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## Dental Needs Assessment and Access to Care for Adolescents

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Adolescence is the transitional period between childhood and the adult years. It is a time of awakening, hormones, aspirations, rebellion, and (most important for many) learning to drive. It is an age of increasing peer pressure to succumb to "Madison Avenue advertising" to buy things. In 2004, it was projected that spending by youngsters aged 12 to 19 years would reach \$169 billion [1]. Adolescence is also a period that we tend to assume needs limited attention to health issues—the concerns of childhood are past and the ravages of the older years are too far in the future to contemplate. For many adolescents, however, these years can be a difficult emotional period and a time when dental and medical needs may be neglected. For example,

- Two-thirds of all 15-year-old adolescents continue to experience dental decay.
- Almost 1.7 million adolescents have unmet dental needs.
- Among parents reporting their children's unmet needs, 57% reported unmet dental needs—nearly five times the number reporting the need for eyeglasses.
- Twice as many parents claimed unmet dental treatment for their adolescent children as those who claimed medical needs.
- In 2002, more than 600,000 adolescents between 12 and 17 years had unmet medical needs and almost 900,000 delayed medical care due to cost [2,3].

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Disparities in oral health care can arise from "differences in culture, language, diet, physical activity, socioeconomic and demographic status, sex, age, and exposure to environmental pollutants and occupational hazards" [4]. Inequalities in dental care also can arise as a result of a lack of health insurance or having intellectual or physical disabilities. For example,

- In 2002, 2.7 million children (11% of children aged 12–17 years) were uninsured for health care.
- In 2003, 8.4 million children (11.4% of all children) less than 18 years old had no health insurance, ranging (for low-income children) from 3.5% in Minnesota to 10% or more in Arizona, Florida, Nevada, and Oklahoma to 15% in Texas [5,6].<sup>1</sup>
- In 2000, there were more than 2.6 million children (between 5 and 15 years old) in nonresidential facilities who had one or more disabilities, including more than 1.6 million who had learning disabilities. There were more than 100,000 children who had disabilities in Florida and Illinois, almost 200,000 in New York and Texas, and more than 250,000 in California [7].

### By the numbers

In 2003, there were 29.2 million adolescents between 12 and 18 years old (10% of the total United States resident population of 290.8 million individuals), including 6.7 million racial minority adolescents and 4.7 million adolescents who were reported as having Hispanic ethnicity (Table 1) [8].

Milgrom and colleagues [4] reported that more than one in four Americans currently is African American, Hispanic, or Asian/nonHispanic. This proportion will increase to one in three Americans by 2020, and by 2050, racial and ethnic minority groups are expected to be the majority.

## Living arrangements

During the second half of the 1990s, the number of unmarried couples who have children increased by 15%, from 1.3 million to 1.5 million. Most white adolescents (62%) live with married biologic parents; in contrast, 49% of Hispanic adolescents and only 25% of black adolescents live in such families. For black adolescents, the most common living arrangement is with a single parent (61%), whereas 35% of Hispanic adolescents and only about 20% of white adolescents live in such families. About one fourth of black adolescents and nearly one third of Hispanic teenagers

<sup>&</sup>lt;sup>1</sup> Presentations by many government agencies and journal articles do not permit the isolation of some health, economic, and social data for the specific adolescent years. The inclusion, however, of these pre- and postadolescent years provides a general framework of the impact of these factors as youngsters enter and leave these formative years.

Race/ethnicity	Number (in millions)
White	22.5
Black	4.6
Native American	.4
Asian American	1.1
Native Hawaiian	0.6
2 or more races	< 0.1
Total	29.2
Hispanic (may be of any race)	4.7

*Data from* US Bureau of the Census. Health insurance statistics—low income uninsured children by state: 2001, 2002, 2003. Available at: http://www.census.gov/hlthins/liuc03.htm. Accessed November 8, 2004.

in cohabitating families live with both biologic parents (ie, they live with their mother and father but their parents are not married). In contrast, virtually all white adolescents in cohabitating families live with one biologic parent and that parent's boyfriend or girlfriend.

One review of the relationship between adolescents' living arrangements and their behavioral outcomes showed that living with a single mother and her boyfriend was no better than living with a single mother. In many cases (particularly for whites and Hispanics), it was significantly worse. The most favorable outcomes were for adolescents living with their biologic parents who were married to each other [9].

## Oral health status

## Dental caries

Table 1

Brown and colleagues [10] studied trends in dental caries and noted "since the 1970s, the cumulative number of carious permanent and primary teeth, both treated and untreated, has declined substantially among children in the United States." Between the early 1970s and the mid-1990s (the periods of the First and Third National Health Nutrition Examination Surveys), there was more than a 50% decline in the number of decayed, missing, and filled permanent teeth of adolescents in families below and above the poverty level. There were marked increases in the proportion of filled teeth for children at or below the poverty level (but these increases were still not as high as for children above the poverty level) (Table 2) [10].

"The number of untreated carious permanent teeth among children has declined dramatically...the absolute difference in untreated caries between disadvantaged children and the rest of the child population has narrowed substantially" [11]. The average number of untreated carious permanent teeth declined by at least 75% among male and female adolescents and among white and black adolescents at or below and above the poverty level. Nevertheless, compared with their white counterparts, black adolescents

4	1		

Table	2
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	1971–1974	1988–1994	Change (%)
Average number of permanent teeth	6.65	3.08	-54
At or below poverty level	6.68	3.20	-52
Above poverty level	6.65	3.04	-54
Teeth with a history of filled caries (%)			
At or below poverty level	33.2	62.4	88
Above poverty level	60.6	75.9	25

Decayed, missing, and filled permanent teeth per adolescents (aged 12–18 years) by poverty level (1971–1974 and 1988–1994)

Data from Brown LJ, Wall TP, Lazar V. Trends in total caries experience: permanent and primary teeth. J Am Dent Assoc 2000;131:223–31.

continued to have greater average numbers of untreated carious permanent teeth (Table 3) [11].

The collective effect of these dramatic decreases in decay rates has been a significant factor in the overall nearly 60% decline in the past 3 decades in the proportion of individuals (aged 6–17 years) who had untreated dental caries. Nevertheless, persistent higher rates of untreated dental caries are reported for minority children (particularly for Mexican Americans) and children living in families who have incomes below the poverty level (Table 4) [12]. Edelstein [2] reported this reality, stating that 80% of the tooth decay occurs in only 25% of United States children and adolescents.

## Periodontal disease

Table 3

Studies have shown that gingivitis of varying severity is nearly universal in children and adolescents [13]. The incidence of loss of periodontal attachment and supporting bone, although relatively uncommon in children, increases in adolescents aged 12 to 17 years. Although there is a much

demographic characteristics (19/1–19/4 and 1988–1994)			
	1971–1974	1988–1994	Change (%)
Average number of permanent teeth	1.99	0.49	-75
Sex			
Male	1.40	0.30	-79
Female	1.47	0.35	-76
Race/poverty level			
At or below poverty level			
White	1.88	0.43	-77
Black	2.57	0.51	-80
Above poverty level			
White	1.19	0.22	-82
Black	2.23	0.49	-78

Number of untreated carious permanent teeth per adolescents (aged 12–18 years) by selected demographic characteristics (1971–1974 and 1988–1994)

Data from Brown LJ, Wall TP, Lazar V. Trends in untreated caries in permanent teeth of children 6 to 18 years old. J Am Dent Assoc 1999;130:1637–44.

1999–2000)			
Demographic characteristic	1971–1974 (%)	1999–2000 (%)	Change (%)
Total	55.3	22.6	59.1
Race/ethnicity			
White	52.3	18.8	64.0
Black	70.5	27.9	60.4
Mexican American	60.2	38.0	36.9
Poverty status			
Poor	68.9	33.8	50.9
Not poor	46.2	12.7	72.5

Percentage of individuals (aged 6-17 years) with untreated dental caries (1971-1974 and 1999-2000)

*Data from* National Center for Health Statistics. Health, United States, 2004; with chartbook on trends in the health of Americans. Hyattsville (MD): National Center for Health Statistics; 2004.

lower prevalence of destructive periodontal disease in children than in adults, youngsters can develop severe forms of periodontitis [13].

The prevention, early diagnosis, and treatment of periodontal disease in adolescents is important because of its high prevalence and severity, because incipient periodontal diseases in children may develop into advanced periodontal diseases in adults, and because of the association between periodontal diseases and systemic diseases [14].

The latest national study (done in the early 1990s) of periodontal disease among dentate individuals revealed the following:

- Ninety-three percent had 1 mm or greater loss of periodontal attachment (in at least one examined area of the mouth), including 60% of 13- to 17-year-olds.
- Thirty percent had some periodontal bleeding, including 73% of 13- to 17-year-olds. This rate was the highest for all age cohorts.
- Twenty-three percent had supragingival calculus, including 34% of 13to 17-year-olds. This rate was again the highest for all age cohorts.
- Sixty-seven percent had subgingival calculus, including 40% of 13- to 17-year-olds. This rate was the lowest for all age groups.
- More boys than girls had loss of periodontal attachment, moderate and deep pockets, and recession.
- Non-Hispanic whites exhibited better periodontal health than non-Hispanic blacks and Mexican Americans [15].
- Disparities in periodontitis between non-Hispanic blacks and whites "are pervasive and have increased over time. This increase appears to be driven by social, cultural, and behavioral factors" [16].

## Orthodontics

Table 4

Noticeable incisor irregularities occur in the majority of all racial/ethnic groups. More than 50% of each racial/ethnic group have at least some

degree of orthodontic need. About 20% of the population have deviation from the ideal occlusal relationship; 2% are severe enough to be disfiguring and are potential cases for orthodontic correction.

In 2000, 8.7% of 6- to 17-year-olds were reported to have visited a dentist for orthodontic services, spending an average annual amount of \$2,000 (median \$875). Orthodontic treatment visits were reported by a greater percentage of the following:

- Girls versus boys
- Whites versus members of minority groups (over 30% of white youths compared with 11% of Mexican American youths and 8% of black youths were reported to be receiving orthodontic treatment)
- Individuals in higher-income families
- Individuals who had private health insurance (more than half of the payments [52%] were paid out-of-pocket, 44% were paid by private insurance carriers, and 2.5% were paid by the Medicaid program; particularly high proportions of out-of-pocket payments were paid by residents of nonmetropolitan areas [66%] versus 48% paid by metropolitan residents) [17,18]

## Use of dental services

Results from the 2002 National Health Interview Study [3] identified 2.1 million adolescents who had not had a dental visit in 2 or more years, including 933,000 who had not had a dental visit in more than 5 years.

For children aged 2–17 years, no dental visits in 5 or more years were reported for the following:

- Greater than 20% of all minority population children (including 30% of Mexican American children) compared with 17% of white children
- Greater than 20% of children living in poverty compared with 14% of children not living in poverty
- Greater than 30% of children who could not afford dental care compared with 17% of children who could afford dental care
- Greater than 35% of children who were uninsured compared with 15% of children who had private health insurance

The reality is that almost 2 million children between 5 and 17 years old have not visited a dentist in 5 or more years (Table 5) [3].

## Dental care use by pregnant women

An estimated 6 million women in the United States become pregnant each year. Overall, 70% of the pregnant women in 2002 had received dental care in the previous 12 months, ranging from 36% in Nevada to 89% in Vermont and 91% in Puerto Rico [19]. "Although preventive dental care

characteristics (2002)			
Demographic characteristic	≤1 y (%)	1-2 y (%)	>2 y (%)
Adolescents (aged 12-17 y)	80.8 (19.3 million)	10.3 (2.5 million)	17.7 (2.1 million)
Children (aged 2-17 y)			
Race/ethnicity			
White	76.4	7.0	16.7
Black	68.5	11.4	21.1
Native American	67.8	11.1 <sup>a</sup>	21.1 <sup>a</sup>
Asian	68.0	9.2	22.7
Hispanic	63.1	12.1	24.7
Mexican American	60.0	12.0	28.0
Poverty status			
Poor	63.4	13.1	23.5
Not poor	79.8	6.0	14.2
Dental care affordability			
Cannot afford	49.6	19.5	30.8
Can afford	76.3	7.1	16.6
Health insurance coverage			
Private	79.8	5.8	14.5
Medicaid/other public	69.5	11.4	19.1
Uninsured	50.7	13.8	35.6
Place of residence			
Large MSA	75.1	7.7	17.3
Not in MSA	71.7	89	19.3

Length of time since last dental visit for children (aged 2-17 years) by selected demographic

Abbreviation: MSA, Metropolitan Statistical Area.

<sup>a</sup> Relative SE > 30%.

Table 5

Data from Dey AN, Schiller JS, Tai DA. Summary health statistics for US children: National Health Interview Survey, 2002. National Center for Health Statistics. Vital Health Stat 10. 2004; No. 22. Washington (DC): Government Printing Office; 2004.

...will improve the overall health of pregnant women and may reduce their risk of adverse pregnancy outcomes, women who are pregnant are known to use dental services less frequently and at lower levels than the general population" [19,20]. The proportion of pregnant women who use dental services is especially low for those who are (1) in their adolescent years, (2) members of minority groups, (3) divorced, (4) in low-income families, (5) not insured for health services, and (6) smokers (Table 6) [18].

Evidence is increasing of the association between periodontal infections and increased risk of poor birth outcomes, which in turn may have longterm effects on the newborn [21,22].

## There really are barriers

## Poverty and the cost for dental care

Since 2000, the total number and the percentage of the United States resident population living in poverty have increased for 3 consecutive years,

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Table 6

Demographic characteristic	
Age (y)	
18–19	8.7
20–24	24.0
25–29	28.4
30–34	25.2
35–39	11.2
40-44	2.5
Race/ethnicity	
Non-Hispanic white	62.9
Non-Hispanic black	10.1
Other non-Hispanic	5.2
Hispanic (all races)	20.0
Marital status	
Married	73.9
Divorced	2.2
Widowed	0.1
Never married	6.3
Annual household income	
<\$10,000	5.0
\$75,000 or more	19.8
Health insurance	
Yes	90.9
No	9.1
Smoking status	
Yes (every day)	7.8
Never	68.6

Use of dental services by pregnant women by selected demographic characteristics (1999 and 2002)

*Data from* Timothe P, Eke PI, Presson SM, et al. Dental care use among pregnant women in the United States, report in 1999 and 2002. Prev Chronic Dis [series online] January 2005. Available at: http://www.cdc.gov/pcd/issues/2005/jan/04\_0069.htm. Accessed December 17, 2004.

from 31.6 million and 11.3%, respectively, in 2000, to 35.9 million and 12.5%, respectively, in 2003. In 2003, almost 9 million children (16.6% of all children between 5 and 17 years old) lived in families with incomes below the poverty line, including 32.1% of black children and 28.5% of Hispanic children compared with 13.4% of white children (Table 7) [23,24]. In addition, the proportion of minority and nonminority children living in poverty is greater in rural areas than in metropolitan areas (Table 8) [25].

For the year 2000, the average expense per person aged 6 to 18 years for dental visits was \$607 compared with \$480 per person for the total population. Almost half (47.5%) of the dental expenses for 6- to 18-year-olds were paid by private health insurance; 44% were paid out-of-pocket.

Despite Medicaid payment of 23% of the costs of dental services for the poor, 42% of the average per-person dental care costs for the population below the poverty level were paid out-of-pocket (Table 9) [26].

8

Table	7

Race/ethnicity	Number (millions)	%
Total	8.8	16.6
White	5.4	13.4
Black	2.7	32.1
Asian	.3	14.0
Hispanic (may be of any race)	2.7	28.5

Number (in millions) and percentage of youngsters (aged 5–17 years) by race/ethnicity living below the poverty line (2003)

*Data from* US Bureau of the Census and Bureau of Labor Statistics. Annual demographic survey. Available at: http://ferret.bls.census.gov/macro/032004/pov/new01\_100\_01.htm. Accessed December 17, 2004; and US Bureau of the Census. Poverty: 2003 highlights. Available at: http://www.census.gov/hhes/poverty/poverty03/pov03hi.htm. Accessed December 17, 2004.

## Insurance

In 2000, virtually half (49.5%) of the expenditures for dental services for the general population were covered by private insurance arrangements, a percentage essentially equal to physician services (49.2%) and making up the greatest share of costs covered by private third-party insurers. Nevertheless, 108 million individuals lacked dental insurance [27]. As a result, 44% of dental service costs were paid out-of-pocket; a far greater proportion than all other major health services. Specifically, 3% of hospital care costs, 10% of physician service costs, 23% of nursing home care costs, and 30% of prescription drug costs were paid out-of-pocket (Table 10) [26].

Government spending for dental services has been particularly limited. Since 1980 (with projections through 2011), the government's proportion of spending for overall personal health service (including federal, state, and local agencies) ranges from 39% to 44%. During this period, approximate government spending represented between 53% and 60% for all hospital service costs, between 30% and 35% for physician services, between 11% and 23% for prescription drug costs, and between 49% and 64% for nursing home costs.

By contrast, government spending for dental services ranged from 2.9% in 1990 to 5.6% in 2001, with projections that will reach 7.3% in 2011 [28].

In addition, there are major variations by demographics in the proportion of dental costs paid out-of-pocket. Compared with their respective

Table 8

Poverty rates in nonmetropolitan and metropolitan areas by race/ethnicity (2002)

Race/ethnicity	Nonmetropolitan (%)	Metropolitan (%)
Non-Hispanic whites	11.0	7.2
Non-Hispanic blacks	33.2	22.7
Hispanics	26.7	21.4

*Data from* Economic Research Service, US Department of Agriculture. Rural poverty at a glance. Available at: http://www.ers.usda.gov/publications/rdrr100ChartsMaps.htm. Accessed December 17, 2004.

Demographic characteristic	Mean expense (dollars)	Out-of-pocket (%)	Private health insurance (%)	Medicaid (%)
Total population	480	49.3	42.0	4.0
Aged 6-18 y	607	44.0	47.5	6.4
Race/ethnicity				
White and other	506	49.8	42.1	3.6
Black	343	40.3	47.1	7.1
Hispanic	337	51.7	35.3	7.3
Income				
Low	322	41.8	23.7	22.8
High	529	47.9	48.4	0.3 <sup>a</sup>

Table 9

Table 10

Average expense per person for a dental visit, percentage paid out-of-pocket, and percentage paid by third-party health insurance (2000)

<sup>a</sup> Relative SE  $\geq 30\%$ .

*Data from* Agency for Healthcare Research and Quality. Dental service: use, expenses and source of payment: 1996–2000. MEPS research finding; 2004. Publication #AHRQ 04–0018. Available at: http://www.meps.ahrq.gov/papers/rf20\_04-0018/rf20.pdf. Accessed November 10, 2004.

counterparts, older persons, the unemployed, residents of northeastern and southern regions of the country, individuals with high income, and whites and Hispanics pay a greater percentage of out-of-pocket costs for dental service [29].

# Some answers: Medicaid and the State Children's Health Insurance Program

Medicaid is a means-tested health program established as part of the Social Security Act of 1965 and designed to provide access to health care for certain low-income populations. Medicaid is financed jointly by the federal and state

government agencies (1990–2000)					
Healthcare service	Out-of-pocket (%)	Private insurance (%)	Government agencies (%)		
Total personal health care	15.8	35.8	44.2		
Dental services	43.9	49.5	6.4		
Hospital care	3.0	33.9	58.9		
Physician and clinical services	10.1	49.2	33.8		
Nursing home and home health	23.2	10.3	63.1		
Prescription drugs	29.9	47.8	22.3		

The percentage of national health expenditures paid out-of-pocket, by private insurance, and by government agencies (1996–2000)

*Data from* Agency for Healthcare Research and Quality. Dental service: use, expenses and source of payment: 1996–2000. MEPS research finding; 2004. Publication #AHRQ 04–0018. Available at: http://www.meps.ahrq.gov/papers/rf20\_04-0018/rf20.pdf. Accessed November 10, 2004.

governments and, within broad federal guidelines, states have the flexibility to establish income and asset requirements, benefit packages, and reimbursement fees. Although dental services are elective for adults, all children enrolled in Medicaid are entitled to comprehensive dental services under the Early Periodic Screening, Diagnostic, and Treatment (EPSDT) program. Despite the inclusion of dental benefits, state Medicaid programs face a myriad of difficulties, "from low levels of participation by dentists to difficulties in teaching beneficiaries how to negotiate the dental care system" [2].

Although dental spending for Medicaid equals only 1% of Medicaid expenditures, the states' fiscal demands have led to cuts or elimination of dental benefits for adults and Medicaid beneficiaries with disabilities. "Comparing 2003 with 2000, the number of states offering comprehensive dental benefits to adults in Medicaid had dropped from 14 to 8. In 2003, 9 states cut or restricted adult dental benefits. In 2004, 7 states reduced adult benefits" [30]. In essence, adolescents enrolled in the Medicaid program who have disabilities all too often "age out of dental care" when they reach adulthood [31].

The State Children's Health Insurance Program (SCHIP) was created in 1997 to give states the option of offering health insurance for children (up to age 19 years) who are not already insured. SCHIP is a state-administered program, and each state (under federal guidelines) sets its own regulations regarding eligibility and services. In most states, uninsured children whose families earn up to \$36,000 a year (for a family of four) are eligible [32]. The 29 million children in Medicaid and SCHIP are 1.5 times more likely to access dental care than are uninsured children. Children covered by Medicaid are 3.5 times less likely to have unmet dental needs than uninsured children [30].

Although dental benefits for children in SCHIP are optional, all but one state (Texas) includes dental services in their plans. "Unlike Medicaid's EPSDT benefit that provides comprehensive dental services, many SCHIP plans provide more limited benefits" [30].

## Individuals who have special needs

## Numbers

Over 50 million United States residents have a developmental, physical, or intellectual disability that hinders them in their ability to function on their own or contribute fully to work. The disability may affect the education, family, or community life of the person with the disability and is often accompanied by high costs (emotional, social, and financial) to them, their families, and the nation [33].

About 17% of children younger than 18 years have a developmental disability. In 2000, approximately 12,500 children were born who had cerebral palsy, 5000 who had hearing loss, 4400 who had vision impairment, 5000

who had heart malformations, 5500 who had other circulatory anomalies, 800 who had spina bifida/meningocele, and 8600 who had a variety of musculoskeletal/integumental anomalies [34].

Approximately 2% of school-age children have a serious developmental disability such as mental retardation or cerebral palsy and need special education or supportive care [35]. In a study using 2000 census data, it was reported that more than 2 million children (4.6% of all children aged 5–15 years) have one disability, including 1.6 million who have a learning disability. Almost 535,000 children have two or more disabilities, bringing the total number of children (aged 5–15 years) who have disabilities to more than 2.6 million. The proportion of children who have disabilities ranges from 2.9% for Asian Americans to 7.0% for blacks and 7.7% for Native Americans (Table 11) [7,36].

Results from a study performed by the Maternal and Child Health Bureau in 2001 indicated that

- The percentage of adolescents who had special health care needs (ie, those who had or were at increased risk of a chronic physical, developmental, behavioral, or emotional condition) and who required health care beyond that generally required by adolescents was 15.8% (3.8 million individuals aged 12–17 years).
- Almost 20% of the adolescents who had special health care needs had unmet needs for specific care services, almost 12% had no personal physician or nurse, and 23% (in need of care) had difficulty receiving referral for special care.

Table 11

Disability state of children (aged 5-15 years) in nonresidential care facilities (2000)

Disability state	Number	%	
Children in nonresidential care facilities	45,133,667	100	
Children with no disabilities	42,518,748	94.2	
Children with one disability	2,080,569	4.6	
Sensory disabilities	238,498	0.5	
Physical disabilities	161,401	0.4	
Learning disabilities	1,604,363	3.6	
Self-care disabilities	76,307	0.2	
Children with two or more disabilities	534,350	1.2	
Total number of children with disabilities	2,614,919	5.8	
By race/ethnicity			
White	_	5.6	
Black	_	7.0	
Native American	_	7.7	
Asian American	_	2.9	
Hispanic (of any race)	_	5.4	

*Data from* The Annie E. Casey Foundation. Kids Count 2000 census data online. Available at: http://www.aecf.org/kidscount/census. Accessed December 17, 2004; and Waldrop J, Stern SM. US Bureau of the Census. V. Disability status: 2000. Census 2000 brief, March 2003. Available at: http://www.census.gov. Accessed March 18, 2004.

• Almost 22% of families who had adolescents with special health care needs had financial problems resulting from the teenager's health [35].

### Insurance

In 2001, slightly more than 5% of children who had special health care needs (almost 0.5 million children) had no form of private or public-sponsored health insurance [37].

There is a gradual, progressive increase (with age) in the proportion of children who have special health needs and who have no health insurance (from 4.8% to 5.9%). In addition, there are marked variations by demographic characteristics in the proportion of children who have no health insurance. Among children who have special health care needs, compared with the general population, the proportion of children who have no health insurance is

- Double the rate for Hispanic children
- Four and one half times the rate for children in families for whom interviews were performed in Spanish (or a language other than English)
- Four to five times the rate for children in lower-income families
- Almost 9 times the rate for children whose maternal parent's education was eighth grade or less (Table 12) [37]

There are wide variations between states in the proportion of children who have special health care needs who lack health insurance, ranging from about 2% in Connecticut and Massachusetts to 12% in Texas [38].

Demographic characteristic	%			
Age (y)				
0–5	4.8			
6–11	4.7			
12–17	5.9			
Race/ethnicity				
Hispanic	10.1			
Black non-Hispanic	5.3			
White non-Hispanic	4.5			
Language at interview				
English	4.7			
Spanish or other language	21.0			
Household income				
<\$10,000	8.6			
\$10,000-\$19,999	10.2			
>\$60,000	2.0			
Maternal education				
≤Eigth grade	18.2			
>4-v college	2.1			

*Data from* Van Dyck PC, Kogan MD, McPherson MG, et al. Prevalence and characteristics of children with special health care needs. Arch Pediatr Adolesc Med 2004;158:884–90.

Table 12 Children who have special health care needs and do not have health insurance (2001)

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Nationally, almost two thirds of children who have special health care needs have private health insurance. Slightly more than one fifth of children have public coverage. Additional insurance is provided by combinations of private and public arrangements; however, there are wide variations between the various jurisdictions. Private insurance coverage ranges from 43% in the District of Columbia and 46% in New Mexico, Vermont, and Louisiana to 78% in Virginia. Public coverage ranges from 10% in Virginia to 38% in New Mexico [38].

## Residence

Evolving residential requirements for individuals who have mild and moderate intellectual disabilities and related developmental disabilities (ID/DD) increasingly place these persons of all ages in community settings. Changing social policies, favorable legislation for individuals who have disabilities, and class-action legal decisions, which have delineated the rights of individuals who have ID/DD, have led to deinstitutionalization (ie, mainstreaming and the establishment of community-oriented group residences and enhanced personal family residential settings) and closure of many state-run large facilities [39].

In the past, residents of these large state institutions who had ID/DD received needed dental and medical services from health practitioners in the institutions' clinical facilities. Most community residential facilities, however, are too small to provide needed dental care. As a consequence, adolescents and older persons with ID/DD who reside in our communities are dependent on local practitioners for needed oral health services. There is the added reality that many of these individuals who have special needs and now reside in our communities are members of families who are already patients of record of most local dental practitioners.

## Summary

Adolescence is the transitional period between childhood and the adult years. It is a critical foundation period that can help to redirect some of the difficulties of childhood. It is also a time when many of the complexities of childhood can be exacerbated as youngsters reach the early years of adulthood. The contribution of the state of the adolescent's health should not be understated. Oral health needs are critical factors in the maturation of the adolescent, whether they involve the relief of pain, improved nutrition, an increase in self-esteem with orthodontic treatment, or "just" saving the dentition from the ravages of the early stages of periodontal disease.

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