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GAO

Report to Congressional Requesters

September 2008

MEDICAID

Extent of Dental Disease in Children Has Not Decreased, and Millions Are Estimated to Have Untreated Tooth Decay

GAO-08-1121

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Highlights

Highlights of GAO-08-1121, a report to congressional requesters

Why GAO Did This Study

In recent years, concerns have been raised about the adequacy of dental care for low-income children. Attention to this subject became more acute due to the widely publicized case of Deamonte Driver, a 12-year-old boy who died as a result of an untreated infected tooth that led to a fatal brain infection. Deamonte had health coverage through Medicaid, a joint federal and state program that provides health care coverage, including dental care, for millions of low-income children. Deamonte had extensive dental disease and his family was unable to find a dentist to treat him.

GAO was asked to examine the extent to which children in Medicaid experience dental disease, the extent to which they receive dental care, and how these conditions have changed over time. To examine these indicators of oral health, GAO analyzed data for children ages 2 through 18, by insurance status, from two nationally representative surveys conducted by the Department of Health and Human Services (HHS): the National Health and Nutrition Examination Survey (NHANES) and the Medical Expenditure Panel Survey (MEPS). GAO also interviewed officials from the Centers for Disease Control and Prevention, and dental associations and researchers.

In commenting on a draft of the report, HHS acknowledged the challenge of providing dental services to children in Medicaid, and cited a number of studies and actions taken to address the issue.

To view the full product, including the scope and methodology, click on GAO-08-1121. For more information, contact James Cosgrove at (202) 512-7114 or cosgrovej@gao.gov.

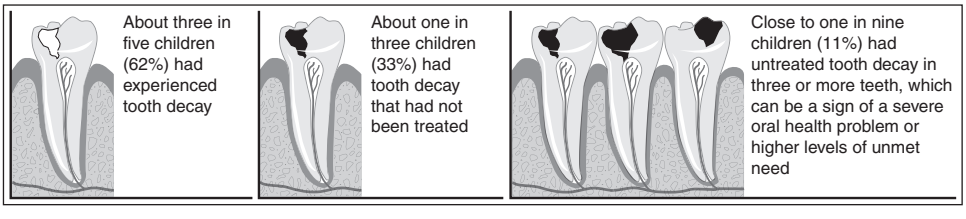
What GAO Found

Dental disease remains a significant problem for children aged 2 through 18 in Medicaid. Nationally representative data from the 1999 through 2004 NHANES surveys—which collected information about oral health through direct examinations—indicate that about one in three children in Medicaid had untreated tooth decay, and one in nine had untreated decay in three or more teeth (see figure). Projected to 2005 enrollment levels, GAO estimates that 6.5 million children aged 2 through 18 in Medicaid had untreated tooth decay. Children in Medicaid remain at higher risk of dental disease compared to children with private health insurance; children in Medicaid were almost twice as likely to have untreated tooth decay.

Receipt of dental care also remains a concern for children aged 2 through 18 in Medicaid. Nationally representative data from the 2004 through 2005 MEPS survey—which asks participants about the receipt of dental care for household members—indicate that only one in three children in Medicaid ages 2 through 18 had received dental care in the year prior to the survey. Similarly, about one in eight children reportedly never sees a dentist. More than half of children with private health insurance, by contrast, had received dental care in the prior year. Children in Medicaid also fared poorly when compared to national benchmarks, as the percentage of children in Medicaid who received any dental care—37 percent—was far below the Healthy People 2010 target of having 66 percent of low-income children under age 19 receive a preventive dental service.

Survey data on Medicaid children's receipt of dental care showed some improvement; for example, use of sealants went up significantly between the 1988 through 1994 and 1999 through 2004 time periods. Rates of dental disease, however, did not decrease, although the data suggest the trends vary somewhat among different age groups. Younger children in Medicaid—those aged 2 through 5—had statistically significant higher rates of dental disease in the more recent time period as compared to earlier surveys. By contrast, data for Medicaid adolescents aged 16 through 18 show declining rates of tooth decay, although the change was not statistically significant.

Proportion of Children in Medicaid Aged 2 through 18 with Tooth Decay, Untreated Tooth Decay, and Untreated Tooth Decay in Three or More Teeth, 1999-2004



Source: GAO analysis of 1999 through 2004 NHANES survey data.

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Abbreviations

AAPD	American Academy of Pediatric Dentistry
AHRQ	Agency for Healthcare Research and Quality
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare & Medicaid Services
EPSDT	Early and Periodic Screening, Diagnostic, and Treatment
HHS	Department of Health and Human Services
MEPS	Medical Expenditure Panel Survey
NHANES	National Health and Nutrition Examination Survey
SCHIP	State Children's Health Insurance Program

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United States Government Accountability Office
Washington, DC 20548

September 23, 2008

The Honorable Dennis J. Kucinich
Chairman
Subcommittee on Domestic Policy
Committee on Oversight and Government Reform
House of Representatives

The Honorable Elijah E. Cummings
House of Representatives

In recent years, concerns have been raised about the adequacy of dental care for low-income children. Attention to this subject became more acute due to the widely publicized case of Deamonte Driver, a 12-year-old boy who died as a result of an untreated infected tooth that led to a fatal brain infection. Deamonte had health coverage through Medicaid, a joint federal and state program that provides health care coverage, including dental care, for millions of low-income children. Even though Deamonte was entitled to dental care from his Medicaid managed care organization, Deamonte's family had experienced significant difficulties in obtaining needed dental care, including finding a dentist in their Maryland neighborhood who would accept Medicaid patients.[1]

May 2007 and February 2008 congressional hearings investigated the effectiveness of federal oversight of state Medicaid dental programs by the Department of Health and Human Services' (HHS) Centers for Medicare & Medicaid Services (CMS), the agency that oversees state Medicaid programs at the federal level. Concerns raised at the hearings about low-income children's oral health, including the extent that children in Medicaid experience dental disease and receive dental care, are not new. Our reports dating back to 2000 highlighted the problem of chronic dental disease and the factors that contribute to low use of dental care by low-income populations, including children in Medicaid.[2]

[1]Low-income children eligible under a state Medicaid plan generally are entitled to screening, diagnostic, preventive, and treatment services—including dental services—under Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit.

[2]A list of related GAO products can be found at the end of this report.

You asked us to examine two aspects of children's oral health: the extent to which children in Medicaid experience dental disease and the extent to which they receive dental care. You also asked us to assess how these conditions have changed over time. This report presents information from national health surveys on key indicators of the oral health status of children in Medicaid, specifically, the rate of dental disease and their receipt of dental care, and changes in these indicators over time.[3] To determine the extent to which children in Medicaid experience dental disease, we analyzed data from a survey conducted by HHS—the National Health and Nutrition Examination Survey (NHANES). NHANES—administered by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics—obtains nationally representative information on the health and nutritional status of the U.S. population through direct physical examinations, including dental examinations, and interviews. The dental examinations include a dentist's assessment of tooth decay and the presence of dental sealants, and the interviews include questions on various health and demographic characteristics, including information on insurance status. We grouped NHANES survey data from 1999 through 2004 (the most recent data based on direct oral examinations by dentists available)[4] in order to include a sufficient number of examinations to provide a reliable basis for assessing the extent of dental disease in the Medicaid population of children aged 2 through 18.[5] To assess how the rate of dental disease experienced by children in

[3]Our ongoing work is examining state and federal efforts to ensure that children in Medicaid receive needed dental services.

[4]After 2004, direct oral examinations by dentists were eliminated as part of NHANES. According to CDC, these examinations by dentists were replaced in 2005 through 2008 NHANES by a basic assessment of tooth decay experience and untreated decay conducted by trained health technologists.

[5]Our figures for Medicaid include children enrolled in the State Children's Health Insurance Program (SCHIP), because NHANES contains a single category that combines Medicaid and SCHIP beneficiaries. SCHIP provides health care coverage to children in low-income families who are not eligible for traditional Medicaid programs. States may implement SCHIP programs by expanding their existing Medicaid programs, establishing separate child health programs, or a combination of both. States with Medicaid expansion programs must provide to SCHIP beneficiaries all benefits that are available to the traditional Medicaid population. SCHIP enrollment in fiscal year 2006 was 6.6 million children. Nationwide, about 29 percent of children enrolled in SCHIP were in states that have chosen to expand their existing Medicaid programs. Of the total Medicaid and SCHIP population, about 15 percent were enrolled in SCHIP during the 2000 through 2004 time period. Although state Medicaid programs may cover children under age 21, SCHIP covers children under age 19. Therefore, to ensure our analyses of age and insurance status were comparable we limited our analyses to children ages 2 through 18.

Medicaid has changed over time, we compared NHANES data from 1999 through 2004 with NHANES data from 1988 through 1994. We analyzed results from three different groups based on their health insurance status: children with Medicaid, children with private health insurance, and uninsured children. The group of children with private insurance included both children with dental coverage and children without dental coverage,[6] while the group of uninsured was children who had neither health insurance nor dental insurance.

To assess children's receipt of dental care, we analyzed data from another HHS survey, the Medical Expenditure Panel Survey (MEPS). MEPS—administered by HHS's Agency for Healthcare Research and Quality (AHRQ)—obtains nationally representative information on Americans' health insurance coverage and use of health care, including information on receipt of dental care, such as how often participants see a dentist and whether they have experienced problems accessing needed dental care. Our MEPS analysis was based on surveys conducted in 2004 and 2005 (the most recent data available); to assess how receipt of dental care has changed over time, we compared the data from 2004 and 2005 with the earliest available MEPS data, from 1996 and 1997. We analyzed the MEPS data using the same three insurance groups we used for the NHANES data. To estimate the number of children in each Medicaid category with a given condition, we applied certain proportions from NHANES or MEPS data to an estimate of the 2005 average monthly Medicaid enrollment of children aged 2 through 18 (20.1 million children). Similar to NHANES, the Medicaid category included children enrolled in the State Children's Health Insurance Program (SCHIP) for the later time period (2004 through 2005 for MEPS).[7] To assess the reliability of NHANES and MEPS data, we spoke with knowledgeable agency officials, reviewed related documentation, and compared our results to published data. We determined these data to be reliable for the purposes of this report. Appendixes I and II contain more information on our NHANES and MEPS analyses. Finally, we obtained information on oral health and the Medicaid population from CDC and from dental associations and experts including

[6]We analyzed the data for privately insured children with and without dental coverage separately, and found that the indicators of oral health and dental utilization for both groups were similar. Consequently, in this report we present the data for children with private insurance as one group.

[7]We estimate that, of the total number of children in the MEPS 2004 through 2005 Medicaid and SCHIP category, about 16 percent were in SCHIP.

the Children's Health Dental Project and the Medicaid/SCHIP Dental Association. This work was conducted in accordance with generally accepted government auditing standards from December 2007 through September 2008.

Results in Brief

Dental disease and inadequate receipt of dental care remain significant problems for children in Medicaid. Nationally representative survey data from 1999 through 2004 indicate that about one in three children aged 2 through 18 in Medicaid had untreated tooth decay, and one in nine had untreated decay in three or more teeth. Projecting the survey results to the 2005 average monthly Medicaid enrollment of 20.1 million children, we estimate that 6.5 million children aged 2 through 18 in Medicaid had untreated tooth decay. Children in Medicaid remain at higher risk of dental disease compared to children who have private health insurance; children in Medicaid were almost twice as likely to have untreated tooth decay.

Survey data from 2004 and 2005 showed that only about one in three children in Medicaid had received dental care in the prior year; about one in eight children reportedly never sees the dentist. More than half of children with private health insurance, by contrast, had received dental care in the prior year. Children in Medicaid also fared poorly when compared to national benchmarks, as the percentage of children in Medicaid who received any dental care—37 percent—was far below HHS's Healthy People 2010 target of having 66 percent of low-income children under age 19 receive a preventive dental service in the prior year.

Survey data on Medicaid children's receipt of dental care showed some improvement for children in more recent surveys. For example, comparison of NHANES survey data from 1988 through 1994 to more recent data from 1999 through 2004 showed that the percentage of children aged 6 through 18 in Medicaid with at least one dental sealant increased nearly threefold, from 10 percent in 1988 through 1994 to 28 percent in 1999 through 2004. However, over the same time periods, dental disease in the overall Medicaid population aged 2 through 18 did not decrease, although the data suggest the trends vary somewhat among different age groups. Younger children—those aged 2 through 5—had statistically significant higher rates of dental disease in the more recent time period examined as compared to earlier surveys. By contrast, data for adolescents—children in Medicaid aged 16 through 18—show declining rates of tooth decay, although the change was not statistically significant.

We provided a draft of this report for comment to HHS. HHS provided written comments, including comments from CMS, CDC, and AHRQ, and technical comments which we incorporated as appropriate. CMS acknowledged the challenge of providing dental services to children in Medicaid, as well as all children nationwide, and cited a number of activities undertaken by CMS in coordination with states. CDC commented that trends in dental caries (tooth decay) vary by age group and for primary versus permanent teeth. We revised our report to further clarify the trends by age group, and note that due to sample sizes, we were unable to comment further on trends in the Medicaid child population by both age and by dentition (primary versus permanent teeth). We also added information on CDC's findings in the general population. AHRQ commented that its own work on dental use, expenses, dental coverage and changes had not been cited and sought additional clarification on the methodology we used to analyze the data. We revised our report to cite AHRQ's findings on dental services for children and to further describe our methodology.

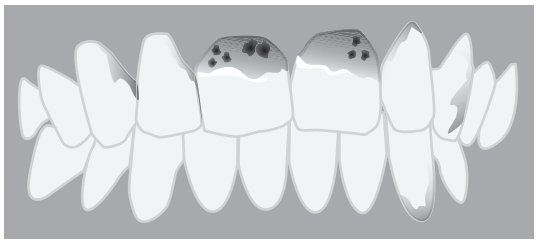
Background

In 2000, a report of the Surgeon General noted that tooth decay is the most common chronic childhood disease.[8] Left untreated, the pain and infections caused by tooth decay may lead to problems in eating, speaking, and learning. Tooth decay is almost completely preventable, and the pain, dysfunction, or on extremely rare occasion, death, resulting from dental disease can be avoided (see fig. 1). Preventive dental care can make a significant difference in health outcomes and has been shown to be cost-effective. For example, a 2004 study found that average dental-related costs for low-income preschool children who had their first preventive dental visit by age 1 were less than one-half ($262 compared to $546) of average costs for children who received their first preventive visit at age 4 through 5.[9]

[8]U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, *Oral Health in America: A Report of the Surgeon General* (Rockville, Md., 2000).

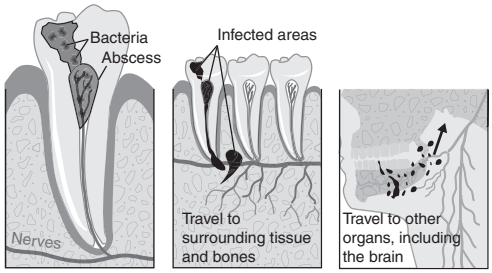
[9]Matthew F. Savage, Jessica Y. Lee, Jonathan B. Kotch, and William F. Vann Jr., "Early Preventive Dental Visits: Effects on Subsequent Utilization and Costs," *Pediatrics*, 114 (2004). The study examined the effects of preventive care on subsequent utilization and costs of dental services among preschool-aged children in North Carolina continuously enrolled in Medicaid between 1992 and 1997.

Figure 1: Tooth Decay and Its Possible Adverse Outcomes if Untreated



What is tooth decay?

The American Academy of Pediatric Dentistry describes dental caries (commonly known as cavities or tooth decay) as a process where bacteria in the mouth form acids which demineralize tooth enamel. Tooth decay can be prevented by good oral health practices, such as brushing with flouride toothpaste regularly, but if not treated, could result in pain, infection, and tooth loss.



How can tooth decay lead to death?

Untreated tooth decay can penetrate the tooth surface, allowing bacteria to infect the interior of the tooth, causing an abscess. From there, if the infection is not dealt with by antibiotics or other treatment, it can travel to surrounding tissue or other organs, including the brain, and on extremely rare occasions, cause death.

Source: GAO and the American Academy of Pediatric Dentistry.

The American Academy of Pediatric Dentistry (AAPD) recommends that each child see a dentist when his or her first tooth erupts and no later than the child's first birthday, with subsequent visits occurring at 6-month intervals or more frequently if recommended by a dentist. The early initial visit can establish a "dental home" for the child, defined by AAPD as the ongoing relationship with a dental provider who can ensure comprehensive and continuously accessible care. Comprehensive dental visits can include both clinical assessments, such as for tooth decay and sealants,[10] and appropriate discussion and counseling for oral hygiene, injury prevention, and speech and language development, among other topics. Because resistance to tooth decay is determined in part by genetics, eating patterns, and oral hygiene, early prevention is important. Delaying the onset of tooth decay may also reduce long-term risk for more serious decay by delaying the exposure to caries risk factors to a time when the child can better control his or her health behaviors.

[10]According to the American Academy of Pediatric Dentistry (AAPD), dental sealants, a plastic material put on the chewing surfaces of back teeth, have been shown to prevent decay on tooth surfaces where food and bacteria can build up. AAPD recommends sealants for 6-year and 12-year molars as soon as possible after eruption.

Recognizing the importance of good oral health, HHS in 1990 and again in 2000 established oral health goals as part of its Healthy People 2000 and 2010 initiatives. These include objectives related to oral health in children, for example, reducing the proportion of children with untreated tooth decay. One objective of Healthy People 2010 relates to the Medicaid population: to increase the proportion of low-income children and adolescents under the age of 19 who receive any preventive dental service in the past year, from 25 percent in 1996 to 66 percent in 2010.[11]

Medicaid, a joint federal and state program which provides health care coverage for low-income individuals and families; pregnant women; and aged, blind, and disabled people, provided health coverage for an estimated 20.1 million children aged 2 through 18 in federal fiscal year 2005.[12] The states operate their Medicaid programs within broad federal requirements and may contract with managed care organizations to provide Medicaid benefits or use other forms of managed care, when approved by CMS. CMS estimates that as of June 30, 2006, about 65 percent of Medicaid beneficiaries received benefits through some form of managed care.[13] State Medicaid programs must cover some services for certain populations under federal law. For instance, under Medicaid's EPSDT benefit, states must provide dental screening, diagnostic, preventive, and related treatment services for all eligible Medicaid beneficiaries under age 21.[14]

[11]The Healthy People 2010 goal was increased from 57 percent when it was first established in 2000 to 66 percent during a mid-course review in the mid-2000s. The goal defines preventive dental care to include examination, x-ray, fluoride treatment, cleaning, or sealant application. See U.S. Department of Health and Human Services, Public Health Service, *Progress Review: Oral Health* (February 7, 2008).

[12]Estimate based on CMS statistics for children ages 1 through 18 in Medicaid, less the estimated number of children aged 1 in that group (the latter of which was estimated using Census data).

[13]CMS's statistics include the Medicaid population enrolled in capitated plans (typically defined as plans that contract with states to receive a prepaid per enrollee payment for coverage of Medicaid services) and primary care case management models.

[14]These Medicaid dental services must be provided at intervals which meet reasonable standards of dental practice or as medically necessary and must include relief of pain and infections, restoration of teeth, and maintenance of dental health.

Dental Disease and Inadequate Receipt of Dental Care Remain Significant Problems for Children in Medicaid

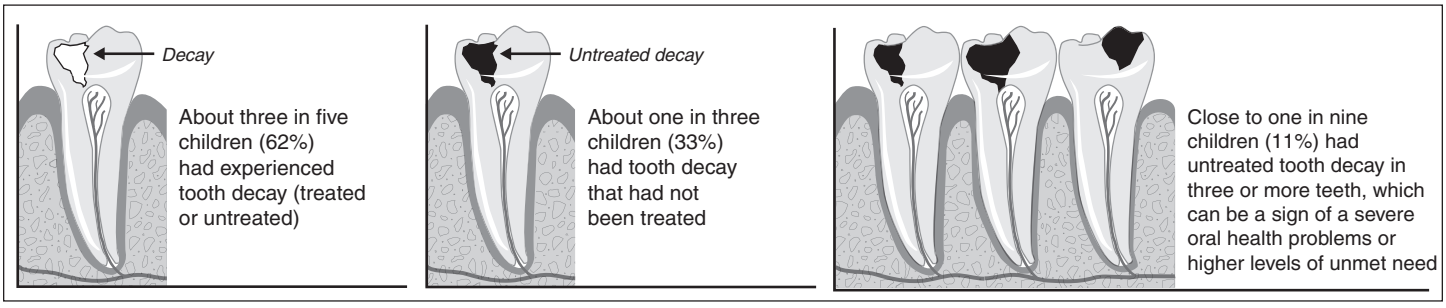
Children in Medicaid aged 2 through 18 often experience dental disease and often do not receive needed dental care, and although receipt of dental care has improved somewhat in recent years, the extent of dental disease for most age groups has not. Information from NHANES surveys from 1999 through 2004 showed that about one in three children ages 2 through 18 in Medicaid had untreated tooth decay, and one in nine had untreated decay in three or more teeth. Compared to children with private health insurance, children in Medicaid were substantially more likely to have untreated tooth decay and to be in urgent need of dental care. MEPS surveys conducted in 2004 and 2005 found that almost two in three children in Medicaid aged 2 through 18 had not received dental care in the previous year and that one in eight never sees a dentist. Children in Medicaid were less likely to have received dental care than privately insured children, although they were more likely to have received care than children without health insurance. Children in Medicaid also fared poorly when compared to national benchmarks, as the percentage of children in Medicaid ages 2 through 18 who received any dental care—37 percent—was far below the Healthy People 2010 target of having 66 percent of low-income children under age 19 receive a preventive dental service.[15] MEPS data on Medicaid children who had received dental care—from 1996 through 1997 compared to 2004 through 2005—showed some improvement for children ages 2 through 18 in Medicaid. By contrast, comparisons of recent NHANES data to data from the late 1980s and 1990s suggest that the extent that children ages 2 through 18 in Medicaid experience dental disease has not decreased for most age groups.

[15]The MEPS measures receipt of any dental care, whereas the 2010 Healthy People target is for receipt of a preventive dental service. This comparison may underestimate the actual gap.

National Survey Data from 1999 through 2004 Show That One in Three Children in Medicaid Had Untreated Tooth Decay

Dental disease is a common problem for children aged 2 through 18 enrolled in Medicaid, according to national survey data (see fig. 2). NHANES oral examinations conducted from 1999 through 2004 show that about three in five children (62 percent) in Medicaid had experienced tooth decay,[16] and about one in three (33 percent) were found to have untreated tooth decay.[17] Close to one in nine—about 11 percent—had untreated decay in three or more teeth, which is a sign of unmet need for dental care and, according to some oral health experts, can suggest a severe oral health problem. Projecting these proportions to 2005 enrollment levels, we estimate that 6.5 million children in Medicaid had untreated tooth decay, with 2.2 million children having untreated tooth decay involving three or more teeth.[18]

Figure 2: Proportion of Children in Medicaid Aged 2 through 18 with Tooth Decay, Untreated Tooth Decay, and Untreated Tooth Decay in Three or More Teeth, 1999-2004



Source: GAO analysis of 1999 through 2004 NHANES survey data.

Note: The NHANES survey data for Medicaid also include data for children in SCHIP, which we estimate to be about 15 percent of the total.

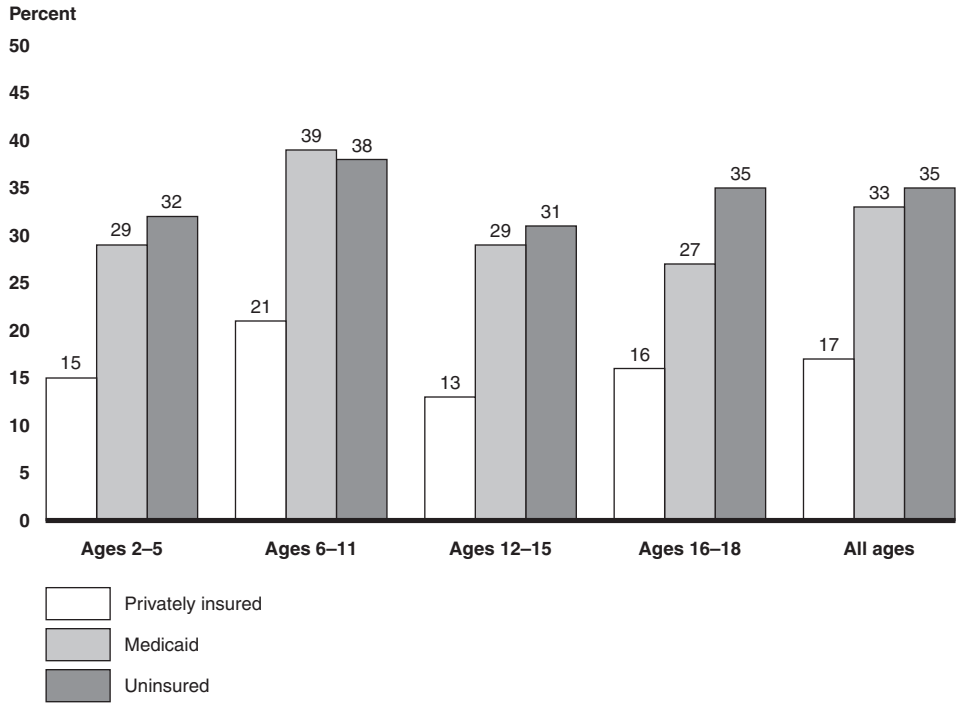
[16]We considered a child as having experienced tooth decay if he or she had a tooth with untreated decay, had a tooth that had been treated for decay (meaning had a filling), or had lost a tooth due to decay.

[17]The extent of dental disease may be even more severe than these statistics suggest. Oral health experts told us that the extent of untreated tooth decay identified in NHANES is likely an underestimate because NHANES examiners consider a tooth as decayed only if the decay is "visibly significant."

[18]These estimates are based on 95 percent confidence intervals—that is, there is a 95 percent probability that the actual number falls within this range. For children with untreated tooth decay, the lower and upper limits are 5.9 million and 7.1 million, respectively. For children with untreated tooth decay in three or more teeth, the lower and upper limits are 1.9 million and 2.6 million, respectively.

Compared with children with private health insurance, children in Medicaid were at much higher risk of tooth decay and experienced problems at rates more similar to those without any insurance. As shown in figure 3, the proportion of children in Medicaid with untreated tooth decay (33 percent) was nearly double the rate for children who had private insurance (17 percent) and was similar to the rate for uninsured children (35 percent). These children were also more than twice as likely to have untreated tooth decay in three or more teeth than their privately insured counterparts (11 percent for Medicaid children compared to 5 percent for children with private health insurance). These disparities were consistent across all age groups we examined.

Figure 3: Percentage of Children Aged 2 through 18 with Untreated Tooth Decay, by Age and Insurance Status, 1999-2004



Source: GAO analysis of 1999 through 2004 NHANES survey data.

Note: The NHANES survey data for Medicaid also include data for children in SCHIP, which we estimate to be about 15 percent of the total.

According to NHANES data, more than 5 percent of children in Medicaid aged 2 through 18 had urgent dental conditions, that is, conditions in need of care within 2 weeks for the relief of symptoms and stabilization of the condition. Such conditions include tooth fractures, oral lesions, chronic pain, and other conditions that are unlikely to resolve without professional intervention. On the basis of these data, we estimate that in 2005, 1.1 million children aged 2 through 18 in Medicaid had conditions that warranted seeing a dentist within 2 weeks.[19] Compared to children who had private insurance, children in Medicaid were more than four times as likely to be in urgent need of dental care.

The NHANES data suggest that the rates of untreated tooth decay for some Medicaid beneficiaries could be about three times more than national health benchmarks. For example, the NHANES data showed that 29 percent of children in Medicaid aged 2 through 5 had untreated decay, which compares unfavorably with the Healthy People 2010 target for untreated tooth decay of 9 percent of children aged 2 through 4.[20]

[19]This estimate is based on a 95 percent confidence interval—that is, there is a 95 percent probability that the actual number falls within a specific range. For children with an urgent need to see a dentist, the lower and upper limits of the range are 700,000 and 1.5 million, respectively.

[20]The age groups we used for our analysis of NHANES differ slightly from the age groups measured for purposes of Healthy People 2010. According to HHS, prevalence of untreated tooth decay among 2 through 4 year olds in the general population increased from 16 percent during the 1988 through 1994 time period, to 19 percent for the 1999 through 2004 time period (this increase was not statistically significant). For this objective, the trends may be moving in the opposite direction of the target. HHS has also reported that among young children aged 2 to 4 years, the prevalence of tooth decay in primary teeth increased from 18 percent for the 1988 through 1994 time period to 24 percent for the 1999 through 2004 time period. By comparison with older children, tooth decay in preschool children in the general population increased significantly. According to HHS, this trend could portend a future increase in tooth decay in older children, as influenced by changes in diet or food consumption patterns. The target for this goal is 11 percent.

National Survey Data from 2004 through 2005 Showed That Nearly Two in Three Children in Medicaid Did Not Receive Dental Care in the Previous Year

Most children in Medicaid do not visit the dentist regularly, according to 2004 and 2005 nationally representative MEPS data (see fig. 4). According to these data, nearly two in three children in Medicaid aged 2 through 18 had not received any dental care in the previous year.[21] Projecting these proportions to 2005 enrollment levels, we estimate that 12.6 million children in Medicaid have not seen a dentist in the previous year.[22] In reporting on trends in dental visits of the general population, AHRQ reported in 2007 that about 31 percent of poor children (family income less than or equal to the federal poverty level) and 34 percent of low-income children (family income above 100 percent through 200 percent of the federal poverty level) had a dental visit during the year.[23] Survey data also showed that about one in eight children (13 percent) in Medicaid reportedly never see a dentist.[24]

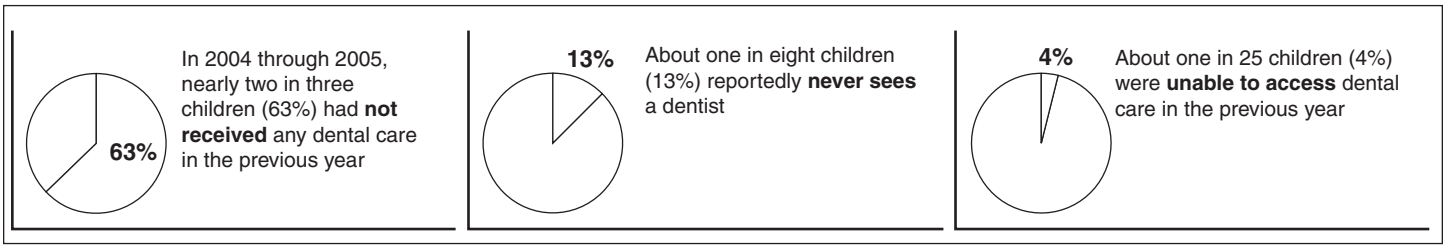
[21]MEPS asks an adult if the children in the household had received any dental care in the previous year. If they respond affirmatively, then surveyors ask about the type of provider they visited: a dentist, a hygienist, oral surgeon, orthodontist, endodontist, periodontist, or dental technician.

[22]This estimate is based on a 95 percent confidence interval—that is, there is a 95 percent probability that the actual number falls within a specific range. For children without a dental visit in the previous year, the lower and upper limits of this range are 12.1 million and 13.0 million, respectively.

[23]U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, "Dental Use, Expenses, Private Dental Coverage, and Changes, 1996 and 2004," *MEPS Chartbook*, no. 17 (2007), http://www.meps.ahrq.gov/mepsweb/data_files/publications/cb17/cb17.pdf (downloaded Sept. 16, 2008).

[24]As part of the MEPS survey, participants are asked: "On average, how often does [person] receive a dental check-up?" One of the responses to this question is that the individual in question "never goes to a dentist." The percentage of children who "never go to the dentist" varied by age group. The youngest group, ages 2 through 5, was the group most likely to never see a dentist, with 30 percent of children falling in that category. However, even some of the older children never see a dentist. We found that about 10 percent of children aged 16 through 18 in Medicaid were in this category.

Figure 4: Proportion of Children in Medicaid Nationwide Not Receiving Dental Care or Unable to Access Dental Care, 2004-2005



Source: GAO analysis of 2004 through 2005 MEPS survey data.

Note: The MEPS survey data for Medicaid also include data for children in SCHIP, which we estimate to be about 16 percent of the total.

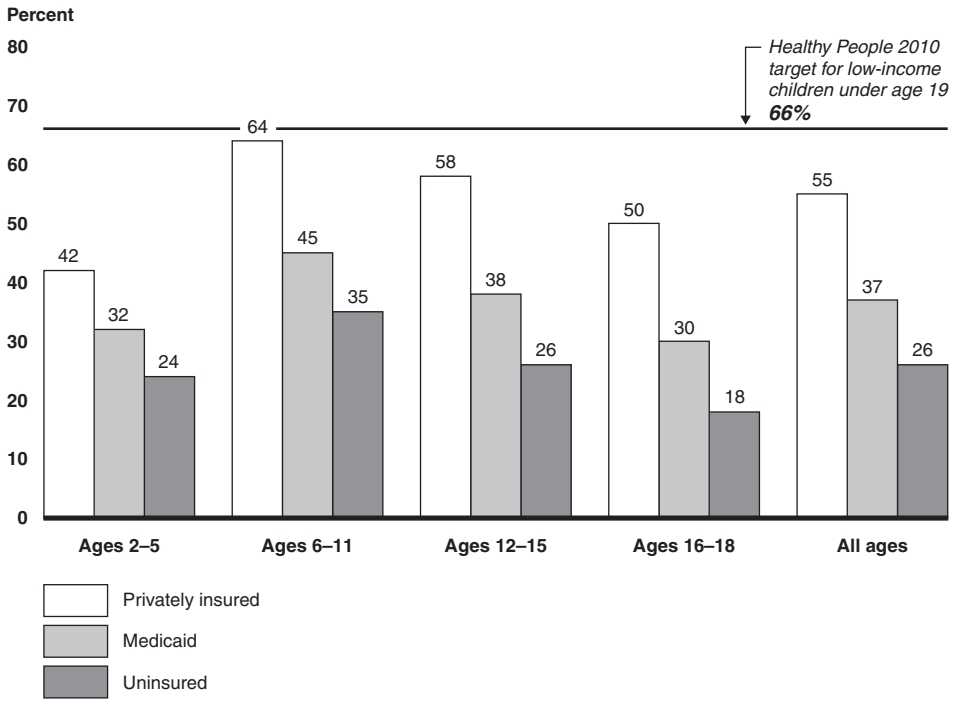
MEPS survey data also show that many children in Medicaid were unable to access needed dental care. Survey participants reported that about 4 percent of children aged 2 through 18 in Medicaid were unable to get needed dental care in the previous year. Projecting this percentage to estimated 2005 enrollment levels, we estimate that 724,000 children aged 2 through 18 in Medicaid could not obtain needed care.[25] Regardless of insurance status, most participants who said a child could not get needed dental care said they were unable to afford such care.[26] However, 15 percent of children in Medicaid who had difficulty accessing needed dental care reportedly were unable to get care because the provider refused to accept their insurance plan, compared to only 2 percent of privately insured children.

[25]This estimate is based on a 95 percent confidence interval—that is, there is a 95 percent probability that the actual number falls within this range. For children who could not obtain needed dental care, the lower and upper limits of this range are 543,000 and 884,000, respectively.

[26]MEPS asked participants for the reason they were unable to get needed care. Possible responses included (1) could not afford care, (2) insurance company would not approve/cover/pay, (3) doctor refused insurance plan, (4) problems getting to doctor's office, (5) could not get time off work, (6) didn't know where to get care, (7) was refused services, (8) could not get child care, (9) did not have time, and (10) other. Table 9 in app. II lists the reasons for MEPS participants' inability to access necessary dental care by insurance status. MEPS is a nationally representative survey that also includes privately insured and uninsured individuals; it does not illuminate why beneficiaries with health coverage such as Medicaid (which has no cost sharing for certain beneficiaries) would report that they could not afford care, or the reasons for providers refusing to accept insurance plans.

Children enrolled in Medicaid were less likely to have received dental care than privately insured children, but they were more likely to have received dental care than children without health insurance. (See fig. 5.) Survey data from 2004 through 2005 showed that about 37 percent of children in Medicaid aged 2 through 18 had visited the dentist in the previous year, compared with about 55 percent of children with private health insurance, and 26 percent of children without insurance. The percentage of children in Medicaid who received any dental care—37 percent—was far below the Healthy People 2010 target of having 66 percent of low-income children under age 19 receive a preventive dental service.

Figure 5: Percentage of Children in Medicaid Nationwide Who Received Dental Care in the Previous Year, by Age and Insurance Status, 2004-2005



Source: GAO analysis of 2004 through 2005 MEPS survey data.

Note: The MEPS survey data for Medicaid also include data for children in SCHIP, which we estimate to be about 16 percent of the total.

The NHANES data from 1999 through 2004 also provide some information related to the receipt of dental care. The presence of dental sealants, a form of preventive care, is considered to be an indicator that a person has received dental care. About 28 percent of children in Medicaid had at least one dental sealant, according to 1999 through 2004 NHANES data. In contrast, about 40 percent of children with private insurance had a sealant. However, children in Medicaid were more likely to have sealants than children without health insurance (about 20 percent).

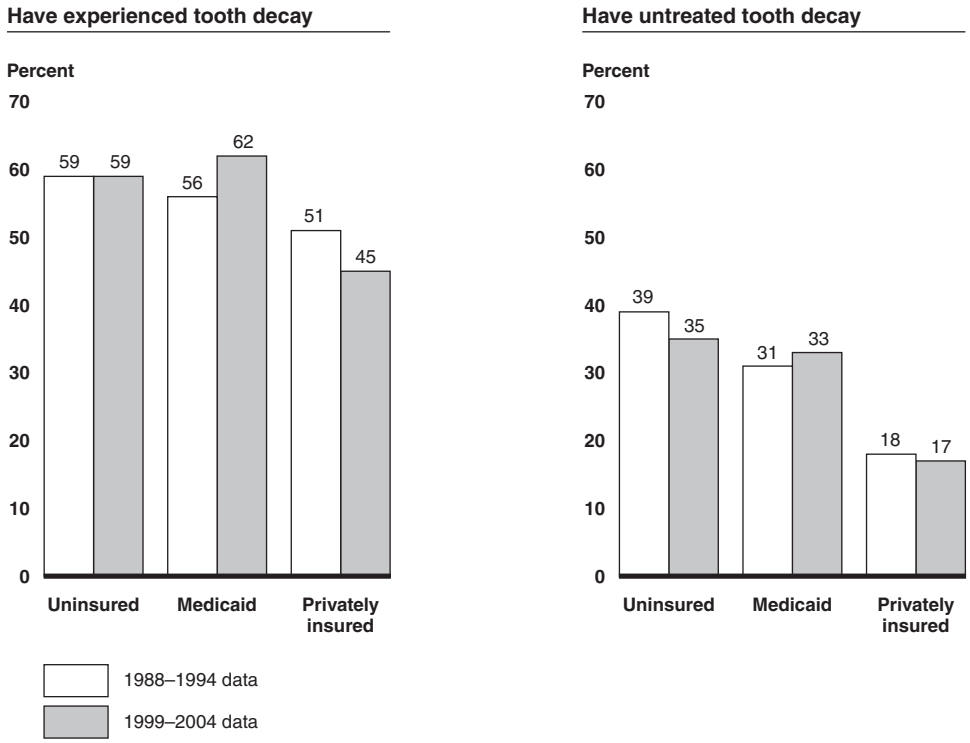
Comparison of Past and Recent Survey Data Suggests That the Rate of Dental Disease in Children in Medicaid Is Not Decreasing, although the Receipt of Dental Care Has Improved Somewhat in More Recent Years

While comparisons of past and more recent survey data suggest that a larger proportion of children in Medicaid had received dental care in recent surveys, the extent that children in Medicaid experience dental disease has not decreased. A comparison of NHANES results from 1988 through 1994 with results from 1999 through 2004 showed that the rates of untreated tooth decay were largely unchanged for children in Medicaid aged 2 through 18: 31 percent of children had untreated tooth decay in 1988 through 1994, compared with 33 percent in 1999 through 2004 (see fig. 6). The proportion of children in Medicaid who experienced tooth decay increased from 56 percent in the earlier period to 62 percent in more recent years. This increase appears to be driven by younger children, as the 2 through 5 age group had substantially higher rates of dental disease in the more recent time period, 1999 through 2004.[27] This preschool age group experienced a 32 percent rate of tooth decay in the 1988 through 1994 time period, compared to almost 40 percent experiencing tooth decay in 1999 through 2004 (a statistically significant change). Data for adolescents, by contrast, suggest declining rates of tooth decay. Almost 82 percent of adolescents aged 16 through 18 in Medicaid had experienced tooth decay in the earlier time period, compared to 75 percent in the latter time period (although this change was not statistically significant). These trends were similar for rates of untreated tooth decay, with the data suggesting rates going up for young children, and declining or remaining the same for older groups that are more likely to have permanent teeth. According to CDC, these trends are similar for the general population of children, for which tooth decay in permanent teeth has generally declined

[27]We found that the rates of untreated tooth decay for children with Medicaid did not decrease from the period 1988 through 1994 to the period 1999 through 2004. Similarly, CDC found that the rates of untreated primary tooth decay in children aged 2 through 11 had not decreased between 1988 through 1994 and 1999 through 2004. However, CDC has found that rates of untreated tooth decay in permanent teeth for low-income children have declined since the early 1970s.

and untreated tooth decay has remained unchanged. CDC also found that tooth decay in preschool aged children in the general population had increased in primary teeth.

Figure 6: Surveyed Measures of Tooth Decay Rates, by Insurance Status, 1988-1994 and 1999-2004



Source: GAO analysis of 1988 through 1994 and 1999 through 2004 NHANES survey data.

Notes: For the privately insured and for those with Medicaid, changes between the two time periods in the percentage of children aged 2 through 18 who experienced tooth decay were statistically significant at the 95 percent level. For this measure, changes in the percentage of children aged 2 through 18 who were uninsured were not statistically significant. For untreated tooth decay, none of the changes between the two time periods were found to be statistically significant at the 95 percent level. The 1999 through 2004 NHANES survey data for Medicaid also include data for children in SCHIP, which we estimate to be about 15 percent of the total.

At the same time, indicators of receipt of dental care, including the proportion of children who had received dental care in the past year and use of sealants, have shown some improvement. Two indicators of receipt of dental care showed improvement from earlier surveys:

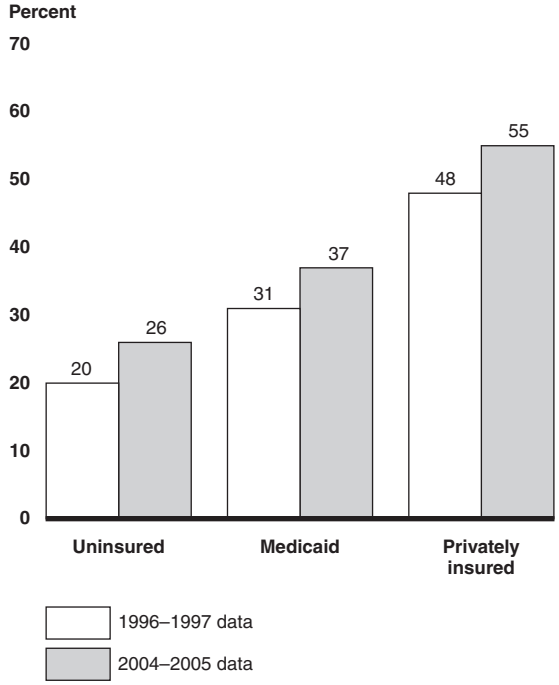
- The percentage of children in Medicaid aged 2 through 18 who received dental care in the previous year increased from 31 percent in 1996 through 1997 to 37 percent in 2004 through 2005, according to MEPS data (see fig. 7). This change was statistically significant. Similarly, AHRQ reported that the percent of children with a dental visit increased between 1996 and 2004 for both poor children (28 percent to 31 percent) and low-income children (28 percent to 34 percent).

- The percentage of children aged 6 through 18 in Medicaid with at least one dental sealant increased nearly threefold, from 10 percent in 1988 through 1994 to 28 percent in 1999 through 2004, according to NHANES data, and these changes were statistically significant. The increase in receipt of sealants may be due in part to the increased use of dental sealants in recent years, as the percentage of uninsured and insured children with dental sealants doubled over the same time period.[28] Adolescents aged 16 through 18 in Medicaid had the greatest increase in receipt of sealants relative to other age groups. The percentage of adolescents with dental sealants was about 6 percent in the earlier time period, and 33 percent more recently.

  The percentage of children in Medicaid who reportedly never see a dentist remained about the same between the two time periods, with about 14 percent in 1996 through 1997 who never saw a dentist, and 13 percent in 2004 through 2005, according to MEPS data.

[28]According to HHS officials, many state health departments have long-term programs that have delivered sealants to a sizable number of low-income children over the past decade. See for example, CDC, "Impact of Targeted, School-Based Dental Sealant Programs in Reducing Racial and Economic Disparities in Sealant Prevalence Among School Children, Ohio, 1998-1999," *Morbidity and Mortality Weekly Report*, 50 no. 34 (2001),736-8.

Figure 7: Surveyed Measures of Children Who Visited a Dentist in the Previous Year, by Insurance Status, 1996-1997 and 2004-2005



Source: GAO analysis of 1996 through 1997 and 2004 through 2005 MEPS survey data.

Notes: For each group, changes between the two time periods in the percentage of children aged 2 through 18 who had received dental care in the previous year were statistically significant at the 95 percent level. The 2004 through 2005 MEPS survey data for Medicaid also include data for children in SCHIP, which we estimate to be about 16 percent of the total.

More information on our analysis of NHANES and MEPS for changes in dental disease and receipt of dental care for children in Medicaid over time, including confidence intervals and whether changes over time were statistically significant, can be found in appendixes I and II.

Concluding Observations

The information provided by nationally representative surveys regarding the oral health of our nation's low-income children in Medicaid raises serious concerns. Measures of access to dental care for this population, such as children's dental visits, have improved somewhat in recent surveys, but remain far below national health goals. Of even greater concern are data that show that dental disease is prevalent among children in Medicaid, and is not decreasing. Millions of children in Medicaid are estimated to have dental disease in need of treatment; in many cases this need is urgent. Given this unacceptable condition, it is important that

those involved in providing dental care to children in Medicaid—the federal government, states, providers, and others—address the need to improve the oral health condition of these children and to achieve national oral health goals.

Agency Comments

We provided a draft of this report for comment to HHS. HHS provided written comments which we summarize below. The text of HHS's letter, including comments from CMS, CDC, and AHRQ, is reprinted in appendix III. HHS also provided technical comments, which we incorporated as appropriate. In commenting on the draft, CMS acknowledged the challenge of providing dental services to children in Medicaid, as well as all children nationwide, and cited a number of activities undertaken by CMS in coordination with states, such as completing 17 focused dental reviews and forming an Oral Health Technical Advisory Group. CDC commented that trends in dental caries vary by age group and for primary versus permanent teeth. CDC also noted that beginning in 2005, trained health technologists conducted basic assessments of caries experience. We revised our report to further clarify the differing trends by age groups and to acknowledge the assessments performed by health technologists. We did not analyze the data by both age and dentition (primary versus permanent teeth) due to small sample sizes; we note that the trends for the youngest and oldest age groups in the Medicaid child population that we identified are consistent with those that CDC found in the general population by age and dentition.

AHRQ commented that agency staff had completed a Chartbook that summarizes dental use, expenses, dental coverage, and changes from 1996 and 2004 for the general population that was not cited and referenced in our report, and indicated it was unclear why the same analytical approach was not followed for the determination of public coverage status. In technical comments, AHRQ noted that their reported findings are generally comparable to GAO's findings. We revised our report to cite AHRQ's findings on dental services for children and to further describe our methodology. Regarding our determination of public coverage status, we did not use AHRQ's analytical approach that describes "public coverage" because the focus of this report was on children covered by Medicaid. AHRQ's approach did not distinguish Medicaid from other types of public coverage.

We are sending copies of this report to other interested congressional committees and to the Secretary of HHS. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staffs have any questions regarding this report, please contact me at (202) 512-7114 or cosgrovej@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors are listed in appendix IV.

James C. Cosgrove
Director, Health Care

Appendix I: NHANES Analysis

The National Health and Nutrition Examination Survey (NHANES), conducted multiple times since the early 1960s by the Department of Health and Human Services' (HHS) National Center for Health Statistics of the Centers for Disease Control and Prevention (CDC), is designed to provide nationally representative estimates of the health and nutrition status of the noninstitutionalized civilian population of the United States. NHANES provides information on civilians of all ages. Prior to 1999, three periodic surveys were conducted. Since 1999, NHANES has been conducted annually. For this study, we examined data from 1999 through 2004 and data from 1988 through 1994. We did not analyze any NHANES data after 2004 because, beginning in 2005, NHANES surveys do not include examinations by dentists for tooth decay, dental sealants, and most other oral health conditions.[1]

Our analysis of NHANES data focused on the oral examination of children ages 2 through 18. As part of an overall physical examination, dental examiners inspect children's mouths and collect data on the number and condition of teeth and the condition of gums. To analyze these data, we considered three categories of children, based on their health insurance status as reported by their parents or guardians on the interview section of the survey: children with Medicaid, children with private health insurance, and children without health insurance.[2] These categories include more than 90 percent of children who were given dental examinations as part of NHANES. We do not present results for children with other forms of government health insurance, such as TRICARE or Medicare, and we do not present results for children whose parents or guardians provided no information on their health insurance status (about 1.5 percent of children fell into this category). For the 1999 through 2004 time period, the Medicaid category includes some children enrolled in the State Children's Health Insurance Program (SCHIP); we estimate that about 85 percent of the children for that time period were enrolled in Medicaid with the

[1]For 2005 through 2008, NHANES collected basic information on tooth decay experience and untreated decay using a screening assessment conducted by trained health technologists. According to CDC officials, CDC has begun planning to alternate between a comprehensive tooth decay examination and a more limited screening for future NHANES.

[2]The privately insured category comprises children with private health insurance, some of whom had dental coverage and others who did not, while the uninsured category comprises children who had neither health insurance nor dental insurance.

remainder enrolled in SCHIP.[3] To assess the reliability of NHANES data, we interviewed knowledgeable officials, reviewed relevant documentation, and compared the results of our analyses to published data. We determined that the NHANES data were sufficiently reliable for the purposes of our engagement.

Using the NHANES data, we analyzed the percentage of children with untreated tooth decay, the percentage of children who had experienced tooth decay, the percentage of children with tooth decay in three or more teeth, and the percentage of children with dental sealants (see tables 1 through 5). We also analyzed the dental examiner's recommendation for care as the basis for determining whether a child had an urgent need for dental care. For each of these measures, we estimated the percentage, with 95 percent confidence intervals (that is, there is a 95 percent probability that the actual number falls within the lower and upper limits of our estimates), of children in each of the three insurance categories using raw data and appropriate sampling weights. We also used standard errors to calculate if changes from the 1988 through 1994 time period to the 1999 through 2004 time period were statistically significant at the 95 percent level. To estimate the number of children in the Medicaid category with a given condition, we multiplied the calculated percentage by an estimate of the 2005 average monthly enrollment of children ages 2 through18 in Medicaid (20.1 million children). We estimated the 2005 average monthly enrollment of children ages 2 through 18 in Medicaid using CMS statistics, by age group, for children ages 1 through 18 (we reduced this number to account for children age 1 using Census data).

[3]States may implement SCHIP programs by expanding their existing Medicaid programs, establishing separate child health programs, or a combination of both. States with Medicaid expansion programs must provide to SCHIP beneficiaries all benefits that are available to the traditional Medicaid population. SCHIP enrollment in fiscal year 2006 was 6.6 million children. Nationwide, about 29 percent of children enrolled in SCHIP were in states that have chosen to expand their existing Medicaid programs. Of the total Medicaid and SCHIP population, about 15 percent were enrolled in SCHIP during the 2000 through 2004 time period.

Table 1: Percentage of Children Aged 2 through 18 Who Have Experienced Tooth Decay, by Health Insurance Status, 1988-1994 and 1999-2004

	1988-1994			1999-2004		
	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit
All children (2-18)						
Private insurance	50.7[a]	48.2	53.1	45.0[a]	42.6	47.4
Medicaid	55.5[a]	50.3	60.7	61.6[a]	58.7	64.4
Uninsured	59.1	53.1	65.0	58.5	54.0	62.9
Children 2-5						
Private insurance	19.9	17.2	22.7	21.1	17.5	24.8
Medicaid	32.3[a]	27.6	37.0	39.5[a]	34.9	44.0
Uninsured	37.1	29.0	45.1	38.2	29.0	47.4
Children 6-11						
Private insurance	52.1	47.8	56.5	47.7	42.9	52.5
Medicaid	65.0	55.8	74.1	71.1	67.0	75.2
Uninsured	61.7	52.3	71.2	60.5	52.2	68.8
Children 12-15						
Private insurance	58.7[a]	53.6	63.9	47.7[a]	44.4	50.9
Medicaid	63.8	54.7	72.9	67.7	62.9	72.6
Uninsured	54.5	45.4	63.5	58.9	51.6	66.2
Children 16-18						
Private insurance	78.4[a]	73.2	83.6	62.5[a]	58.6	66.4
Medicaid	81.9	73.3	90.4	74.8	67.6	82.1
Uninsured	76.9	68.8	85.1	70.3	64.8	75.9

Source: GAO analysis of 1988 through 1994 and 1999 through 2004 National Health and Nutrition Examination Survey (NHANES) data.

Notes: Data in the Medicaid category from the 1988 through 1994 period only included children who were enrolled in Medicaid, while data from the 1999 through 2004 period included children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimated that about 85 percent of the children in the Medicaid category from 1999 through 2004 were enrolled in Medicaid, while the remaining 15 percent were enrolled in SCHIP (either in separate child health programs or Medicaid expansion programs). We considered an individual as having experienced tooth decay if any of their teeth had untreated decay, if any of their teeth had been treated for decay, or if any of their teeth were missing due to decay.

[a]Change from the 1988 through 1994 period to the 1999 through 2004 period was statistically significant at the 95 percent level.

Table 2: Percentage of Children Aged 2 through 18 with Untreated Tooth Decay, by Health Insurance Status, 1988-1994 and 1999-2004

	1988-1994			1999-2004		
	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit
All children (2-18)						
Private insurance	17.9	15.9	19.9	16.8	14.9	18.6
Medicaid	30.7	26.0	35.3	32.5	29.5	35.4
Uninsured	38.7	33.5	43.8	34.6	30.4	38.8
Children 2-5						
Private insurance	14.9	12.4	17.3	15.1	11.9	18.4
Medicaid	26.1	21.5	30.8	28.9	24.4	33.4
Uninsured	32.9	25.0	40.7	32.1	23.2	40.9
Children 6-11						
Private insurance	22.6	19.3	25.9	20.6	17.6	23.7
Medicaid	36.9	29.4	44.4	38.7	33.8	43.6
Uninsured	42.6	32.6	52.6	37.6	30.5	44.8
Children 12-15						
Private insurance	12.4	9.5	15.3	12.8	10.4	15.2
Medicaid	28.1	18.0	38.1	29.1	22.1	36.1
Uninsured	33.3	25.4	41.2	30.8	24.8	36.7
Children 16-18						
Private insurance	19.6	14.6	24.5	16.2	12.9	19.5
Medicaid	31.0	19.2	42.9	27.0	19.5	34.6
Uninsured	43.1	35.1	51.2	35.0	29.0	41.0

Source: GAO analysis of 1988 through 1994 and 1999 through 2004 National Health and Nutrition Examination Survey (NHANES) data.

Notes: Data in the Medicaid category from the 1988 through 1994 period only included children who were enrolled in Medicaid, while data from the 1999 through 2004 period included children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimated that about 85 percent of the children in the Medicaid category from 1999 through 2004 were enrolled in Medicaid, while the remaining 15 percent were enrolled in SCHIP (either in separate child health programs or Medicaid expansion programs).

None of the changes from the 1988 through 1994 period to the 1999 through 2004 period were found to be statistically significant at the 95 percent level.

Table 3: Percentage of Children Aged 2 through 18 with Untreated Tooth Decay in Three or More Teeth, by Health Insurance Status, 1988-1994 and 1999-2004

	1988-1994			1999-2004		
	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit
All children (2-18)						
Private insurance	5.3	4.3	6.2	5.0	4.0	6.0
Medicaid	12.5	9.0	16.0	11.1	9.3	13.0
Uninsured	15.0	12.2	17.9	14.5	11.2	17.7
Children 2-5						
Private insurance	6.8	4.8	8.8	5.7	3.3	8.1
Medicaid	13.1	9.8	16.4	14.7	11.2	18.2
Uninsured	16.9	10.7	23.1	18.7	10.8	26.6
Children 6-11						
Private insurance	5.9	4.3	7.4	6.5	5.0	8.0
Medicaid	14.9	9.4	20.4	10.6	7.8	13.5
Uninsured	21.5	13.9	29.2	16.9	11.9	22.0
Children 12-15						
Private insurance	3.0	1.6	4.4	3.0	1.9	4.0
Medicaid	8.2	1.0	15.5	8.2	3.7	12.8
Uninsured	8.4	4.9	11.9	7.7	4.5	10.9
Children 16-18						
Private insurance	5.0	2.4	7.6	4.1	2.3	6.0
Medicaid	11.4	1.5	21.4	8.9	4.5	13.4
Uninsured	11.2	6.6	15.8	13.8	10.0	17.6

Source: GAO analysis of 1988 through 1994 and 1999 through 2004 National Health and Nutrition Examination Survey (NHANES) data.

Notes: Data in the Medicaid category from the 1988 through1994 period only included children who were enrolled in Medicaid, while data from the 1999 through 2004 period included children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimated that about 85 percent of the children in the Medicaid category from 1999 through 2004 were enrolled in Medicaid, while the remaining 15 percent were enrolled in SCHIP (either in separate child health programs or Medicaid expansion programs).

None of the changes from the 1988 through 1994 period to the 1999 through 2004 period were found to be statistically significant at the 95 percent level.

Table 4: Percentage of Children Aged 6 through 18 with Dental Sealants, by Health Insurance Status, 1988-1994 and 1999-2004

	1988-1994			1999-2004		
	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit
All children (6-18)						
Private insurance	23.7[a]	19.8	27.6	39.9[a]	37.0	42.7
Medicaid	9.5[a]	5.1	13.9	27.7[a]	23.0	32.4
Uninsured	11.3[a]	6.1	16.5	19.9[a]	15.4	24.3
Children 6-11						
Private insurance	24.0[a]	19.6	28.5	35.8[a]	31.8	39.8
Medicaid	11.6[a]	5.8	17.5	22.6[a]	15.5	29.6
Uninsured	16.2	7.9	24.5	16.1	9.8	22.3
Children 12-15						
Private insurance	26.8[a]	20.9	32.7	46.2[a]	41.7	50.7
Medicaid	8.7[a]	0.5	16.9	34.2[a]	26.1	42.4
Uninsured	11.8[a]	3.1	20.5	28.0[a]	20.8	35.3
Children 16-18						
Private insurance	18.6[a]	14.7	22.6	39.6[a]	35.9	43.3
Medicaid	5.6[a]	1.3	9.9	33.0[a]	25.9	40.1
Uninsured	3.2[a]	0.0	6.8	18.4[a]	11.8	25.0

Source: GAO analysis of 1988 through1994 and 1999 through 2004 National Health and Nutrition Examination Survey (NHANES) data.

Notes: Data in the Medicaid category from the 1988 through1994 period only included children who were enrolled in Medicaid, while data from the 1999 through 2004 period included children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimated that about 85 percent of the children in the Medicaid category from 1999 through 2004 were enrolled in Medicaid, while the remaining 15 percent were enrolled in SCHIP (either separate child health programs or Medicaid expansion programs).

[a]Change from the 1988 through 1994 period to the 1999 through 2004 period was statistically significant at the 95 percent level.

Table 5: Percentage of Children Aged 2 through 18 with an Urgent Need for Dental Care, by Health Insurance Status, 1999-2004

	Percentage	Lower limit	Upper limit
All children (2-18)			
Private insurance	1.3	0.7	2.0
Medicaid	5.4	3.4	7.4
Uninsured	6.7	4.5	9.0
Children 2-5			
Private insurance	1.4	0.0	2.9
Medicaid	5.9	3.3	8.5
Uninsured	6.9	1.8	11.9
Children 6-11			
Private insurance	1.6	0.8	2.4
Medicaid	3.9	1.9	5.9
Uninsured	9.7	5.4	13.9
Children 12-15			
Private insurance	1.0	0.4	1.7
Medicaid	7.2	2.6	11.8
Uninsured	4.2	1.9	6.5
Children 16-18			
Private insurance	1.2	0.5	1.9
Medicaid	5.7	0.9	10.5
Uninsured	3.7	1.7	5.7

Source: GAO analysis of 1999 through 2004 National Health and Nutrition Examination Survey (NHANES) data.

Notes: Data from the Medicaid category included children who were enrolled in SCHIP. We estimated that about 85 percent of the children in the Medicaid category were enrolled in Medicaid, while the remaining 15 percent were enrolled in SCHIP (either separate child health programs or Medicaid expansion programs).

Children were categorized as having an urgent need for care if the examiner recommended that the child see a dentist immediately or within the next 2 weeks; that is, if the examiner found that the child was in need of care within 2 weeks for the relief of symptoms and stabilization of their condition. Such conditions include tooth fractures, oral lesions, chronic pain, and other conditions that are unlikely to resolve without professional intervention.

Our analysis of the NHANES data was conducted in accordance with generally accepted government auditing standards from December 2007 through September 2008.

Appendix II: MEPS Background and Analysis

The Medical Expenditure Panel Survey (MEPS), administered by HHS's Agency for Healthcare Research and Quality (AHRQ), collects data on the use of specific health services—frequency, cost, and payment. We analyzed results from the household component of the survey, which surveys families and individuals and their medical providers.[1] Our analysis was based on data from surveys conducted in 1996 through 1997 and 2004 through 2005. We used the 1996 through 1997 data because they were the earliest available and we used the 2004 through 2005 data because they were the most current available.

The household component of MEPS collects data from a sample of families and individuals in selected communities across the United States, drawn from a nationally representative subsample of households that participated in the prior year's National Health Interview Survey (a survey conducted by the National Center for Health Statistics at the Centers for Disease Control and Prevention). The household interviews feature several rounds of interviewing covering 2 full calendar years. MEPS is continuously fielded; each year a new sample of households throughout the country is introduced into the study. MEPS collects information for each person in the household based on information provided by one adult member of the household. This information includes demographic characteristics, health conditions, health status, use of medical services, provider charges, access to care, satisfaction with care, health insurance coverage, income, and employment. We analyzed responses to questions on the use of dental care as well as responses to questions on the difficulty accessing needed dental care. As with the National Health and Nutrition Examination Survey (NHANES) data, we analyzed results from children aged 2 through 18 and divided children into three categories on the basis of their health insurance status. Similar to NHANES, the Medicaid category included children enrolled in the State Children's Health Insurance Program (SCHIP) for the later time period (2004 through 2005 for MEPS). The privately insured category included children with private health insurance, some of whom had dental coverage and others who did not, while the uninsured category comprised children who had neither health insurance nor dental insurance.

[1]To facilitate analysis of subpopulations, it was necessary to pool together more than 1 year of MEPS data to yield sample sizes large enough to generate reliable estimates. To facilitate use of these data and the calculation of designed-based standard errors, we used the AHRQ public use file HC-036. This file provides a standardized set of variance estimation units over all years of MEPS. Using this file, estimates can be made with datasets created by combining multiple years of annual MEPS data.

To determine the reliability of the MEPS data, we spoke with knowledgeable agency officials and reviewed related documentation and compared our results to published data. We determined that the MEPS data were sufficiently reliable for the purposes of our engagement.

We analyzed data according to four different questions asked by the MEPS survey (see tables 6 through 9). The questions asked (1) whether the child had seen or talked to any dental provider in a given time period; (2) how often the child got a dental checkup; (3) whether the child had trouble accessing needed dental care; and (4) if the respondent answered yes to the third question, then what the reasons were for having trouble accessing needed dental care. Using sampling weights, we estimated the percentage of children in each category as well as a lower and upper limit of this percentage, calculated at the 95 percent confidence interval. We also used standard errors to calculate if changes from the 1996 through 1997 time period to the 2004 through 2005 time period were statistically significant at the 95 percent level.

To estimate the number of children ages 2 through 18 in Medicaid not receiving dental care in the previous year, we calculated the percentage that had not received dental care in the previous year (62.6 percent) and applied this percentage to an estimate of the 2005 average monthly enrollment of children ages 2 through18 in Medicaid (20.1 million children). We estimated the 2005 average monthly enrollment of children ages 2 through 18 in Medicaid using CMS statistics, by age group, for children ages 1 through 18 (we reduced this number using Census data to account for children age 1).

Table 6: Percentage of Children Aged 2 through 18 Who Had Received Dental Care in the Previous Year, by Health Insurance Status, 1996-1997 and 2004-2005

	1996-1997			2004-2005		
	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit
All children (2-18)						
Private insurance	48.2[a]	46.2	50.1	55.0[a]	52.8	57.1
Medicaid	30.6[a]	28.2	33.0	37.4[a]	35.1	39.8
Uninsured	19.9[a]	17.1	22.6	26.4[a]	23.1	29.8
Children 2-5						
Private insurance	30.9[a]	28.2	33.6	42.0[a]	38.5	45.5
Medicaid	20.7[a]	17.3	24.0	31.5[a]	28.4	34.7
Uninsured	13.8[a]	8.1	19.5	23.6[a]	17.8	29.4
Children 6-11						
Private insurance	58.1[a]	55.4	60.9	63.6[a]	60.9	66.3
Medicaid	38.1[a]	34.3	41.9	45.1[a]	42.0	48.1
Uninsured	25.9[a]	20.8	30.9	35.1[a]	30.0	40.2
Children 12-15						
Private insurance	51.6[a]	48.4	54.9	57.6[a]	54.4	60.8
Medicaid	33.7	28.5	38.9	37.5	33.7	41.3
Uninsured	18.2[a]	13.7	22.7	26.3[a]	20.0	32.7
Children 16-18						
Private insurance	46.7	43.4	50.0	50.4	46.5	54.2
Medicaid	25.5	20.3	30.7	29.8	24.8	34.8
Uninsured	18.0	12.8	23.2	17.9	12.8	23.0

Source: GAO analysis of 1996 through 1997 and 2004 through 2005 Medical Expenditure Panel Survey (MEPS) data.

Notes: Data in the Medicaid category from the 1996 through 1997 period only included children who were enrolled in Medicaid, while data from the 2004 through 2005 period included children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimated that about 84 percent of the children in the Medicaid category from the 2004 through 2005 period were enrolled in Medicaid, while the remainder were enrolled in SCHIP (either in separate child health programs or Medicaid expansion programs).

Data presented in this table were based on the survey responses of an adult member of the child's household.

[a]Change from the 1996 through 1997 period to the 2004 through 2005 period was statistically significant at the 95 percent level.

Table 7: Percentage of Children Aged 2 through 18 Who Never See a Dentist, by Health Insurance Status, 1996-1997 and 2004-2005

	1996-1997			2004-2005		
	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit
All children (2-18)						
Private insurance	7.8	6.9	8.6	7.0	6.3	7.7
Medicaid	14.3	12.4	16.3	12.5	11.2	13.8
Uninsured	18.0	15.4	20.7	19.4	16.8	22.0
Children 2-5						
Private insurance	26.6	23.8	29.3	25.4	22.7	28.1
Medicaid	31.7	28.4	35.1	30.0	26.8	33.2
Uninsured	42.2	35.6	48.8	43.9	36.9	50.8
Children 6-11						
Private insurance	2.4	1.7	3.1	1.8	1.2	2.5
Medicaid	6.7	4.3	9.0	4.5	3.3	5.7
Uninsured	11.9	8.6	15.3	11.9	9.0	14.8
Children 12-15						
Private insurance	1.3	0.7	1.9	1.6	1.1	2.2
Medicaid	7.1	4.3	9.9	4.8	3.3	6.2
Uninsured	10.7	7.2	14.1	13.2	9.6	16.7
Children 16-18						
Private insurance	2.6	1.5	3.7	2.7	1.9	3.6
Medicaid	6.8	3.4	10.2	9.5	6.9	12.0
Uninsured	14.0	9.5	18.5	17.5	13.8	21.1

Source: GAO analysis of 1996 through 1997 and 2004 through 2005 Medical Expenditure Panel Survey (MEPS) data.

Notes: Data in the Medicaid category from the 1996 through 1997 period only included children who were enrolled in Medicaid, while data from the 2004 through 2005 period included children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimated that about 84 percent of the children in the Medicaid category from the 2004 through 2005 period were enrolled in Medicaid, while the remainder were enrolled in SCHIP (either in separate child health programs or Medicaid expansion programs).

Data presented in this table were based on the survey responses of an adult member of the child's household.

None of the changes from the 1996 through 1997 period to the 2004 through 2005 period were found to be statistically significant at the 95 percent level.

Table 8: Percentage of Children Aged 2 through 18 Who Were Unable to Access Necessary Dental Care, by Health Insurance Status, 2004-2005

	Percentage	Lower limit	Upper limit
Private insurance	1.6	1.1	2.0
Medicaid	3.6	2.7	4.4
Uninsured	6.8	5.3	8.4

Source: GAO analysis of 2004 through 2005 Medical Expenditure Panel Survey (MEPS) data.

Notes: Data from the Medicaid category included both children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimate that 84 percent of the children in the Medicaid category were enrolled in Medicaid, while the remainder were enrolled in SCHIP (either in separate child health programs or Medicaid expansion programs).

Data presented in this table were based on the survey responses of an adult member of the child's household.

Table 9: Reasons for Children's Inability to Access Necessary Dental Care, by Health Insurance Status, 2004-2005

	Private insurance			Medicaid			Uninsured		
Reason given	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit	Percentage	Lower limit	Upper limit
Could not afford care	64.2	53.3	75.0	50.4	39.1	61.8	96.8	95.6	97.9
Insurance company would not approve/cover/pay	10.9	2.9	18.8	11.6	4.7	18.6	0.6	0.5	0.7
Doctor refused insurance plan	2.4	0.0	6.0	14.8	4.3	25.2	0.0	0.0	0.0
Problems getting to the doctor's office	4.2	3.3	5.1	3.3	1.7	4.9	0.0	0.0	0.0
Could not get time off work	0.0	0.0	0.0	1.1	0.9	1.2	0.0	0.0	0.0
Didn't know where to get care	2.0	0.0	6.0	4.3	2.3	6.4	0.5	0.5	0.6
Was refused services	0.0	0.0	0.0	1.7	0.9	2.4	0.2	0.0	0.7
Could not get child care	0.0	0.0	0.0	0.6	0.0	1.7	0.0	0.0	0.0
Did not have time	4.3	1.1	7.5	2.8	0.0	6.0	1.0	0.8	1.3
Other	12.0	9.5	14.7	9.5	4.9	14.1	0.9	0.0	1.9

Source: GAO analysis of 2004 through 2005 Medical Expenditure Panel Survey (MEPS) data.

Notes: Data from the Medicaid category included both children who were enrolled in Medicaid and children who were enrolled in SCHIP. We estimate that 84 percent of the children in the Medicaid category were enrolled in Medicaid, while the remainder were enrolled in SCHIP (either in separate child health programs or Medicaid expansion programs).

Data presented in this table were based on the survey responses of an adult member of the child's household.

Our analysis of the MEPS data was conducted in accordance with generally accepted government auditing standards from December 2007 through September 2008.

Appendix III: Comments from the Department of Health and Human Services

Note: Page numbers in the draft report may differ from those in this report.

DEPARTMENT OF HEALTH & HUMAN SERVICES OFFICE OF THE SECRETARY

Assistant Secretary for Legislation
Washington, DC 20201

SEP 16 2008

James Cosgrove
Director, Health Care
Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Cosgrove:

Enclosed are the Department's comments on the U.S. Government Accountability Office's (GAO) draft report entitled: "MEDICAID: Extent of Dental Disease in Children Has Not Decreased, and Millions Are Estimated to Have Untreated Tooth Decay" (GAO-08-1121).

The Department appreciates the opportunity to review and comment on this report before its publication.

Sincerely,

for Vincent J. Ventimiglia, Jr.
Assistant Secretary for Legislation

Attachment

COMMENTS OF THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE'S (GAO) DRAFT REPORT ENTITLED, "MEDICAID: EXTENT OF DENTAL DISEASE IN CHILDREN HAS NOT DECREASED, AND MILLIONS ARE ESTIMATED TO HAVE UNTREATED TOOTH DECAY" (GAO 08-1121)

The Department of Health and Human Services (HHS), including the Centers for Medicare & Medicaid Services (CMS), the Centers for Disease Control and Prevention (CDC) and the Agency for Healthcare Research and Quality (AHRQ), appreciates the opportunity to comment on the Government Accountability Office (GAO) Draft Report entitled, "Extent of Dental Disease in Children has Not Decreased and Millions are Estimated to Have Untreated Tooth Decay" (GAO-08-1121). The objective of this report was to examine the oral health status of children in Medicaid, including the extent to which children in Medicaid experience dental disease, the extent they receive dental care, and how these conditions have changed over time. We understand a second report will be issued at a later date addressing State and CMS oversight activities of children receiving Medicaid dental services.

GAO RECOMMENDATIONS:

There were no recommendations included in this draft report.

ADDITIONAL COMMENTS:

Comments of the Centers for Medicare & Medicaid Services:

CMS acknowledges that the provision of dental services is a challenge for children covered by Medicaid as well as children in the country as a whole. It is important to note that States administer the Medicaid Program with general oversight from CMS. By design, each State's program is unique and targeted to the population served. Additionally, the barriers to receiving dental care are multi-factorial. Thus, there is no one single activity that can be implemented to stimulate improvement. CMS seeks to support States in their efforts to improve services through interventions focused in the areas of improved access to required dental services, reimbursement aligned with desired outcomes, and attention to the quality and transparency of services provided. The following are a few of the activities that CMS has led in coordination with the States:

- To assist in obtaining data for purposes of improvement, CMS completed 17 State dental reviews between February and May. The findings from these reviews will be summarized in a national report that will be used to inform future policy and focus improvement activities in the strategic areas listed above.

- In addition to the 17 State focused reviews, CMS collected information on the availability of Dental Periodicity Schedules from all 50 States. Our initial review indicated that all but three States had some type of periodicity schedule, although they were not all in compliance with the CMS regulations and were not always easily accessible by providers and beneficiaries. As a result, CMS Regional Offices issued further guidance to States on expectations related to periodicity schedules.

COMMENTS OF THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE'S (GAO) DRAFT REPORT ENTITLED, "MEDICAID: EXTENT OF DENTAL DISEASE IN CHILDREN HAS NOT DECREASED, AND MILLIONS ARE ESTIMATED TO HAVE UNTREATED TOOTH DECAY" (GAO 08-1121)

- In collaboration with the National Association of State Medicaid Directors (NASMD), CMS recently developed an Oral Health Technical Advisory Group (TAG) and has held four meetings to date to address issues related access to care, quality improvement and collecting and reporting data. We have received technical advice from the American Dental Association (ADA) regarding evidence-based performance indicators that can be used to measure improvements in access and quality consistently throughout the country. We continue to seek information from other dental professional groups and have met with the American Academy of Pediatric Dentistry and the Medicaid and SCHIP Dental Association and presented at the National Oral Health Conference that was held April 28-30, 2008.

- Our spring 2008 Quality Teleconference Call held on April 3, 2008 focused on promising practices in children's dental care. The Conference included presentations on innovative approaches to financing dental care, including information from the State of North Carolina on its "Into the Mouth of Babes" program, the State of Tennessee's approach to increasing provider participation and access, the State of Michigan's Healthy Kids Dental program and the State of California's proposed dental performance measures for their SCHIP population. The conference call was well received and there were over 400 participants. Subsequently we posted several dental "promising practice" on our website to disseminate information regarding their programs. Additionally, we recently funded a contract to explore child heath promising practices in Medicaid and SCHIP that we expect to complete by the end of the year.

- Last year we also established a Medicaid Quality Improvement Goal to improve States' abilities to assess quality of care and move toward the development of a national framework for quality. We have developed a comprehensive state-specific Quality Assessment Report that provides an analysis of nearly every quality activity occurring in a state Medicaid or SCHIP program. Dental services are included among the various performance areas. We have also funded a contract that will focus on helping many Medicaid Managed Care Organizations collect quality performance information in a consistent manner that will allow for Benchmarking with plans across the country.

- We are also working aggressively to ensure the submission of accurate dental services data on the CMS-416 so that we can continue to analyze and monitor progress in the provision of dental services.

- We recognize that real change in the system occurs at the local level by State administrators, local providers and their patients. Reform activities are being led by new and innovative approaches from States such as Maryland, Vermont, Pennsylvania, Tennessee, Alabama, Connecticut and many other States.

COMMENTS OF THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE'S (GAO) DRAFT REPORT ENTITLED, "MEDICAID: EXTENT OF DENTAL DISEASE IN CHILDREN HAS NOT DECREASED, AND MILLIONS ARE ESTIMATED TO HAVE UNTREATED TOOTH DECAY" (GAO 08-1121)

Comments of the Centers for Disease Control and Prevention:

In the general population of children, caries in permanent teeth has generally declined and untreated decay has remained unchanged. In preschool school children, caries has increased in primary teeth, but among elementary-school aged children caries in primary teeth has remained unchanged. Moreover, aggregating permanent and primary teeth across large age ranges can provide misleading information regarding caries trends. It would be better to describe caries trends more on a age-dentition based relationship such as describing caries in only primary teeth for very young children, caries in mixed (primary and permanent) for early elementary-aged children, and caries in permanent teeth for older children and adolescents.

CDC notes that NHANES data show two clear different trends: a decrease in the prevalence and severity of caries in the permanent dentition (children from age 12 and older have full permanent dentition), and a no change in the prevalence and severity of caries in the primary dentition (children aged 2-5 have a full set of primary teeth and some may have already a first permanent molar). While children in the 6-11 age groups have a combination of primary and permanent teeth – mixed dentition, combining the age groups of 2-18 to indicate that there is no "decrease" is inaccurate since the aggregate data mask the reduction in permanent teeth. Thus, the report should focus on both dentitions separately.

The following are specific comments to the report:

- Page 2, footnote 4: It is true that after 2004, NHANES has not conducted a comprehensive oral health examination that can provide data for an extensive caries analysis or an analysis similar to what GAO has done. However, CDC has recognized the need to conduct periodic comprehensive dental caries examinations and has begun planning to alternate between a comprehensive caries examination similar to what was conducted during NHANES III and NHANES 1999-2004, and a more limited caries screening as has been conducted during NHANES 2005-2008. NCHS suggests revising the footnote, as follows, to make this clear: After 2004, direct oral examinations by dentists were eliminated in NHANES; these were replaced in 2005-2008 by a basic assessment of caries experience and untreated decay conducted by trained health technologists.

Now p. 9 footnote 17.

- Page 8, Footnote15: While it is accurate to say that the prevalence of untreated dental caries may be an underestimate of the true prevalence of untreated decay because dental radiographs (x-rays) were not taken as part of the caries assessment on NHANES and, therefore, our ability to assess the areas in between teeth with precision is limited, our NHANES examiners are trained to detect untreated cavities visually and with a dental explorer. Nevertheless, the methods used on NHANES III and NHANES 1999-2004 are identical, therefore, any assessment in the overall trend is not biased.

COMMENTS OF THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE'S (GAO) DRAFT REPORT ENTITLED, "MEDICAID: EXTENT OF DENTAL DISEASE IN CHILDREN HAS NOT DECREASED, AND MILLIONS ARE ESTIMATED TO HAVE UNTREATED TOOTH DECAY" (GAO 08-1121)

Now p. 9 footnote 17.

- Page 8, Footnote 15: We don't believe that this is a correct assessment. The criteria used in NHANES are the same used in previous national surveys, so we can assess trends.

  The underestimation occurs in all surveys because we do not have other diagnostic tools available at the clinical setting. But in epidemiology and surveillance we always deal with that issue. Furthermore, if the methods underestimate disease, they do across all subpopulation groups. Is "visibly significant" what they are really told or is it "obvious signs of dental decay." The caries diagnostic criteria are spelled out in the NHANES exam manual but are hard to categorize in a simple phrase.

Now p. 15 footnote 27.

- Page 13, Footnote 25: CDC has found the rates of untreated decay among low-income children to have declined since the early 1970s for permanent teeth only. This is not true when looking at primary teeth only or when primary and permanent teeth are combined.

Now p. 17 footnote 28.

- Page 14 bullet 2: We think it would be useful to specify why sealant use in low-income children has increased in recent years. There are two reports (MMWR and NCHS Series 11) that elaborate on this statistic. Although we have no hard data on the contribution of school-based sealant programs to the increase of sealant prevalence in low-income children we do know that many state health departments have long-term programs that have delivered sealants to a sizable number of low-income children over the past decade. We reference an MMWR report from Ohio Impact of targeted, school-based dental sealant programs in reducing racial and economic disparities in sealant prevalence among schoolchildren—Ohio, 1998–1999. *MMWR* 2001;50(34):736–738 that provides some level of detail.

Comments of the Agency for Healthcare Research and Quality:

AHRQ notes that the report indicates that GAO staff spoke with agency officials regarding the use of MEPS data for their analyses; however, AHRQ is not aware of specific requests from GAO staff for substantive assistance on the analyses directed to 1) assessing the relationship of public coverage and use of dental services in children; 2) discussions regarding the analytic approach taken with the MEPS data to ascribe public coverage in children; 3) the age restriction that was considered (2-18); and 4) the details of how the two consecutive year MEPS data sets were utilized to inform these analyses (e.g. were the 2 years pooled or was this the longitudinal 2 year data?). Specifically, we note the additional concerns:

- AHRQ staff completed a Chartbook that summarizes Dental Use, Expenses, Dental Coverage, and Changes, 1996 and 2004, with particular attention to changes experienced by individuals under the age of 21. The reference to this report follows: AHRQ Pub. No. 08-0002, Dental Use, Expenses, Dental Coverage and Changes, 1996 and 2004, Chartbook 17 found at: http://www.meps.ahrq.gov/mepsweb/data_files/publications/cb17/cb17.pdf. This Chartbook presents data from the 1996 and 2004 Medical Expenditure Panel Survey (MEPS) on dental use and dental coverage for the U.S civilian non-institutionalized

COMMENTS OF THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE'S (GAO) DRAFT REPORT ENTITLED, "MEDICAID: EXTENT OF DENTAL DISEASE IN CHILDREN HAS NOT DECREASED, AND MILLIONS ARE ESTIMATED TO HAVE UNTREATED TOOTH DECAY" (GAO 08-1121)

(community) population. Data are presented for the overall community population, children age birth to age 20, adults age 21 to age 64, and older adults age 65 and older. However, the MEPS study was not cited and referenced, and it is unclear why the same

analytical approach was not followed for the determination of public coverage status and estimates as noted in the MEPS Chartbook.

- AHRQ has standard approaches for the determination of national dental utilization estimates for each calendar year and it is unclear what has been done analytically to convey how the estimates cover the periods 1996-1997 and 2004-2005. Consequently, the report should be specific in the analytical and estimation approaches that were adopted for this report and how they either coincide or depart from standard methods used in MEPS.

We thank the GAO staff for their work in this important area of oral health status of children in Medicaid, including the extent to which children in Medicaid experience dental disease, the extent they receive dental care, and how these conditions have changed over time.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

James C. Cosgrove, (202) 512-7114 or cosgrovej@gao.gov

Staff Acknowledgments

In addition to the individual named above, Katherine M. Iritani, Assistant Director; Susannah Bloch; Alex Dworkowitz; Erin Henderson; Martha Kelly; Ba Lin; Elizabeth T. Morrison; Terry Saiki; Hemi Tewarson; and Suzanne Worth made key contributions to this report.

Related GAO Products

Medicaid: Concerns Remain about Sufficiency of Data for Oversight of Children's Dental Services. GAO-07-826T. Washington, D.C.: May 2, 2007.

Medicaid Managed Care: Access and Quality Requirements Specific to Low-Income and Other Special Needs Enrollees. GAO-05-44R. Washington, D.C.: December 8, 2004.

Medicaid and SCHIP: States Use Varying Approaches to Monitor Children's Access to Care. GAO-03-222. Washington, D.C.: January 14, 2003.

Medicaid: Stronger Efforts Needed to Ensure Children's Access to Health Screening Services. GAO-01-749. Washington, D.C.: July 13, 2001.

Oral Health: Factors Contributing to Low Use of Dental Services by Low-Income Populations. GAO/HEHS-00-149. Washington, D.C.: September 11, 2000.

Oral Health: Dental Disease Is a Chronic Problem Among Low-Income Populations. GAO/HEHS-00-72. Washington, D.C.: April 12, 2000.

Medicaid Managed Care: Challenge of Holding Plans Accountable Requires Greater State Effort. GAO/HEHS-97-86. Washington, D.C.: May 16, 1997.

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