

Improving Adolescent Health Status through Preventive Services



National Business Group on Health

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Introduction

Adolescence* is characterized by rapid physical, mental and hormonal changes. These changes, along with teens' increased independence, make adolescence a time when many damaging health behaviors (e.g., smoking, sexual promiscuity) and health problems emerge. By the time they reach adulthood, many adolescents will already have risk factors for chronic diseases, which account for 70% of deaths in the United States.²

Preventive services delivered in the primary care setting are essential for reducing adolescent risk factors and related health care costs.³ The majority of adolescents have a primary care physician,⁴ but only about 37% actually obtain their recommended annual health physical.⁵ Of those who do, less than half report receiving counseling on topics related to risky behaviors, diet, weight, exercise, unwanted pregnancy, sexually transmitted infections or mental health issues.⁴ A lack of preventive care during adolescence can lead to costly health outcomes like unplanned pregnancy, obesity and oral disease; it may also set a bad pattern for prevention in adulthood.⁶

*In general, adolescence is regarded as the period between the onset of puberty and adulthood.

“The health and risk behaviors of adolescents have consequences for their current and long-term well-being as well as consequences for society. Today’s adolescents are the future parents, leaders and workforce of the United States.”¹

Source: Centers for Disease Control and Prevention

Impact on the Workplace

Each year, at least \$33.5 billion is spent on preventable adolescent health problems (see Table 1 for a breakdown of costs by selected conditions in 2006). This estimate includes only the direct costs associated with unintended pregnancy, sexually transmitted infections, alcohol and drug use, injuries, and outpatient mental health issues.⁷ When

Employers provide health care coverage to more than half the children in the United States.⁷ Many employers also provide coverage to dependents beyond adolescence: 43% of National Business Group on Health employers provide coverage through age 25 for dependents who are enrolled in school.⁸

indirect costs are included, the costs are even higher. For large employers, beneficiaries under the age of 25 account for approximately 15% of healthcare costs.⁷ Ill or injured children are also a major cause of lost productivity for parents.

Employers are impacted in at least four ways when their child and adolescent beneficiaries are not healthy:⁷

- **Higher health care costs.** Ill or injured children use more costly health care services (such as hospitalization) and thus have higher total health care costs. Parents of adolescents who are unhealthy may also face problems: employees who care for ill or injured relatives report an increase in the number of their own health risks. For example, they are more likely to smoke, be sedentary, and use medications to relax, and they use seatbelts less frequently.⁹
- **Lower productivity.** Parents of ill or injured children miss more workdays than those with healthy children. They are more likely to take family medical leave, personal sick leave, or paid time off. They may also be less productive at work because they suffer from stress related to caregiving. Research indicates that 26% of employee “sick” days are actually used to care for a family member.¹⁰
- **Lower retention/higher turnover.** Parents with ill or injured children and adolescents are more likely than parents of healthy children to leave the workforce or cut back work hours.
- **Poorer health of the future workforce.** The children and adolescents of today are the workforce of tomorrow. Many chronic diseases, for example obesity and mental illness, put children at risk for a lifetime of health problems.

Table 1. Direct medical expenses for privately insured adolescents (aged 10-19) by selected medical conditions, 2006

Condition	Cost (in millions)
Trauma-Related Disorders	4,731.19
Mental Disorders	4,442.50
COPD, Asthma	2,336.32
Infectious Diseases	993.07
Cerebrovascular Disease	488.95
Normal birth/live birth	388.01
Poisoning	333.43

Source: Agency for Healthcare Research and Quality. *Total Expenses for Conditions by Site of Service: United States, 2006*. Medical Expenditure Panel Survey Component Data. Generated interactively March 27, 2009.

The Need for Preventive Services

Because the majority of adolescent health problems are preventable, clinical preventive services are important.¹¹ Preventive services for adolescents include:

- Screening and counseling for risky behaviors.
- Screening, counseling and treatment regarding sexual activity, sexually transmitted infections and pregnancy prevention.
- Screening, counseling and treatment for mental health issues and depression.
- Promotion of a healthy lifestyle.
- Private and confidential health care.

Bright Futures Recommendations

The American Academy of Pediatrics' (AAP) Bright Futures: Guidelines for the Health Supervision of Infants, Children, and Adolescents provides a standardized way for practitioners to focus on health promotion and disease prevention in youth. According to Bright Futures guidelines, all adolescents should have an annual preventive services visit that includes a history, physical examination, and any necessary immunizations. They should also receive health guidance regarding:¹²

- Physical growth and development (physical and oral health, body image, healthy eating, physical activity)
- Social and academic competence (connectedness with family, peers, and community interpersonal relationships; school performance)
- Emotional well-being (coping, mood regulation and mental health, sexuality)
- Risk reduction (tobacco, alcohol or other drugs; pregnancy; STIs)
- Violence and injury prevention (safety belt and helmet use, substance abuse and driving or riding in a vehicle, guns, interpersonal violence, bullying)

Although practitioners may not be able to address each of these issues in every annual visit, they should ensure that each of the five is addressed during the patient's early adolescence (ages 11-14), middle adolescence (ages 15-17) and late adolescence (ages 18-21).¹²

Barriers to Care

Adolescents have the lowest rate of primary care use in the United States.¹¹ Only one third of adolescents have one or more preventive health care visits per year.¹³ Moreover, adolescents with the greatest number of risk factors are the most likely to report not receiving needed health care.¹⁴ One in five adolescents with special health care needs goes without essential health care services altogether.¹⁵

Privacy and Confidentiality Concerns

Adolescents identify privacy and confidentiality concerns as a major influence on their willingness to seek medical care.^{16, 17} This is particularly true for issues related to sexual behavior, reproductive health, mental health and substance use.¹⁷ In one national study, one in five adolescents using a publicly funded clinic for reproductive health services said they would stop using contraception if the clinic began to require parental notification.^{17, 18} Another study found that 36% of youth who had foregone needed mental health treatment named confidentiality concerns as a barrier to seeking treatment.¹⁷

Comfort Level of Providers

The skill and comfort level of pediatricians contribute to the services provided to adolescents during a routine office visit. According to the AAP, pediatricians report the following barriers to providing health care to adolescents:¹⁹

- Lack of training in gynecological and pregnancy care (56.9% of pediatricians reporting).
- Infrequent follow-up/poor attendance (51.0%).
- Lack of adequate reimbursement given the time it takes to provide care for adolescents (46.1%).
- Lack of interest in providing gynecological/pregnancy care (41.8%).
- Difficulty identifying where to refer adolescents for psychosocial problems (39.9%).
- Lack of formal training in adolescent health problems (39.5%).

Few providers have been trained in methods for screening adolescents for health risk behaviors. Research shows that educational interventions aimed at increasing providers' screening and counseling rates may be effective.¹⁷

Reimbursement

Traditional health plans do not cover extended health counseling services beyond those provided in a typical provider visit. Providers would need an additional 40 minutes per adolescent each year to follow the minimum U.S. Preventive Care Task Force recommendations — time not currently reimbursed by insurance plans.¹⁷

A study conducted by the AAP found that it would have cost \$4.3 billion to provide comprehensive clinical preventive services to all 10- to 24-year-olds in 1998. If the delivery of comprehensive clinical preventive services (as defined by the AAP) prevented just 1% of the \$700 billion in costs associated with preventable adolescent injuries, there would be a hypothetical net savings of \$2.7 billion.^{7,20}

Overview of the Health Status of Adolescents

The Population

In 2007, there were more than 42 million adolescents (defined here as individuals aged 10-19) in the United States²¹ —14% of the entire U.S. population. Although adolescents are generally healthy, between 13% and 23% have special health care needs or disabilities.²²

Health Issues

The majority of adolescent morbidity and mortality can be prevented.¹¹ According to the Centers for Disease Control and Prevention, the “leading causes of morbidity and mortality among youth in the United States are related to six categories of priority health risk behaviors:

1. tobacco use;
2. alcohol and other drug use;
3. behaviors that contribute to unintentional injuries and violence;
4. sexual behaviors that contribute to unintended pregnancy and STIs, including human immunodeficiency virus (HIV) infection;
5. unhealthy dietary behaviors; and
6. physical inactivity.”²³

Adolescents engage in risky behaviors at early ages. Alcohol and tobacco use often begin between ages 11 and 15.¹⁴ Almost half of high school students have engaged in sexual intercourse and other risky behaviors (Table 1).²³

Table 2. In 2007, the percent of 9th-12th grade students who:

Ever used alcohol	75%
Used a condom during last sexual intercourse	62%
Ever tried cigarettes	50%
Ever had sexual intercourse	48%
Ever used marijuana	38%
Were obese	13%
Did not eat for 24 or more hours (to lose weight or prevent weight gain)	12%
Rarely or never wore a seat belt	11%
Drove when drinking alcohol	11%
Attempted suicide	7%

Source: US Youth Risk Behavior Survey (YRBSS), Centers for Disease Control and Prevention

Tobacco Use

In 2007, half of all high school student reported trying cigarettes.²³ More than a third of children who try smoking become daily smokers before they leave high school.²⁴ Approximately 40% of all adolescent smokers believe they are already addicted to nicotine.²⁵ Teenage cigarette smoking may result in:⁷

- Impaired lung growth, development and functioning.
- Elevated risk for respiratory illness, cardiovascular disease, and future smoking-related health problems.
- Increased probability of other health risk behaviors.

Preventing adolescent smoking and reducing the number of adolescent smokers are crucial to reducing future costs. Eighty percent of all adult smokers began before age 18.⁷ Employees who smoke have an average of \$1,623 in additional medical costs each year,²⁶ and 10% of all smokers are living with a tobacco-related illness.²⁷

To learn how to implement effective tobacco cessation benefits, programs and work site policies; improve employee health; and reduce health care costs, visit TOBACCO: THE BUSINESS OF QUITTING, an employers' website for tobacco cessation, at <http://www.businessgrouphealth.org/tobacco>.

Alcohol

Approximately 11 million American youth under the age of 21 drink alcohol. By age 15, half of all adolescents have had one full drink; by age 21, 90% have.²⁹ Almost half of all adolescents who drink alcohol "binge drink," defined as having five or more drinks in a row.³⁰

Adolescent alcohol use often has negative consequences. Alcohol is often a factor in suicide, physical fights, academic and occupational problems, homicides, fatal injuries, and risky sexual activity. Continued alcohol abuse is linked to cancer, cardiovascular disease, stroke, and liver and neurological damage.²⁹

Estimates for adolescent substance abuse or dependence range from 3.3% in 15-year-olds to 9.8% in 17- to 19-year-olds.²⁸

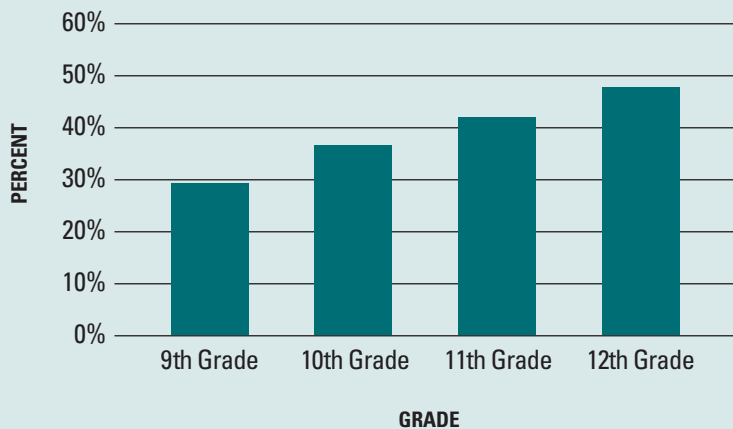
Every year, about 5,000 people under age 21 die from alcohol-related injuries.

About 1,900 (38%) of these involve motor vehicle accidents. About 1,600 (32%) of these deaths are homicides and about 300 (6%) are suicides.²⁹

Illicit Drug Use

Almost 10% of 12- to 17-year-olds engaged in illicit drug use in 2005, and approximately 5% of these were dependent on drugs.³² Marijuana is the most popular illicit drug among adolescents. Nearly a third of high school seniors, 23.9% of 10th graders, and 10.9% of 9th graders have used it at least once in the past year.³³ Even more students report ever having used marijuana in their lifetime (see Figure 1).

Figure 1. Percent of students reporting lifetime use of marijuana



Source: MacKay AP, Duran C. *Adolescent health in the United States, 2007*. Atlanta, GA: National Center for Health Statistics; 2007.

Adolescents who engage in substance use before age 18 have an eightfold higher chance of developing substance dependence in adulthood.³¹

Unintentional Injuries

Unintentional injuries (e.g. motor vehicle crashes) are the leading cause of death for adolescents and young adults.¹¹ Risky behaviors contributing to automobile-related deaths include speeding, alcohol consumption, and not using a seat belt.¹⁷ According to the American Automobile Association, in 2006, “Crashes involving teen drivers ages 15 to 17 cost American society more than \$34 billion annually in medical expenses, lost work, property damage, quality of life loss, and other related costs.”³⁴

Between 2002 and 2004, 42% of all adolescent emergency room visits were for injuries. The four most common injuries causing these ER trips were fractures, sprains and strains, open wounds and contusions.¹

Mental Health

Mental and behavioral health disorders are leading causes of activity limitations in youth.¹ Common adolescent mental health problems include depression, anxiety disorders, eating disorders, learning disorders, and attention-deficit hyperactivity disorder (ADHD). In fact, about one in five youths report symptoms of emotional distress. Almost one in 10 experience severe emotional impairment.³⁵

Research shows that many youth who need mental health treatment do not receive it.³⁵ Early intervention and effective care are crucial for teens with mental health problems. For example, teens with depression that get appropriate, timely treatment are less likely to have additional episodes. About half of teens with depression continue to have mental health problems as adults.³⁶

Suicide, which is often associated with depression, is the third-leading cause of death for adolescents and young adults.³⁷ In 2007, almost 15% of high school students reported seriously considering suicide within the previous year; nearly 7% reported attempting suicide.²³ While female adolescents are more likely to attempt suicide, their male peers are more likely to be successful.¹⁴

Sexual Behaviors

Compared to other industrialized nations, the United States has the highest rates of sexually transmitted infections³⁸ and teenage births.³⁹ Each year, there are about 19 million new sexually transmitted infections in the United States, half of which occur among youth aged 15 to 24.⁴⁰ While some STIs have no symptoms, they can have long-term consequences such as infertility and cancer.⁷ STI infection among individuals aged 15 to 24 years costs \$6.5 billion in direct medical costs each year (in year 2000 dollars).⁴¹

There are approximately 750,000 adolescent pregnancies annually in the United States; 82% of these are unplanned.⁴² In 2004, teenage pregnancy cost U.S. taxpayers at least \$9 billion.⁴³ Compared to their peers, adolescent mothers are less likely to complete high school or have steady employment and more likely to be on public assistance at some point. The most common reasons for hospitalizations among adolescent females are pregnancy-related.¹⁴

Human Papillomavirus (HPV)

Approximately 18-25% of female adolescents have high-risk types of human papillomavirus (HPV).¹⁷ Most sexually active individuals will be infected with the virus at some point in their lives. There are more than 90 strains of HPV; high-risk strains can cause cervical cancer, other genital cancers and genital warts. The HPV vaccine that is available protects adolescents against 70% of HPV strains that cause cervical cancer and 90% of HPV strains that cause genital warts.⁴⁴

Unhealthy Dietary Behaviors and Physical Inactivity

Obesity and overweight are serious problems in the United States. Currently, 18.8% of children ages 6 to 11 and 17.4% of adolescents ages 12 to 19 are overweight.⁴⁶

Only one-fourth of children and adolescents receive counseling about physical activity from their medical doctors; less than half are counseled about healthy eating.²² Less than one in four high school students report participating in 60 or more minutes of physical activity at least one day per week.²³

Obese children are more likely than children with healthy weights to become obese adults,⁴⁷ increasing their risk for chronic diseases such as diabetes, hypertension, osteoarthritis and cardiovascular disease.^{46, 48} Type II diabetes, rare in this age group 20 years ago, is increasingly more common in children and adolescents.⁴⁹ Studies have found that Type II diabetes now accounts for anywhere between 8% and 45% of new pediatric diagnoses.

Complications of obesity kill more people every year than AIDS, cancer, and accidents combined.

Source: American Medical Association

Eating disorders, such as anorexia nervosa and bulimia nervosa, are also more common in adolescents. More than 90% of people with eating disorders are female and between the ages of 12 and 25.⁵⁰ Approximately 86% report that their eating disorders began by the age of 20.

Eating disorders have serious physical and mental side effects, including dehydration, malnutrition, heart/liver/kidney damage, depression, low self-esteem and mood swings. Because treatment for eating disorders is expensive and long term,⁵¹ prevention is key for reducing costs and negative health outcomes.

Recommendations for Employers

Employers should consider adopting the following recommendations in order to ensure the availability of preventive services for adolescent populations. These recommendations may help to improve the health status of the future workforce, reduce unnecessary expenditures, and increase employee health and productivity.

Assess Current Health Plans

Child and adolescent illness and injury are a major cause of employee absence and lost productivity. Employers have opportunities to reduce preventable health problems through comprehensive benefit design focusing on accessibility and quality.

Employers should assess their health plan for

- Covered Services
 - Evaluate the availability of preventive services for adolescents, e.g., STI screenings, health risk behavior counseling and reproductive health education.
 - Work out a system of reminders for adolescents and their parents regarding preventive screenings, physicals, etc. About 20% of adolescents report being extremely or very interested in using the Internet to obtain health information,¹⁷ so employers may want to consider using e-reminders.
 - Ensure that the HPV vaccine is covered for adolescents. This vaccine can reduce the number of high-cost illnesses (e.g., cervical cancer) associated with HPV infection.
- Costs
 - Consider the affordability of preventive services (co-pays, deductibles, etc.). This is particularly important for adolescents who may have limited or no income.
 - Address reimbursement issues that may act as a barrier to care. Consider reimbursing and providing incentives for primary care physicians to screen and counsel patients about health risk behaviors.
- Providers
 - Evaluate the number of in-network providers that specialize in adolescent physical and/or mental health.
 - Gauge the accessibility of providers, e.g., the number in any given area and proximity to public transportation.
 - Develop a plan for educating providers about the importance of preventive services for adolescents. This should also include information about methods of screening and health risk behavior counseling.

Expand Work-Life Benefits and Wellness Programs

Employees with access to innovative work/life benefits such as onsite childcare and flexible working arrangements may be more productive employees. Research also shows that when the parents of chronically ill children receive help and support from their employers, they concentrate more on their jobs while at work and remain with their employers longer.

Employers should

- Offer flexible leave policies that encourage employees to get preventive care for their dependents.
- Expand eligibility for Employee Assistance Programs so that dependents can access services.
- Facilitate parent support programs that include information about community resources for adolescents and parents.
- Offer incentives for employees and dependents to receive preventive services.
- Consider giving dependents access to tobacco cessation programs.
- Consider establishing parental focus groups to talk to parents and understand their health care needs.

Coordinating Care

Employees with children spend a significant amount of time organizing and coordinating health care. Employers can minimize productivity loss by assisting parents in navigating the complex health system.

Employers should

- Implement disease management programs for adolescents with special health care needs to ensure proper follow-up with recommended treatment.
- Provide case management services to adolescents and their families.
- Educate employees about what they need to ask of their primary care physician and what preventive services are needed during the adolescent years.
- Provide employees with listings of adolescent health specialists in their geographic area.
- Encourage employees to keep a personal health record for their children.
- Ensure that employees choose a primary care physician for themselves and their dependents.

Conclusion

Although most adolescents are healthy, they often do not receive the recommended preventive services to keep them healthy throughout the life span. Risk reduction and healthy lifestyle counseling are particularly important because common adolescent behaviors can have a profound effect on current and future health.⁷ Employers can have a positive impact on adolescent health by assessing their health benefits, expanding their wellness and work-life programs, and working with their third-party vendors to coordinate treatment and address barriers to care. Improving the health of children will likely benefit an employer's bottom line by reducing both direct health care costs and indirect costs and ensuring a healthier workforce for the future.

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Acknowledgements:

Improving Adolescent Health Status through Preventive Services was generously funded by Grant #G96MC04447 from the U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. All materials are in the public domain.

About the Center for Prevention and Health Services:

The Center houses Business Group projects related to the delivery of prevention and health services through employer-sponsored health plans and worksite programs. Employers should look to the Center for:

- Current information and practical recommendations from federal agencies and professional associations.
- Analyses of model programs from other employers.
- Findings from recent clinical and health service research.

For more information, visit <http://www.businessgrouphealth.org> or e-mail healthservices@businessgrouphealth.org.

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