codes for services provided by these programs.

Dental procedure codes used to identify children who received preventive services *only* through school-based dental health programs

Service	Code
Prophylaxis – adult (children with this code were *excluded*)	D1110
Prophylaxis – child (children with this code were *excluded*)	D1120
Topical application of fluoride – child	D1203
Topical application of fluoride – adult	D1204
Topical fluoride varnish; therapeutic application, moderate to high caries risk patients	D1206
Nutritional counseling for control of dental disease	D1310
Tobacco counseling for the control and prevention of oral disease	D1320
Oral hygiene instructions	D1330
Sealant – per tooth	D1351

ED Visits for Avoidable Dental Problems: The number of ED visits for caries-related conditions per 1,000 member years among Medicaid enrollees ages 0-34. We used ICD-10 diagnosis codes from Dental Quality Alliance specifications to identify caries-related visits.[5]

Spending: Per-enrollee, per-year (annualized) spending for preventive dental services; dental services not considered preventive in nature; and ED visits for avoidable dental problems. Where possible, we calculated spending using allowed amounts from medical/dental claims. Where these were missing or less than $0.05 (suggesting that services were paid for using capitated payments), we imputed spending using the Oregon Health Plan 2018 Medical-Dental fee schedule.

Stratification by Demographic Group and County

We used information from Medicaid enrollment files to stratify measures by demographic group and county of residence. The following table presents rates for non-spending measures by county.

Rates for dental measures in 2018, by county

County	Access to Any Dental Service (% of enrolled children)	Access to Preventive Dental Services (% of enrolled children)	Preventive Services through School-Based Programs (% of enrolled children age 6-14)	ED Visits for Avoidable Dental Problems (per 1,000 children)
Baker	58.4	50.4	18.7	14.6
Benton	53.4	48.9	6.2	5.5
Clackamas	55.3	50.2	4.0	7.7
Clatsop	53.0	46.8	6.7	9.9
Columbia	52.1	46.0	5.4	5.8
Coos	61.2	53.6	20.1	12.9
Crook	59.7	47.8	10.9	11.1
Curry	55.6	44.1	8.7	7.3
Deschutes	58.3	51.4	7.2	6.8
Douglas	58.1	51.4	28.0	12.8
Gilliam	69.9	64.4	18.9	NA
Grant	64.6	50.8	18.9	NA
Harney	69.5	60.4	22.7	NA
Hood River	67.6	62.6	3.7	5.3
Jackson	60.6	54.6	6.9	8.3
Jefferson	64.4	47.8	13.7	11.3
Josephine	62.4	54.0	6.4	6.8
Klamath	57.9	50.3	20.1	10.7
Lake	57.8	53.0	15.2	11.2
Lane	62.1	57.9	13.7	9.5
Lincoln	52.9	46.9	10.7	12.3
Linn	55.0	50.9	5.0	8.7
Malheur	72.9	69.4	5.0	9.0
Marion	60.4	56.7	5.3	5.5
Morrow	71.6	62.8	20.1	NA
Multnomah	59.7	54.3	5.6	7.3
Polk	52.4	48.2	3.8	10.3
Sherman	59.0	57.6	17.8	NA
Tillamook	56.8	45.5	7.5	8.5
Umatilla	61.7	53.7	10.9	4.9
Union	58.0	49.0	7.4	11.9
Wallowa	52.3	45.1	7.1	NA
Wasco	66.5	60.1	9.7	9.8
Washington	62.0	55.9	4.3	4.6
Wheeler	61.9	54.3	NA	NA
Yamhill	61.9	57.1	5.9	9.0

References

1 "Improving Access to Oral Health Care for Vulnerable and Underserved Populations." 2011. Washington, D.C.: Institute of Medicine and National Research Council.

2 Jackson, Stephanie L., William F. Vann, Jonathan B. Kotch, Bhavna T. Pahel, and Jessica Y. Lee. 2011. "Impact of Poor Oral Health on Children's School Attendance and Performance." *American Journal of Public Health* 101 (10): 1900–1906. https://doi.org/10.2105/AJPH.2010.200915.

3 Soni, Anita. 2014. "Children's Dental Care: Advice and Visits, Ages 2-7, 2011." Medical Expenditure Panel Survey Statistical Brief 432. Agency for Healthcare Research and Quality. https://meps.ahrq.gov/data_files/publications/st432/stat432.pdf.

4 Brandt, Madeline, and Kimberly Leonard. 2019. "Learning What Works for School-Based Dental Health Programs: The Oregon Children's Dental Health Initiative." Oregon Community Foundation. https://oregoncf.org/assets/PDFs-and-Docs/PDFs/ocf-school-based-childrens-dental-health-report.pdf.

5 Dental Quality Alliance. 2019. "Dental Quality Alliance User Guide for Pediatric Measures Calculated Using Administrative Claims Data." Dental Quality Alliance. https://www.ada.org/~/media/ADA/DQA/2020_PediatricMeasuresUserGuide.pdf?la=en.

CENTER FOR HEALTH SYSTEMS EFFECTIVENESS

This Issue Brief was produced with the generous support of the Oregon Community Foundation.

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