Washington State Medicaid
Facts and Figures
FY 2008 – FY 2012
Table of Contents

- Overview and Summary
- Importance of Dental Care and Oral Health
- Overview of the Washington Medicaid Dental Program
- Major Policy Changes
- Total Expenditures and Services
- Adult Expenditures and Services
- Child Expenditures and Services
- Provider Total Expenditures and Services
- Policy Implications and Opportunities
- References
- Additional Resources
- About the Sponsor and Authors
- Acknowledgements
- Methods
- Definitions
Introduction

Oral Health is a critical component of overall health. Poor oral health can cause pain and impact many aspects of a person’s life, including the ability to eat, sleep, learn, and work. Untreated oral disease can exacerbate chronic health conditions, like diabetes, negatively impacting overall health and raising medical costs.

When people seek and receive oral health care early, disease can be prevented and small problems can be treated so that they don’t lead to serious and costly health issues.

A significant number of people in Washington receive their healthcare coverage from Medicaid (also known as Apple Health). This includes over one half of children and a growing number of adults. Therefore, the Medicaid dental program is a key factor in the oral health status of a large number of people.

Note: According to the Centers of Medicare and Medicaid Services (CMS), the number of Washingtonians who received Medicaid health coverage was 1,121,278 in FY 2010 (16.7% of the state’s population) and 1,182,587 (17.5%) in FY 2011.
The Washington Dental Service Foundation (WDSF) commissioned Health Management Associates (HMA) to examine dental utilization and expenditures for the Washington State Medicaid population in order to identify trends that may inform future policy decisions. The purpose of the report is to:

- Identify current status and 5-year trends in utilization, services received, and costs for children and adults.

- Understand the data in the context of recent policy changes and programmatic efforts.

- Propose policy implications and additional data needs.
Summary of Key Findings

• Dental expenditures were $139M in FY 2008, peaked at $189M in FY 2010, and decreased to $178M in FY 2012. After adjusting for inflation, this is a 12% increase over the 5-year period, which can be attributed primarily to an increase in enrollees.

• In FY 2012, the vast majority of spending (94%) was on services for children, as budget cuts largely eliminated the adult dental program as of January 2011.

• Diagnostic and preventive services were the types of services most frequently used, but restorative services contributed to the largest proportion of total expenditures.

• In FY 2012, dental expenditures for most users were under $500. Fewer than 4% of users had expenditures of more than $2,000.

• The percentage of children accessing dental services increased across all age groups and in all counties between FY 2008 and FY 2012.

• In FY 2012, 54% of child enrollees received dental services, compared to 12% of adult enrollees.

Note: Estimated 12% increase in dental expenditures exclude Community Health Center (CHC) services.
Oral Health is a Critical Component of Overall Health and Well-Being

- Untreated dental disease can cause intense pain, affecting a person’s ability to eat, sleep, learn, and work.
- Tooth decay is the most common childhood disease. Children with severe dental problems are more likely to miss school and have difficulty learning.
- Pregnant women are more likely to develop oral health problems due to biological changes in their bodies and, if they have active oral disease, can pass cavity-causing bacteria to their babies after birth through saliva.
- Gum disease is linked to a number of serious health conditions, including diabetes, heart disease, and stroke. Older adults, in particular, are at risk for poor oral health because many medications cause dry mouth, which leads to tooth decay and gum disease.
Overview of the WA Medicaid Dental Program

- Children are eligible for a complete range of dental services, including preventive and restorative procedures through age 20.
- Since January 2011 when budget cuts went into effect, most adults have been limited to emergency services, such as tooth extractions and antibiotics for pain.
- Currently, comprehensive dental coverage is only available to pregnant women, those in long-term care/nursing homes, and clients who are eligible under a 1915 (c) waiver program.
- In WA, comprehensive dental coverage will be restored to all Medicaid-insured adults beginning January 2014.
- Dental coverage will also be available to the additional adults that will be covered by the Medicaid Expansion component of the Affordable Care Act.

National Picture

Children in low-income families are required by federal law to get dental coverage through Medicaid, but adult dental coverage is an optional benefit.

A decline in state revenues across the country led to cuts in adult dental coverage in many states. In 2011, 14 states offered only emergency help to adults. The number of states with no adult benefits increased from 5 in 2008 to 9 in 2011.

Note: The Centers for Medicare and Medicaid Services 1915 (c) waiver program covers certain medically needy and disabled clients.
Programs & Services Available to WA Medicaid Enrollees

• Apple Health for Kids:
  – Provides comprehensive dental coverage to children with no copay or deductibles.
  – Free for all children in families below 200 percent of the Federal Poverty Level ($39,060 for a family of three). Families up to 300 percent of the Federal Poverty Level pay a monthly premium.

• Adults:
  – Adults under age 65 with income up to 138 percent of the Federal Poverty Level ($15,856 for an individual) will have comprehensive dental coverage as of January 2014.
  – For adults ages 65 and over, only “full benefit dual eligibles” (i.e., those who qualify for Medicare and Medicaid) will have dental coverage. That means their income is below 74% of the Federal Poverty Level ($8,503 for an individual) or they have high medical expenses and spend down their assets.

Eligibility for Children and Adults

The Medicaid eligibility requirements are more stringent for adults than children.

Given adults over age 65 are not included in the Medicaid Expansion, eligibility for Medicaid coverage remains extremely low for this population. Since Medicare does not include a dental benefit, many seniors do not have dental insurance.
Dental Programs & Services Available to WA Medicaid Enrollees

• **Access to Baby and Child Dentistry Program (ABCD):** connects Medicaid-insured children under age 6 to dentists trained to address oral health in young children. Initiated in 1995, the ABCD program has successfully worked to:
  – identify highest risk children and enroll them by age one;
  – educate families/caregivers on preventing cavities;
  – provide outreach and case management to connect families with dental offices; and
  – train dentists in the best practices for treating young children.

• **Oral health preventive services during well-child checks:** Given primary care medical providers on average see young children 8 or 9 times by the age of 3, well-child medical visits are an opportunity to reach children early, deliver preventive services, assess risk, and refer those in need of care to a dental provider. Primary care providers in WA who are trained and certified by WDS Foundation are reimbursed by Medicaid for delivering oral screenings, providing oral health education, and applying fluoride varnish.

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**Programs for Young Children Serve as Models**

ABCD is nationally recognized for expanding access to care for Medicaid-insured young children. The Pew Charitable Trusts praised ABCD for achieving significant results while “delivering a strong return on taxpayers’ investment.”

Washington’s Medicaid program was one of the first to reimburse primary care providers for applying fluoride varnish on children’s teeth. The number of fluoride varnish applications delivered in medical settings to Medicaid-enrolled children under age six increased from 145 in 2000 to nearly 19,000 in 2011.
Timeline for Changes Affecting Washington Medicaid Dental Services and Claims

January 2009: eligibility for Medicaid’s Apple Health for Kids extended to children living in families up to 300% of the federal poverty level (up from 250%).

January 2011: most adult dental benefits were cut.

July 2011: dental services were restored for select adults (pregnant women, those in long-term care/nursing homes, and clients who are eligible under a 1915 (c) waiver program).

May 2010: A new Medicaid claims tracking and payment system, ProviderOne, launched.

July 2011: With the transition to ProviderOne, Washington had complete payment to Community Health Centers (CHC) data, in contrast to previous years when total CHC expenditures were not easily accessible.

January 2014: Dental coverage available to Medicaid-insured adults, including Medicaid expansion population.

Notes: All years are fiscal years. They run from July 1 of the mentioned year to June 31 of the next year. So, FY 2008 runs from July 1, 2008 through June 31, 2009.

Major Administrative and Legislative Changes

Eligibility for dental coverage has changed over the years. The elimination of most adult dental benefits in January 2011 was a particularly significant event.

The launch of a new payment system called ProviderOne allowed for more accurate tracking of the cost and utilization of services and allowed more efficient payment to providers.
Total Expenditures and Services
Washington State Medicaid Dental Expenditures vs. Medical Expenditures FY 2012

Washington’s FY 2012 total Medicaid expenditures was $8.3B, including both federal and state funding.

Dental expenditures were just a small portion, 3% of that total budget.

Note: Source: Washington State Health Care Authority, Chief Financial Officer, Correspondence from 5/10/13
Medicaid Enrollees, Dental Utilization and Expenditures, FY 2008 – FY 2012

The number of Medicaid enrollees has increased from FY 2008 to FY 2012. The percent of enrollees using services, as well as total expenditures, have fluctuated during this period. In FY 2008, 38% of enrollees received services, compared to 43% in FY 2010. Utilization fell back to 39% in FY 2012.

The average annual growth rate was 4.3% for Medicaid enrollees, 4.7% for enrollees getting services and 6.3% for expenditures (excluding CHC payments).

Note: Excludes Community Health Center (CHC) claims.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Factors Affecting the Increase in Expenditures, FY 2008 vs. FY 2012

An increase in Medicaid enrollees between FY 2008 and FY 2012 was the primary factor driving increased expenditures of $38.6 Million.

<table>
<thead>
<tr>
<th>Volume-Related Changes</th>
<th>Percentage Contributing to Increase in Expenditures</th>
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<tbody>
<tr>
<td>Increase in enrollees</td>
<td>66%</td>
</tr>
<tr>
<td>Increase in users – proportion of enrollees using dental services</td>
<td>8%</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Cost Related Changes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in expenditures per person due to more frequent use or higher cost procedures</td>
<td>27%</td>
</tr>
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</table>

Note: Excludes Community Health Center (CHC) payments. Analysis of factors that affected a change in expenditures is also sometimes referred to as healthcare cost variance analysis.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Children have historically comprised a much larger proportion of the total dental expenditures than adults – approximately three-quarters of expenditures from FY 2008 to FY 2010.

By FY 2012, more than a year after the adult dental cuts, children accounted for 94% of all expenditures.

Note: Excludes claims with unmatched eligibility data and CHC claims.
Children refers to the population from birth through age 20.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data

While total expenditures have risen 28% between FY 2008 and FY 2012, part of the increase is attributable to inflation. After adjusting for inflation, the increase is 12%.

Note: Excludes claims with unmatched eligibility data and CHC claims. Dollars adjusted using Urban Medical Consumer Price Index to 2012 dollars. CPI from July of each year (the beginning of the fiscal year) was used. Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Dental Procedures by Procedure Group, Adults vs. Children, FY 2012

Restorative services accounted for the greatest portion of total expenditures for children in FY 2012.

However, diagnostic services, often necessary prior to oral surgery, along with oral surgery accounted for the greatest portion of expenditures for adults in FY 2012.

Extractions, which fall within the oral surgery group, were one of the few procedures covered for all adults in 2012.

Note: Excludes CHC claims and claims with missing values for procedure categories. Other includes Maxillofacial Prosthetics, Fixed Prosthodontics, Implant Services, and Periodontics. Combined, these categories had less than 5% of total adult expenditures and less than 1% of total child expenditures in FY 2012. The following are not depicted in the pie charts: for adult expenditures, Orthodontics, which represented only 0.03% of total expenditures and for children, Other, which represented only 0.02% of expenditures and Prosthodontics, Removable with 0.01% of expenditures. See Appendix for information on procedure groups. Note that pie charts do not add up to 100% due to the noted removed procedure groups.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Average Expenditures per Dental User
FY 2008 – FY 2012

Dental expenditures per user rose from $318 in FY 2008 to a high of $345 in FY 2009. Expenditures per user then fell, but rose again in FY 2012 to $337 per person, 6% higher than FY 2008.

Note: Excludes CHC claims.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Total Expenditures per User, FY 2012

Expenditures for most users (56%) were between $101 and $500 in FY 2012. Fewer than 4% of users had dental expenditures of more than $2,000.

Note: Excludes claims with unmatched eligibility data and CHC claims.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
High Cost Dental Service Users, FY 2012

About 10% of enrollees account for 40% of the expenditures and 50% of enrollees account for 85% of expenditures.

Thus, while dental expenditures are concentrated in a disproportionate share of the population, they are not as concentrated as medical expenditures where just 5% of enrollees account for 50% of expenditures.

Note: Excludes claims with unmatched eligibility data. Includes CHC expenditures. Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Top Ten Most Expensive Users, FY 2012

Unlike medical expenditures, that can run into hundreds of thousands for high cost beneficiaries, the users with the 10 highest dental costs in FY 2012 each had less than $8,500 in dental expenditures.

Eight of the top ten were children who had endodontic services (e.g., root canals).

Note: users with high dental expenditures may have additional medical costs not captured here that are connected to treatment of a dental problem (e.g., operating room, anesthesia, ER costs).

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Enrollees with at Least One Dental Service
FY 2008 – FY 2012

The percentage of children using dental services has risen steadily since FY 2008.

Since adults comprise a much smaller proportion of dental users than children, the impact of the adult dental cuts on the percent of total Medicaid enrollees using dental services was relatively small, with 39% of all enrollees using services in FY 2012 compared to 43% in FY 2010.

Note: Includes all services including CHC services. Excludes claims with unmatched eligibility data.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Enrollees with at Least One Dental Service, Adults vs. Children, FY 2008 vs. FY 2012

While children have always been the predominant users, in FY 2012, due to the adult dental cuts, just 11% of all users were adults compared to 27% in FY 2008.

Note: Excludes claims with unmatched eligibility data. Includes CHC claims.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Enrollees with at Least One Dental Service, Continuously vs. Non-Continuously Enrolled, FY 2012

Among enrollees with at least 11 months of continuous enrollment, 51% used at least one dental service in FY 2012, compared to only 16% of those who were not continuously enrolled.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Enrollees with at Least One Dental Service, by County, FY 2012

Utilization rates vary by county with a low of 27% in Clallam (indicated by light shading) and a high of 57% in Adams County (indicated by dark shading). King County, with the largest population in the state, had a rate of 36%.

Note: Excludes out of state utilization and utilization where the county is unknown.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
A slightly larger proportion of enrollees were using preventive services in FY 2012 compared to FY 2008—a positive trend for the state.

Note: The percent of users with Endodontics, Maxillofacial Prosthetics, Orthodontics, Periodontics, Prosthodontics (Removable), Prosthodontics (Fixed), and implant services was 2% or less for both years. Excludes claims with unmatched eligibility data. Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
The most frequently accessed services are those that are preventive and diagnostic, such as oral exams and fluoride applications.

Note: Excludes claims with missing values for procedure categories. Procedure names are simplified; see methods for details on the procedures.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Restorative services made up the greatest portion of total expenditures in both FY 2008 and FY 2012. There was a slight decline in the percentage of costs associated with restorative services (from 33% in 2008 to 30% in 2012).

Orthodontics, treatment that commonly includes braces, contributed to a significantly greater percentage of total expenditures in FY 2012 than FY 2008. There was a rate increase for orthodontia in 2007, which led to an increase in the number of providers willing to see Medicaid clients.

Note: Excludes CHC claims and claims with missing values for procedure categories. Other includes Maxillofacial Prosthetics, Fixed Prosthodontics, Implant Services, and Periodontics. Combined, these categories had less than 1% of total expenditures for FY 2012 and are not depicted in the pie chart. Also not depicted in 2012 is Prosthodontics, Removable with less than 1% of expenditures. Note that pie charts do not add up to 100% due to the noted removed procedure groups. See Appendix for information on procedure groups.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data.
Dental Users and Total Expenditures by Procedure Group, FY 2012

While more people use diagnostic and preventive services, restorative services are much more costly.

Note: Excludes CHC claims. Excludes claims with missing values for procedure categories. Maxillofacial Prosthetics, Prosthodontics (Removable), and Periodontics had less than 7,000 users and $1,000,000 in expenditures. They are included in the graph as “Other Procedure Groups.”

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
The top ten procedures totaled approximately $101 million, about 43% of total dental expenditures in FY 2012. Orthodontic treatment, often involving braces for realignment of teeth, topped the list at almost $17M.
Summary
Total Expenditures and Services, All Ages

- Dental expenditures rose from $139M in FY 2008 to $178M in FY 2012 (excluding CHC expenditures) primarily due to an increase in enrollees.
- Diagnostic and preventive services were the types of services most frequently used, but restorative services contributed to the largest proportion of total expenditures in both FY 2008 and FY 2012.
- Fluoride applications and cleanings for children and exams for both adults and children were among the most common procedures in FY 2012.
- Utilization of dental services varied widely by county, ranging from 26% to 57% in FY 2012.
- Individuals continuously enrolled in Medicaid for 11 months or more were more likely to use dental services – 51% compared to 16%, in FY 2012.
- Dental expenditures for most users were under $500 in FY 2012. Fewer than 4% of users had expenditures of more than $2,000.

Note: Community Health Center (CHC) expenditures were incomplete for FY 2008-FY 2010. Subsequently, unless otherwise noted, expenditure data for the period FY 2008 – FY 2010 excludes CHC expenditures; expenditure data for FY 2012 also excludes CHC expenditures, for consistency, when compared to previous years; where expenditure data for FY 2012 are reported without comparison to previous years, CHC expenditures are included since FY 2012 does allow us to report complete CHC expenditures to the best of our knowledge. Please see the Methods for more details.
Expenditures and Services among Children
Utilization and Expenditures Among Children, FY 2008 – FY 2012

Between FY 2008 and FY 2012, there were increases in the number of children enrolled in Medicaid, the number of children getting dental services, and the associated dental expenditures, excluding CHC payments.

Expenditures increased from $102 million in FY 2008 to $167 million in FY 2012, a 64% increase. (Adjusted for inflation this increase was 47%.) This was more than the increase in the number of child enrollees (21%) and the increase in the number of dental users (45%). The increase can also be attributed to children using services more frequently and getting more costly types of procedures.

Note: Excludes claims with unmatched eligibility data and CHC claims.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Factors Affecting the Change in Children's Expenditures, FY 2008 – FY 2012

Expenditures increase by $65M between FY 2008 and FY 2012. During this period, we also know that utilization and the total number of enrollees increased.

<table>
<thead>
<tr>
<th>Volume-Related Changes</th>
<th>Percentage Contributing to Increase in Expenditures</th>
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<tbody>
<tr>
<td>Increase in enrollees</td>
<td>32%</td>
</tr>
<tr>
<td>Increase in users – proportion of enrollees using dental services</td>
<td>38%</td>
</tr>
<tr>
<td>Cost Related Changes</td>
<td></td>
</tr>
<tr>
<td>Increase in expenditures per person due to more frequent use or higher cost procedures</td>
<td>30%</td>
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An analysis of the $65 million increase in children's dental expenditures between FY 2008 and FY 2012 reveals that there was not a single driving factor responsible for the increase. Both volume and cost-related factors played a role. There was an increase in children enrolled in the program, a larger proportion of children using dental services, and an increase in the frequency and type of services being used.

Note: Excludes Community Health Center (CHC) payments. Analysis of factors that affected a change in expenditures is also sometimes referred to as healthcare cost variance analysis. Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Average Child Dental Expenditures per User
FY 2008 - FY 2012

Dental expenditures per child enrollee rose from $316 in FY 2008 to $357 in FY 2012, a 13% increase.

Note: Excludes claims with unmatched eligibility data and CHC payments.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
There have been notable increases since FY 2008 in the percent of children of all age groups that have received dental services. The greatest increases have been among children ages one and under, a positive sign given that the American Academy of Pediatric Dentistry, the American Academy of Pediatrics, and American Academy of Family Physicians recommend the first dental screening by the first birthday by a dentist or physician.
Utilization for Children in Washington vs. Other States

• Washington state leads the country in the percentage of young Medicaid insured children receiving preventive dental care.

Nationally, the percent of children enrolled in Medicaid with at least one dental visit has been steadily increasing over the years, from 27% in 2000 to 40% in 2012. In WA, the rate is 53%.

Washington is a leader in innovative programs to improve access to dental care for young children.

**ABCD**: Connects Medicaid-insured children under age six to dental care.

**Early learning**: Head Start and child care providers, as well as home visitors, have been trained to identify children at risk for oral health problems and connect them to community resources.
Child Enrollees with at Least One Dental Service, by County, FY 2012

Utilization across the state ranged from 40% to 71%.

Chelan, Douglas, and Yakima Counties had the largest percentage of children receiving dental services in FY 2012 (indicated by darker shading), while Asotin, Clallum, and Jefferson Counties had the lowest (indicated by lighter shading).

Note: Excludes out of state utilization and utilization where the county is unknown.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Change in Utilization for Children by County, FY 2008 vs. FY 2012

The percent of children enrolled in Medicaid with at least one dental visit increased between FY 2008 and FY 2012 for each of Washington’s counties. Thirty-four of the thirty-nine counties had increases of 10% or more.

Note: Excludes records without a county identifier and records outside the state.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Children access diagnostic and preventive services (on the far right of graph) more than any other type, but restorative services (on the top of graph) were the most costly for the Medicaid program.

Note: Maxillofacial Prosthetics, Prosthodontics (Removable), Orthodontics, and Periodontics had less than 7,000 users and $1,000,000 in expenditures. They are included in the graph as “Other Procedure Groups”.
Excludes claims with unmatched eligibility data.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Among children eligible for care, there have been large increases in those that receive preventive and diagnostic services. This suggests that more children are getting the care needed to prevent disease, rather than solely treatment services to fix problems.
The percentage of children who received preventive dental care increased for all age groups from FY 2008 to FY 2012. By FY 2012, 60% of children between the ages of 2 and 5 received preventive dental care.

The percent of children using preventive services for all age groups in FY 2008 was 40.2% and in FY 2012 was 49.6%.

Note: Excludes claims with unmatched eligibility data.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Percent of Children Age 6 – 9 Receiving Sealants, FY 2008 vs. FY 2012

Sealants protect the chewing surface of teeth from decay. Permanent molars, which appear when a child is about 6 years old, are the most likely to benefit from sealants.

The percentage of children ages 6-9 getting sealants did not change between FY 2008 and FY 2012.

Note this represents children who received sealants within a single year, the prevalence of sealants within this age group is likely higher.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Children Oral Health Services Provided by Primary Care Medical Providers

The number of children receiving oral health services by primary care medical providers dramatically increased from 2000 to 2011.

Note: Primary Care Medical Providers include primary care physicians, other physicians who include some primary care services in their practices, and some non-physician providers, such as nurse practitioners and physician’s assistants. Primary care providers are physicians specifically trained for and skilled in comprehensive first contact and continuing care for persons with any undiagnosed sign, symptom, or health concern.

Children Receiving Oral Health Preventive Services from Primary Care Medical Providers

Percentage of Children Age 1-5 Enrolled in EPSDT for at Least 90 Continuous Days Receiving Oral Health Services Provided by a Non-Dentist Provider, FY2011

Washington is a leader in the percent of children who receive oral health preventive services from primary care medical providers during well-child visits.

More than 1/3 of WA’s pediatricians and family practitioners have been trained to deliver oral health preventive services during well-child visits.

Source: FY2011 CMS-416 reports, Line 1b and Line 12f
Note: *FY2010 data was used for Ohio
Summary
Total Expenditures and Services, Children

• WA Medicaid spent $167M on dental services for children in FY 2012, compared to $102M in FY 2008 (excluding CHC expenditures).

• Increases in the number of enrollees, the number of children accessing services and the costs per child each contributed to the $65M increase in dental expenditures.

• The percentage of children accessing dental services increased across all age groups and was dramatic among the youngest age groups.

• The percentage of children accessing dental services increased in all counties between FY 2008 and FY 2012. However, geographic disparities remain - utilization by county ranged from 40% to 71%, in FY 2012.

• The percentage of children accessing dental services was 45% in FY 2008, compared to 54% in FY 2012.

• The rate of children accessing preventive services also increased, from 35% in FY 2008 to 50% in FY 2012.

Note: Community Health Center (CHC) expenditures were incomplete for FY 2008-FY 2010. Subsequently, unless otherwise noted, expenditure data for the period FY 2008 – FY 2010 excludes CHC expenditures; expenditure data for FY 2012 also excludes CHC expenditures, for consistency, when compared to previous years; where expenditure data for FY 2012 are reported without comparison to previous years, CHC expenditures are included since FY 2012 does allow us to report complete CHC expenditures to the best of our knowledge. Please see the Methods for more details.
Expenditures and Services among Adults
Total expenditures and utilization fell dramatically after the adult dental cuts went into effect in January of 2011. Expenditures fell to just $11 M in FY 2012 compared to a high of $43 M in FY 2009.

In FY 2012, just 12% of adults received services, including those who were exempt from the cuts and those who received emergency dental services (e.g., pain relief, extraction, etc.).

Note: Excludes claims with unmatched eligibility data. Excludes CHC claims.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Trend in Dental Utilization and Expenditures Among Adults, Ages 21-54 and 55+, FY 2008 – FY 2012

While enrollees ages 21-54 had higher rates of utilization than those age 55 and older, both groups experienced declines in use of services after FY 2010.

Note: Excludes claims with unmatched eligibility data. Excludes CHC claims.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Average Adult Dental Expenditures per User, FY 2008 – FY 2012

Expenditures per user were at a high of $348 in FY 2009. Expenditures subsequently fell for the next three years, reaching a low of $182 per user in FY 2012, a 43% drop from FY 2008.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Adult Enrollees with at Least One Dental Service, by County, FY 2012

Adams County had the largest percentage of Medicaid adult enrollees receiving dental services in FY 2012, 21% (indicated by darker shading), while Klickitat and Skamania Counties had the lowest, 5% and 6%, respectively (indicated by lighter shading).

Note: Excludes out of state utilization and utilization where the county is unknown.
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
In FY 2012, with adult dental cuts in effect, preventive services were used by relatively few adults (orange dot). Diagnostic procedures, which had the greatest number of users, were typically done in conjunction with other procedures (e.g., prior to emergency oral surgery).

In sharp contrast to utilization by children, more adults had oral surgery procedures (e.g., extractions) than preventive services in FY 2012.

Note: Maxillofacial Prosthetics, Prosthetics (Removable), and Periodontics had less than 7,000 users and $1,000,000 in expenditures. They are included in the graph as “Other Procedure Groups.”

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Adult Oral Surgery: Use and Expenditures Among Enrollees, FY 2008 vs. FY 2012

Use of oral surgery and per user expenditures declined from FY 2008 to FY 2012, even though this procedure category includes emergency extractions.

The percentage of enrollees who got oral surgery fell by 45% and expenditures decreased from $203 to $113 per procedure.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Dental Services for Selected Pregnant Enrollees, FY 2012

- Studies show that many women experience gum disease during pregnancy, which may present risk to the baby. ¹
- The American Pregnancy Association, the American College of Obstetrics & Gynecology, the American College of Radiology, and leading dental associations agree that dental treatment can be accomplished safely at any time during pregnancy. ¹
- WDS Foundation delivers continuing education training for dentists regarding dental care for pregnant women.
- An estimated 19% of women in two predominant pregnancy aid codes received a dental service in FY 2012.*

*Note: The 19% cited as receiving dental services must be interpreted with caution given that some of the users may be up to 2 months post-partum; some enrollees may have received dental care during pregnancy, but prior to enrolling in Medicaid; the selected aid codes only represent a portion of Medicaid-enrolled pregnant women and the data do not support an accurate calculation of the total number of Medicaid enrollees who are pregnant and received one or more dental services.

Adult Expenditures and Services

Having a healthy mouth before and during pregnancy improves the health of mothers as well as their babies, since mothers can pass cavity-causing bacteria to their babies through saliva.

Despite the importance of oral health care for pregnant women, historically, there have been barriers to treating pregnant women, including limited professional guidance and liability concerns.
Summary

Total Expenditures and Services, Adults

• Budget cuts largely eliminated the Medicaid adult dental program as of January 2011, except for emergency services and services for select populations (i.e., pregnant women, those in long-term care/nursing homes, and clients who are eligible under a 1915 (c) waiver program). Only small numbers of adults who were exempted from the cuts or who were receiving emergency dental care continued to receive services.

• The state spent $37M on dental services for adults in FY 2008, compared to $11M in FY 2012 (excluding CHC expenditures).

• Just 12% of the adult population received services in FY 2012, compared to 27% in FY 2008. Adults over age 65 had lower utilization than other adults.

• In FY 2012, more adults received oral surgery procedures than preventive services.

• The state legislature recently restored the adult dental program and comprehensive services will resume in January of 2014.

Note: Community Health Center (CHC) expenditures were incomplete for FY 2008-FY 2010. Subsequently, unless otherwise noted, expenditure data for the period FY 2008 – FY 2010 excludes CHC expenditures; expenditure data for FY 2012 also excludes CHC expenditures, for consistency, when compared to previous years; where expenditure data for FY 2012 are reported without comparison to previous years, CHC expenditures are included since FY 2012 does allow us to report complete CHC expenditures to the best of our knowledge. Please see the Methods for more details.
Dental Providers
According to research conducted by the Pew Center on the States, Washington’s reimbursement rates for dentists serving Medicaid-insured children are higher than three of the four other states in the Pacific region. However, with reimbursement rates at 46.5% of dentists’ retail fees, only 12 states have lower Medicaid reimbursement rates than WA. The rates for Medicaid-insured adults are even lower.

<table>
<thead>
<tr>
<th>Procedure Code</th>
<th>Procedure Description</th>
<th>WA Medicaid 2011 Payment Rate (Children under the age of 20)</th>
<th>WA Medicaid ABCD Payment Rate (Children Ages 0-5)</th>
<th>WA Medicaid 2011 Payment Rate (Adults)</th>
<th>2011 CA Medi-Cal (CA Medicaid) Payment Rate</th>
<th>2011 Pacific Region ADA General Practice 25th Percentile</th>
<th>2007 National ADA General Practice 50th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0120</td>
<td>Periodic Oral Exam</td>
<td>$21.73</td>
<td>$29.46</td>
<td>$20.24</td>
<td>$15.00</td>
<td>$45.00</td>
<td>$43.00</td>
</tr>
<tr>
<td>D0272</td>
<td>Bitewings, 2 Films</td>
<td>$10.29</td>
<td>n/a</td>
<td>$6.44</td>
<td>$10.00</td>
<td>$40.00</td>
<td>$39.00</td>
</tr>
<tr>
<td>D1110</td>
<td>Prophylaxis (cleaning) - adult</td>
<td>$36.25</td>
<td>n/a</td>
<td>$34.38</td>
<td>$40.00</td>
<td>$90.00</td>
<td>$80.00</td>
</tr>
<tr>
<td>D1120</td>
<td>Prophylaxis (cleaning) - child</td>
<td>$22.98</td>
<td>$22.98</td>
<td>$30.00</td>
<td>$65.00</td>
<td>$60.00</td>
<td></td>
</tr>
<tr>
<td>D2150</td>
<td>Amalgam, 2 Surfaces, Permanent Tooth</td>
<td>$61.97</td>
<td>$69.97</td>
<td>$44.51</td>
<td>$48.00</td>
<td>$138.00</td>
<td>$144.00</td>
</tr>
<tr>
<td>D7140</td>
<td>Extraction, Erupted Tooth or Exposed Root</td>
<td>$57.65</td>
<td>n/a</td>
<td>$30.49</td>
<td>$41.00</td>
<td>$370.00</td>
<td>$145.00</td>
</tr>
<tr>
<td>D2751</td>
<td>Crown, Porcelain Fused to Base Metal</td>
<td>$560.97</td>
<td>n/a</td>
<td>$340.00</td>
<td>$800.00</td>
<td>$900.00</td>
<td></td>
</tr>
</tbody>
</table>

Note: Pacific Region includes California, Washington, Hawaii, Oregon and Alaska. CA rates do not reflect the 1% that has been taken out of every payment since March 2009. Also, CA is awaiting a court decision regarding the imposition of a 10% payment reduction that would be retroactive to June 2011.

Expenditures by Billing Provider Type Specialty, FY 2012

In FY 2012, ninety-six cents out of every dollar for dental services went to dentists or Community Health Centers. The remaining 4% went to dental hygienists, anesthesiologists, and other dental providers.

Note: Includes only matched claims. Other includes Multi-Specialty, Dental Hygienists, Pediatrics, Denturists, Oral & Maxillofacial Surgery, Nurse Anesthetist (Certified Registered), Single Specialty, Public Health, Family Practice, Nurse Practitioner, Internal Medical, and General Practice.  
Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Overall, many more children are served by community health centers than adults, as more children use dental services, in general.

The number of adults served by community health centers has been declining since 2011, when the cuts to Medicaid adult dental benefits went into effect.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
The portion of child dental users served by community health centers was consistent from FY 2008 to FY 2011, around 30%, but slightly dropped in FY 2012 to 26%.

<table>
<thead>
<tr>
<th>Year</th>
<th>CHC Medicaid Dental Patient Age 20 and Under</th>
<th>Total Medicaid Dental Users Age 20 and Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>222,486 (32.13%)</td>
<td>684,996</td>
</tr>
<tr>
<td>2009</td>
<td>263,494 (30.26%)</td>
<td>839,904</td>
</tr>
<tr>
<td>2010</td>
<td>304,653 (28.65%)</td>
<td>1,024,277</td>
</tr>
<tr>
<td>2011</td>
<td>325,176 (28.58%)</td>
<td>1,149,993</td>
</tr>
<tr>
<td>2012</td>
<td>394,909 (26.04%)</td>
<td>1,521,874</td>
</tr>
</tbody>
</table>

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
The portion of adult dental users served by community health centers has been on the rise since 2011, peaking at 51% in FY 2012.

An analysis of the adult utilization decrease between FY 2008 and FY 2012 reveals that while overall there has been a 48% decrease in the total number of adult enrollees receiving dental services, there has been only a 15% decrease among adults receiving services at Community Health Centers.

Source: Washington State Health Care Authority, Medicaid Dental Services Enrollment and Utilization Data
Percentage of Population Living in a Dental Health Professional Shortage Area (HPSA): US vs. West Coast States, 2010

Nearly 14% of people in Washington state live in a dental Health Professional Shortage Area, slightly below the U.S. average of 15%.

Source: Designated Health Professional Shortage Areas (HPSA) Statistics, Health Resources and Services Administration (HRSA), February 2012. Percentages calculated using 2010 population data from U.S. Census Bureau.
Policy Implications and Opportunities

• The increase in the number of young children receiving preventive dental care is a promising trend. Expanding current efforts and identifying additional strategies to encourage care with a focus on prevention to the youngest Medicaid-enrollees should be explored.

• Though the percentage of children accessing dental services is on the rise, there is still wide variation among the counties, from 40% to 71%. Strategies used in counties with particularly high utilization, like Chelan, Douglas, and Yakima, should be examined to determine if their success can be replicated elsewhere.

• Given the low percentage of adults that have accessed dental care, even prior to the 2011 adult dental cut, strategies should be explored to ensure that high risk populations access care (e.g., those with chronic health conditions that are impacted by oral disease).
Policy Implications and Opportunities

• Adults age 55 and over have lower utilization rates than other adults, yet have increased risk for oral disease. Older adults have limited options for public dental coverage - Medicare does not include dental coverage and older adults are not part of the Medicaid Expansion, so only the lowest income seniors qualify for Medicaid coverage (those under 74% of the federal poverty level). Explore options for increasing access for this high-risk population.

• Given that those continuously enrolled in Medicaid were much more likely to use dental services than their counterparts, strategies to guarantee 12 months of continuous coverage may result in more regular, preventive care. Currently WA has continuous coverage for children but not adults.
Additional Data Needs

Due to data limitations, we were not able to report on Medicaid dental expenditures and utilization in several domains.

The following data would be helpful to inform future policy:

• **Emergency department dental visits** – According to the Washington State Hospital Association, dental visits are a top reason Medicaid-insured patients visit the E.D. Better quantifying the cost and types of patients (e.g., age, health conditions, etc.) that seek care in the E.D could inform strategies to divert these visits.

• **Dental treatment requiring operating room use** – Children, and some adults with disabilities, that need treatment for severe tooth decay often necessitate the care be provided under general anesthesia in an operating room. Capturing these trends would provide a gauge for progress in reducing these severe cases.
Additional Data Needs

• **Oral health preventive services delivered by primary care medical providers** – Better data is needed to understand the role primary care providers are playing in preventing oral disease among children as this is a promising strategy for reaching a significant portion of the children that are not currently accessed care in a dental environment.

• **Utilization of oral health services by pregnant and post-partum women** – Better understanding the proportion of pregnant and post-partum women that are accessing oral health services could inform strategy to ensure a high number receive care in order to prevent disease among their babies and toddlers.

• **Utilization of oral health service by adults with chronic health conditions** – Given recent evidence that people with health conditions, such as diabetes, have significantly lower medical costs when they receive oral health care, the opportunity exists to examine progress in WA in getting these populations into dental care.
References

Slide 3: Introduction

“Medicaid Managed Care Enrollment Report Summary Statistics as of July 1, 2011.” Data and Systems Group (DSG) for the Centers of Medicare and Medicaid Services (CMS).


Slide 6: Oral Health is a Critical Component of Overall Health and Well-Being


Slide 7: Overview of the WA Medicaid Dental Program


Slide 8: Dental Programs & Services Available to WA Medicaid Enrollees

[http://www.huffingtonpost.com/2012/10/02/medicaid-dental-cuts_n_1930650.html]


[http://www.buckconsultants.com/portals/0/publications/key-indicators/CPI.pdf]

Slide 20: High Cost Dental Service Users, FY 2012

[http://www.agingwashington.org/events/acannual/CCM_ADSA_Fact_Sheet.pdf]
References

Slide 36: Percent of Child Enrollees Using at least One Service, by Age Group, FY 2008 vs. FY 2012
http://www.aapd.org/resources/frequently_asked_questions/#36

Slide 37: Utilization for Children in Washington vs. Other States


[http://www.ada.org/sections/professionalResources/pdfs/12_med.pdf]


Slide 43: Percent of Children Age 6-9 Receiving Sealants, FY 2008 vs. FY 2012

Slide 54: Dental Services for Selected Pregnant Enrollees, FY 2012

Slide 57: Reimbursement Rates for WA Dental Providers vs. CA and ADA Pacific General Practice
Additional Resources

Critical Factors that Influence Good Oral Health


Social Determinants Affect Oral Health and Oral Health can Affect Social Determinants


Important Health Risks are Associated with Poor Oral Health


Dental Care and ACA

About the Sponsor and Authors

Washington Dental Service (WDS) Foundation

Washington Dental Service (WDS) Foundation commissioned this document for the purpose of better understanding the use and expenditures associated with dental services for Washington’s Medicaid population. WDS Foundation is a non-profit funded by Washington Dental Service, committed to lasting approaches to improving the oral health of Washington’s residents. The Foundation’s mission is to prevent oral disease and improve overall health. The Foundation works closely with partner organizations to develop and implement innovative programs and public policies that produce permanent changes in the healthcare arena and improve the public’s long-term oral health.

Lisa Maiuro MSPH, PhD, Health Management Associates, Inc.

Dr. Lisa Maiuro is the lead author and researcher for this document. A former UCLA/Rand Corp. Pew Health Policy Fellow, she has more than 25 years of experience in health policy and research and data analysis, including the analysis of oral health data for the purposes of improving access to quality dental care through data driven information supplemented by information from the providers, programs and patients impacted. She is currently working on implementing a dynamic and interactive dental dashboard for the CA Medicaid dental program for the purposes of ongoing performance measurement and monitoring. (http://www.healthmanagement.com/)

Bret Corzine, Health Management Associates, Inc.

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Acknowledgments

The sponsor and authors wish to acknowledge the support of staff at the Washington State Health Care Authority (HCA), which provided the data for this project. Special thanks go to Dianne Baum, the Dental Program Manager, whose guidance has been invaluable to the successful completion of this project.
Methods

Claims Data:
The expenditure and utilization analyses for this presentation were based on the Washington Medicaid paid claims data as extracted by the Washington Dental Service Foundation. Data are included for Fiscal Year 2008 through Fiscal Year 2012.

The dental procedure codes are grouped into sections as follows:

I. Diagnostic D0100-D0999. Examples of services include exams and x-rays.
II. Preventive D1000-D1999. Examples of services include application of fluoride and sealants.
III. Restorative D2000-D2999. Examples of services a crown which may be used to restore an already broken tooth or a tooth that has been severely worn down.
IV. Endodontics D3000-D3999. An example of a service is a root canal.
V. Periodontics D4000-D4999. Examples of services include the removal of plaque and tartar from under the gums.
VI. Prosthodontics, removable D5000-D5899. An example of a service is removable dentures.
VII. Maxillofacial Prosthetics D5900-D5999. Examples of services include orbital and other facial prosthetics.
VIII. Implant Services D6000-D6199. Examples of services include the surgical placement of implants.
IX. Prosthodontics, fixed D6200-D6999. Examples of services include permanent retainers.
X. Oral and Maxillofacial Surgery D7000-D7999. Examples of services include dental extractions.
XI. Orthodontics D8000-D8999. Examples of services include dental braces.
XII. Adjunctive General Services D9000-D9999. Examples of services include anesthesia and other services related to dental treatment.

Data for Community Health Center (CHC) services based on the specific dental procedures in the twelve groups above were not available. Therefore, all CHC based dental care was classified as “Other.” In 2010 the Washington State Department of Social and Health Services (DSHS) replaced its Medicaid Management Information System with a new payment processing system named Provider One. ProviderOne is now the primary provider payment processing system for DSHS. Prior to that point, not all the dental CHC expenditures were reported in the dental data. Consequently, total dental expenditures that include CHC data for FY 2008 through FY 2010 are incomplete and therefore this document does not include CHC expenditures for FY 2008 through FY 2010. Please note that, subsequently, total dental expenditures in this document, depending on the unit of analysis e.g. all dental payments or all dental payments less CHC services, differ from those on the Washington State Health Care Authority website. Including CHC expenditures in total expenditures for longitudinal analyses from FY 2008 through FY 2012 implies a rate of growth not supported by the data given that the Washington Medicaid FY 2008 through FY 2010 claims data do not include all CHC payments and these payments were not available from other sources.

For purposes of reporting in this document we applied the following guide unless otherwise noted on the page: expenditure data for the period FY 2008 – FY 2010 excludes CHC expenditures; expenditure data that compares expenditures for any of the years in the FY 2008 – FY 2010 period with FY 2012 excludes CHC (CHC) expenditures; total expenditure data for FY 2011 and FY 2012 includes CHC expenditures, unless otherwise noted, as long as it is not being compared to expenditures for years prior to FY 2011.

Claims designated as Access to Baby and Child Dentistry (ABCD) were based on the field “Pricing Path” which was converted to an ABCD “Y/N” value.
Methods

Sealants:
Child enrollees under the age of 1 and the age of 1 receive sealants at less than a 1% rate, and therefore they were excluded from this page. CMS' Oral Health Initiative seeks to improve children's access to dental care, with an emphasis on early prevention. One of the initiative goals is to increase the proportion of Medicaid and CHIP children ages 6 to 9 who receive a sealant on a permanent molar by 10 percentage points. 1

Enrollee Demographic Data:
The enrollee demographic data for this presentation were based on the Washington Medicaid paid claims data as extracted by the Washington Dental Service Foundation. Demographic data (e.g., age and county) for a single enrollee may vary by claim within a given year. However, in order to track an enrollee's utilization and expenditures over time based on demographic factors it was necessary to have a single indicator for a given year for many of these demographic fields. Subsequently, demographic information was based on the value for which the enrollee had the most months of eligibility, e.g. if the enrollee was in King County for 8 of the 12 months, the enrollee's county was designated as King for the year. 2 This is an obvious study limitation but necessary for this type of analysis and we do not believe this approach has a material impact on our findings.

Access/Utilization Measures:
There are many definitions of and methods by which to measure access to care and utilization.

One of the most basic is a utilization rate, i.e., the proportion of a population that uses a service in a specified time period. The numerator in this equation is typically an unduplicated count of users, i.e., an individual is only counted once regardless of the number of times that person is seen or the number of services received. The denominator, however, can be specified in several different ways, each of which tends to influence how the data are interpreted. Most of the analyses used an unduplicated count of enrolled members, referred to as "enrollees" over the course of the year. This reflected the aggregate number of people who had the benefit of dental services at any time during the period analyzed. However, it is important to note that in the Washington Medicaid program, like all Medicaid programs, over the course of a year some individuals may be eligible for a month or two while others may be eligible for the entire year. Thus, it isn't reasonable to assume that people who have been enrolled for a month have had the same opportunity to receive dental care as those who have been enrolled for a year.

Dental Care during Pregnancy:
Every pregnant woman should have an oral evaluation, be counseled on proper oral hygiene, and be referred for preventive and therapeutic oral health care. 3 Ideally, our analysis would have included an exploration of dental care for pregnant Medicaid enrollees. However, data limitations prohibited this given that the only way to identify a pregnant woman and their stage of pregnancy would involve an analysis of the medical claims data. We were able to examine dental utilization for a subset of Medicaid enrollees classified as Pregnancy Categorically Needy Emergency and related services only, aid codes 1095 and 1096. This includes women who are not federally qualified for full scope Medicaid and thus exclude all the pregnant women who are in aid codes that do qualify for full scope. It also covers several month of postpartum care. Thus, while utilization rates for this population given us information about this subset of pregnant women they do not necessarily represent utilization rates for all pregnant women in the Washington Medicaid program during their pregnancy.

2 In cases where individuals were enrolled in more than two programs and/or counties for an equal number of months, WDSF chose whichever program and/or county they were enrolled in last (i.e., most recent month).
Methods

Top 10 Procedures by Expenditures and Users:
The top 10 procedures by expenditures and the top 10 procedures by users slides contain simplified procedure names. Below are the full procedure names and procedure codes:

- **Adolescent Orthodontic Treatment**: Comprehensive Orthodontic Treatment of the Adolescent Dentition (D8080)
- **Stainless Steel Crown**: Prefabricated Stainless Steel Crown (D2930)
- **Periodic Oral Exam**: Dental - Periodic Oral Examination (D0120)
- **Composite Filling - 2 Surfaces**: Resin-Based Composite - 2 Surfaces Posterior (D2392)
- **Fluoride - Child**: Topical Application of Fluoride (Prophylaxis Not Included) - Child (D1203)
- **Cleaning – Child**: Prophylaxis - Child (D1120)
- **Composite Filling - 1 Surface**: Resin-Based Composite - 1 Surface Posterior (D2391)
- **Sealant**: Sealant - Per Tooth (D1351)
- **Extraction**: Extraction Erupted Tooth/Exposed Root (D7140)
- **Comprehensive Oral Exam**: Comprehensive Oral Evaluation Orthodontics (D0150)

Top 10 Procedures by Expenditures and Users:
Calculating real dollars: Price inflation causes the value of a dollar to fall over time, and so the same dollar amount in two different years will usually represent different amounts of purchasing power. To counteract this problem, analysts typically adjust dollar figures to account for inflation. Figures that have not been adjusted for inflation are said to be in 'nominal dollars,' while those that have been adjusted are in 'real dollars.' Converting costs to 'real dollars' allows us to compare costs incurred in different years. For our analysis we used the medical consumer price index to capture changes in price related to medical services.
Definitions

- **Adjunctive General Services**: Services performed in addition to another procedure, such as anesthesia, only when the procedure is directly related to the original procedure.
- **Continuously Eligible**: An enrollee who was enrolled in the dental program for 11 or more consecutive months during a fiscal year.
- **Diagnostic Services**: Services used to determine the cause of an illness.
- **Endodontics**: A dental specialty concerned with treatment of the root and nerve of the tooth.
- **Fixed Prosthodontics**: Replacement of missing teeth with artificial materials, such as a bridge or denture, in a permanent fashion.
- **Health Professional Shortage Area**: A HPSA is a geographic area wherein the population has an inadequate number of dentists to serve their dental needs. The designation is used primarily for the purposes of loan repayment for dentists and hygienists.
- **Maxillofacial Prosthetics**: Surgery of, pertaining to, or affecting the jaws and the face.
- **Oral Surgery**: Procedures used to correct problems or damage to the mouth, teeth, or jaw by incision or manipulation.
- **Orthodontics**: A dental specialty concerned with straightening or moving misaligned teeth or jaws with braces or surgery.
- **Periodontics**: A dental specialty concerned with the treatment of gums, tissue, and bone that support the teeth.
- **Other**: Comprised of procedures codes T1015, Clinic Services-FQHC Encounter and T2035, Utility Services Anesthesia, where the former accounts for 97% of the expenditures for these two services categories.
- **Preventive Services**: Services performed to help avoid sickness or other problems in the mouth.
- **Removable Prosthodontics**: Replacement of missing teeth with artificial materials, such as a bridge or denture, in a temporary fashion.
- **Restorative Services**: Procedures used to correct problems or damage to the mouth, teeth, or jaw without surgery.
- **Sealant**: Plastic resin placed on the biting surfaces of teeth to prevent bacteria from attacking the enamel and causing tooth decay.
- **User**: An enrollee who received one or more services.