# The Impact of Oral Disease on Colorado's Children

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## Introduction

The oral health of Americans has improved significantly as a result of improvements in diet, better oral hygiene, fluoridation of public water systems and expanded access to oral health care.[1] Oral disease is still rampant among large numbers of Americans, especially those with low socio-economic status (SES) largely based on poverty and lack of educational attainment. The 2000 Surgeon General's report, *Oral Health in America* represented a landmark study for increasing public awareness of the disparities in the prevalence of dental disease between individual's based on income, race and ethnicity and for documenting that the most prevalent dental diseases, caries and periodontal disease, are fully preventable. The Surgeon General's report also empirically established the relationship between oral and systemic health. [2]

In Colorado in the late 1990s, public health agencies and private foundations began focusing their attention on the disproportionate occurrence of dental disease found among low-income children.[3] In 2000, the Colorado Commission on Children's Dental Health released a series of recommendations on ways to improve access to oral health care and implement new strategies to improve the oral health of Colorado's children.[4] Since 2000, there have been a significant number of new public and private oral health initiatives implemented.

Colorado is at the forefront of states for a number of these oral health initiatives:

- The Colorado Department of Public Health and Environment (CDPHE) participates in the National Oral Health Surveillance System which provides vital statistics on the oral health status of Colorado's children, enabling policymakers to track progress and identify areas in need of further intervention.
- Colorado has a well-developed school-based sealant program coordinated by CDPHE that targets elementary schools with large numbers of low SES students.[5]
- Colorado legislation has established a legal framework for the independent practice of dental hygienists which allows dental hygienists to bill Medicaid directly for preventive oral health services.
- Colorado Medicaid recently added health care providers to dentists and dental hygienists as providers of preventive oral health care services including oral health evaluations, parental oral health education and guidance and the application of fluoride varnishes to children under the age of 5 years. As a result, physicians, nurse practitioners and physician assistants may now bill Medicaid for these services.
- Colorado communities, largely with funding from the philanthropy, have broadened the network of safety net oral health clinics that serve low-income and uninsured children.

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[1] U.S. Department of Health and Human Services (2000). *Oral Health in America: Report of the Surgeon General*. Rockville, MD: National Institute of Dental and Craniofacial Research, National Institutes of Health. (Retrieved May 10, 2010, from: http://silk.nih.gov/public/hck1ocv.@www.surgeon.fullrpt.pdf).

[2] U.S. Department of Health and Human Services (2000).

[3] Colorado Health Institute (2005). *Oral Health Environmental Scan.* Available at: http://www.coloradohealthinstitute.org/~/media/Documents/OralHeathScan.ashx.

[4] Colorado Commission on Children's Dental Health (2000). *Addressing the Crisis of Oral Health Access for Colorado's Children.* (Retrieved May 10, 2010, from: http://www.cdphe.state.co.us/pp/oralhealth/cccdhrpt.pdf).

[5] Low SES schools are those with a large proportion of students that are eligible for free or reduced price meals served at school.

Despite these achievements, there are still many opportunities for improvement. Nationally, the prevalence of dental caries in the primary teeth of young children ages 2-4 years increased in the 10 year period between 1994 and 2004.[6] For adolescents ages 12-19 years there was a slight decline in the overall caries rate during this period. Across all age groups, the presence of dental caries was more prevalent among children living below or near the federal poverty level (FPL) than among those living above 200 percent of FPL.[7]

Similar trends exist in Colorado. In 2007, the prevalence of caries among all third grade students was 57 percent, while the rate for children in low SES schools was 72 percent. In 2005, CDPHE reported that an estimated 7.8 million hours of school were missed annually in Colorado due to acute oral pain and infection among children.[8] Moreover, when low-income children experienced oral disease it was likely to be more extensive and severe— almost 12 times the number restricted activity days (days absent from school) due to oral health problems.[9]

Recognizing the social, economic and health impacts resulting preventable oral disease, the Delta Dental of Colorado Foundation board of directors contracted with the Colorado Health Institute (CHI) to conduct an analysis of the costs and outcomes associated with oral health interventions funded on behalf of Colorado's children. This analysis includes:

- A description of the oral health status of Colorado's children;
- Estimates of the total amount of public and private dollars expended on oral health care for children in Colorado;
- A comparative analysis of utilization patterns and types of claims paid by Medicaid, the Child Health Plan Plus (CHP+) and Delta Dental of Colorado commercial plans; and
- A discussion of evidence-based options for improving the oral health of Colorado's children.

## Key findings

1) On average, Colorado kindergartners and third graders caries experience essentially remained unchanged between 2003-04 and 2006-07 (the most recent years for which data are available).

2) While the state made some progress at reducing numbers of children with untreated caries (25% of 3rd graders statewide), it did not meet the Centers for Disease Control and Prevention Healthy People 2010 Objective of 21 percent. Further, the state's most vulnerable children (those in schools with a high proportion of low-income families) had a disproportionate share of the untreated dental caries (35%).

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[6] Dye, BA, et.al. (2007). "Trends in oral health status: United States, 1988-1994 and 1999-2004." *Vital Health Statistics* 11(248):1-92.
[7] Tomar, SL, and AF Reeves. (2009). "Changes in the oral health of U.S. children and adolescents and dental public health infrastructure since the release of the Healthy people 2010 Objectives." *Academic Pediatrics* 9(6):988-395.
[8] Colorado Department of Public Health and Environment, Oral Health Program (2005). *The Impact of Oral Disease on the Health of Coloradans*. (Retrieved May 31, 2010, from: http://www.cdphe.state.co.us/pp/oralhealth/impact.pdf).
[9] U.S. General Accounting Office (2000). *Dental Disease is a Chronic Problem Among Low-income Populations.* (Retrieved May 28, 2010, from: http://www.gao.gov/new.items/he00072.pdf).

3) CHI estimates that nearly $250 million was spent on children's oral health care in Colorado in FY 2008-09. Commercial insurers comprise the largest share of these expenditures, followed by the Medicaid and CHP+ programs. There are a large number of nonprofit organizations providing oral health care services to low-income children in Colorado including federally qualified health centers, community-based oral health clinics, community-funded safety net clinics and school-based health centers. Many of these community-based programs receive substantial support from Colorado foundations. As well, CDPHE has incurred a growing investment in school-based sealant programs across the state.

4) While children enrolled in Medicaid had the lowest rates of utilization for at least one oral health service in 2005-06 (31%), it also achieved the greatest gains, by FY 2008-09 the rate had climbed to 35 percent. The age group that achieved the most improvement was one-to-four-year olds.
   - Continuous enrollment matters. Children who are continuously enrolled in any of the three oral health insurance programs for 12 or more months were more likely to utilize oral health services than those with shorter spans of continuous enrollment. CHP+ enrolled children had considerably higher utilization rates among continuously enrolled children than Medicaid children, although both programs had lower utilization rates than Delta Dental commercially enrolled children.
   - A sizeable proportion of children enrolled in Medicaid incurred annual per capita expenditures exceeding $1,000; this finding increases with age, with almost one-quarter of 15- to 18-year olds in this expenditure category.
   - While CHP+ oral health expenditures were significantly lower, this finding likely is distorted somewhat by the $600 annual cap in the CHP+ program.
   - Across all three programs, 15- to 18-year olds had the highest proportion of treatment costs of any age group.

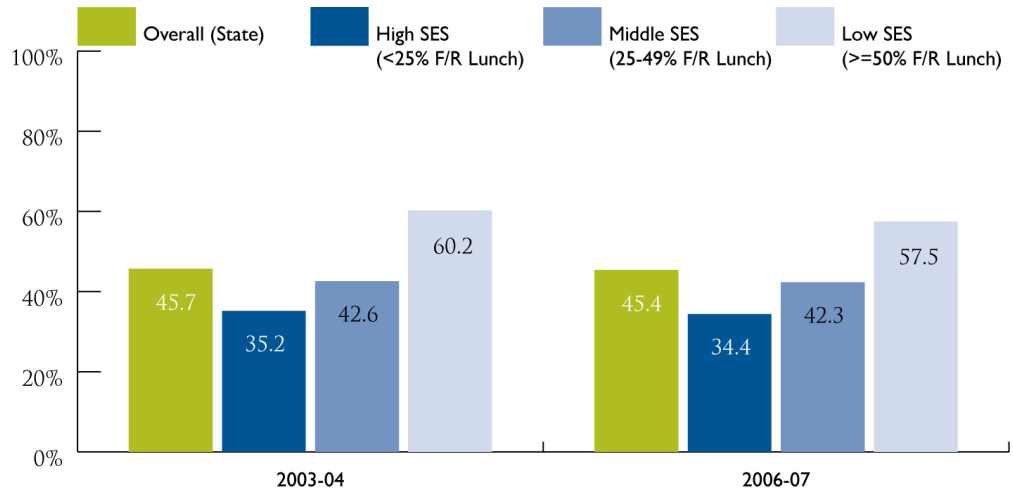
5) There is a number of evidenced-based intervention options that have been shown to improve the oral health of children, some have been implemented in Colorado; others have not. Among these, increasing the number of communities with optimum levels of fluoridation in their public water system; expanding the reach of school-based sealant programs; implementing continuous coverage for children enrolled in the Medicaid program; implementing an oral health benefit for pregnant women in Medicaid and CHP+ and increasing the use of mid-level oral health practitioners to provide preventive care.

## The oral health status of Colorado's children

As health policy leaders develop strategies to improve the oral health status of Colorado's children, it is instructive to understand our children's current oral health status. Using the most recent data available from the Colorado Oral Health Survey, CHI analyzed the oral health status of children in Colorado and the extent to which it had changed between the 2003-04 and 2006-07 school years. Since oral health varies widely based on children's socioeconomic status (SES), statewide averages are provided in the following graphs in addition to data based on the SES of students in Colorado schools.[10]

Graph 1 summarizes the proportion of kindergarteners with caries experience in 2003-04 and 2006-07. Findings from Graph 1 support the theme that recurs throughout this report—there is a strong association between children's socioeconomic status and their oral health outcomes. Kindergarteners in low SES schools experienced substantially more caries than those in high SES schools.

Graph 1. Proportion of Colorado kindergarteners with caries experience, statewide and by SES level of school, 2003-04 and 2006-07 school years



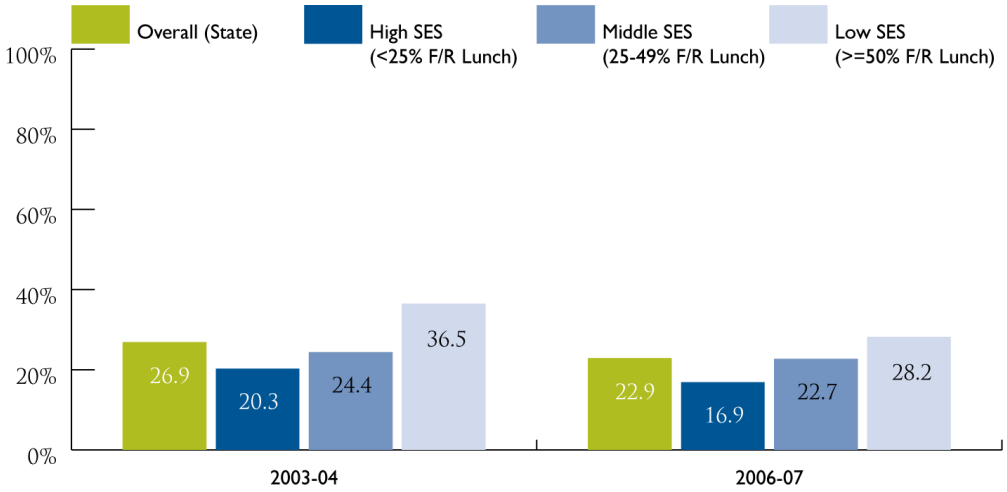

SOURCE: The Colorado Oral Health Survey, 2003-04 and 2006-07 school years
NOTE: Children are considered low SES if they attend a school where 50 percent or more of the students are eligible for free or reduced price meals at school.

- The statewide average for kindergarteners' caries experience basically remained unchanged during the timeframe analyzed (46% in 2003-04 and 45% in 2006-07). Slight gains were made in the lowest SES schools with their kindergarteners' caries prevalence declining from 60 percent to 57 percent during the timeframe analyzed.

While kindergartners' caries experience remained relatively stable statewide, improvements were made in the proportion of kindergartners with *untreated* caries (see Graph 2).

[10] The number of children qualifying for free and reduced price meal at school is used as a marker for socioeconomic status. For this analysis, children are considered low SES if they attend a school where 50 percent or more of the students were eligible for free or reduced price meals.

Graph 2. Proportion of Colorado kindergarteners with untreated caries, statewide and by SES level of school, 2003-04 and 2006-07 school years

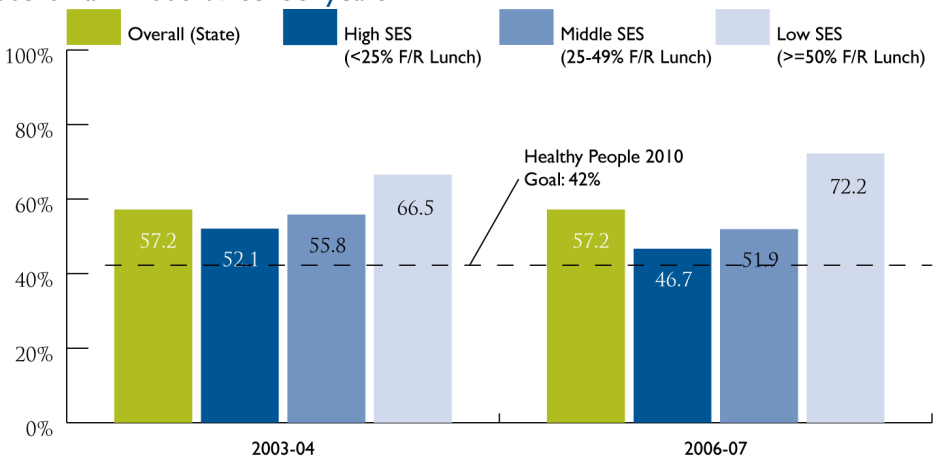



SOURCE: The Colorado Oral Health Survey, 2003-04 and 2006-07 school years

- Regardless of the school's SES status, between 2003-04 and 2006-07, the proportion of kindergartners with untreated caries declined. The largest decline occurred among low SES schools where the proportion of kindergarteners with untreated caries fell from 36 percent in 2003-04 to 28 percent in 2006-07. Overlaying the results from Graph 1 and Graph 2 it can be seen that the state did not make progress in reducing the overall prevalence of caries among kindergartners, but some modest gains were made in treating the disease.

Graph 3 summarizes the caries experience of third graders in Colorado, which is significantly higher than that of kindergarteners. Like kindergartners, caries experience within this age group is associated with socioeconomic status. However, unlike kindergartners, third graders' caries experience declined in high and middle SES schools but increased in low SES schools (67% to 72%). None of Colorado's third grade classrooms met the Healthy People 2010 goal of 42 percent.

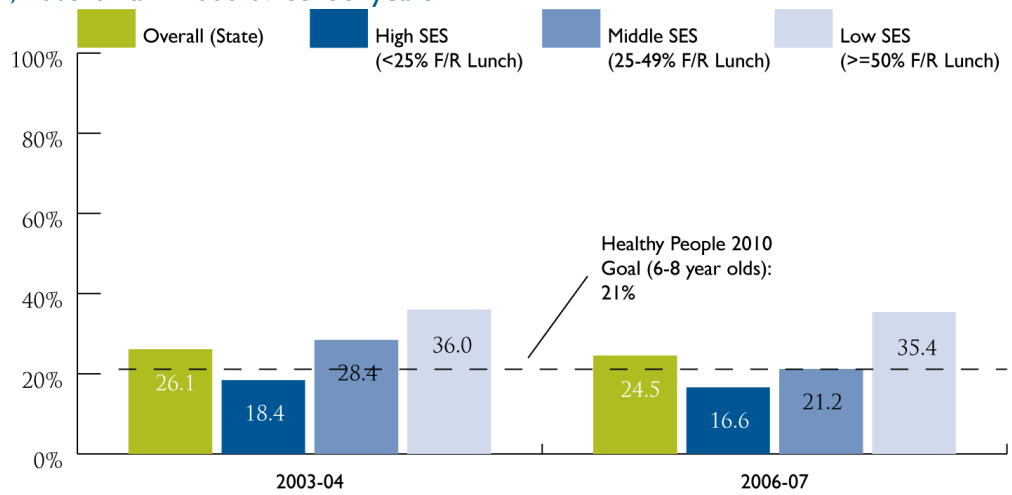
Graph 3. Proportion of Colorado third graders with caries experience, statewide and by SES level of school, 2003-04 and 2006-07 school years




SOURCE: The Colorado Oral Health Survey, 2003-04 and 2006-07 school years

- Untreated caries among Colorado's third graders declined slightly throughout the state between 2003-04 and 2006-07. Third graders in middle SES schools experienced the greatest reductions. One of the Healthy People 2010 objectives is that 21 percent of 6-8 year-olds has untreated caries; by 2006-07, Colorado third graders in high and middle SES schools met this goal.

Graph 4. Proportion of Colorado third graders with untreated caries, statewide and by SES level of school, 2003-04 and 2006-07 school years

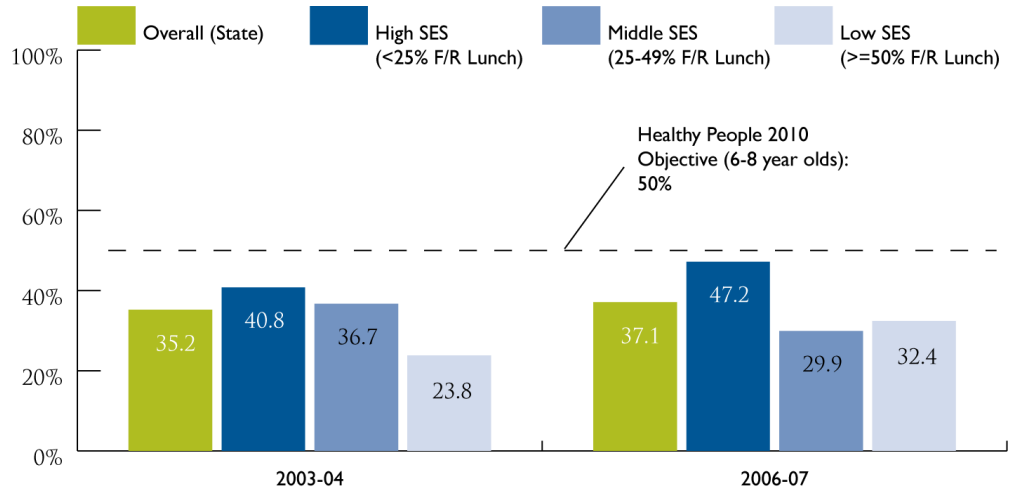



SOURCE: The Colorado Oral Health Survey, 2003-04 and 2006-07 school years

Dental sealants, a thin plastic coating applied to the chewing surface of permanent molars, is a highly effective measure to prevent tooth decay. A Healthy People 2010 objective is that 50 percent of third-grade students to have at least one sealant on one of their first permanent molars.[11] As shown in Graph 5, the portion of third graders with at least one dental sealant in Colorado increased slightly from 35 percent in 2003-04 to 37 percent in 2006-07.

[11] Centers for Disease Control and Prevention, National Center for Health Statistics (2000). Healthy People 2010, Oral Health. (Retrieved May 10, 2010, from: http://www.healthypeople.gov/Document/HTML/Volume2/21Oral.htm).

Graph 5. Proportion of Colorado third graders with dental sealants, statewide and by SES level of school, 2003-04 and 2006-07 school years




SOURCE: The Colorado Oral Health Survey, 2003-04 and 2006-07 school years

Through *Be Smart and Seal Them!*, coordinated by CDPHE, the state and many nonprofit organizations have invested considerable resources in the application of sealants to the molars of second grade students in Colorado. These school-based sealant programs targeting second grade students attending low SES schools have contributed to substantial increases in the number of low SES third grade students with sealants—from 24% in 2003-04 to 32% in 2006-07.

- Despite some modest gains in the overall reduction of caries experience and untreated caries, there are still significant differences between children attending high and low SES schools. Not unexpectedly, a child attending a low SES school in Colorado is three times more likely to be in need of urgent dental care (9%) than a child attending a high SES school (3%).[12] Additionally, only one-third of children in low and middle SES schools had sealants in place at the time of the survey, while almost one-half of the children in the higher SES schools had one or more sealants.

## Oral health care spending on behalf of Colorado's children

CHI estimates that nearly $250 million was spent in FY 2008-09 on improving the oral health of Colorado's children in Colorado. As summarized in Table 1, reimbursement for oral health care services by commercial and public insurance plans accounted for approximately $230 million while foundation funding added another $5.2 million, some of which went to community health centers along with CHP+ reimbursements. In the aggregate, through these multiple funding sources, nearly 584,000 children received some oral health care in Colorado in 2008-09.

[12] Colorado Department of Public Health and Environment. (2004). *Colorado Oral Health Survey: 2003-04 School Year.* (Retrieved May 10, 2010, from: http://www.cdphe.state.co.us/pp/oralhealth/ColoradoSummaryReport2.pdf).

Table 1. Oral health care spending on behalf of Colorado's children by type of insurer, provider and philanthropy,* FY 2008-09

| | Number of children with at least one dental visit | Total expenditures by funding source |
|---|---|---|
| Commercial dental insurance | 382,689 | $152,595,300 |
| Medicaid and CHP+ | 162,848 | $77,270,600 |
| Community Health Centers (FQHCs)** | 38,000 | $13,556,000 |
| Foundations | | $5,237,000 |
| TOTAL | 583,537 | $248,658,900 |

NOTE: Co-payments for oral health services are not included in this analysis. FQHCs receive oral health funding from foundations and reimbursement from Medicaid and CHP+ therefore there is overlap among funding sources in the case of FQHCs.
*Commercial dental insurance, Medicaid and CHP+ expenditures are based on FY 2008-09 data while FQHC and foundation expenditures are based on CY 2008 data.
** FQHCs are reimbursed differently by Medicaid than other oral health care providers, that is, they are paid by encounter as opposed to fee-for-service. Therefore, to show the contributions to the oral health care of children in Colorado made by FQHCs, CHI estimated the total number of children seen for an oral health visit by an FQHC and provided an estimate of expenditures made on their behalf.

## COMMERCIAL INSURANCE SPENDING ON ORAL HEALTH CARE FOR COLORADO'S CHILDREN

Commercial oral health insurance plans comprise the largest single source of funding in Colorado for children's oral health care. Based on data provided by Delta Dental of Colorado and other data sources, CHI estimated the number of children covered by all commercial plans in Colorado (see Table 2).

Table 2. Spending for children's oral health care in Colorado by commercial insurance plans, FY 2008-09

| Insurer | Number of children with at least one dental visit | Claims paid for children's oral health services | Average cost per child |
|---|---|---|---|
| Delta Dental of Colorado | 104,811 | $34,118,729 | $326 |
| Other commercial dental insurance | 277,878 | $118,476,606 | $426 |

SOURCE: "Other" commercial dental insurance estimates were derived from the 2008-09 Colorado Household Survey and the 2006 Medical Expenditure Panel Survey, adjusted to 2008 dollars.

- In FY 2008-09, 176,000 children were enrolled in a Delta Dental commercial plan. Of these, nearly 105,000 had at least one reimbursed dental visit for a utilization rate of 59 percent. Total oral health claims paid by Delta Dental for that year were $34 million with an average reimbursement per child with at least one oral health visit of $326.

- CHI estimates that 480,000 Colorado children were enrolled in other commercial dental insurance plans during this time period. Nearly 278,000 (58%) of these children had a least one

dental visit with an average per diem cost of $426 for each child having at least one visit.[13] [14] It is important to note that these expenditures are only the amounts paid by private insurance companies and do not include co-payments or deductibles.

## MEDICAID AND CHP+ SPENDING ON ORAL HEALTH CARE FOR COLORADO'S CHILDREN

### Medicaid

The Colorado Medicaid program is a public health insurance program for low-income families, elders and people with disabilities that is jointly funded by the federal and state governments. In Colorado, the Medicaid program includes physical, behavioral and oral health coverage for children ages five and younger with family incomes at or below 133 percent of the federal poverty level (FPL) and for children between 6 and 18 years with family incomes at or below 100 percent of the FPL. Due to the softening of the economy and the state's recent outreach and enrollment initiatives, the number of low income children enrolled in Medicaid has increased significantly—from 319,000 in FY 2005-06 to 373,000 in FY 2008-09 or a 17 percent increase.[15]

A federal Medicaid requirement is that Early Periodic Screening, Diagnosis and Treatment (EPSDT), which includes periodic screening for vision, hearing and dental health care needs, be provided to all children under age 21 enrolled in Medicaid. The Colorado EPSDT program requires that children receive a dental exam once every six months, starting (at a minimum) by 12 months of age. Dental care needs identified must include relief of pain and infection, restoration of primary and permanent teeth and maintenance of good oral health.[16] Primary dental benefits for children include clinical oral evaluations, radiographs, dental prophylaxis, fluoride treatments, space maintainer, amalgams, resin-based composites, crowns, root canal therapy, prosthetics, oral surgery and, in very limited cases, orthodontics. Orthodontics is available only for children who qualify as having a handicapping malocclusion.

Oral health services in Medicaid are reimbursed on a fee-for-service basis.

### CHP+

Children 18 and younger who don't qualify for Medicaid but have family incomes at or below 250 percent of the FPL may qualify for the Child Health Plan Plus (CHP+) program. Like Medicaid, CHP+ provides physical, behavioral and oral health coverage. However, the oral health benefit provided under the CHP+ program is not as broad as that provided by Medicaid. The CHP+ oral health benefit is a

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[13] CHI calculated the commercially insured population by applying 2006 Medical Expenditure Panel Survey (MEPS) data which found that 51 percent of Colorado's children ages 0 to 20 years had private dental coverage to the 2008-09 Colorado Household Survey estimate of numbers of insured children under the age 20 in Colorado. To estimate total expenditures, CHI then applied the 2006 MEPS estimate of 58 percent of children with private dental coverage having at least one dental visit in 2006 and MEPS derived average expenditures were then adjusted to 2008 dollars.

[14] In comparing Delta Dental's average reimbursement with other commercial plans, it is important to note that CHI could not control for variations in the design of benefit packages, including co-payments and deductibles. These estimates have been calculated to provide an approximation of the relative spending by all payers.

[15] Estimates are based on number of unduplicated children enrolled.

[16] Centers for Medicare and Medicaid Services (2004). *Guide to Children's Dental Care in Medicaid*. (Retrieved May 10, 2010, from: http://www.cms.gov/MedicaidDentalCoverage/Downloads/dentalguide.pdf).

capitated managed care private insurance product with a benefit cap of $600 per year. Delta Dental of Colorado (the statewide CHP+ oral health contractor) is paid a fixed monthly per member per child rate. Through its network of participating oral health providers, Delta Dental agrees to reimburse for oral health services provided to children enrolled in CHP+ up to the cap. As in Medicaid, CHP+ recently experienced significant enrollment growth—from 64,000 children in FY 2005-06 to 90,000 in FY 2008-09 (a 41% increase).

Table 3. Per capita and aggregate Medicaid and CHP+ spending on children's oral health care, FY 2008-09

| | Number of children with at least one dental visit FY 2008-09 | Total claims paid for children's oral health services, FY 2008-09 | Average reimbursement per child, FY 2008-09 |
|---|---|---|---|
| Medicaid | 131,399 | $69,514,259 | $529 |
| CHP+ | 31,449 | $ 7,756,324 | $247 |

NOTE: Co-payments are not included in these figures. Total claims paid by Medicaid do not include reimbursements to FQHCs. However, due to differences in claims submissions between the two programs, CHP+ reimbursements to FQHCs are included.

- CHI estimates that Medicaid and CHP+ reimbursed oral health providers $77 million in FY 2008-2009. This represents 31percent of all spending on children's oral health services in Colorado during fiscal year 2008-09.[17] The average Medicaid reimbursement for a child with at least one dental service in Colorado was $529 while it was $247 in the CHP+ program.

## COMMUNITY HEALTH CENTER SPENDING ON ORAL HEALTH CARE FOR COLORADO'S CHILDREN

Community health centers, also known as federally qualified health centers (FQHCs), provide a substantial portion of primary systemic, oral and behavioral health care services to low-income and uninsured Colorado residents. By federal mandate, FQHCs are required to be located in urban and rural areas designated by the federal government as medically underserved areas (MUAs), medically underserved populations (MUPs) or health professions shortage areas (HPSAs) in order to receive federal grants and cost-based reimbursement. If FQHCs do not provide the full range of basic primary health services, they are required to arrange for such care through other local partners. Of Colorado's 15 FQHCs, 13 operate a total of 37 dental clinic sites around the state.[18]

In exchange for agreeing to serve all patients regardless of their ability to pay, the federal government provides grants to FQHCs under Section 330 of the Public Health Service Act. In addition, FQHCs receive cost-based reimbursement for services provided to individuals enrolled in Medicaid and Medicare; that is, reimbursement based on an FQHC's average cost per visit. Unlike reimbursement methods used for other providers, this ensures that the costs of serving low-income and uninsured patients are fairly compensated given that they comprise the majority of patients seen at an FQHC.

[17] Estimates based on enrollment and claims data provided to CHI by the Colorado Department of Health Care Policy and Financing.
[18] Colorado Community Health Network (2009). *Colorado Community Health Network Fact Sheet.* (Retrieved May 10, 2010, from: http://cchn.org/pdf/about_cchn/news_room/2009_Fact_Sheet.pdf).

Because of this difference in reimbursement methods, FQHC data were not contained in the claims database provided by HCPF and therefore CHI calculated and displayed their expenditures separately.

Table 4. Colorado community health center patient volume and spending on children's oral health care, 2008

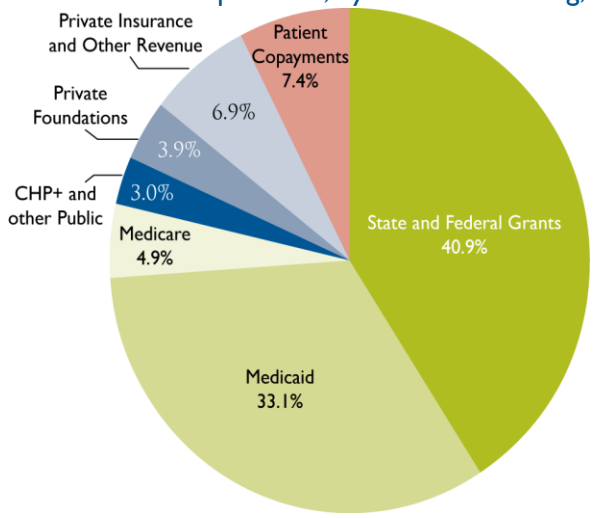
| | Number of children with at least one dental visit | Total cost of children's oral health services | Average cost per child |
|---|---|---|---|
| Community health centers (FQHCs) | 38,000 | $13,556,000* | $357 |

*Approximately 7 percent of children receiving oral health care at FQHCs are covered by the CHP+ program. Therefore, CHP+ reimbursement to FQHCs is included in both Table 3 and Table 4. Estimates derived from detailed data obtained from a single FQHC with a large dental practice whose oral health reimbursement experience was applied to remaining FQHCs in Colorado providing oral health care to children.

- As summarized in Table 4, CHI estimates that FQHCs provided $13.6 million of oral health care to low income children in Colorado in 2008. This represents approximately 5 percent of the total annual oral health expenditures made on behalf of Colorado's children in 2008.

Due to the data limitations described above, it is not possible to detail the $13.6 million of children's oral expenditures in FQHCs by funding stream; however, Graph 6 summarizes funding sources for *all* services provided by FQHCs in 2008.

Graph 6. FQHC revenues for all services provided, by source of funding, 2008




SOURCE: Uniform Data System, Colorado Rollup Report, 2008

## FOUNDATION SPENDING ON ORAL HEALTH CARE FOR COLORADO'S CHILDREN

CHI estimates that private foundations in Colorado funded approximately $5.2 million in oral health care-related services and programs for low-income and underserved children in 2008. Due to the unique flexibility afforded to foundations to innovate without federal and state funding constraints, Colorado foundations provided grants to fund both direct oral health care services as well as innovative

delivery models. In most cases, these programs are evaluated for their efficacy and cost-effectiveness. Table 5 summarizes foundation spending on oral health care for children in Colorado in 2008.

Table 5. Foundation spending for Colorado children's oral health care, 2008

| Foundation | Safety net services | Community -based prevention | Capital | Workforce | Innovative care models | Total |
|---|---|---|---|---|---|---|
| Caring for Colorado | $541,000 | $50,000 | $260,000 | | | $851,000 |
| The Colorado Trust | $140,000 | | | $100,000 | | $240,000 |
| The Colorado Health Foundation | $273,000 | $110,000 | | $58,000 | | $441,000 |
| Colorado Dental Assoc. | $775,000 | | | | | $775,000 |
| DDOC Foundation | $275,000 | $285,000 | $1,500,000 | $450,000 | $140,000 | $2,650,000 |
| K-P Foundation | | $30,000 | | $100,000 | | $130,000 |
| Rose Community Foundation | $50,000 | | | $100,000 | | $150,000 |
| Total | $2,054,000 | $475,000 | $1,760,000 | $808,000 | $140,000 | $5,237,000 |

## NONPROFIT ORAL HEALTH PROVIDERS

There are a number of nonprofit organizations that provide oral health care to children in Colorado. These organizations receive funding from a variety of sources including Colorado's Medicaid and CHP+ programs, foundations, in-kind and community support and corporate donations. In addition to the nonprofit programs and clinics listed below, the oral health safety net includes private dentists that provide charity care or discounted services to low-income patients.

### Be Smart & Seal Them!

*Be Smart & Seal Them!* is a school-based oral health program administered by CDPHE that provides seed grants to schools to establish sealant programs in elementary schools in communities around Colorado, with a special focus on schools with large numbers of low-income students. School-based sealant programs for second graders are sponsored by a number of different organizations including the Central Area Health Education Center (AHEC) in Greeley, Denver Health, Kids in Need of Dentistry, Rocky Mountain Youth Clinics, Summit County School District, RE-1 Valley School District and Weld County

School District. These sponsoring agencies often receive additional funding from foundations, Medicaid and CHP+ reimbursement and in-kind donations to administer the sealant programs.

School-based sealant programs include a dental screening by a dentist or registered dental hygienist and the application of dental sealants on molars. In addition, services include counseling with students and parents about good oral hygiene practices and the value of sealants. When appropriate, referrals to dentists for restorative and emergency dental care are made. Services are provided by paid and volunteer dentists, hygienists and dentist and dental hygiene students. School nurses typically coordinate these school-based programs.

*Be Smart & Seal Them!* targets students who are at the greatest risk of developing caries and who would otherwise be unlikely to have access to sealants. In order to be eligible for the public funds, urban schools must document that at least 50 percent of their students are enrolled in free or reduced-price meals and rural schools must be located in a geographic area where the median family income is equal to or less than 235 percent of the federal poverty level (FPL). *Be Smart & Seal Them!* grants are also available for planning, implementation and collection of data on the effectiveness of a school-based sealant program.[19]

During the 2008-09 school year, CDPHE identified 398 schools with nearly 24,000 second grade students that met the program's threshold eligibility requirements. During this school year, nearly 7,000 second-graders at 99 schools participated in the program. Over 3,600 children received oral health screenings and approximately 2,600 had sealants applied. [20]

CDPHE is currently planning to expand the sealant program to include more schools and school districts throughout the state and will begin including seventh grade students in the Oral Health Survey in the fall of 2010 to provide data on the number of students with sealants on their second molars.

**Community-based oral health clinics**

There are a number of community-based oral health clinics that provide oral health services to low-income uninsured and underinsured children. Many of these clinics began with startup grants from foundations and are sustained financially through philanthropic and corporate grants, patient fees and Medicaid, CHP+ and Colorado Indigent Care (CICP) reimbursements. In addition to the three community-based oral health clinics described below, CHI identified seven other community-based oral health clinics through its Safety Net Indicators and Monitoring System.

Dental Aid

Dental Aid was the first recognized comprehensive nonprofit dental clinic in the country. Dental Aid's three Colorado-based clinics provide low-cost dental care to low-income and uninsured children and adults in Boulder and Broomfield counties. The Louisville clinic serves primarily children. In addition to clinical services, Dental Aid also conducts outreach and provides oral health screenings to low-income

[19] Colorado Department of Public Health and Environment (CDPHE). *Be Smart and Seal Them! A School-Based Dental Sealant Manual.* (Retrieved May 10, 2010, from: http://www.cdphe.state.co.us/pp/oralhealth/BeSmartandSealThem.pdf).

[20] Conversation with Michelle Thornton, CDPHE Sealant Coordinator, May 2010.

children in preschools and elementary schools in the Boulder area. Dental Aid's oral health education program provides education about the benefits of brushing, flossing, fluoride, good nutrition and regular dental visits to children and their parents at childcare centers, preschools and elementary schools in the area.[21]

Dental Aid provided oral health services to over 4,000 children and 3,900 adults in 2008. Much of Dental Aid's funding comes from state and local grants, foundation and corporate sponsorships and Medicaid and CHP+ reimbursement with some co-payments provided by patients and their families.[22]

The Children's Hospital Dental Center

The *Healthy Smiles Clinic* is a partnership between The Children's Hospital and the University of Colorado School of Dental Medicine and is funded primarily by a grant from the Delta Dental of Colorado Foundation, and Medicaid and CHP+ reimbursements. Approximately 65 percent of the children receiving oral health care services at the clinic are enrolled in Medicaid and the remainder is enrolled in CHP+ or is uninsured.

Within the clinic, children ages 3-18 years receive oral health care provided by post graduate dental residents. In addition, children ages 6-18 years receive oral health care from dental students who are required to complete a three-week pediatric rotation in the clinic. In 2009, over 20,000 children received services from these undergraduate and graduate residents.

The *Healthy Smiles Clinic* is also a *Cavity Free at Three* site. As such, the clinic provides preventive screenings to infants through age three who are referred by physicians for oral health services. As part of the *Cavity Free at Three* intervention, parents are provided primary oral health care education. The Children's Hospital dental program has operatory facilities where dental residents and community dentists provide restorative services to young children, usually under anesthesia. In 2009, over 2,700 infants and toddlers received restorative services in the hospital's operating rooms.

Kids in Need of Dentistry

*Kids in Need of Dentistry* (KIND) provides low-cost preventive oral health care services to children in Colorado up to the age of 18 years. Organized in 1912 by a team of dentists from the Denver Dental Society, KIND targets poverty level children and those who do not qualify for publicly-financed oral health insurance. Families pay a small fee based on a sliding fee schedule and no child is refused services due to the family's inability to pay. [23]

KIND operates comprehensive facility-based dental clinics in Denver, Commerce City, Lakewood and Colorado Springs that provide a full array of oral health care services as well as a mobile clinic. *Miles for Smiles* is a 36-foot mobile dental clinic that provides oral health care services to children in underserved communities throughout the state. KIND also operates Chopper Toppers—a dental screening and

[21] Dental Aid Web site. (2008). Various pages. (Retrieved May 10, 2010, from: http://www.dentalaid.org).
[22] Conversation with Karen Cody Carlson, President and CEO of Dental Aid, May 2010.
[23] Kids in Need of Dentistry (KIND) (2008). Get KIND services. (Retrieved May 10, 2010, from: http://www.kindsmiles.org/kind/en/Parents/).

sealant program that targets at-risk students in schools where 50 percent or more of the student population receive free or reduced price meals at school.

Through its various clinics, KIND provided nearly 7,500 oral health visits to children in 2008, just over half of these included restorative services and the remaining 44 percent were for sealant applications and other preventive care. [24]

KIND's revenues, including in-kind donations, totaled $1.5 million in 2008. Approximately one-quarter of KIND's funding came from Colorado-based foundations and another quarter was from patient revenues. In-kind services, in the form of volunteer clinicians and other donated services comprised almost one-third of total funding. [25]

**Community-funded safety net clinics and rural health clinics**

Children from low-income families may also gain access to oral health care through community-funded safety net clinics (CSNCs) and some rural health clinics (RHCs). CSNCs include faith-based clinics and those staffed by volunteer clinicians or family practice residents that offer free or low-cost/sliding fee primary care services to low-income, uninsured families and individuals. CSNCs and RHCs are affiliated with a statewide membership organization known as ClinicNET. Not counting RHCs, ClinicNET currently lists 25 affiliated clinics and organizations throughout the state.[26] Many of these organizations operate multiple clinical sites or programs.

The availability of oral health care varies by CSNC. While some oral health clinics provide a full complement of diagnostic, preventive and restorative services within an integrated care setting, others rely primarily on partnerships with other community providers to which they refer children for oral health care. For example, very few RHCs offer on-site oral health services; however, they do refer patients with oral health needs to community dentists and other oral health providers.

Because CSNCs are not federally supported clinics, they do not have access to the same cost-based reimbursement and federal grant funding as FQHCs. [27] They rely on other sources of revenue, including Medicaid, CHP+ and CICP reimbursement from the state, patient fees, private donations and foundation grants.

Rocky Mountain Youth Clinics

Rocky Mountain Youth Clinics (RMYC) provides preventive and primary health and oral health care to uninsured children and adolescents (ages 3-18 years). Oral health services are provided by the Ronald McDonald dental van. The van, donated by the Ronald McDonald House Charities, is a pediatric dental office on wheels that travels to low-income schools and other community sites around the state.

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[24] Conversation with Julie Collett, KIND Executive Director, May 2010.
[25] KIND (2008). Kids in Need of Dentistry financial statements for the year ending December 31, 2008. (Retrieved May 10, 2010, from: http://www.kindsmiles.org/kind/docs/AuditKIND08a.pdf).
[26] ClinicNET (2010). *ClinicNET Position Paper.* (Retrieved May 10, 2010, from: http://clinicnet.org/CNpositionpaper.pdf).
[27] Rural health centers receive cost-based reimbursement for most services provided. However, because RHCs are not required to provide oral health services, they do not receive cost-based reimbursement for such services.

Preventive dental visits for uninsured children are provided at a cost of $10 per visit, although RMYC waives the fee for patients unable to pay.[28] Forty-three percent of the children served by the dental van in 2008 had never had a dental visit. In 2008, RMYC provided over 1,500 dental visits to low-income children in Colorado, incurring total operating costs of $250,000.

In 2009-2010, RMYC is participating in the Co-location Project, a research and demonstration project funded by the Delta Dental of Colorado Foundation and administered by the University of Colorado School of Dental Medicine. As part of the project, two dental hygienists have been placed in a pediatric medical clinic and provide oral health screenings to children who come to the clinic for well-child visits. The purpose of the project is to demonstrate the efficacy of locating a hygienist in a physician's office and to evaluate the cost-effectiveness of the intervention.[29]

**School-based health centers**

School-based health centers (SBHCs) are primary care clinics, located in or near a K-12 school that provide preventive and primary health and oral health care services. Most SBHCs are located in schools with a high concentration of low-income children. SBHCs receive federal, state and local funding and in-kind contributions in addition to limited patient revenues.

Thirteen of Colorado's 43 SBHCs offer oral health screening services. Only one SBHC provided both preventive and restorative dental services in 2008. During the 2008-09 school year, Colorado's SBHCs provided over 84,000 student visits. Of these, 3,600 or about four percent were for oral health care.[30]

**Head Start**

Head Start is a preschool program that promotes school readiness by providing educational, health and nutrition services to low-income children. During FY 2008-09, nearly 11,000 children were enrolled in Head Start programs in Colorado. Of these, 9,500 received an oral health examination and 9,000 received some form of preventive dental care. Approximately 2,900 children in Head Start were diagnosed as needing oral health treatment services—nearly 2,500 of these children received care.[31]

One of the largest Head Start programs in Colorado is Denver's Great Kids Head Start Program (DGKHS) which partners with five organizations to run over 50 Head Start centers throughout Denver. One of the primary objectives of the program is to link children to a continuous source of dental care,

[28] Rocky Mountain Youth Clinics (2008). Locations and programs. (Retrieved May 10, 2010, from: http://www.rockymountainyouth.org/?q=node/2).
[29] Conversation with Stephanie Wasserman, Rocky Mountain Youth Clinics Director of Community and School-Based Health Programs. May 2010.
[30] Colorado Association of School-Based Health Care (2010). School-based health centers: Working together to improve the health of Colorado children. Retrieved June 1, 2010, from: http://www.casbhc.org/publications/Communities%20Working.pdf).
[31] E-mail message from Brianne Schledewitz, Contractor to Region VIII, DHHS / ACF / Head Start, May 3, 2010.

that is, a dental home.[32] In the beginning of 2008, 824 children at Denver's Great Kids Head Start had a dental home; by the end of the year over 1,200 children had a documented dental home.[33]

To address the lack of awareness about the importance of good oral health by many Head Start parents, DGKHS emphasizes parent education. Care management and frequent follow-up visits are provided to increase the proportion of children receiving oral health guidance and care. DGKHS has developed a DVD for Head Start parents explaining the importance of oral health care and how to find oral health care providers. In addition, DGKHS has partnered with Dr. Paul Cook at the CU College of Nursing to train Head Start workers on motivational interviewing that has as its goal to empower parents in securing and maintaining ongoing oral health care for their children.[34]

## Oral health claims analysis

In order to assess Medicaid, CHP+ and Delta Dental of Colorado commercial plans' expenditures on oral health services for children, CHI and Delta Dental conducted a claims analysis of these three insurance programs. CHI acquired Medicaid and CHP+ oral health claims and enrollment data from HCPF for the 4-year period covering FY 2005-06 through FY 2008-09 and analyzed overall utilization of any oral health service; types of services utilized; the relationship between length of program enrollment and utilization of services and overall spending by type of service. These analyses were conducted for children between the ages of 1 and 18 during the 4-year study period. Delta Dental replicated the analysis for children enrolled in its commercial plans during the same time period. The following section of the report provides summaries of these analyses.

### MEDICAID, CHP+ AND DELTA DENTAL: PLAN DESIGN AND ELIGIBILITY

When comparing and contrasting children's oral health experiences in the three insurance plans, it is important to consider the differences in the populations served, eligibility requirements and plan design features. Children are eligible for Medicaid in two separate eligibility categories: 1) if they are ages 5 years and younger and have family incomes at or below 133 percent of the federal poverty level (FPL); and 2) if they are ages 6-18 years and have family incomes at or below 100 percent of the FPL. Beginning in July 2005 (the first month of the study period), income eligibility for CHP+ increased from 185 to 200 percent of the FPL; in FY 2007-08, eligibility was increased from 200 to 205 percent of the FPL. CHI does not have data on the family income levels of children enrolled in the Delta Dental commercial plans. However, due to the relationship between having private insurance and income, it is reasonable to expect that children enrolled in the Delta Dental commercial plans have family incomes higher than children enrolled in Medicaid or CHP+.

Because Medicaid income eligibility guidelines are higher for children ages five and younger, Medicaid enrolled children are slightly younger (average age of 8 yrs) than those enrolled in CHP+ (average age of 9 yrs). The average age of children enrolled in Delta Dental commercial plans is 10 years.

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[32] Denver's Great Kids Head Start (2009). *Annual Report, 2008-2009*. (Retrieved May 10, 2010, from: http://www.denvergov.org/Portals/398/documents/Denver's%20Great%20Kids%20Head%20Start%20-%20Final%202008-2009%20Annual%20Report.pdf).

[33] City and County of Denver (2008). Head Start Program Information Report for 2007-2008 Program Year.

[34] Conversation with Gloria Richardson, Health Coordinator for Denver's Great Kids Head Start. April 30, 2010.

Children enrolled in CHP+ are provided 12 months of continuous enrollment in the program and then are required to re-apply. Newly-enrolled CHP+ children are not eligible for oral health benefits during their first month of enrollment. Children enrolled in Medicaid must verify their income on a monthly basis to remain eligible for coverage. There is no waiting period for oral health benefits in Medicaid.

Both programs include presumptive eligibility for children. That is, upon application children are automatically presumed eligible, having immediate access to covered services until eligibility is determined or within 45 days, whichever occurs sooner. In the Medicaid program, children who are presumptively eligible may receive oral health services immediately. However, oral health services are not available for presumptively eligible children in CHP+.

While child enrollment in Delta Dental's commercial plans is relatively stable, children in Medicaid and CHP+ tend to have breaks in enrollment due to loss of eligibility (although they often regain eligibility after a break in enrollment). These on-off breaks are often referred to as "churn" and have a documented impact on the likelihood of having a dental visit and for continuity of care. CHI's analyses found that children with coverage for less than 12 months were significantly less likely to visit an oral health provider than those who had continuous spans of enrollment for 12 months or longer.

All three programs have fee schedules for oral health services based on procedure codes. Delta Dental reimburses oral health providers at the same rate for CHP+ and its commercial products, these rates are generally higher than those paid by HCPF to Medicaid providers.

Unlike Medicaid, the CHP+ oral health plan includes an annual cap of $600. The cap was $500 during the first two years of the study period, but increased by the General Assembly to $600 for the second two years. Once a child's care reaches the $600 cap, parents can either pay out-of-pocket for services or seek reduced price services from a safety net provider.

Delta Dental of Colorado offers a variety of employer and individual (non-group) dental insurance plans. Two out of three individual plans offered have an annual per person maximum. In the plans CHI examined, one plan had an annual cap of $1,000 and another of $1,500. Annual caps for the Delta Dental employer-sponsored plans range from no cap to $1,500 or higher.

It is also instructive to note that neither Medicaid nor CHP+ have a cosmetic orthodontia benefit. In the case of Medicaid, a child with a disabling condition for which orthodontics would correct a malformation of the mouth or which has otherwise been deemed medically necessary, orthodontia is covered with prior authorization. The Delta Dental line of commercial products may have an orthodontia benefit, it is dependent the plan design that is negotiated between an employer and Delta Dental.

### UTILIZATION OF ORAL HEALTH SERVICES

Utilization rates are based on the proportion of children who had at least one oral health claim during a fiscal year relative to all children who were enrolled for at least one month during that fiscal year.

Table 6. Overall utilization of any oral health service, FY 2005-06 through FY 2008-09

| Fiscal year | Medicaid | CHP+ | Delta Dental commercial |
|---|---|---|---|
| FY 2005-06 | 30.9% | 33.9% | 59.9% |
| FY 2006-07 | 31.7% | 33.2% | 59.3% |
| FY 2007-08 | 32.9% | 35.5% | 59.8% |
| FY 2008-09 | 35.3% | 34.9% | 59.5% |

- Utilization of any service by enrolled children in the CHP+ program was slightly higher than that in Medicaid during FY 2005-06; however, by FY 2008-09 the gap had been closed (35% in both programs).
- Throughout the study period, the utilization rate of oral health services in the Delta Dental commercial plans was stable and significantly higher than that observed in the Medicaid and CHP+ programs.

Utilization of oral health care services is an important indicator of good oral health throughout childhood. CHI analyzed the extent to which utilization varied between children in different age cohorts. Tables 7-9 summarize the utilization rates of at least one oral health service by coverage type. The analysis includes the first and last fiscal years of the study period. The rates were derived based on the proportion of children who had at least one oral health claim during the fiscal year relative to all children who were enrolled in the type of coverage for at least one month during the fiscal year.

Table 7. Medicaid children's utilization of at least one oral health service by age group, FY 2005-06 and FY 2008-09

| Age group | FY 2005-06 | FY 2008-09 |
|---|---|---|
| 1-4 years | 28.0% | 34.6% |
| 5-9 years | 36.9% | 40.6% |
| 10-14 years | 31.8% | 35.0% |
| 15-18 years | 24.1% | 26.2% |

- In both the first and last years of the study period, Medicaid achieved the highest utilization rates for children in the 5-9-year age group. This is an important finding because this is the age group during which sealants should be applied to be most effective.
- The greatest gains in utilization among Medicaid children occurred among children ages 1-4.

Table 8. CHP+ children's utilization of at least one oral health service by age group, FY 2005-06 and FY 2008-09

| Age group | FY 2005-06 | FY 2008-09 |
|---|---|---|
| 1-4 years | 27.3% | 27.9% |
| 5-9 years | 40.1% | 41.4% |
| 10-14 years | 35.4% | 36.4% |
| 15-18 years | 27.8% | 28.3% |

- Utilization of at least one oral health service in the CHP+ program remained relatively stable across all age groups throughout the study period.
- Like Medicaid, CHP+ achieved the highest utilization rates among children in the 5-9 age group.
- The lowest utilization rate occurred among 1 to 4-year-olds.

Table 9. Delta Dental commercial children's utilization of at least one oral health service by age group, FY 2005-06 and FY 2008-09

| Age group | FY 2005-06 | FY 2008-09 |
|---|---|---|
| 1-4 years | 44.1% | 45.3% |
| 5-9 years | 66.9% | 66.5% |
| 10-14 years | 65.3% | 64.8% |
| 15-18 years | 56.2% | 55.8% |

- Among each of the age groups, utilization rates were more stable and significantly higher than in the Medicaid and CHP+ programs throughout the study period.
- Like Medicaid and CHP+, the highest utilization rate in both the first and last year of the study period occurred among the 5-9 age group.

### UTILIZATION RATES BY SPELLS OF ENROLLMENT

As noted earlier, children enrolled in Medicaid and CHP+ have shorter spells of continuous enrollment than children enrolled in Delta Dental commercial plans due to program rules and the mobile nature of the populations enrolled. In order to assess the impact of this "churn" on utilization, CHI compared the oral health utilization of children who had fewer than 12 months of continuous enrollment to those with 12 of more months of continuous enrollment (Tables 10-12).

Table 10. Medicaid children's utilization of at least one oral health service by age and length of continuous enrollment, FY 2008-09

| Age group | Children enrolled fewer than 12 months | Children enrolled 12 months or more |
|---|---|---|
| 1-4 years | 15.3% | 40.7% |
| 5-9 years | 23.6% | 49.3% |
| 10-14 years | 21.1% | 42.7% |
| 15-18 years | 17.3% | 35.2% |
| Total | 19.2% | 43.1% |

- As shown in Table 10, regardless of age, children who were continuously enrolled in Medicaid for fewer than 12 months had significantly lower utilization rates for at least one oral health service than those continuously enrolled for 12 months or longer.
- Among all age groups, utilization rates are approximately two times higher among children who were continuously enrolled for 12 months or longer compared to those continuously enrolled for fewer than 12 months.

NOTE: H.B. 09-1293, the Colorado Healthcare Affordability Act of 2009, authorized HCPF to implement 12-month continuous eligibility for children in Medicaid. If this policy change occurs, based on findings from Table 10, it is likely to lead to significantly higher utilization of oral health services among children enrolled in Medicaid.

Table 11. CHP+ children's utilization of at least one oral health service by age and length of continuous enrollment, FY 2008-09

| Age group | Children enrolled fewer than 12 months | Children enrolled 12 months or more |
|---|---|---|
| 1-4 years | 29.7% | 46.3% |
| 5-9 years | 48.4% | 61.6% |
| 10-14 years | 41.4% | 55.3% |
| 15-18 years | 32.6% | 46.8% |
| Total | 39.1% | 54.4% |

- While the magnitude of the difference in utilization rates is not as large as in Medicaid, children who were continuously enrolled in CHP+ for 12 months or longer had significantly higher utilization rates than those continuously enrolled for fewer than 12 months.
- Utilization rates for children ages 1-4 years enrolled less than 12 months in CHP+ are nearly two times greater than those for 1-4 year olds in Medicaid.

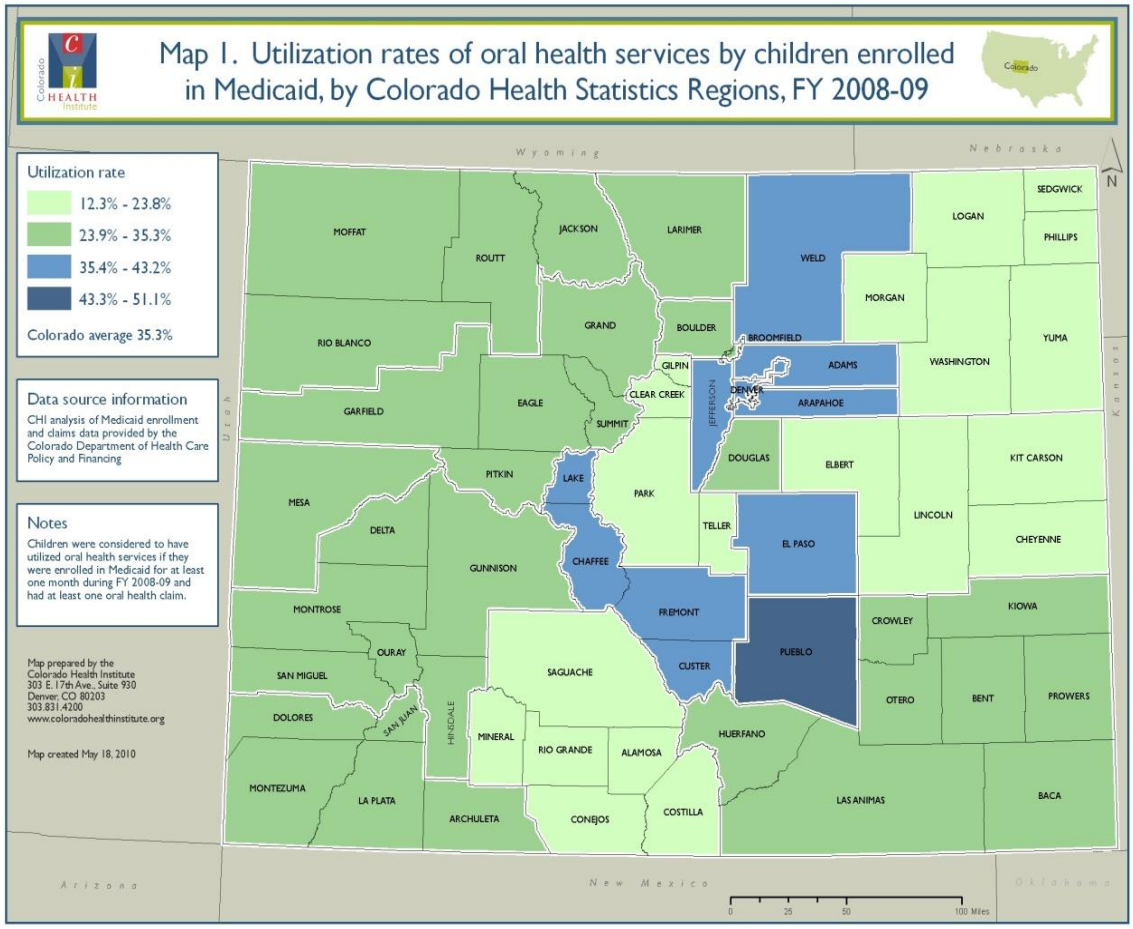
Table 12. Delta Dental commercial children's utilization of at least one oral health service by age and length of continuous enrollment, FY 2008-09

| Age group | Children enrolled fewer than 12 months | Children enrolled 12 months or more |
|---|---|---|
| 1-4 years | 20.7% | 52.9% |
| 5-9 years | 33.5% | 75.6% |
| 10-14 years | 32.1% | 72.8% |
| 15-18 years | 25.7% | 63.2% |
| Total | 28.4% | 67.7% |

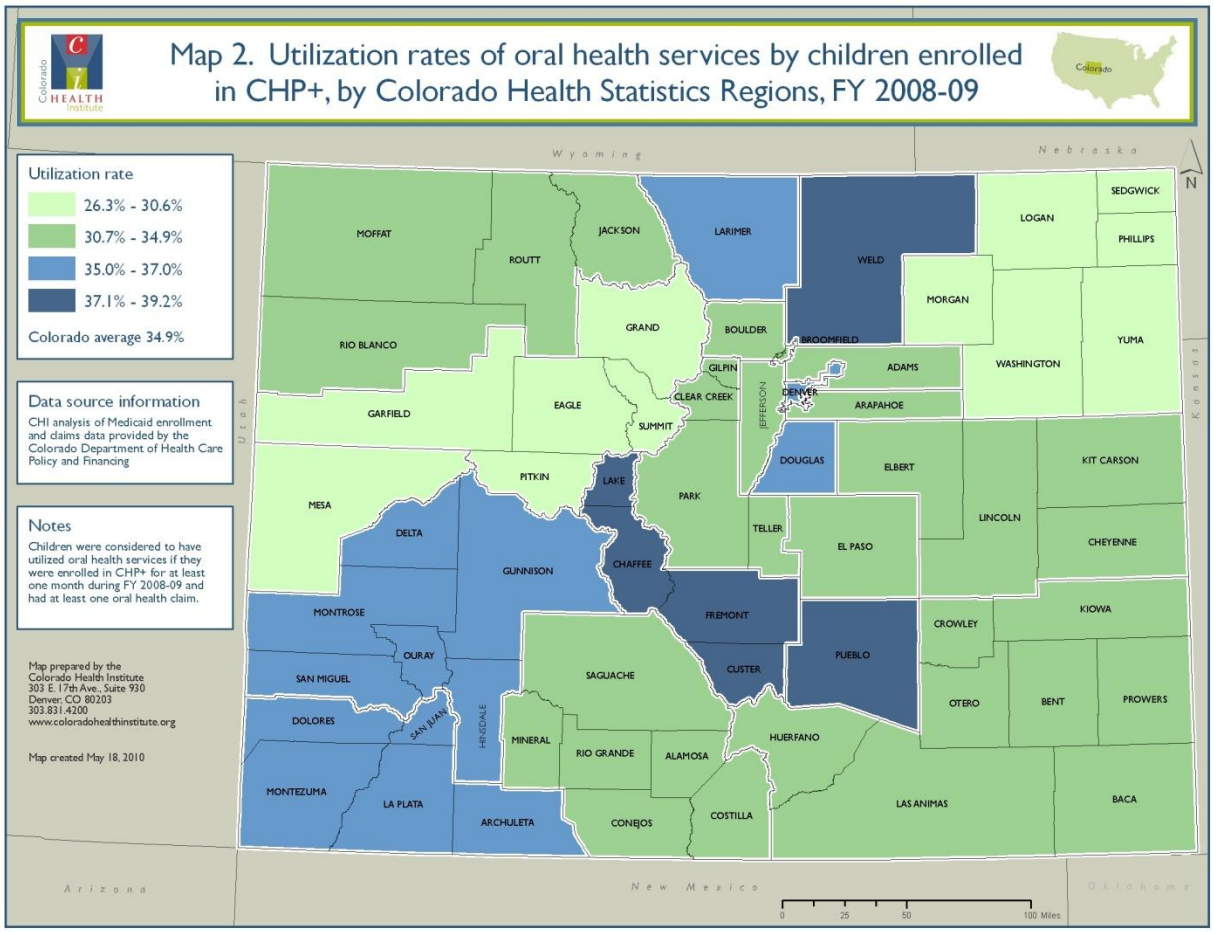
- The utilization rates for children enrolled in Delta Dental commercial plans for 12 months or more are two times greater those of children enrolled less than twelve months.
- Although, the utilization rates for children enrolled 12 months or more are higher than for similar populations in CHP+ or Medicaid, it is notable that the utilization rates for children enrolled less than 12 months in CHP+ (39%) are nearly 10 percentage points higher than children enrolled less than 12 months in a Delta Dental commercial plan (28%).

The oral health utilization data presented thus far include statewide averages which may conceal regional variations that exist around the state. For example, the number of oral health providers willing to accept children enrolled in Medicaid may be a more acute problem in some areas of the state than others. Maps 1-3 display oral health service utilization rates for children by 21 health statistics regions (HSRs) for Medicaid, CHP+ and Delta Dental commercial plans. In each map, counties colored in green have utilization rates that are *at or below* statewide utilization rates, while counties colored in blue have utilization rates that are *higher* than the statewide rate.

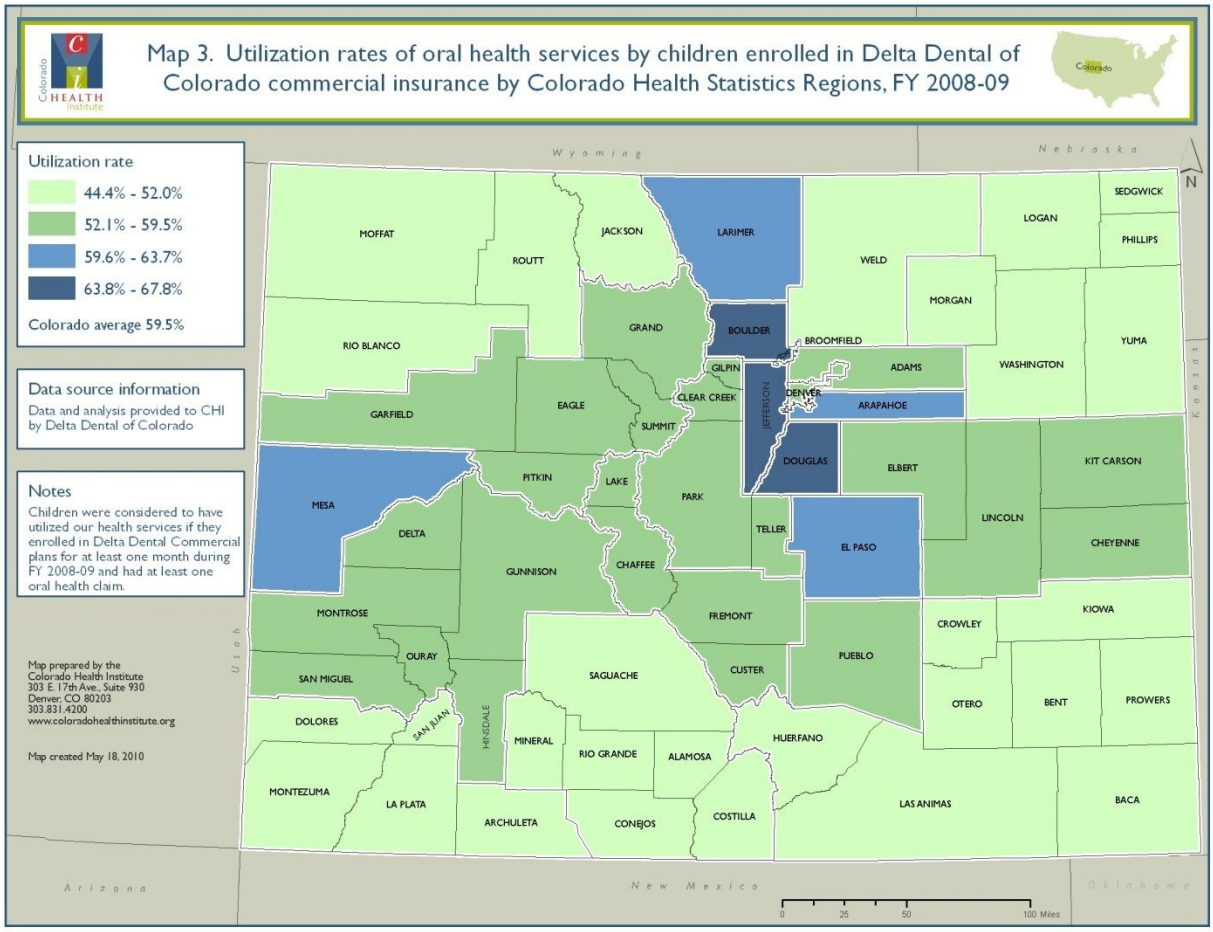
As summarized in Map 1, with a few exceptions, children's utilization rates in the Medicaid program tended to be higher in Front Range counties. The northeast region of the state and the San Luis Valley had some of the lowest Medicaid utilization rates in the state.


Map 1. Utilization rates of oral health services by children enrolled in Medicaid, by Colorado Health Statistics Regions, FY 2008-09
Colorado
Utilization rate
12.3% - 23.8%
23.9% - 35.3%
35.4% - 43.2%
43.3% - 51.1%
Colorado average 35.3%
Data source information
CHI analysis of Medicaid enrollment and claims data provided by the Colorado Department of Health Care Policy and Financing
Notes
Children were considered to have utilized oral health services if they were enrolled in Medicaid for at least one month during FY 2008-09 and had at least one oral health claim.
Map prepared by the Colorado Health Institute
303 E. 17th Ave., Suite 930
Denver, CO 80203
303.831.4200
www.coloradohealthinstitute.org
Map created May 18, 2010
Wyoming
Nebraska
Utah
Kansas
Arizona
New Mexico
Oklahoma
N
MOFFAT
ROUTT
JACKSON
LARIMER
WELD
LOGAN
SEDGWICK
PHILLIPS
MORGAN
YUMA
WASHINGTON
RIO BLANCO
GRAND
BOULDER
BROOMFIELD
GILPIN
ADAMS
ARAPAHOE
DENVER
JEFFERSON
CLEAR CREEK
GARFIELD
EAGLE
SUMMIT
DOUGLAS
ELBERT
KIT CARSON
PITKIN
LAKE
PARK
MESA
DELTA
TELLER
EL PASO
LINCOLN
CHEYENNE
GUNNISON
CHAFFEE
FREMONT
CROWLEY
KIOWA
MONTROSE
OURAY
CUSTER
PUEBLO
SAGUACHE
SAN MIGUEL
OTERO
BENT
PROWERS
DOLORES
SAN JUAN
HINSDALE
MINERAL
RIO GRANDE
ALAMOSA
HUERFANO
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA
0
25
50
100 Miles

As shown in Map 2, in FY 2008-09, regional utilization rates for the CHP+ program were quite different than those of Medicaid. While counties in the northeast corner of the state still had the lowest utilization rates, CHP+ utilization was relatively high in counties in the southwest quadrant of the state. In the CHP+ program, a large number of Front Range counties had oral health utilization rates that were below the state average.



Utilization rates among children enrolled in Delta Dental's commercial plans (Map 3) were higher than Medicaid and CHP+ in all 21 regions of the state. Delta Dental achieved its highest utilization rates along the Front Range, this finding likely correlates with the market penetration in these counties relative to other areas of the state.



### SPENDING ON ORAL HEALTH SERVICES

CHI completed several analyses of spending on oral health services within the three types of coverage. To put these analyses in context, it is instructive to take into account the CHP+ expenditure cap of $600 on the oral health benefit. As noted earlier, Medicaid does not cap services or expenditures for children's oral health services. Table 13 presents data on how many children enrolled in Medicaid and Delta Dental commercial plans would have exceeded the CHP+ cap had one existed in these programs. CHI calculated the proportion of children whose oral health services exceeded the CHP+ cap relative to all children who received any oral health services during the fiscal year noted.

Table 13. Proportion of children receiving any oral health service that met or exceeded the CHP+ cap by payer source

| Fiscal year | Medicaid | CHP+ | Delta Dental commercial |
|---|---|---|---|
| FY 2005-06 | 24.7% | 14.2% | 11.3% |
| FY 2006-07 | 26.2% | 11.8% | 11.5% |
| FY 2007-08 | 20.5% | 8.3% | 9.1% |
| FY 2008-09 | 25.7% | 7.2% | 8.4% |

NOTE: In FY 2005-06 and FY 2007-08, the CHP+ cap was $500; in FY 2007-08 and FY 2008-09, the cap was raised to $600.

- Approximately one-quarter of children in Medicaid met or exceeded the CHP+ reimbursement cap in each fiscal year examined.
- 14 percent of children enrolled in CHP+ met or exceeded the cap in FY 2005-06 but this number was halved by FY 2008-09.

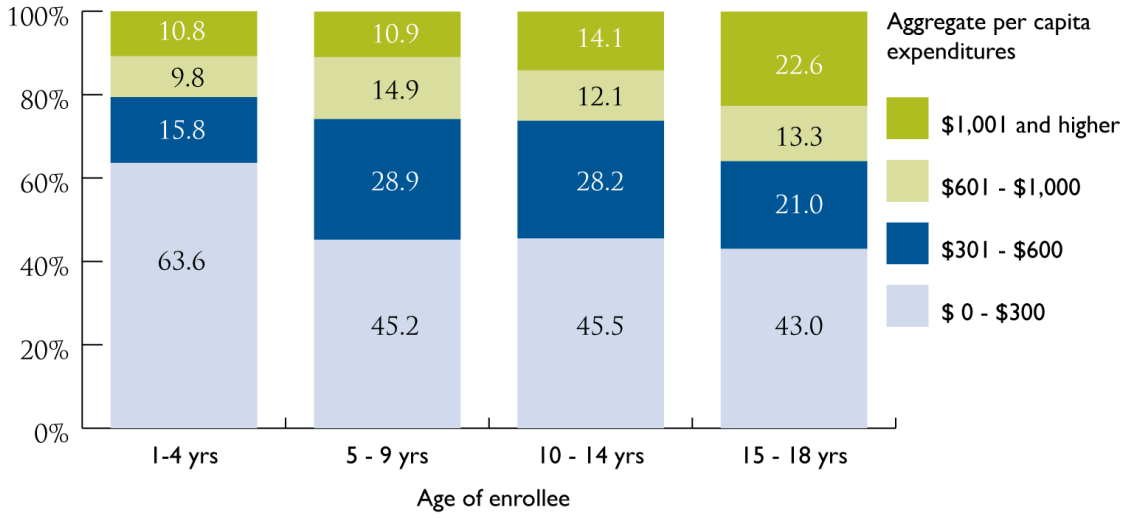
It is important to note that CHP+ reimburses oral health providers at higher rates than Medicaid and therefore $600 buys fewer oral health services under CHP+ than in Medicaid. Table 14 summarizes the difference in payments by procedure codes in the CHP+ and Medicaid programs. The analysis is based on aggregating payments for all claims in each service category and dividing by the number of procedures in each service category.

Table 14. Comparison of reimbursement between Medicaid and CHP+ programs, FY 2008-09

| | Medicaid | CHP+ | % difference |
|---|---|---|---|
| Oral exams and diagnostic services | $20.73 | $28.29 | 36% |
| Prophylaxis | $28.93 | $43.05 | 49% |
| Sealants | $21.92 | $30.73 | 40% |
| Fluoride treatment | $14.65 | $19.47 | 33% |
| Restorative services | $80.64 | $86.65 | 7% |
| Oral surgery/rehab. | $70.42 | $88.75 | 26% |

CHI analyzed the distribution of aggregated per capita oral health expenditures by age group by payer, graphs 7 -9 summarize these results.

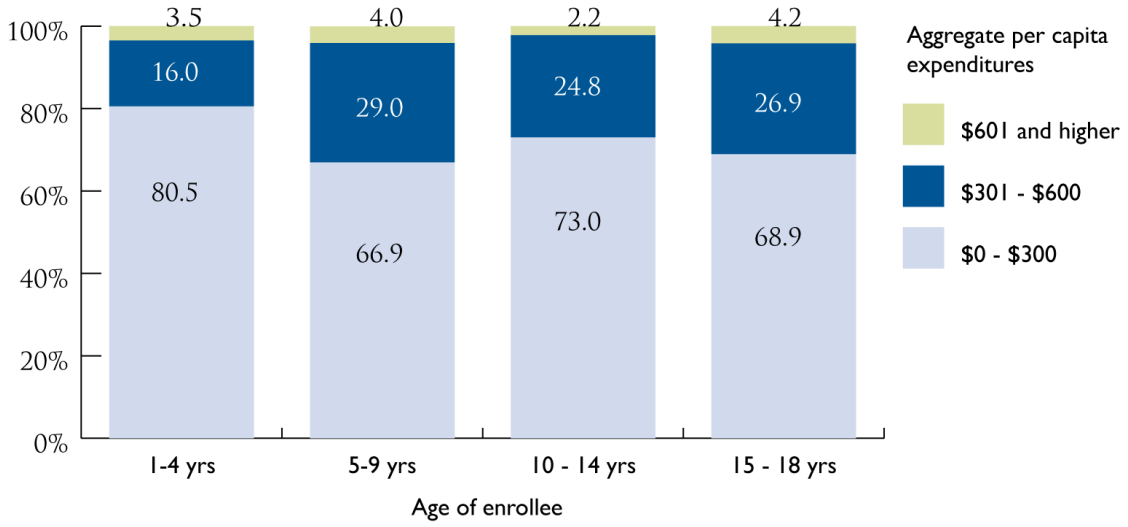
Graph 7. Distribution of per capita expenditures by age group, Medicaid, FY 2008-09




- In FY 2008-09, 11 percent of Medicaid children ages 1-4 years had annual oral health expenditures exceeding $1,000; this percentage increases with age to 23 percent of 15 to 18-year olds.

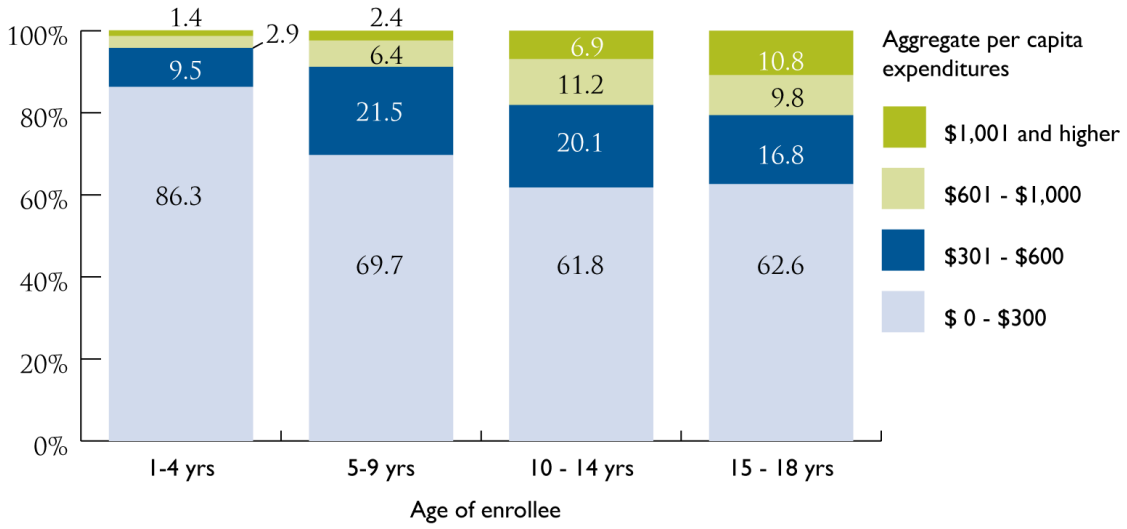
The CHP+ analysis is based on claims paid in FY 2008-09. Although the CHP+ cap was raised to $600 in FY 2008-09, in some small number of cases, expenditures could have exceeded $600 if a claim was incurred in FY 2007-08 but payment was made in FY 2008-09.

Graph 8. Distribution of per capita expenditures by age group, CHP+, FY 2008-09



- Four out of five children ages 1-4 years had oral health expenditures at or below $300—a much higher percentage in this expenditure category than among Medicaid children. Like Medicaid, annual expenditures for oral health services increased with age.

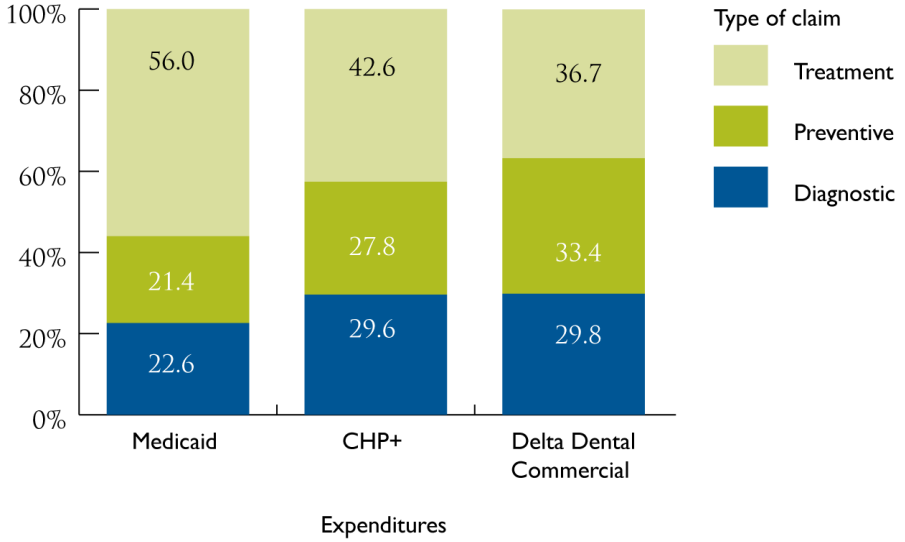
Graph 9. Distribution of per capita expenditures by age group, Delta Dental, FY 2008-09




- Per capita oral health expenditures were lower for children in the Delta Dental commercial plans than those in the Medicaid and CHP+ programs. For example, only one percent of children ages 1-4 years had expenditures in this range compared to 11 percent of 1-4 year olds in the Medicaid program.

Due to the importance of investing in preventive services to avoid later treatment costs, CHI analyzed the distribution of spending on treatment, preventive and diagnostic services within the Medicaid, CHP+ and Delta Dental commercial programs. (In order to make accurate comparisons, orthodontics were excluded from the analysis included in Graphs 10 - 13).

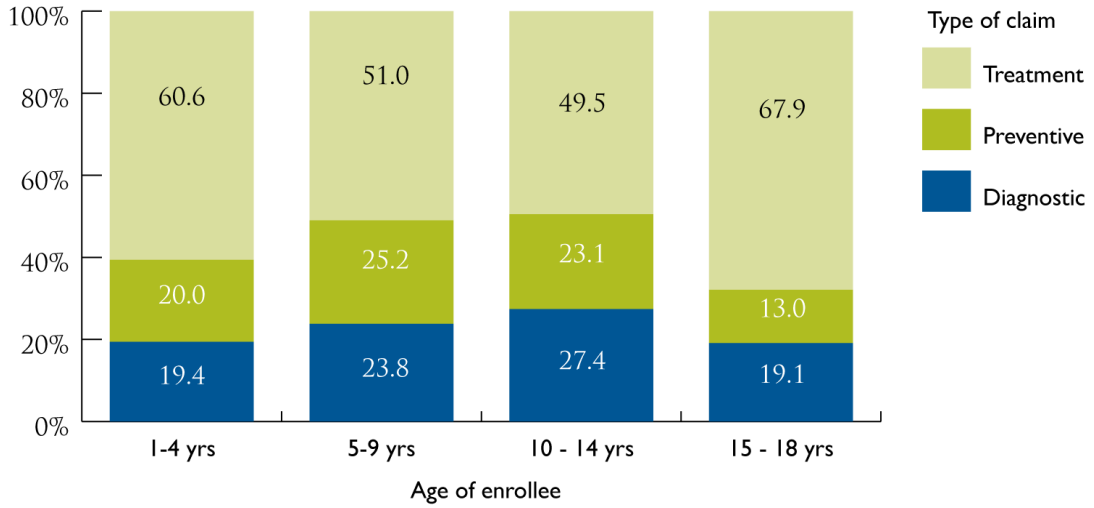
Graph 10. Proportion of expenditures by type of claim, by payer, FY 2008-09




The proportion of oral health expenditures spent on treatment services in Medicaid (56%) was significantly higher than in CHP+ (43%) or Delta Dental commercial plans (37%). Concomitantly, Medicaid expenditures for preventive and diagnostic services were lower than CHP+ and Delta Dental commercial.

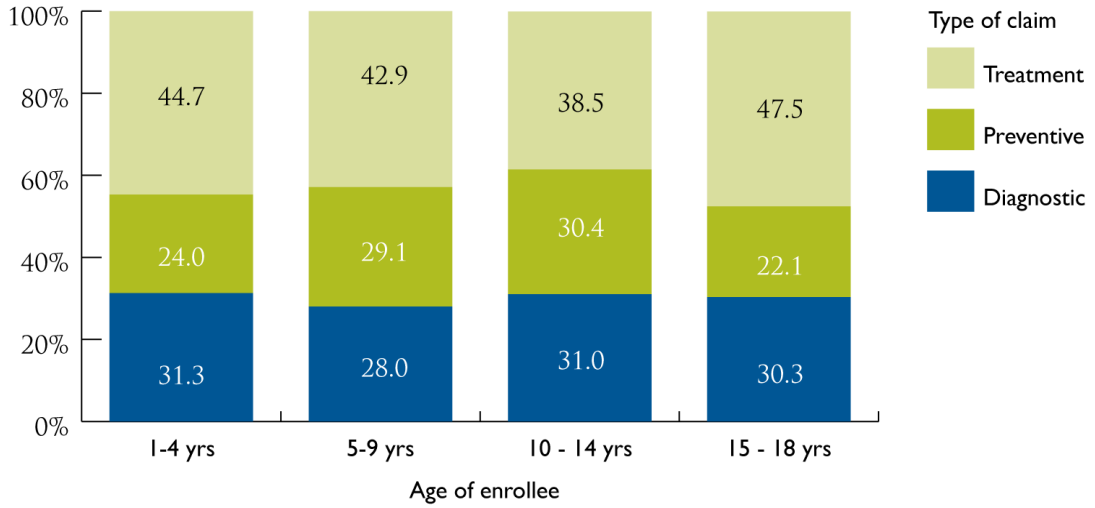
In order to better understand the relationship between treatment, preventive and diagnostic services, CHI replicated this analysis by age group in Graphs 11-13.

Graph 11. Proportion of Medicaid expenditures by type of claim and age group, FY 2008-09



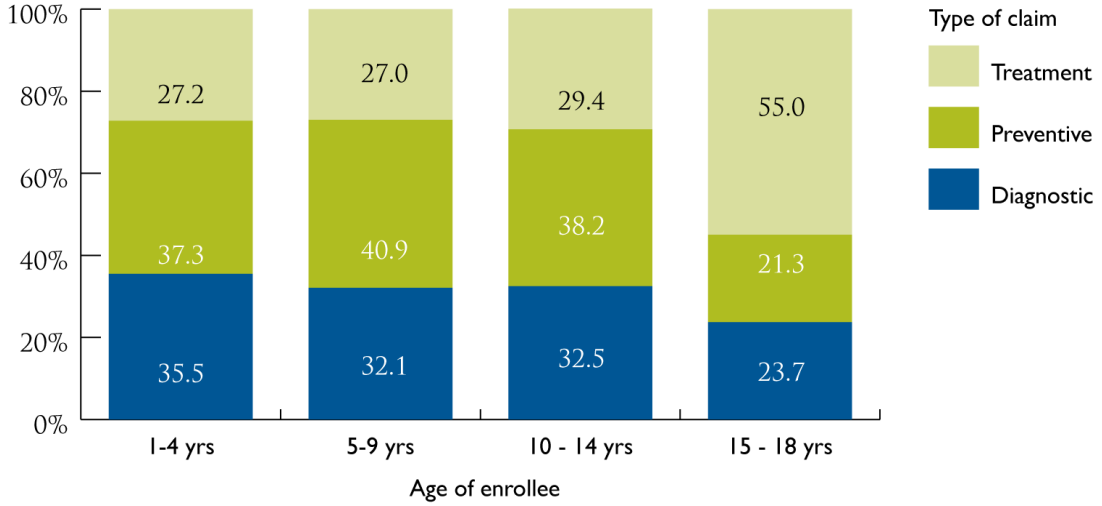

- Proportionally, treatment expenditures in Medicaid were the highest among youth ages 15-18 years (68%) with significantly lower expenditure levels for preventive (13%) and diagnostic services (19%).
- Nearly 61 percent of expenditures for children in the 1-4 age group were for treatment services.

Graph 12. Proportion of CHP+ expenditures by type of claim and age group, FY 2008-09




- The CHP+ program spends proportionally less on treatment services than Medicaid and more on preventive and diagnostic services. CHP+ expenditures are relatively similar across all four age groups.

Graph 13. Proportion of Delta Dental commercial plans' expenditures by type of claim and age, FY 2008-09




- With the exception of 15-18 year-olds, Delta Dental's expenditures by type of service were similar across all age groups. Similar to Medicaid and CHP+, expenditures for treatment were the highest in the 15-18 year age group. Excluding these older children, treatment services comprised the smallest share of total expenditures. This finding contrasts with Medicaid and CHP+ where treatment services comprised the largest share of expenditures for all age groups.

## SUMMARY OF FINDINGS FROM CLAIMS ANALYSIS

Of the three payer sources analyzed, Medicaid had the lowest oral health utilization rate in FY 2005-06 yet made the largest improvements in utilization over the course of the study period. Nonetheless,

roughly only one-in-three children enrolled in Medicaid and CHP+ utilized at least one oral health service in FY 2008-09. Utilization gains in the Medicaid program were greatest among 1- to 4-year olds and this improvement is likely due to the recent emphasis on the importance of oral health care for infants and toddlers.

Children who were continuously enrolled for 12 or more months were more likely to utilize oral health services compared to those with shorter spans of continuous enrollment. In FY 2008-09, utilization rates for oral health services in the Medicaid and CHP+ programs were similar. However, after controlling for length of continuous enrollment, CHP+ children's utilization rates were much higher than among Medicaid children.

Compared to higher income children, lower income children experience a higher incidence of caries and lack access to preventive oral health care. The high level of treatment services and relatively lower utilization rates for preventive visits among Medicaid children suggests an imbalance in the current allocation of oral health investments made on behalf of Colorado's poorest children.

## Evidence-based best practices and promising initiatives being pursued in Colorado and by other states

This final section of the paper reviews a range of oral health interventions that are being implemented in Colorado and elsewhere that have been tested and evaluated as well as promising practices for eradicating caries and promoting improved oral health among Colorado's children. Some have demonstrated their cost-effectiveness, while others are still being evaluated.

### COMMUNITY PREVENTIVE MEASURES

**Option 1: Promote optimum fluoridation levels in public water systems through social marketing of their efficacy**

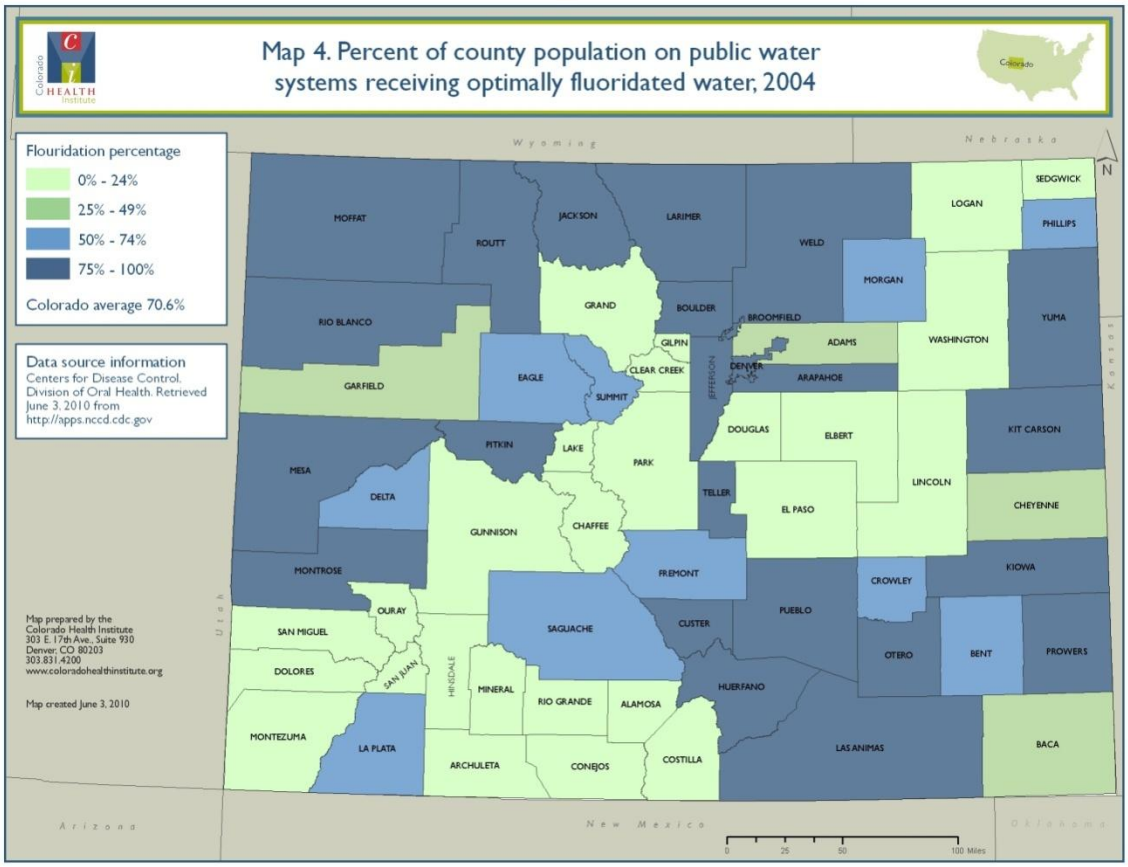
OBJECTIVE: TO REDUCE THE INCIDENCE OF CARIES AMONG CHILDREN IN COLORADO

The U.S. Centers for Disease Control and Prevention (CDC) recognizes community water fluoridation as one of the top 10 public health achievements of the 20th Century. Nearly 70 percent of public water systems in the U.S. are fluoridated. As of 2006, the year for which the most recent data are available, 26 states had reached the Healthy People goal of 75 percent of the population with optimally fluoridated community water supplies.

In Colorado, community water fluoridation is not mandated but rather decided on a community-by-community basis. The Colorado Department of Public Health and Environment provides information about fluoridation levels in community water systems and also promotes fluoridation as a sound public health measure. While fluoridation of the community water supply is voluntary, once a water district chooses to participate, it must do so in compliance with federal and state laws. In 2006, nearly 73.6

percent of Colorado's population was served by a community water system with optimally fluoridated water.[35]

Map 4 displays the counties in Colorado where public water supplies have been deemed to be optimally fluoridated (the latest data available from CDPHE). It can be seen that there are still many communities throughout the state that are not optimally fluoridated.




A potential role for the DDOCF would be to develop a public information strategy that targets under- or un-fluoridated water districts with messages about the value of water fluoridation.

A Colorado study on the costs and savings associated with fluoridation estimated that Colorado would save $148 million annually or $61 per person if fluoridation programs were implemented in the 52 sub-optimally fluoridated areas in Colorado in 2003.[36] Adjusted for inflation, approximately $73 per capita could be avoided in treatment costs if all of Colorado's public water systems were optimally fluoridated. This estimate includes the savings associated with tooth decay avoidance and the lifetime costs associated with the maintenance of a restored tooth. CHI estimates that a potential cost avoidance of

[35] Centers for Disease Control and Prevention (2008). "Populations receiving optimally fluoridated public drinking water—United States, 1992-2006." *Morbidity and Mortality Weekly Report* 57(27):737-741.
[36] Anselmo, T, et al. (2007). "Expanding school-based sealant programs to realize treatment cost savings in Colorado." *Journal of Dental Hygiene* 82(4):81-88.

$30 million could be realized by eliminating the treatment-related costs associated with childhood tooth decay in counties with sub-optimally fluoridated water in 2010 dollars.[37]

State Example

The California State Planning and Fluoridation Systems Development Initiative was funded was supported by a grant from the Maternal and Child Health Bureau. The goal of the project was to achieve public awareness of the benefits of fluoridation and create a climate conducive to implementation of the new California Fluoridation Act. Successful fundraising strategies coupled with the provision of technical expertise to communities resulted in the creation of local coalitions, community education, and capital funding supporting fluoridation. As a result, three of California's four largest cities and three other medium sized communities are committing to providing fluoridation to their residents, a doubling of Californians receiving fluoridation.[38]

### Option 2: Expand school sealant programs

OBJECTIVE: TO INCREASE THE AVAILABILITY OF SCHOOL-BASED SEALANT PROGRAMS IN HIGH-RISK SCHOOL DISTRICTS

In 2002, the Task Force on Community Preventive Services published a series of recommendations on community interventions found to be effective at preventing dental caries in children. The Task Force was a 15-member independent group of health experts convened by the federal Department of Health and Human Services to systematically review the cost-effectiveness of population-based public health interventions at the community level. After a review of the evidence, the task force recommended that community water fluoridation programs and school-based sealant programs were most effective at preventing tooth decay.[39] Dental sealants, if retained, have been found to be 100 percent effective at preventing caries on the chewing surfaces of molars. A review of published research by the Task Force reported the average decrease in caries incidence among 6 to 17 year olds with dental sealants was 60 percent.[40]

In Colorado, the application of sealants to children's teeth was among the top ten procedures in the Medicaid, CHP+, and Delta Dental commercial insurance programs. These insurers reimbursed dental providers for 117,000 sealants in FY 2008-09. In contrast, only 2,630 second grade students attending low SES schools had a sealant applied in 2008 through the school-based sealant program.

Many states, including Colorado, have implemented school-based sealant programs that are targeted to high-risk children. High-risk has been defined by the socio-economic status of children identified as

[37] This estimate was derived by applying per-capita cost savings to children residing in counties with sub-optimally fluoridated water.

[38] National Maternal and Child Oral Health Resource Center. Retrieved May 2010 from: http://www.mchoralhealth.org/materials/results.php?type=advanced&Web_Keywords=Media%20campaigns.

[39] Task Force on Community Preventive Services. (2002). "Recommendations on selected interventions to prevent dental caries, oral and pharyngeal cancers and sports-related craniofacial injuries." *American Journal of Preventive Medicine* 23(11):16-20.

[40] Gooch, B, et. al. (2009). "Preventing dental caries through school-based sealant programs: Updated recommendations and reviews of evidence." *Journal of the American Dental Association* 140(11):1356-1365.

schools with a large proportion of children who are eligible for free or reduced-price school meal programs. High risk teeth are the first permanent molars that erupt around age six and the second permanent molars that erupt around 12 years of age. Additional benefits of school-based sealant programs are the oral health screenings provided before the sealants are applied to molars and the opportunity to provide oral health education and guidance and that students with untreated decay are referred for treatment as appropriate.

The *Be Smart and Seal Them!* program coordinated by the CDPHE provides sealants to second-grade students. In collaboration with private foundations and nonprofit oral health care providers, this school-based sealant program has expanded its reach from 20 percent of eligible second grade students in the 2005-06 school year to 29 percent in 2008-09. The current sealant program does not provide sealants to second molars.

Table 15. Eligible Colorado children receiving school-based dental sealants

| | 2005-06 | | 2006-07 | | 2007-08 | | 2008-09 | |
|---|---|---|---|---|---|---|---|---|
| Second grade students | 58,698 | | 60,308 | | 62,076 | | 63,404 | |
| Sealant-eligible students | 20,598 | 35% | 21,286 | 35% | 22,370 | 36% | 23,839 | 38% |
| Eligible students in participating schools | 4,150 | 20% | 5,880 | 28% | 6,286 | 28% | 6,960 | 29% |
| Number of students screened (permission forms returned) | 2,399 | 17% | 3,662 | 17% | 3,498 | 16% | 3,621 | 15 % |
| Eligible students with applied sealants | 1,631 | 8% | 2,530 | 12% | 2,259 | 10% | 2,630 | 11% |

- CDPHE estimates that the 2006-07 sealant program provided sealants to 2,530 students, avoiding 2,200 caries and saving $212,000 in the treatment costs associated with single-surface amalgams.[41] They further estimate that for every dollar spent in a school sealant program two dollars are saved in treatment costs.[42]
- CHI analyses of FY 2008-09 Medicaid claims data found that the 10th most common reimbursed procedure was "resin-based composite one surface posterior" (D2391), a procedure commonly used to restore a molar. In CHP+, the eighth most common reimbursed procedure was "amalgam on one surface" (D2140) and the 10th most common procedure was "amalgam on two surfaces" (D2150). The cost of these procedures is considerably more than applying a dental sealant in the short term, while the greater longer term costs associated with maintaining a restored tooth over the span of a lifetime.

[41] Anselmo, T, et al. (2007). "Expanding school-based sealant programs to realize treatment cost savings in Colorado." *Journal of Dental Hygiene* 82(4):81-88.
[42] Colorado Department of Public Health and Environment, Oral Health Program (2005). *The Impact of Oral Disease on the Health of Coloradans*. (Retrieved May 31, 2010, from: http://www.cdphe.state.co.us/pp/oralhealth/impact.pdf).

### Option 3: Increase the application of fluoride varnishes on primary teeth

OBJECTIVE: TO INCREASE THE UTILIZATION OF PREVENTIVE CARE AND REDUCE THE INCIDENCE OF CARIES AMONG YOUNG CHILDREN IN COLORADO

To reduce and prevent decay among young children, the American Dental Association recommends that a fluoride varnish be applied every six months for preschool children at moderate risk and every three months for children at high risk of developing tooth decay. Fluoride varnish is particularly beneficial for young children because when it is applied in a controlled dose, the varnish will adhere to the tooth surface and have a low risk of ingestion. For primary teeth, fluoride varnishes have been shown to reduce tooth decay by 30-60 percent. [43] [44]

Medicaid reimbursement for the application of fluoride varnish is $15 in 2010. Medicaid will reimburse a provider for up to four fluoride applications per child in a fiscal year for a high-risk child as recommended by the American Dental Association. An investment of $180 for 12 fluoride varnishes a year for children between the ages of one and four years could potentially reduce the average treatment costs of $545 in Medicaid for this age group in FY 2008-09.

Starting in FY 2010-11, the CHP+ program will begin reimbursing medical providers for up to two fluoride varnish applications a year, the program currently reimburses dentists to provide two fluoride varnishes in one year. In 2010, the CHP+ reimbursement for the application of fluoride varnish is $22. An investment of $132 for six fluoride varnishes for children between the ages of one and four (current limit in CHP+) could potentially reduce the average treatment costs of $291 in the CHP+ program for this age group in FY 2008-09.

Other State Example

The Boston University/Chelsea Partnership Dental Program is a city-wide school-based program that provides approximately 220 second graders with dental sealants and 550 first and second grade students with two fluoride varnish applications during the school year. Fluoride varnishes are also offered to pre-kindergarten and kindergarten students attending participating schools. In addition, the Partnership Dental Program opened a dental clinic in a nearby Middle School which is open 2:30 p.m. to 7:30 p.m., Tuesday through Friday and is staffed by bilingual dentists. The clinic provides examinations, preventive and restoration services to any student enrolled in Prekindergarten through 12th grade.[45]

[43] Marinho, V. (2008). "Evidence-based effectiveness of topical fluorides." *Advanced Dental Research* 20(1):3-7.
[44] Weintraub JA, et al. (2006). "Fluoride varnish efficacy in preventing early childhood caries." *Journal of Dental Research* 85(2):172-176.
[45] Agency for Health Research Quality, Innovations Exchange (2010). "Comprehensive school-based program enhances access to oral health education, prevention, and treatment services for low-income children." (Retrieved May 10, 2010, from: http://www.innovations.ahrq.gov/content.aspx?id=1844).

### Option 4: Expand Oral health services and education for pregnant women and new mothers

OBJECTIVE: TO INCREASE PUBLIC AWARENESS OF THE IMPORTANCE OF ORAL HEALTH CARE FOR PREGNANT WOMEN AND TO REDUCE THE PREVALENCE OF CARIES AMONG VERY YOUNG CHILDREN

Other state examples: Practice guidelines for professionals

New York State Department of Health developed a document titled "Oral Health Care During Pregnancy and Early Childhood: Practice Guidelines" in 2006. The document provides separate recommendations for prenatal care providers, oral health providers and child health professionals in the oral health care of pregnant women and infants.

The California Dental Association (CDA) Foundation and the American College of Obstetricians and Gynecologists released guidelines developed by an expert panel of dental and medical professional in 2009. The guidelines were developed to encourage and expand dental services to pregnant women and to address misconceptions about the safety of oral health care during the perinatal period.

Colorado's public interest informational campaign

The Delta Dental of Colorado Foundation has funded a campaign to increase awareness of the importance of oral health care and raise awareness among pregnant women and new mothers about the vertical transmission of bacteria. The Foundation has reported successful results as measured by responses to repeated telephone surveys.

Other states information campaigns and coverage of pregnant women

South Dakota Dental Association - *South Dakota Great Faces, Great Smiles: An Ounce of Prevention*. With a grant from the national Maternal and Child Health Bureau, the South Dakota Dental Association prepared materials for a public health education campaign designed to improve the oral health of children and their families in underserved communities, targeting young children enrolled in Head Start. Materials include flip charts for parent education sessions, a brochure titled "Baby Teeth do Matter: Steps to Healthy Teeth" (in English and Spanish), posters about the transmission of oral bacteria and a DVD containing public education messages for television and radio.[46]

The Arizona Department of Health Services, Office of Oral Health - Infant tooth decay campaign materials. With partial funding from a grant from the national Maternal and Child Health Bureau, the Arizona Department of Health services developed campaign materials to increase public awareness that bacteria responsible for tooth decay, specifically early childhood caries, may be transmitted from a mother or other caregiver to an infant during the first year of life. Information is provided for parents and health professionals in a variety of media, including an outdoor board, poster, and radio spot (MP3 on CD-ROM). Three brochures (Pregnancy and Oral Health, Baby's First Year, and Your Child Age 1-3)

[46] Maternal and Child Oral Health Resource Center. (Retrieved May 25, 2010, from: http://www.mchoralhealth.org/materials/results.php?type=advanced&Web_Keywords=Media%20campaigns ).

are also included. Materials include the campaign tagline, Are You Spoon-Feeding Tooth Decay to Your Baby? The brochures, posters, and radio spot are available in English and in Spanish.[47]

Oregon launched a small pilot program in 2004, the *Early Childhood Cavities Prevention* initiative, that sought to eliminate caries in 2-year olds by targeting Medicaid-enrolled pregnant women and new mothers. The initiative was funded by a grant from the Robert Wood Johnson Foundation to the Oregon Public Health Division. A county-funded WIC (Women, Infants and Children) program coordinator recruited pregnant women into the program. Dental hygiene students met with pregnant women in their homes and provided counseling and scheduled a visit for an oral health assessment and preventive dental care at the Oregon Institute of Technology dental hygiene clinic. Women were provided treatment such as cleanings, fluoride applications, chlorhexidine rinses and caries treatment. After delivery, the new mothers were provided Xylitol gum and follow-up case management visits for a year to reinforce oral health education messages and replenish preventive materials. Preliminary evaluations of the pilot program suggest that it has had a positive impact on the oral health of the children in the pilot county and has been expanded to four additional counties. The program is still operational and achieving its original goals of reducing childhood oral disease rates.[48], [49]

A similar research-based program is being evaluated in Colorado. *The Bright Smiles for Bright Futures* Xylitol research project funded by the Delta Dental of Colorado Foundation is evaluating the effectiveness of Xylitol gum and related interventions at reducing the level of caries-related bacteria in new mothers and thus reducing bacteria transmission to newborns. Initial observations from the research suggest that the preventive oral health intervention services, case management and oral health counseling that is provided to the participants is having a beneficial effect on the women and babies.

### Option 5: Oral health preventive services and educational interventions for middle and high school students in school-based health centers

OBJECTIVE: TO IMPROVE ACCESS TO AND INCREASE THE UTILIZATION OF PREVENTIVE ORAL HEALTH SERVICES AMONG ADOLESCENTS

As reported in the claims analysis section of the report, youth between the ages of 15 and 18 had a disproportionate share of treatment costs relative to other age groups in Medicaid, CHP+ and Delta Dental commercial insurance claims. These findings would suggest the need for increasing the number and types of preventive oral health measures directed at adolescents.

One measure would be to educate teens about the importance of preventive oral health and how to get that care. For example, in Virginia, **t**he Division of Dental Health in the Virginia Department of Health

[47] Maternal and Child Oral Health Resource Center.
[48] National Academy for State Health Policy (2009). *Increasing Access to Dental Care in Medicaid: Targeted programs for four populations.* (Retrieved May 10, 2010, from: http://www.nashp.org/sites/default/files/Dental_Reimbursements.pdf).
[49] American Association of State and Territorial Dental Directors (2009). Dental Public Health Activities & Practices. (Retrieved May 10, 2010, from: http://www.astdd.org/bestpractices/pdf/DES40006ORklamathecc.pdf.)

has developed an oral health education curriculum for middle and high school students called "Give Teens Something to Smile About."[50]

A second intervention strategy would be to expand access to preventive oral health care to teens in school-based health centers (SBHC). SBHCs are accessible to students and reduce the need for parents to take off work to keep dental appointments for their children. During the 2008-09 school year, more than 27,000 students were provided systemic, behavioral and oral health services in 43 school-based health centers in Colorado, yet only four percent of these visits were for oral health care. The Colorado Association of School-Based Health Centers reports that seven of the SBHCs have a full or part-time dental hygienist and 3 percent have a dental technician or therapist.[51]

### EXPANDING ACCESS TO PUBLIC ORAL HEALTH INSURANCE

#### Option 6: Implementing 12 month continuous coverage in the Medicaid program

OBJECTIVE: TO IMPROVE ACCESS TO ORAL HEALTH SERVICES FOR CHILDREN THROUGH CONTINUOUS INSURANCE COVERAGE

In CHI's analysis comparing utilization patterns in Medicaid, CHP+ and Delta Dental commercial insurance, children who were enrolled for 12 months or longer were significantly more likely to have had at least one oral health visit than children with fewer than twelve months of continuous enrollment. Factors that influence the length of enrollment are state Medicaid and CHP+ rules, regulations and program design. Federal law requires that states conduct eligibility reviews for enrolled children at least every 12 months, states have the option to choose shorter periods of enrollment in both programs.

In April 2009, the Colorado state legislature passed the *Colorado Health Care Affordability Act* which authorized the Department of Health Care Policy and Financing to implement 12-months of continuous enrollment for Medicaid children as of the spring of 2012.

#### Option 7: Increase outreach and enrollment to Medicaid and CHP+ eligible children

OBJECTIVE: TO IMPROVE ACCESS TO ORAL HEALTH SERVICES FOR CHILDREN THROUGH AGGRESSIVE ENROLLMENT OF CHILDREN IN PUBLIC INSURANCE PROGRAMS

In a recently published analysis of the number of Colorado children with health insurance, CHI estimates that only 71 percent of the children eligible for Medicaid and CHP+ were enrolled in 2008.[52]

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[50] Virginia Department of Health (2008). Saving Smiles Series: Oral health education curriculum, grades 6-10. (Retrieved May 10, 2010, from: http://www.vahealth.org/dental/oralhealtheducation/documents/2008/pdfs/Saving_Smiles_Series.pdf).

[51] Colorado Association for School-based Health Care (2010). *School-based Health Centers: Communities working together to improve the health of Colorado children*. (Retrieved May 10, 2010, from: http://www.casbhc.org/publications/Communities%20Working.pdf).

[52] Colorado Health Institute (2010). *Colorado Children's Health Insurance - 2010 Update.* Available at: http://www.coloradohealthinstitute.org/Publications/2010/05/EBNEchildren.aspx.

There are many reasons why a child may be eligible but not enrolled (EBNE) in Medicaid. Research by the Urban Institute[53] and Colorado Covering Kids and Families[54] suggests that the following reasons are among the most frequently-cited by parents. First, parents may not be aware of the program. Despite Colorado's investment in outreach efforts, there are many parents who are unaware that their children may be eligible for Medicaid. In addition, even if a parent is aware of the program, they may incorrectly think that their child is ineligible. Third, many parents do not want to deal with the administrative complexities associated with enrollment. Identity verification documents can be expensive to obtain and applications may contain confusing language written at a high literacy level. Fourth, some parents may not agree with the importance of having their child insured; the term "Medicaid" is associated with a stigma and some parents object to the idea of a government handout. Finally, some non-citizen parents may be reluctant to apply for Medicaid for their citizen children because they worry enrollment could threaten their immigration status.

### Option 8: Expand oral health access for pregnant women and parents on Medicaid

OBJECTIVE: TO IMPROVE TO UTILIZATION OF ORAL HEALTH SERVICES FOR CHILDREN THROUGH IMPROVED ACCESS FOR THEIR PARENTS

Studies have shown that providing health insurance coverage to adults has a positive effect on increasing enrollment and utilization of health services by their children.[55] A 2008 study reported that for low-income and minority children, dental care is higher when their mothers have a regular source of care.[56] The research suggests that children's utilization of dental care may improve with the provision of dental benefits to parents in both the Medicaid and CHP+ programs.

At this date, Colorado Medicaid only provides dental care for parents and pregnant women for emergencies for oral health conditions related to an emergency systemic health problem. CHP+ does not provide for any oral health benefit to pregnant women.[57]

The provision of dental benefits for adults covered by Medicaid and pregnant women covered by CHP+ was considered by Governor Ritter for the FY 2009-010 budget but was withdrawn because of the economic recession and a steep decline in state revenues.

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[53] Haley, J, and G Kenney (2001). *Why Aren't More Uninsured Children Enrolled in Medicaid or SCHIP?* The Urban Institute. (Retrieved June 2, 2010, from: http://www.urban.org/publications/310217.html).

[54] Colorado Covering Kids and Families (2009). *The Maze: Barriers that keep Colorado's eligible children and families out of Medicaid and CHP+ and recommendations to create a direct path to enrollment.* (Retrieved June 2, 2010, from: http://www.cchn.org/ckf/pdf/CKF_Report_The_Maze_April_2009.pdf).

[55] Rosenbaum, S, and R Wittington (2000). *Parental Health Insurance Coverage as Child Health Policy: Evidence from the literature.* The George Washington University School of Public Health and Health Services. (Retrieved May 10, 2010, from: http://www.firstfocus.net/sites/default/files/r.2007-6.25.rosenbaum.pdf).

[56] Grembowski, D, et al. (2008). "Linking mother and child access to dental care." *Pediatrics* 122(4):e805-e814.

[57] Colorado Department of Health Care Policy and Financing (2010). Colorado Medicaid children's dental benefits. (Retrieved May 10, 2010, from: http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251618484090&ssbinary=true).

Other state example

California mandated Medicaid coverage for a set of oral health services for pregnant women in 2005. A more limited package of oral health services also was made available to women who did not meet Medicaid eligibility criteria including preventive, periodontal and emergency dental care. When a state budgetary crisis forced a sharp cut to adult dental services in 2009 the pregnancy-related oral health benefit remained untouched.

## EXPAND SUPPLY OF ORAL HEALTH CARE PROVIDERS

### Option 9: Reimburse health care providers for oral health evaluations and anticipatory guidance for new parents, infants and toddlers

OBJECTIVE: TO IMPROVE UTILIZATION OF PREVENTIVE ORAL HEALTH SERVICES FOR VERY YOUNG CHILDREN

Most infants and children visit primary care providers early and frequently according to pediatric guidelines. Primary care providers are in a unique position to deliver a set of preventive oral health services that include oral health assessments, parent education and anticipatory guidance and the application of fluoride varnishes.

In July 2009, the Colorado Medicaid program began reimbursing licensed health care providers to provide oral health evaluations, anticipatory guidance and fluoride varnishes for 0-4 year olds. These services are allowable under Medicaid only if provided at the time of a well-child visit. The health care providers that can bill for these services include medical doctors (MDs), doctors of osteopathy (DOs) and nurse practitioners (NPs). In order to be reimbursed, the provider must have participated in on-site training from a *Cavity Free at Three* team or have completed a training module of the Smiles for Life curriculum.[58]

Primary care providers at federally qualified community health centers (FQHCs) are also qualified providers but are reimbursed at an encounter rate as opposed to fee-for-service. Because many FQHCs have onsite dental clinics, parents are encouraged to make an appointment for a well-child visit with the health care provider and an appointment with an oral health care provider on the same day. The health care visit and the oral health care visit can be billed separately.

Currently, CHP+ does not reimburse health care providers for these preventive oral health services, largely because the CHP+ dental benefit is provided through an exclusive managed care contract with Delta Dental of Colorado. The *Cavity Free at Three* technical assistance team has recommended and HCPF agreed to begin reimbursing medical providers in the CHP+ program for up to two fluoride applications a year beginning July 1, 2010.[59]

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[58] *Smiles for Life* is a curriculum developed by the Society of Teachers of Family Medicine, Group on Oral Health, and is endorsed by the American Academy of Family Physicians. It can be accessed online at: http://www.smilesforlife2.org/.

[59] Conversation with Amy Sangarella, Colorado Department of Health Care Financing Child Health Plan Plus (CHP+) Dental Program Manager, June 1, 2010.

Activities in other states

One of the first states to implement health care provider reimbursement for preventive oral health care services was North Carolina. The North Carolina *Into the Mouths of Babes Program* evolved out of a similar program in the 1990s that found medical services were more accessible to children in rural areas of the state than dental services. In 2001, the North Carolina Division of Medical Assistance began reimbursing trained health providers for up to six preventive dental services within the first three years of life to Medicaid-enrolled children. The preventive care package included an oral health screening and risk assessment, fluoride varnish application and parental education and guidance. All three components needed to be provided at one visit for the provider to receive a $54 Medicaid reimbursement for the visit.

The number of claims submitted by health care providers for these preventive oral health visits in North Carolina increased from 8,300 in 2001 to 57,000 visits in 2007. Initial evaluations of the program indicate that a child with at least four visits had a significant reduction in caries-related treatment costs.[60]

In 1998, the Washington State Medicaid program became one of the first in the country to reimburse health care providers for the application of fluoride varnish. In 2000, however, only 145 fluoride varnishes had been applied by these providers. Once reimbursements levels were increased and expanded to include an oral health screening, nearly 13,000 fluoride varnishes were applied by health care providers in 2008. More than 775 pediatricians and family physicians have been trained through the continuing education curriculum on oral health, about 24 percent of the state's medical providers.[61]

According to a September 2009 survey conducted by the National Academy for State Health Policy, 34 states now reimburse primary care providers for preventive oral health services. Of these states, 33 separately reimburse providers for the application of fluoride varnish, 10 separately reimburse for an oral exam or screening, seven separately reimburse for anticipatory guidance and six separately reimburse for an oral health risk assessment. Further, 25 states require some type of training before a health care provider can receive Medicaid reimbursement.[62]

### Option 10: Increase Medicaid reimbursement for oral health providers

OBJECTIVE: TO IMPROVE ORAL HEALTH ACCESS BY INCREASING THE NUMBER OF ORAL HEALTH PROVIDERS THAT PARTICIPATES IN THE MEDICAID PROGRAM.

In 2008 CHI conducted a survey of dentists practicing in rural areas of the state and in 2009, conducted a similar survey of urban dentists. In both surveys, dentists were asked about their demographic and

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[60] National Academy for State Health Policy (2009). *Increasing Access to Dental Care in Medicaid: Targeted programs for four populations.* (Retrieved May 10, 2010, from: http://www.nashp.org/sites/default/files/Dental_Reimbursements.pdf)

[61] Dianne, R. (2008). "Delivering preventive oral health services in pediatric primary care: A case study." *Health Affairs* 27(6):1728-1732.

[62] Cantrell, C. (2009). *Engaging Primary Care Medical Providers in Children's Oral Health*. Retrieved March 2010 from: http://www.nashp.org/sites/default/files/EngagingPrimaryCareMedicalProvidersCOH.pdf).

practice-related characteristics, including whether they accepted Medicaid payment.[63] Approximately one-fifth of dentists in both urban and rural areas reported accepting Medicaid patients into their practice. Urban and rural dentists were slightly more likely to accept CHP+ patients than Medicaid. The research literature suggests that acceptance rates of Medicaid reimbursement are low nationwide as well. [64]

Colorado dentists who reported that they did not accept Medicaid patients were asked to indicate their reasons for not doing so. For both urban and rural dentists the most common reason provided was the low reimbursement under Medicaid. The second most common reason cited was broken appointments and "no-shows." These findings from Colorado dentists correspond with those found in the published literature that find dentists report low reimbursement rates, patient non-compliance and broken and no-show appointments as the most common reasons they do not accept Medicaid.[65]

Further, urban dentists were asked to rate how important they thought certain policies would be in improving access to oral health care in Colorado. Responses included: increasing Medicaid reimbursement (75%) followed by ensuring the availability of loan forgiveness programs for dentists willing to practice in underserved areas (62%).

In 2010, the reimbursement rates for the most common procedures for children insured by Medicaid were approximately 58 percent of the fees charged by general dentists in the mountain region (Table 16). The reimbursement rates for the most common procedures for children insured by CHP+ were approximately 71 percent of the average fees charged by general dentists in the mountain region (Table 17).[66] [67]

[63] Colorado Health Institute (2010). *The Practice of Dentistry in Colorado: Are there differences between urban and rural practicing dentists?* Available at: http://www.coloradohealthinstitute.org/Publications/2010/03/Urban-Rural-Dentist.aspx.

[64] Morris, P, et al. (2004). "Pediatric dentists' participation in the California Medicaid program." *Pediatric Dentistry* 26(1): 79-86; Al Agili, D et al. (2007). "Medicaid participation by private dentists in Alabama." *Pediatric Dentistry* 29(4): 293-302; Damiano, P, et al. (1990). "Factors affecting dentist participation in a state Medicaid program." *Journal of Dental Education* 54(11): 638-643; Venezie, R, and Vann, W Jr (1993). "Pediatric dentists' participation in the North Carolina Medicaid program." *Pediatric Dentistry* 15(3): 175-181; Shulman, J, et al. (2001). "Louisiana Dentists' attitudes toward the dental Medicaid program." *Pediatric Dentistry* 23(5): 395-400; Blackwelder, A, and Shulman J (2007). "Texas dentists' attitudes toward the Dental Medicaid program." *Pediatric Dentistry* 29(1): 40-46; Im, J, et al. (2007). "The North Carolina Medicaid program: Participation and perceptions among practicing orthodontists." *American Journal of Orthodontics and Dentofacial Orthopedics* 132(2): 144.e15-21; Hughes, R, et al. (2005). "Dentists' participation and children's use of services in the Indiana dental Medicaid program and SCHIP: Assessing the impact of increased fees and administrative changes." *Journal of the American Dental Association* (136): 517-523.

[65] Ibid.

[66] Mountain Region States: Utah, Montana, Colorado, Nevada, Arizona, Wyoming, Idaho and New Mexico

[67] American Dental Association. (2009) *Survey of Dental Fees.* Available at: http://www.ada.org/1441.aspx.

Table 16. Ten most common procedures for Medicaid reimbursements, FY 2008-09

| | | | Reimbursement Rates | | | |
|---|---|---|---|---|---|---|
| | | | Medicaid 2010 | CHP+ 2010 | Mountain Region 2009 General Dentist Average | Medicaid Reimbursement as Percent of General Dentist Reimbursement |
| 1 | D1330 | Oral Hygiene Instructions | $22 | $23 | $19 | 112% |
| 2 | D1203 | Topical application of fluoride | $15 | $22 | $28 | 53% |
| 3 | D1120 | Prophylaxis - Child | $28 | $41 | $55 | 50% |
| 4 | D0220 | Intraoral-periapical first film | $12 | $17 | $23 | 54% |
| 5 | D0120 | Periodic oral evaluation-established patient | $20 | $27 | $40 | 51% |
| 6 | D0272 | Bitewings-two films | $19 | $23 | $36 | 53% |
| 7 | D0230 | Intraoral-periapical each additional film | $10 | $12 | $18 | 56% |
| 8 | D0150 | Comprehensive oral evaluation | $35 | $44 | $ 63 | 55% |
| 9 | D1351 | Sealant-per tooth | $22 | $34 | $42 | 55% |
| 10 | D2391 | Resin-based composite-one surface posterior | $55 | $100 | $143 | 38% |

Table 17. Ten most common procedures for CHP+ reimbursements, FY 2008-09

| | | | Reimbursement Rates | | | |
|---|---|---|---|---|---|---|
| | | | Medicaid 2010 | CHP+ 2010 | Mountain Region 2009 General Dentist Average | Medicaid Reimbursement as Percent of General Dentist Reimbursement |
| 1 | D1203 | Topical application of fluoride (prophylaxis not included) child | $15 | $22 | $29 | 53% |
| 2 | D1120 | Prophylaxis - Child | $28 | $41 | $55 | 50% |
| 3 | D0120 | Periodic oral evaluation-established patient | $21 | $27 | $40 | 51% |
| 4 | D1351 | Sealant-per tooth | $23 | $34 | $42 | 55% |
| 5 | D0272 | Bitewings-two films | $19 | $23 | $36 | 53% |
| 6 | D0220 | Intraoral-periapical first film | $10 | $17 | $23 | 45% |
| 7 | D0150 | Comprehensive oral evaluation | $35 | $44 | $63 | 55% |
| 8 | D2140 | Amalgam-one surface | $55 | $75 | $110 | 50% |
| 9 | D0230 | Intraoral-periapical each additional film | $10 | $12 | $18 | 56% |
| 10 | D2150 | Amalgam-two surfaces | $70 | $92 | $141 | 50% |

Other state examples

A number of states have experimented with programs that increase Medicaid reimbursements for oral health providers as a strategy to ensure oral health care access. These programs have resulted in higher participation rates among dentists.

For example, providers in the Rhode Island *Rite Smiles* program receive higher reimbursement rates than they would from traditional Medicaid. After one year, Rhode Island saw an increase from fewer than 5 percent of dentists providing more than $1,000 annually in Medicaid services (called "significant" providers) to nearly 40 percent. All of the state's pediatric dentists are now "significant" providers. Before the program, 19 percent of 6-year-olds had visited a dentist, after one year of *Rite Smiles,* 36 percent had visited a dentist. [68]

Indiana also increased Medicaid reimbursements by 95 percent for diagnostic and 132 percent for restorative procedures. As a result, the number of dentists participating in Medicaid increased by 42 percent over the three year period following the reimbursement increase. The number of children enrolled in Medicaid with any dental visit increased from 18 percent to 32 percent during that time period. [69, 70]

Alabama raised Medicaid reimbursement rates to match those of Blue Cross. Within two years, dentist participation in Medicaid rose 39 percent; within four years, dentist participation rose 117 percent. Delaware saw an increase in provider participation from one provider to 130 (out of 378 licensed dentists) following the increase of rates to 85 percent of a dentist's submitted charges. [71]

### Option 11: Increase use of mid-level oral health practitioners

OBJECTIVE: TO IMPROVE ORAL HEALTH ACCESS BY INCREASING THE NUMBER OF ORAL HEALTH PROVIDERS FOR CHILDREN WITH PUBLIC INSURANCE

According to the American Dental Hygienists' Association, 30 states allow dental hygienists to provide oral health services; fifteen states, including Colorado, permit Medicaid to directly reimburse dental hygienists. [72] As of June 2010, dental hygienists cannot bill CHP+ directly. Some states have passed

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[68] National Academy for State Health Policy. (2009). *Increasing Access to Dental Care in Medicaid: Targeted programs for four populations.* (Retrieved May 10, 2010, from: http://www.nashp.org/sites/default/files/Dental_Reimbursements.pdf)

[69] Hughes, R, et al. (2005). "Dentists' participation and children's use of services in the Indiana dental Medicaid program and SCHIP." *Journal of the American Dental Association* 136(4):517-23.

[70] Borchgrevink, A, et al. (2008). *The Effects of Medicaid Reimbursement Rates on Access to Dental Care.* National Academy for State Health Policy. (Retrieved May 10, 2010, from: http://www.nashp.org/sites/default/files/CHCF_dental_rates.pdf).

[71] Crall, JJ. (2007). "Medicaid Dental Program Improvements." (Retrieved May 10, 2010, from http://www.chcs.org/usr_doc/JCrall.pdf).

[72] Ballard, C, and N Highsmith (2006). *Catalyzing Improvements in Health Care: Best practices from the State Action for Oral Health Initiative.* (Retrieved May 10, 2010, from: http://www.chcs.org/usr_doc/SAOHA_Report.pdf).

legislation that expands the scope of practice for dental hygienists. For example, a recently-passed law in Maryland expands the scope of practice for hygienists working in public health agencies.

Other providers, such as dental therapists, can also provide dental services to communities without a sufficient supply of dentists or hygienists. Dental therapists are generally trained in a four-year bachelor's program, and operate under the general supervision of a dentist.[73] One program that has attracted national attention is Alaska's dental health aide therapist program on Alaska's Indian reservations. Dental therapists travel with carts equipped for taking and sending x-rays and confer with dentists over the phone about treatment plans. Therapists can treat routine cases and provide preventative care but complex cases are referred to a dentist. Since 2003, when Alaska's program began, there are dental therapists practicing in eleven villages.[74] This new oral health professional is an especially promising solution for rural locations without a dentist. [75]

Minnesota authorized new primary care dental providers in 2009. Two types of dental therapists were authorized: a dental therapist trained in a 4-year bachelor's degree program; and a dental therapist with a master's degree. In the bachelor's trained category, the therapists must practice under direct supervision of a dentist whereas in the master's prepared therapist on-site supervision is not required but the therapist must maintain a "collaborative relationship" with a dentist to refer difficult cases.[76]

Pennsylvania trains and certifies expanded function dental assistants (EFDAs) to perform certain preventive dental functions such as providing sealants that extend the number of patients a dentist can see in a day. Over 1,400 EFDAs have been certified by the state of Pennsylvania as of November 2009. [77]

### Option 12: Educate and incentivize dentists and other oral health providers to serve Medicaid children

OBJECTIVE: TO IMPROVE ORAL HEALTH ACCESS BY INCREASING THE NUMBER OF ORAL HEALTH PROVIDERS WILLING TO ACCEPT CHILDREN WITH PUBLIC INSURANCE INTO THEIR PRACTICE

Washington State's *Access to Baby and Child Dentistry (ABCD)* began as a pilot program in 1995 and now operates in 30 of 39 counties. The locally administered program is a collaboration of the Washington Dental Service Foundation, the University of Washington School of Dentistry, the state Department of Social and Health Services, the state dental association, local dental societies and local public health jurisdictions. The program recruits general dentists through the ABCD program and provides pediatric training targeted at infants through age three. The training is subsidized by the ABCD program and qualifies for continuing education credits. ABCD-trained dentists receive enhanced Medicaid

[73] The Pew Charitable Trusts. (2001). The Cost of Delay: Four Effective Strategies. (Retrieved May 10, 2010, from: http://www.pewcenteronthestates.org/report_detail.aspx?id=56870).
[74] The Pew Charitable Trusts. (2010). *The Cost of Delay: State dental policies fail one in five children. (Retrieved March 2010 from:* http://www.pewcenteronthestates.org/uploadedFiles/Cost_of_Delay_web.pdf)
[75] Gehshan, S and M Wyatt (2007). "Improving oral health care for young children." National Academy for State Health Policy. Available at: http://www.nashp.org/sites/default/files/improving_oral_health.pdf
[76] The Pew Charitable Trusts. (2001).
[77] Ballard, C, and N Highsmith. *Catalyzing Improvements in Health Care: Best practices from the State Action for Oral Health Initiative.* (Retrieved May 10, 2010, from: http://www.chcs.org/usr_doc/SAOHA_Report.pdf).

reimbursement for selected procedures including oral health evaluations, parent education and the application of fluoride varnishes. In addition, front office staff receives training in culturally appropriate communication and Medicaid billing instructions. Over 1,000 dentists have been trained in the program.

The ABCD program has increased the percentage of Medicaid children under age six receiving dental care from 21 percent in 2000 to 39 percent in 2007. In 2007, 17 percent of Medicaid enrolled infants had their first dental visit before age two.[78] A recent evaluation of the Washington State ABCD program found that Medicaid children in ABCD counties were more likely to receive preventive dental care than privately insured children.[79]

The ABCD program has also developed a training program for primary care medical providers to provide an oral health screening, parent education and fluoride varnish application to young children. Trained primary care providers are reimbursed by Medicaid for these preventive services.

### Option13: Provide family education and care coordination

OBJECTIVE: TO IMPROVE ORAL HEALTH ACCESS AND UTILIZATION BY PROVIDING CARE COORDINATION

CHI's urban and rural dentist workforce surveys found that one of the most common reasons that dentists do not accept Medicaid patients is their perception or experience that patients miss too many appointments. A strategy that some programs and clinics have employed is to reduce the number of missed appointments through care coordinators or patient navigators.

State Examples

Tompkins County, New York has implemented a program where case managers help link Medicaid enrollees to dental providers that accept Medicaid. As a result of this program, the percentage of Medicaid enrollees receiving oral health care services increased from 9 percent to 41 percent. The program also focuses on recruiting and educating dentists about the Medicaid and its enrollees, from these combined activities, Tompkins County saw the number of participating dentists nearly double from 15 in 2003 to 28 in 2006. [80]

The *More Smiling Faces in Beautiful Places* program is a faith-based initiative in South Carolina. Trained volunteer care coordinators remind families of upcoming appointments, follow-up after missed appointments and provide assistance with the barriers that may prevent parents from keeping dental appointments such as transportation or childcare. MSF's recruitment strategy combines outreach efforts from a statewide faith-based affiliate with existing programs to target young children in Head Start and WIC programs. MSF was first launched as a pilot program in six counties, and an analysis of two of the 6

[78] Washington State Access to Baby and Child Web site. (2010). Various pages. (Retrieved March 2010, from: http://www.abcd-dental.org/

[79] Lewis, C, and E Teeple. (2009). "Preventive dental care for young, Medicaid-insured children in Washington State." *Pediatrics* 124:120-127.

[80] Greenberg, B, et al. (2008). "Dental case management: Increasing access to oral health care for families and children with low incomes." *Journal of the American Dental Association* 139(8):1114-1121.

found that 71percent of Medicaid children kept their scheduled dental appointment between January 2004 and December 2005. [81]

The *Smile Alabama!* initiative is a public education and case management program sponsored by Alabama's Medicaid agency, the Alabama Dental Association and Alabama's oral health task force. Smile Alabama! provides targeted case management using professional case managers to coordinate services for Medicaid patients. Some of the services provided include coordinating transportation services to and from dental appointments, following-up on children that frequently miss dental visits and other patient education services.[82] Case management was just one of many policy and program changes in the Smile Alabama! initiative. Overall 20,000 more children had a dental service in 2001 as a result of the Smile Alabama! initiative.[83]

[81] South Carolina Department of Health and Environmental Control. (No date available.) *More Smiling Faces in Beautiful Places Final Report.* (Retrieved May 10, 2010, from: http://www.scdhec.gov/health/mch/oral/docs/More%20Smiling%20Faces%20in%20Beautiful%20Places.pdf).
[82] American Dental Association (2004). *Enhancing Dental Medicaid Outreach and Care Coordination*. (Retrieved June 2, 2010, from: http://www.ada.org/sections/professionalResources/pdfs/medicaid_outreach.pdf).
[83] Alabama Dental Summit Conference Proceedings (2001). *Finding a solution to the problem: Dental access for Alabama's children*. (Retrieved June 2, 2010, from: http://www.medicaid.state.al.us/documents/ROBIN_5_16_05/3A_Dental/3-A-7-AL-Dental-Summit.pdf).