

Immunizations

Introduction

Vaccines are not just for young children. The American Academy of Pediatrics recommends the following four vaccines for teenagers: varicella (chicken pox) vaccine, hepatitis B vaccine, measles-mumps-rubella (MMR) vaccine, and tetanus-diphtheria (Td) vaccine. For college students, meningococcus vaccine is recommended. For more detail on specific recommendations, see the National Immunization Program website. (See U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Immunization Program in References.)

Hepatitis A is strongly recommended among certain populations where the incidence is greater than 20 cases per 100,000 people per year, which includes Arizona. Hepatitis B is important for adolescents who may be at risk due to body piercing, sharing razors, and other risky behaviors.

National

Healthy People 2010 includes two objectives specifically related to the immunization of adolescents. These are: 1) increase the proportion of young children and adolescents who receive all vaccines that have been recommended for universal administration for at least five years; and 2) increase routine vaccination coverage levels for adolescents. The first objective, as it relates to adolescents is developmental; there is no baseline or target yet. The second objective has sub-objectives for each vaccine, as shown in Table 13.

Table 13. Healthy People 2010 objectives related to adolescent immunizations (U.S. Department of Health and Human Services, 2000).

Objective: Increase in vaccination coverage levels for adolescents ages 13-15	1997 Baseline	2010 Target
	Percent	
3 or more doses of hepatitis B	48	90
2 or more doses of measles- mumps-rubella	89	90
1 or more doses of tetanus- diphtheria booster	93	90
1 or more doses of varicella (excluding those who have had varicella)	45	90

As noted in Table 13 above, the 1997 baseline for immunization of adolescents is significantly below the target for hepatitis B and varicella. It is at or above the target for measles-mumps-rubella and tetanus-diphtheria.

Arizona

The Arizona Department of Health Services has included an immunization-related objective in Healthy Arizona 2010; that is, to reduce the rate of hepatitis A in the state (Arizona Department of Health Services, 2001). Two strategies that are targeted on adolescents are: 1) increase the recommended age group for hepatitis A vaccination incrementally from the current 2-5 years of age to 2-18 years of age and accompany these changes with educational and promotional campaigns; and 2) provide hepatitis A vaccinations to youths held in juvenile detention centers.

Despite strides to increase the number of people immunized, vaccine preventable diseases still occur in Arizona. For the period January through May 2003, four people (all ages) died from haemophilus influenzae, one from measles, one from mumps, and 45 from pertussis. In addition, 108 persons (all ages) died from hepatitis A, 146 from hepatitis B, and 464 from hepatitis B, non-acute (Arizona Department of Health Services, 2003b).

The Arizona Department of Health Services (2003a) collects immunization data from schools (public, private, and charter schools). Reporting is mandated by State statute. The Department collects data for students in kindergarten and grades 7 and 10. Data on students in grade 7 is currently available. Data on 10th grade students will be available in the future.

In School Year 2002-2003, 731 schools with 77,092 7th graders were assessed. Nearly 91 percent of the schools submitted an immunization data report. Results showed that 97.5 percent of the students had had the required two doses of measles-mumps-rubella vaccine (up from 93.0 percent in School Year 2000-2001, the first year it was required). Nearly 83 percent of students had three doses of hepatitis B vaccine (up from 46.5 percent in School Year 2000-2001, the first year it was required). The hepatitis A vaccine is not required for school in Arizona. Approximately two percent of students had a personal exemption from vaccination.

According to data collected from 441 Arizona schools during School Year 2002-2003, 33,381 (50.7 percent) of 65,825 10th graders had received a tetanus-diphtheria booster. The supply of tetanus-diphtheria vaccine was not sufficient to allow for booster doses during School Year 2001-2002. The requirement for a tetanus-diphtheria booster every 10 years was suspended during the tetanus-diphtheria shortage. Schools were advised to refer students for tetanus-diphtheria boosters during School Year 2002-2003, but were not required to suspend non-exempt students who failed to meet the requirement until June 1, 2003.

Currently efforts are underway to increase the immunization rate among Arizona's adolescents. Adolescents themselves have helped to guide a campaign to encourage Arizona teens to get the following vaccinations: hepatitis B, tetanus-diphtheria, measles-mumps-rubella, varicella, hepatitis A, PPV23 (pneumonia), influenza (flu), and IPV (polio).

What would help?

- ❖ The State of Arizona can initiate a varicella immunization requirement for school entry. This is currently in progress in Arizona and it is estimated that it will be implemented in School Year 2005-2006.
- ❖ The State of Arizona can expand the Vaccines for Children (VFC) hepatitis A vaccine eligibility for children ages 2-5 years of age to persons ages 2-18. Funding has prevented the expansion of the age criteria in Arizona, but the eligibility criteria are expected to expand as State funds become available.
- ❖ Adolescent involvement in efforts to increase awareness and promote immunization among their peers can be supported and expanded.

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Oral Health

Introduction

Until the last few decades, the public has viewed oral health largely as the presence of decayed or missing teeth, with loss of teeth perceived as a natural part of the aging process. At times, oral health programs were not included or may not have been considered a priority in national or state health policies. Today oral health and oral health care are considered an important part of a total health care plan.

Associations between chronic oral infections and diabetes, heart disease, stroke, and pre-term and low birth weight births are being studied to determine the nature of these associations. The relationship of smokeless tobacco and cigarette use to oral cancer and other gingival and periodontal changes has been documented (U.S. Department of Health and Human Services, 2000b). Improved facial structure and increased mastication abilities result from corrective treatments for malocclusion. The occurrence or extent of dental, facial, and brain injuries can be decreased by the use of mouth guards for protection during athletic activities.

Dental disease contributes to a variety of problems in youth including lost school time, restricted activity, trouble with concentration and learning, diminished test performance, and decreased school performance in general (National Center for Education in Maternal & Child Health, 2001). Inadequate dentition may lead to speech problems and poor nutrition due to inability to chew food efficiently. Bad breath caused by decay or gum disease can limit social acceptance. Peer acceptance is important during this transition period from child to adult and poor oral health may contribute to negative experiences and low self-esteem.

Adolescent oral health status is affected by a variety of conditions and behaviors. Some factors contributing to the oral health status of adolescents are the frequency of fluoride throughout childhood, frequency of dental visits, oral hygiene, presence of sealants, diet, use of tobacco and other drugs, mouth protection worn during athletic activities, access to care, and economic circumstance of the family (U.S. Department of Health and Human Services, 2000b).

A current issue that affects the oral health of adolescents is oral piercing. Some risks related to the oral piercing procedure are infection, severe bleeding, blood borne disease transmission, and bacterial endocarditis (inflammation of the tissues in the heart) in susceptible people. Furthermore, there are potential complications related to the jewelry including injury to the gums, damage to the teeth, interference with normal oral function, interference with oral health evaluation, and aspiration. The American Academy of Periodontology (2002) has expressed concern about the combination of mouth piercing and smoking and the increased probability of periodontal disease. Information on piercing and other adolescent oral health issues is available on websites for the American Dental Association (ADA), the American Academy of Pediatric Dentistry (AAPD), and the American Academy of Periodontology (see References).

Another issue of particular relevance for adolescents relates to the connection between eating disorders and oral health. The digestive system contains strong acids to help break down food. When a person with an eating disorder engages in frequent vomiting, these digestive acids come into frequent contact with the teeth and, in time, erode the enamel. Regular dental

check-ups allow for early identification and preventive instruction concerning this erosive process, as well as monitoring the potentially increased susceptibility to dental caries.

Oral health is a combination of prevention and treatment. Prevention includes a combination of regular dental visits, application of preventive measures such as sealants and fluoride treatments, oral hygiene instruction, proper home care (regular brushing, use of a fluoridated toothpaste, and flossing), and no use of tobacco, alcohol and other drugs. Treatment for adolescents involves dental visits to fill cavities, and to have cleanings, root canals, bridges, orthodontia, and surgery.

The public is becoming aware that numerous negative outcomes emanate from dental diseases and lack of good oral care. It is clear that dental disease may have a lasting impact on the future health status of adolescents (U.S. Department of Health and Human Services, 2000b). The importance of early detection of oral health problems cannot be denied. But it is estimated that uninsured adolescents are four times as likely to have an unmet need for dental care (Newachek, Brindis, Cart, Marchi, & Irwin, 1999). Now the challenge for both public and private dentistry is to make services readily accessible and available to the “at risk, underserved” populations, including adolescents.

National

Objectives in Healthy People 2010 address the oral health of adolescents. These objectives are: 1) to reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth; 2) to reduce the proportion of children, adolescents, and adults with untreated dental decay; 3) to increase the proportion of children who have received dental sealants on their molar teeth (8 and 14 year olds); and 4) to increase the proportion of low-income children and adolescents who received any preventive dental service during the past year. While not specifically targeted to adolescents, there are three other objectives related to their oral health. These are: 1) to increase the proportion of children and adults who use the oral health care system each year; 2) to increase the proportion of school-based health centers with an oral health component; and 3) to increase the proportion of the U.S. population serviced by community water systems with optimally fluoridated water (U.S. Department of Health and Human Services, 2000a).

Dental caries (decay) is one of the most common diseases of childhood (U.S. Department of Health and Human Services, 2000b) with prevalence increasing with age. National studies show that 61 percent of 15 year-old adolescents have had dental decay; American Indians/Alaska Natives had the highest prevalence of the racial/ethnic groups with 89 percent dental decay. Twenty percent of 15 year-old adolescents have untreated decay, with American Indians/Alaska Natives again showing the highest prevalence with 67 percent. Twenty-seven percent of 15 year-old Mexican-American adolescents have untreated decay. Among 14 year-old adolescents, 15 percent had dental sealants according to the National Health and Nutrition Examination Survey. White adolescents had a higher prevalence of dental sealants than Black or Mexican-American adolescents (U.S. Department of Health and Human Services, 2000a).

Dental decay has declined since the introduction of water fluoridation (U.S. Department of Health and Human Services, 2000b), which is considered one of the ten greatest public health achievements in the United States in the last century (Centers for Disease Control and Prevention, 1999). And yet, while the population on public water supplies and receiving

optimally fluoridated water was at about 65 percent in 2000, roughly 84 million people on public water supplies still lacked optimally fluoridated water (Centers for Disease Control and Prevention, 2002). Other information on fluoride can be found at www.cdc.gov/OralHealth/factsheets/sgr2000-fs6.htm.

Children under 19 years of age who qualify for the State Children's Health Insurance Program (SCHIP) are eligible for dental care. In 1993, only about 20 percent of Medicaid children under 19 reported receiving any preventive services. Among White children, 25 percent received preventive care, whereas 13 percent of Black and 16 percent of Hispanic children received preventive care (U.S. Department of Health and Human Services, 2000a).

A study in 2001 used data from the national Longitudinal Study of Adolescent Health to assess the preventive oral health behaviors of adolescents and determine the association with demographic factors. The sample was nationally representative of high school students and behaviors were self-reported. They found that 68 percent of adolescents had a dental exam in the previous year and two percent had never had a dental exam. This translates into about 466,000 adolescents nationwide who have never had a dental exam (Yu, Bellamy, Schwalberg, & Drum, 2001).

Those who were more likely not to have had an exam in the previous year were male, older (18 and over), Black or Hispanic, spoke a language other than English at home, and had no health insurance. Among Hispanic students, six percent had never had a dental exam and nine percent of those who spoke Spanish at home had never had a dental exam. Also, five percent of those students who perceived their health as poor had never had a dental exam (Yu, Bellamy, Schwalberg, & Drum, 2001).

Recently released data from the 2000 National Health Interview Survey (Blackwell, Vickerie, & Wondimu, 2003) indicate that:

- ❖ 7.6 percent of adolescents ages 12-17 had unmet dental needs.
- ❖ 60.5 percent had their last dental contact in the last six months; an additional 19.8 percent had their last dental contact within the last year; 9.8 percent had their last dental contact between one and two years ago; 5.8 percent had their last dental contact between two and five years ago; and 4.1 percent had their last contact more than five years ago.

Arizona

Oral health is addressed in Healthy Arizona 2010 through the following objectives: 1) increase the proportion of children, adults, and older adults who receive dental care each year; 2) increase the proportion of residents with comprehensive dental insurance; 3) increase the proportion of residents served by community water systems with optimally fluoridated water; 4) reduce the proportion of children who have ever had tooth decay; and 5) reduce the proportion of children who currently have untreated tooth decay (Arizona Department of Health Services, 2001).

Estimates and comparisons suggest that more Arizona children experience tooth decay than children do nationally. In a recent survey, 75 percent of Arizona's 15 year olds had decay

experience (Arizona Department of Health Services, 2000), compared to only 61 percent of 15 year olds in a national survey (U.S. Department of Health and Human Services, 2000a).

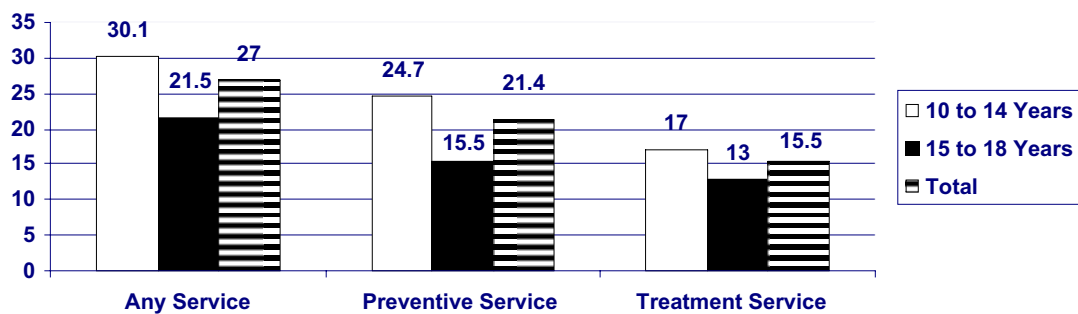
Fewer Arizonans have the benefit of some preventive measures. The percentage of the population in Arizona who received optimally fluoridated water (56 percent) was below the national percentage (65 percent) (Centers for Disease Control and Prevention, 2002).

Currently there is no statewide oral health surveillance effort among adolescents in Arizona. The Arizona Department of Health Services, Office of Oral Health piloted a questionnaire on oral health status for use in schools. The questionnaire was piloted in six schools in 2002 on 248 9th grade students who presented with written consent. An oral health professional then screened each student. Interpretation is underway to determine the validity of the self-reported questionnaire as one method of population-based oral health surveillance of this age group.

Of the 248 students screened in 9th grade, 27 percent had untreated decay; 47 percent had a sealant on at least one permanent molar; 34 percent had decay experience; 13 percent had oral injuries; and 33 percent needed care either urgently or within the next several weeks. Because this was a convenience sample of six schools (two rural and four urban), results cannot be generalized to all Arizona 9th graders.

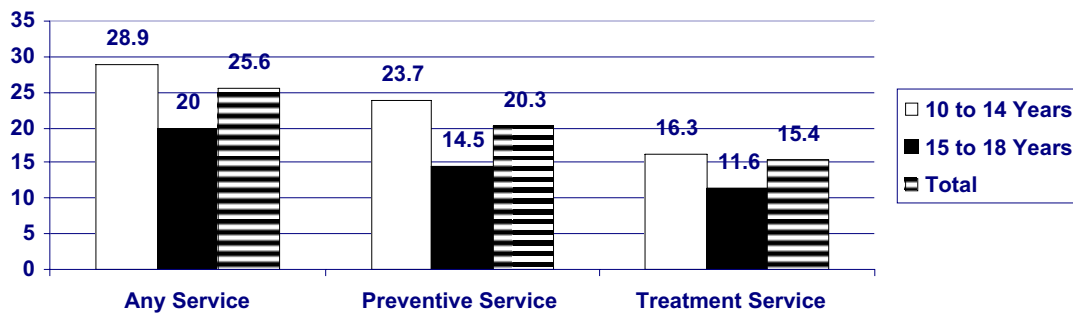
In order to gather an idea of the scope of the problem relating to adolescent oral health, analysis was done on the adolescent Medicaid and KidsCare populations in Arizona (Arizona Health Care Cost Containment System, 2003). These populations are not reflective of the general adolescent population; therefore, findings cannot be generalized. In State Fiscal Year 2000, there were 403,152 Medicaid enrolled children under 19. Almost 30 percent were between ages 10-18. The total receiving any dental service was 27 percent. The total percentage receiving dental preventive services was 21 percent; of which 74 percent were ages 10-14 and 26 percent were ages 15-18. The total percentage receiving dental treatments was 16 percent; of which 70 percent were ages 10-14 and 30 percent were ages 15-18. Figure 19 shows the percentage of children covered by Medicaid in 2000 who received dental care by age group.

Figure 19. Percentage of Medicaid enrollees who received dental services by age group, 2000 (Arizona Health Care Cost Containment System).



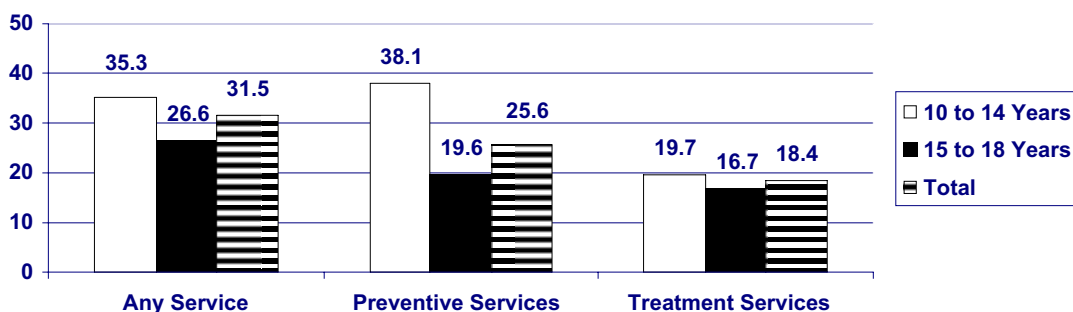
In State Fiscal Year 2001, there were 411,152 children under 19 enrolled in the state Medicaid program, of which 124,722 (30 percent) were adolescents ages 10-18. The total percentage of adolescents receiving any type of dental service was 26 percent. The total percentage of adolescents receiving any preventive dental service in fiscal year 2001 was 20 percent. Of those who received preventive care, 73 percent were ages 10-14 and 27 percent were ages 15-18. The total percentage receiving any dental treatments was 15 percent, of which 70 percent were ages 10-14 and 30 percent were ages 15-18. Figure 20 shows the percentages of adolescents covered by Medicaid in 2001 who received dental care, by age group.

Figure 20. Percentage of Medicaid enrollees who received dental services by age group, 2001 (Arizona Health Care Cost Containment System).



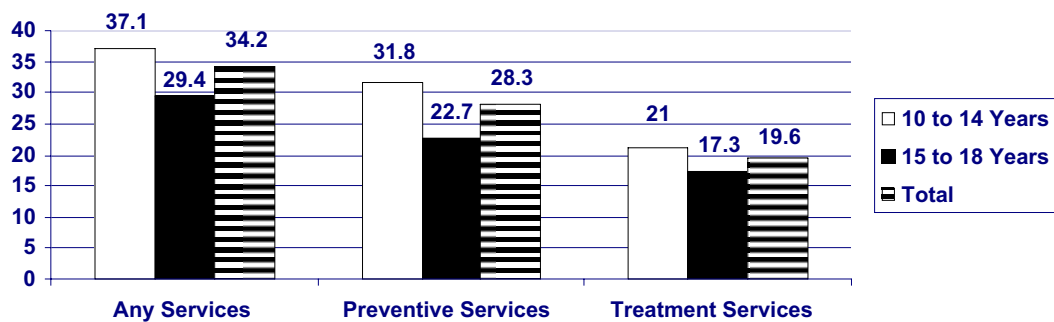
KidsCare is the health coverage plan provided by the State of Arizona through the Arizona Health Care Cost Containment System (AHCCCS) for those who do not qualify for Medicaid. To be eligible, monthly income must be below 200 percent of the federal poverty level. In State Fiscal Year 2000, there were 61,467 children under 19 enrolled in KidsCare. Forty-three percent were ages 10-18. Of these adolescents, 32 percent received any dental service, and of those 63 percent were ages 10-14 and 37 percent were ages 15-18. The percentage of adolescents receiving preventive services was 26 percent, and of those 67 percent were ages 10-14 and 33 percent were ages 15-18. Finally, 18 percent received dental treatment. Of those, 61 percent were ages 10-14 and 39 percent were ages 15-18. Figure 21 shows the percentages of adolescents covered by KidsCare in 2000 who received dental care, by age group.

Figure 21. Percentage of KidsCare enrollees who received dental services by age group, 2000 (Arizona Health Care Cost Containment System).



In State Fiscal Year 2001, there were 34,348 (42 percent) adolescents ages 10-18 enrolled in KidsCare. The total percentage of these children receiving any dental services was 34 percent, and of those 67 percent were ages 10-14 and 33 percent were ages 15-18. The percentage receiving preventive services was 28 percent. Of those adolescents, 69 percent were ages 10-14 and 31 percent were ages 15-18. The percentage receiving any dental treatments was 20 percent, with 66 percent ages 10-14 and 34 percent ages 15-18. Figure 22 shows the percentages of adolescents covered by KidsCare in 2001 who received dental care, by age group.

Figure 22. Percentage of KidsCare enrollees who received dental services by age group, 2001 (Arizona Health Care Cost Containment System).



What would help?

- ❖ Oral health providers, school personnel, and community coalitions can increase parent and adolescent awareness of the value of good oral hygiene, regular preventive care, and prompt attention to problems when detected.
- ❖ Health educators and oral health providers can educate adolescents about the permanent damage to the mouth and teeth as a result of oral piercing.
- ❖ Schools and communities can promote use of mouth protection for adolescents engaged in sporting activities.
- ❖ Insurers can provide comprehensive coverage for oral health, including preventive, diagnostic, and treatment services.
- ❖ Communities can support optimally fluoridated water supplies.
- ❖ The State of Arizona can continue efforts to develop a useful oral health surveillance system that includes adolescents.

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