Highlights
Chapter VIII – Teen Oral Health

Dental disease is the nation's leading chronic disease of children and dental disease is largely preventable. Prevention is relatively inexpensive. In 1999, the average cost of treating one tooth with a dental sealant was $29, compared to the average cost of $65.09 for one "silver" filling. Lack of insurance, low family income and low parental education level are significantly associated with the lack of preventive dental care.

Colorado Trends

State level data on the oral health status of teens is difficult to come by. However, data from local surveys indicate that Colorado teens have dental issues similar to their national peers, including disparities regarding income and race and ethnicity.

- A 1994 survey of the northeast quadrant of the state and the San Luis Valley indicated that 100 percent of all 15-year-olds had some untreated dental decay in permanent teeth.
- A survey of periodontal disease among 13- to 17-year-olds showed that non-Hispanic African Americans were at greater risk than other racial or ethnic groups.
- Even insured children have difficulty accessing oral health services. While 90 percent of physicians participate in managed care, only about 20 percent of dentists do.
- Dentists are not equally distributed throughout Colorado. In April 2000, nine Colorado counties had no dentists whatsoever and an additional 10 had no dentists who served Medicaid-enrolled clients.

2000 Objectives

Progress Report

No objectives for improving teen oral health were included in the *Adolescent Health in Colorado, 1997* report.

Best Practices

Preventive oral health is integral to general health and means much more than healthy teeth. Below are several areas of concern:

- *Good nutrition and diet habits:* Many teens are not receiving the benefits of fluoridated water because they are drinking bottled water, and sugared carbonated sodas and sports drinks may contribute to tooth decay.

- *Oral piercing:* Oral piercing can cause infection, chipped or cracked teeth and interference with dental X-rays.
- *Tobacco use:* Using spit tobacco, also known as "chew" or "smoke" can result in gum recession, tooth decay, oral lesions and oral cancers as well as nicotine addition.
- *Sports injuries and protective mouth gear:* About one third of all dental injuries and approximately 19 percent of head and face injuries are sports-related.
- *Eating disorders:* Anorexia and bulimia also can result in damage to teeth. Poor nutritional intake associated with anorexia means a loss of calcium. Stomach acids from the constant vomiting symptomatic of bulimia, erode the enamel on the teeth.

Experts have suggested the following steps as a start to improving access to oral health services for adolescents.

- Improve access to dental care by expanding preventive care to poor inner-city and rural youth through school-based programs.
- Improve Medicaid coverage for patients and reimbursements for dentists, and provide incentives for dentists to practice in underserved areas.
- Extend dental office hours or provide an on-call service to answer questions.

2010 Objectives

Increase Access to Dental Care

- By 2010, increase the proportion of Medicaid-eligible 10 to 14 year-olds who access dental services to 50.0%, from the 2001 baseline of 38.2%.
- By 2010, increase the proportion of Medicaid-eligible 15 to 18 year-olds who access dental services to 50.0%, from the 2001 baseline of 33.8%.

Source: Colorado Department of Health Care Policy and Financing, 416 Medicaid Report

Reduce Dental Decay

- By 2005, establish baseline data on the proportion of adolescent with untreated decay in their permanent teeth.
  Source: Oral Health Program, Colorado Department of Public Health and Environment

Websites

American Cancer Society
www.cancer.org

American Dental Association
www.ada.org

Anthem Blue Cross and Blue Shield Foundation
www.anthem-inc.com/anthem/affiliates/anthembcbsco/about/foundation

Caring for Colorado Foundation
www.caringforcolorado.org

Center for Science in the Public Interest
www.cspinet.org

Center on Human Development and Disability
www.depts.washington.edu/chdd

Child Welfare League of America
www.cwla.org

Children's Dental Health Project
www.childent.org

Colorado Association for School-Based Health Care
www.casbhc.org

The David and Lucile Packard Foundation
www.packard.org

Health Care Financing Administration
www.cms.hhs.gov

Health Resources and Services Administration
www.hrsa.gov

Latin American Research and Service Agency (LARASA)
www.larasa.org

National Center for Health Statistics
www.cdc.gov/nchs

National Coalition of Hispanic Health and Human Services Organizations
www.cossmho.org

National Institute on Drug Abuse
www.nida.nih.gov

National Maternal and Child Oral Health Resource Center
www.mchoralhealth.org

State Tobacco Education and Prevention Partnership
Colorado Department of Public Health and Environment
www.cdphe.state.co.us/pp/tobacco

US General Accounting Office
www.gao.gov

Chapter VIII
Shining Smiles: Teen Oral Health

Bad teeth, bad breath - just another worry for adolescents as they look in the mirror? Not quite - dental disease includes decay of the teeth, inflammation of gums and oral tissue and untreated injuries to teeth and jaw. Dental disease is the nation's leading chronic disease of children and the shameful fact is that dental disease is largely preventable.[1] The prescription for healthy teeth is fluoridated water, good nutrition, proper oral hygiene, timely application of dental sealants and regular preventive care. Lack of insurance, low family income and low parental education level are significantly associated with the lack of preventive dental care.[2] (See Figure 1.)

Oral Health

National Trends

According to the U.S. Surgeon General, 78 percent of 17-year-olds have experienced tooth decay, and by age 17, more than 7 percent of children have lost at least one permanent tooth to decay.[3] Three percent of adolescents probably have active periodontal disease (inflammation of the gum and soft tissue).[4] Research in the early part of the 1990s found dental disease in children, who are today's adolescents, disproportionately prevalent among low-income populations[5] and certain racial and ethnic groups, especially Mexican American and African American youth.[6] (See Figure 1.)

National studies cited by the U.S. Surgeon General indicate that as many as 20 to 33 percent of today's adolescents do not see a dentist annually and 2 percent have never seen a dentist.[7] Those who have never seen a dentist are more likely to be African American or Mexican American born outside the United States or uninsured.[8]

Researchers studying adolescents seeking care for non-traumatic dental complaints in the emergency room of a major urban hospital found that children under the age of 13 were more likely to have a regular dental provider than adolescents or

This chapter:

- Provides a general description of the state of dental health in adolescents
- Highlights prevention savings and factors other than lack of dental care that affect oral health
- Discusses the barriers that adolescents face in trying to access dental care
- Describes Colorado's current public dental health system for adolescents

Percentage of Untreated Tooth Decay in Permanent Teeth in Teens, ages 12-17 by Income and Race/Ethnicity, U.S.: 1999

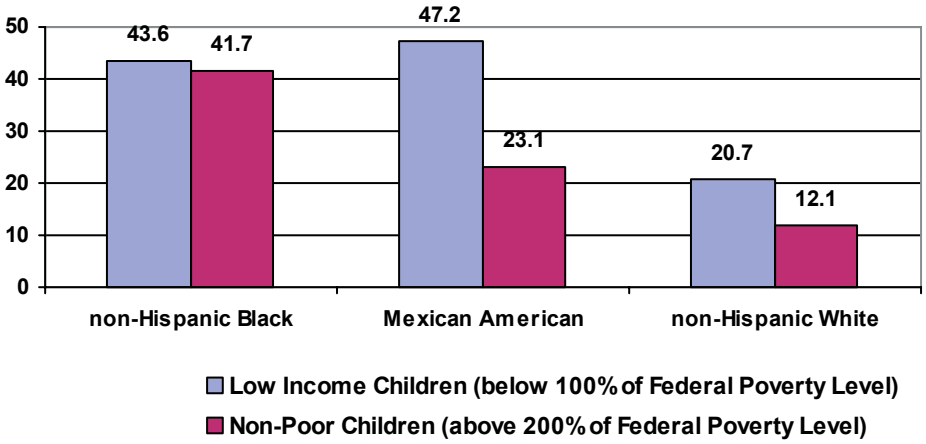

Figure 1. *Source:* U.S. Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000

young adults. Although almost three-quarters of the patients (71 percent) identified a primary care physician, only half (50 percent) identified a regular dentist. The teens reported three primary reasons for going to the emergency room instead of a dental provider: dental office closed (34 percent), lack of dental insurance/money (17 percent), and lack of a dentist (16 percent).[9] Other youth who may be at particular risk are homeless youth,[10] youth transitioning out of foster care systems[11] and those with special health care needs.[12]

Colorado Trends

Data from local surveys indicate that Colorado teens have dental issues similar to their national peers, including disparities regarding income, race and ethnicity.[13] A 1994 survey of the northeast quadrant of the state and the San Luis Valley indicated that 100 percent of all 15-year-olds had some untreated dental decay in permanent teeth.[14] A survey of periodontal disease among 13- to 17-year-olds showed that non-Hispanic African Americans were at greater risk than other racial or ethnic groups.[15]

Dental Care

There are several ways for Colorado adolescents to access dental care: Medicaid, Colorado Child Health Plan *Plus* (CHP+), private dental insurance, fee-for-service payment to private dentists, and the dental health safety net. Each approach includes barriers to access for dental health providers, as well as for teens and their families.

Dental care providers must deal with low reimbursement rates, restrictions on practice, administrative complexity and misconceptions about the importance of preventive dental care. Teens and their families face the cost of private insurance, financial eligibility thresholds, shortages of dentists, shortages of pediatric dentists, administrative complexity and dentists who may not want to accept their form of payment.[22]

Financial Barriers

While 90 percent of physicians participate in managed care, only about 20 percent of dentists do. Most dentists participate in fee-for-service practice. Most dentists provide services in independent, privately owned facilities, with the dentists typically owning their own equipment and responsible for all facility, personnel and administrative costs associated with their practices. Dentists schedule appointments for a specified period of time per individual, which makes missed appointments, low reimbursements and the complexity of government program administration a significant financial burden.[23]

- **Medicaid:** Medicaid provides dental services to income-eligible children through its Early and Periodic Screening, Diagnosis and Treatment (EPSDT) program, but provides services to far fewer children than actually qualify for these services. There are insufficient numbers of providers to meet the needs of Medicaid-enrolled children because there are small numbers of dentists in general and small numbers of dentists willing to accept Medicaid's low reimbursement rates (about 65 cents on the dollar).[24]
- **State Children's Health Insurance Program:** Colorado began a dental health benefit in its state children's health insurance program, the Colorado Child Health Plan *Plus* (CHP+), in February 2002. CHP+ began covering dental exams, cleanings, X-rays, fillings, routine extractions, limited root canal therapy and other diagnostic and preventive services. There is a maximum allowable benefit of $500 per child per calendar year. Depending on family income levels, either all benefits are free or cleanings and check-ups are free. A minimum $5.00 co-pay is required for other services.[25]
- **Dental Safety Net:** Until very recently, adolescents who did not meet Medicaid eligibility, but could not afford dental insurance or fee-for-service care had to look to the dental safety net for health care. The dental safety net in Colorado is made up of several community health centers, hospital emergency clinics, private nonprofit clinics, dental school clinics and private dentists offering volunteer services. The dental safety net in Colorado has been described as underfunded, fragmented and unable to meet community demands for service.[26]

Other Barriers

Research studies have identified additional barriers to accessing dental care, especially for low-income youth.

- **Administrative barriers:** Complicated administrative processes may deter some families from enrolling in publicly funded dental programs and may deter dental health providers from accepting new patients. Barriers include complex enrollment forms, non-standard billing requirements, complicated eligibility determination criteria, delayed reimbursement and burdensome preauthorization requirements.
- **Geographical barriers and regional shortages:** Dentists are not equally distributed throughout Colorado. In April 2000, nine Colorado counties had no dentists whatsoever and an additional 10 had no dentists who served Medicaid-enrolled clients.[27]
- **Personal, financial and cultural barriers:** Patients face expense (both out-of-pocket and the cost of premiums); a perceived stigma about enrolling in Medicaid; geographic shortages that can make transportation to appointments difficult; inconvenient clinic hours which could result in missed work or school; cultural biases about oral health care; lack of comfort with dental care; and language barriers.
- **Misconceptions and misunderstanding about the importance of dental health:** Because the oral health needs of children and youth are rarely life threatening, many people perceive dental care as an elective service. Dentists report that many low-income patients miss appointments and are not compliant about oral hygiene.[28]
- **Cultural competence:** Researchers note that the relationship between lack of dental care and place of birth (especially where unfluoridated water is in use) emphasizes the need to promote the importance of preventive oral health care and increase outreach to both immigrant teens and adolescent children of immigrants under publicly funded health insurance programs.[29]

It's More Than Just Tooth Decay

Oral health is integral to general health and means much more than healthy teeth.[30] Adolescents need comprehensive dental services, which include ongoing primary and preventive health care services including reassessments at a minimum of every six months; access to appropriate specialty and subspecialty care; and care for injuries to the teeth and jaw. They also need counseling and guidance on other risks to maintenance of dental health.

- **Good nutrition and diet habits:** Many teens are not receiving the benefits of fluoridated water because they are drinking bottled water, carbonated sodas and sports drinks.[31]
- **Oral piercing:** Oral piercing can cause infection, chipped or cracked teeth and interference with dental X-rays.[32]
- **Tobacco use:** Using spit tobacco, also known as "chew" or "smoke" can result in gum recession, tooth decay, oral lesions and oral cancers as well as nicotine addition.[33] Colorado youth use spit tobacco at higher levels than their peers nationally. (See Table 1; see also Chapter VI on tobacco use.)
- **Sports injuries and protective mouth gear:** About one third of all dental injuries and approximately 19 percent of head and face injuries are sports-related.[34] For example, baseball and basketball players are 60 times more likely to sustain an oral injury without a mouth guard.[35]
- **Eating disorders:** Anorexia and bulimia also can result in damage to teeth. Poor nutritional intake associated with anorexia means a loss of calcium. Stomach acids from the constant vomiting symptomatic of bulimia erode the enamel on the teeth.[36]

Table 1: Spit on It: Spit Tobacco Use, CO and U.S. 2001

	CO	US
Ever Use Middle School	10.0	7.0
Ever Use High School 23.5	18.0	
Current Use High School	9.0	6.6

Source: 2001 Colorado data*: Colorado Youth Risk Behavior Survey.* U.S. data: *Monitoring the Future*, National Institute on Drug Abuse (2001)

Best Practices

Experts have suggested the following as a start to improving the oral health of adolescents:

- Improve access to dental care by expanding preventive care to poor inner-city and rural youth through school-based programs
- Improve Medicaid coverage for patients and reimbursements for dentists
- Provide incentives for dentists to practice in underserved areas
- Extend dental office hours or provide an on-call service to answer questions.[37]

Prevention Policies Save Teeth and Money

Most tooth decay in adolescents occurs on the molars, the chewing surfaces of the teeth. National health goals include reducing untreated dental decay in 15-year-olds and increasing sealants in the first and second molars of adolescents.[16] Dental sealants are thin plastic coatings, which, when applied to these surfaces, prevent tooth decay by creating a physical barrier against bacterial plaque and food retention.[17] In Colorado, a complete dental sealant treatment (eight molars) costs approximately $232. If properly applied, the sealants can last for many years.[18]

Prevention Pays

- In 1999, the average cost of treating one tooth with a dental sealant was $29, compared to the average cost of $65.09 for one "silver" filling.[19]
- Dental services cost the U.S. an estimated $60 billion annually, including visits to the dentist and hospital charges for diseases of the mouth, disorders of the teeth and jaw and sports-related cranio-facial injuries.[20]

Fluoridated water and application of topical fluoride, such as in a fluoride mouth wash or toothpaste, play a significant role in improving oral health, and in reducing tooth decay in young children by as much as 60 percent and in permanent adult teeth by nearly 35 percent. Fluoride is one of the most cost-effective ways of improving oral health. The annual cost of a community water fluoridation system is about $0.50 per person; topical fluoride application by a dental health provider costs about $3.35 per tooth, per tooth surface, making fluoride a more economical alternative to a "silver" filling.[21]

What Is Colorado Doing?

A state legislative Commission on Children's Dental Health has recommended expanding primary dental prevention activities in school-based health centers and schools; expanding secondary dental prevention activities; and increasing parents', guardians' and caregivers' understanding of and investments in the importance of children's dental health. Strategies include promoting specialized training in pediatric dentistry; allowing dental hygienists to bill Medicaid for educational and preventive services without requiring a dentist's authorization; replicating and/or expanding existing systems of care already serving underserved populations; and offering loan repayment and credit-for-service programs to recent dental, pediatric dental and dental hygiene graduates to serve underserved populations.[38]

The Colorado Department of Public Health and Environment's tobacco prevention and oral health units have helped many programs across the state to make youth and their parents more aware of the benefits of good oral health and the risks to good oral health presented by some risky adolescent behaviors. Local foundations are sponsoring outreach programs to rural communities, such as Anthem Blue Cross and Blue Shield Foundation's "Miles for Smiles" dental van. Other foundations such as Caring for Colorado, are gearing up to fill in gaps in the dental safety net. The Colorado Association for School-Based Health Care is working with its members to increase provision of dental services at Colorado's school-based health centers.

End Notes

1. B Buck, *Ensuring Shining Smiles for Colorado Kids*, Anthem Blue Cross and Blue Shield Foundation (2000); US Surgeon General, *Oral Health in America: A Report of the Surgeon General* (2000); Caring for Colorado Foundation, *Dental Health Improvement Program: Needs Assessment Results* (2002); Colorado Commission on Children's Dental Health, *Addressing the Crisis of Oral Health Access for Colorado's Children* (2001).
2. See resources cited in note 1. See also National Maternal and Child Oral Health Resource Center, *Oral Disease: A Crisis Among Children of Poverty* (1998); Health Resources and Services Administration (HRSA) and Health Care Financing Administration (HCFA), *Oral Health Initiative: Addressing Unmet Oral Health Needs and Disparities to the Underserved* (1999).
3. U.S. Surgeon General, see note 1.
4. National Center for Health Statistics, *Health, United States 2000: With Adolescent Chart Book*, p. 36 (2000); EM Lewitt et al., "Child indicators: Dental health," *The Future of Children*, 8 (1):133-42, The David and Lucile Packard Foundation (1998).
5. See, e.g., DH Dorfman, B Kastner and RJ Vinci, "Dental concerns unrelated to trauma in the pediatric emergency department," *Archives of Pediatrics and Adolescent Medicine* 155 (6): 699-703 (2001); US General Accounting Office, *Oral Health: Factors Contributing to Low Use of Dental Services by Low-income Populations* (2000).
6. See, e.g., MR Watson et al., "Caries conditions among 2-5-year-old immigrant Latino children related to parents' oral health knowledge, opinions and practices," *Community Dental Oral Epidemiology* 27(1): 8-15 (1999); DL Ronis et al., "Preventive oral health behaviors among African Americans and whites in Detroit," *Journal of Public Health Dentistry* 58 (3):234-40 (1998); BL Edelstein. *Racial and Income Disparities in Pediatric Oral Health*, Children's Dental Health Project (1998).
7. SM Yu et al., "Factors associated with use of preventive dental and health services among U.S. adolescents," *Journal of Adolescent Health* 29(6): 395-405 (2001).
8. US Surgeon General, *Oral Health in America*, see note 1; see also references cited in note 6.
9. See references cited in note 5.
10. M Clark, *Homelessness and Oral Health*, National Maternal and Child Oral Health Resource Center (1999).
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12. M Mouradian, ed., *Promoting Oral Health of Children with Neurodevelopmental Disabilities and Other Special Health Needs*, Center on Human Development and Disability, University of Washington (2001); National Maternal and Child Oral Health Resource Center, *Inequalities in Access: Oral Health Services for Children and Adolescents with Special Health Care Needs* (2000).
13. See, e.g., Centro de la Familia Public Policy Center of the Latin American Research and Service Agency (LARASA) and the National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), *Nuestros Jovenes 1998: A Summary of Latino Youth Health in Colorado* (1998).
14. Colorado Department of Public Health and Environment, *Oral Health of Coloradans: 1994* (1994); Colorado Department of Health Care Policy and Financing, *Medicaid Dental Program Services Legislative Report* (1999) and *Colorado Medicaid Report on the Plan to Develop a Dental Services Program That Assures Access to Dental Care for Medicaid-Enrolled Children* (1997).
15. U.S. Surgeon General, *Oral Health in America*, p. 258, see note 1.
16. The corresponding Colorado goal concentrates on elementary school children. Colorado Department of Public Health and Environment, Maternal and Child Health grant proposal 2002.
17. K Kraft and K Holt, eds., *Dental Sealant Resource Guide*, National Center for Education in Maternal and Child Health (2000); National Maternal and Child Oral Health Resource Center, *Preventing Tooth Decay and Saving Teeth With Dental Sealants* (2000).
18. Buck, *Shining Smiles*, p. 5, see note 1.
19. National Maternal and Child Health Resource Center, *Preventing Tooth Decay*, see note 17.
20. US Surgeon General, *Oral Health in America*, see note 1.
21. American Dental Association, *Fluoridation Facts* (1999).
22. Buck, *Shining Smiles*, see note 1; P Ingargiola, *Understanding the Dental Delivery System and How it Differs from the Health Care System*, Anthem Blue Cross and Blue Shield Foundation (2000).
23. See references cited in note 22.
24. Ingargiola, *Dental Delivery System*, see note 22; Caring for Colorado, *Dental Health Improvement*, see note 1.
25. Colorado Child Health Plan *Plus*, *Dental Benefits: Frequently Asked Questions* (2002).
26. Caring for Colorado, *Dental Health Improvement* p.4, see note 1; Buck, *Shining Smiles*, see note 1; Ingargiola, *Dental Delivery System*, p. 5, see note 22.
27. Caring for Colorado, *Dental Health Improvement*, p. 3, see note 1.
28. Yu et al., "Factors," see note 7.
29. US Surgeon General, *Oral Health*, see note 1.
30. Ibid., "Executive Summary."
31. See, e.g., MF Jacobson, *Liquid Candy: How Soft Drinks are Harming Americans' Health*, Center for Science in the Public Interest (1998).
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33. American Dental Association, *Chewing Tobacco Increases Risk for Tooth Decay* (1999).
34. Ibid.
35. American Dental Association, *Mouthguards Essential For Today's Female Athlete: Part-Time Athletes Also Face Injury Risk* (1999).
36. American Cancer Society, *Can Oral Cavity and Oropharyngeal Cancer be Prevented?* (2001).
37. Dorfman et al., "Dental concerns," see note 5.
38. Colorado Commission on Children's Dental Health, *Oral Health Access*, see note 1. In 2001, the Governor signed House Bill 01-1282, which allows dental hygienists who are providing services without supervision by a dentist to bill directly and be reimbursed for providing preventive dental hygiene services to children under the Medicaid program. He also signed House Bill 01-1257 that adds dental hygienists to the list of health care professionals that may claim the existing state income tax credit for health care professionals practicing in health care professional shortage areas. Senate bill SB01-164 created a state dental loan repayment program for dentists and dental hygienists who, as a condition of receiving assistance in paying dental education loans, agree to provide dental care to underserved populations.