

Appendix B

BURDEN OF HEALTH PROBLEMS AMONG U.S. ADOLESCENTS

OTA's analysis in Volume II, based on a broad range of measures of adolescent health and a wide variety of sources of data, suggests that the conventional wisdom that American adolescents as a group are so healthy that they do not require health and related services is not justified. OTA's findings regarding the burden of health problems among U.S. adolescents are summarized in the table below.

In considering the estimates in this appendix, it is important to note several limitations of the available data, in particular:

- The data here on prevalence and incidence come from widely varying sources. When national data were not available, more limited sources are used and such sources are noted. However, even national data have their limitations.
- A particular shortcoming of available data on adolescents apparently "most at risk" of specific problems (see last column) is that, although disaggregations of health status information by gender, race, ethnicity, and age are often difficult to obtain, such data are more likely to be available than crosstabulations of data providing valid information about the *causes* of differences in health status. For example, meaningful data on socioeconomic status and health, and the interactions of socioeconomic status with other factors, are particularly lacking in the United States. But information on the relationships among a wide range of biological (e.g., genetic), psychological (e.g., perceptual), behavioral

(e.g., engagement in risk-taking behaviors such as sports), and social (e.g., family income, community) factors and particular health problems, and the relationships of health problems with each other, is scarce. Typically, special research studies are required (and have sometimes been conducted) to determine the relationships of the broad range of possibly explanatory factors to adolescent health problems. The availability of such studies is discussed in specific chapters in Volume II of this Report (also see ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in this volume). Some of the information from special research studies is reflected in the table below, but, often, the only information available is by gender and/or racial and ethnic background. In considering the information shown below, it is important not to confuse mere correlations of racial, ethnic, gender, and other (e.g., income) factors with causality.

For a complete understanding of the sources and limitations of each data point presented here, the interested reader is encouraged to consult the specified chapters in Volume II of this Report, *Background and the Effectiveness of Selected Prevention and Treatment Services*. A synthesis of the crosscutting issues in data collection and dissemination with respect to adolescent health can be found in Appendix C, "Issues Related to the Lack of Information about Adolescent Health and Health and Related Services," in Volume I of this Report, *Summary and Policy Options*.

Problem	Prevalence, incidence, or other measure of burden	Adolescents most at risk according to available data ¹
Family problems ²	Full scope unknown. In 1985, between 620,000 to 720,000 adolescents ages 10 to 17 were maltreated. ³ An estimated 120,000 adolescents between ages 13 and 18 were in foster care in 1985. In 1984, about one-third of females and one-fifth of males using runaway and homeless youth centers reported that physical or sexual abuse was a problem that led to their running away. ⁴	Many homeless adolescents report having been abused (physically and sexually) prior to becoming homeless. Females seem to bear greater risk than males (especially for sexual abuse). Adolescents in "authoritarian" or "overindulgent" families and adolescents in families with a stepparent are at increased risk.

¹ See caveats above regarding available data, particularity on gender and racial factors.

² See ch. 3, "Parents' and Families' Influence on Adolescent Health," in Vol. II.

³ These data are based on data from the U.S. Department of Health and Human Services' (DHHS) National Center on Child Abuse and Neglect. Maltreatment was defined by DHHS as instances where "a child's health or safety is seriously endangered."

⁴ These data are from the fiscal year 1984 annual report for runaway youth centers prepared by the Administration for Children, Youth, and Families in DHHS. See ch. 14, "Hopelessness: Prevention and Services," in Vol. II.

Problem	Prevalence, incidence, or other measure of burden	Adolescents most at risk according to available data ¹
School problems⁵	In October 1988, the status dropout rate ⁶ for individuals ages 16 to 24 was 12.6 percent (4 million individuals).	Hispanic adolescents (status dropout rate of 33.0 percent); adolescents in central cities (status dropout rate of 15.4 percent); black adolescents (status dropout rate of 13.8 percent).
Injuries:	• Nonfatal injuries⁷	Adolescents who engage in risk-taking behavior (e.g., participation in contact sports). Adolescents who are physically abused.
. Accidental injury deaths	Accidental injuries are the leading cause of death among adolescents. In 1987, 12.9 percent of all deaths to adolescents ages 10 to 14 and 46.2 percent of all deaths to adolescents ages 15 to 19 were due to accidental injuries. In 1987, there were 10,658 accidental injury deaths among 10- to 19-year-olds. ⁸ The vast majority (74 percent) of those accidental injury deaths are due to vehicle-related injuries; others are due to drowning (8 percent), accidental firearms injuries (4 percent), and other causes (15 percent).	Adolescents who engage in risk-taking behavior (e.g., consumption of alcohol, unsafe driving; failure to use automobile safety belts). Adolescents ages 15 to 19 are at greater risk than adolescents ages 10 to 14. Males, especially ages 15 to 19, are at considerably greater risk than females. ¹² American Indian and Alaska Native adolescents experience death from accidental injury at twice the rate of blacks or whites. White male adolescents and American Indian and Alaska Native adolescents (both sexes combined) have the highest rates of motor-vehicle-related accidental deaths. Black male adolescents have higher rates of drowning deaths than white adolescents of either sex and black female adolescents.
. Suicide deaths¹³	In recent years, adolescent suicide rates have apparently increased. There were a total of 2,152 officially reported suicides among 10- to 19-year-olds in 1987. In 1987, 1.5 percent of all deaths to adolescents ages 10 to 14 and 10.3 percent of all deaths to adolescents ages 15 to 19 were due to suicide.	Adolescents who have made a previous suicide attempt. White males ages 15 to 19 have higher suicide rates than either white females or blacks. American Indian adolescents have much higher suicide rates than white adolescents.

⁵See ch.4, "Schools and Discretionary Time," in Vol. II.

⁶The *status dropout rate* is the proportion of individuals who are not enrolled in school and have not finished high school at any given point in time. These calculations are based on Current Population Survey (a household-based survey) data from the U.S. Department of Commerce, Bureau of the Census.

⁷See ch. 5, "Accidental Injuries, Prevention and Services," in Vol. II.

⁸From DHHS' National Health Interview Survey. For adolescents under age 17, the data are reported by a proxy respondent, usually the mother.

⁹Utilization data on physician visits from DHHS' National Ambulatory Medical Care Survey, and utilization data on hospitalizations from DHHS' National Hospital Discharge Survey.

¹⁰From the US Consumer Product Safety Commission.

¹¹In 1987, there were 2,130 accidental injury deaths among 10- to 14-year-olds (12.9 deaths per 100,000) and 8,528 accidental injury deaths among 15- to

19-year-olds (46.2 deaths per 100,000). Mortality statistics are gathered by DHHS' National Center for Health Statistics.

¹²The male-to-female ratio differs by cause of death. For example, from 1984-86 the differences in the male-to-female ratio ranged from 9.9:1 for deaths due to drowning to 1.5:1 for homicide.

¹³See ch.11, "Mental Health Problems, Prevention, and Services," in Vol. II. Mortality statistics are gathered by DHHS' National Center for Health Statistics.

Problem	Prevalence, incidence, or other measure of burden	Adolescents most at risk according to available data ¹
. Homicide deaths ⁴	There were approximately 2,100 adolescent homicide victims in 1987. In 1987, 1.6 percent of all deaths to adolescents ages 10 to 14 and 10.0 percent of all deaths to adolescents ages 15 to 19 were due to homicide.	In 1985, 689 black males ages 10 to 19 died as compared with 657 white males, but there were almost 5.5 times as many white males as blacks in the population. The races and ages of those committing adolescent homicides are unknown.
Chronic Physical Illnesses⁵: • Serious chronic physical illness	An estimated 5 to 10 percent of adolescents have a chronic condition (e.g., leukemia, cerebral palsy, hearing or visual impairment) that limits their activities. ¹⁶	Adolescents of low socioeconomic status (e.g., family incomes of less than \$10,000) are more likely to have a limitation in a major activity as a result of a chronic condition (9.8 percent have limitations) than adolescents of higher socioeconomic status (e.g., family income of more than \$35,000) (5.1 percent have limitations).
. Significant physical problem that could interfere with development • Acne ¹⁸ . Dysmenorrhea (difficult and painful menstruation) ¹⁹	Unknown. Latest available data (from 1970) indicate 22 percent of adolescents have such a problem. ¹⁷ 80 to 90 percent of adolescents experience some degree of acne at some time. National data not available, but local surveys suggest that 25 to 45 percent of female adolescents have missed some school or work because of dysmenorrhea. ¹⁶ Many adolescents suffer from some nutritional or fitness problem. ²¹	Males, white adolescents tend to have more serious problems. Females only.
Nutrition and Fitness Problems²⁰		<i>Nutritional deficiencies:</i> Female adolescents, adolescent athletes of both sexes, adolescents with chronic physical or mental illness or disabilities, and homeless and runaway adolescents. <i>Obesity</i> Available information suggests problems with obesity for black female adolescents, Mexican Americans, Native Hawaiians, American Indians and Alaska Natives, Samoans, and Tongans of both sexes.
Dental and Oral Health Problems=: • Dental caries (cavities)	Full extent unknown, but declining. From 1980 to 1987, caries prevalence among adolescents in school declined 20 to 40 percent. ²³ According to a national school-based survey in 1987, 44 percent of 10-year-olds had experienced caries, while 84 percent of 17-year-olds had experienced caries. However, 22 percent of 10-year-olds and 12 percent of 17-year-olds needed fillings (restorations) for their decayed teeth in 1987.	Adolescents without access to fluoridated water or fluoride treatments are at increased risk for dental caries. Nonwhite (especially American Indian) adolescents have a higher percentage of untreated caries than white adolescents. ²⁴ Juveniles in juvenile justice facilities have more decay, too. Small group of adolescents with rampant caries. ²⁵
• Severe malocclusion	Unknown. Latest available data (from 1970) indicate 13 to 16 percent of 12- to 17-year-olds have severe to very severe malocclusion.	

¹⁴See also ch. 13, "Delinquency: Prevention and Services," in Vol. II, and ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in this volume. Mortality statistics are gathered by DHHS' National Center for Health Statistics.

¹⁵See ch. 6, "Chronic Physical Illnesses: Prevention and services," in Vol. II.

¹⁶This estimate is based on information from DHHS' National Health Interview Survey. See ch. 6, "Chronic Physical Illnesses: prevention and Services," in Vol. II, for information on how the estimate was derived.

¹⁷Based on data from DHHS' National Health Examination Survey (conducted in 1967-70), which included an examination by a physician.

¹⁸Acne and dysmenorrhea were selected as representative of health problems of special concern to adolescents.

¹⁹Based on data from local surveys. In the most recent national survey (the National Health Examination Survey conducted in 1967-70), 60 percent of adolescents who had begun to menstruate experienced menstrual pain, and 14 percent reported frequent school absenteeism due to dysmenorrhea.

²⁰See ch. 7, "Nutrition and Fitness Problems: Prevention and services," in Vol. II.

²¹Data on adolescents' nutrition and fitness problems come from a number of sources, among them the U.S. Department of Agriculture's Nationwide Food Consumption Surveys and DHHS' National Health and Nutrition Examination Surveys.

²²See ch. 8, "Dental and Oral Health Problems: Prevention and Services," in Vol. II.

²³From surveys of school-based children conducted by DHHS' National Institute of Dental Research.

²⁴Available data do not separate the effects of race from income level or other relevant factors.

²⁵Rampant caries is a rapidly progressing form of dental caries which involves extensive breakdown of enamel and dentin, and pulpal pathology.

Problem	Prevalence, incidence, or other measure of burden	Adolescents most at risk according to available data ¹
. Periodontal disease	In 1987, many adolescents in school ages 14 to 17 experienced some gingival inflammation, but few have more serious gingival problems (e.g., 22 percent experienced periodontal attachment loss of more than 2 mm); 0.1 percent to 2.3 percent of U.S. adolescents have localized juvenile periodontitis.	Adolescents who do not have good oral hygiene; adolescents who use smokeless tobacco. Nonwhite adolescents (especially American Indians) have worse periodontal health than white. Disabled adolescents. Periodontal problems increase by age throughout adolescence and into adulthood.
AIDS and Other Sexually Transmitted Diseases (STDs) ²⁶ :		
• STDs	The national prevalence and incidence of STDs other than gonorrhea and syphilis are unknown. ²⁷ In 1989, 30 percent of newly reported gonorrhea cases and 10 percent of newly reported syphilis cases in the U.S. occurred among 10- to 19-year-olds.	Sexually active adolescents only, especially those who do not use condoms or who have multiple sexual partners. In 1988, about 64 percent of adolescent males ages 15 to 18 had ever had sexual intercourse and about 53 percent of adolescent females ages 15 to 19 had ever had sexual intercourse. Only 20 percent of sexually active female adolescents ages 15 to 19 reported current condom use.
• AIDS/HIV infection	AIDS: 568 cases among 13- to 19-year-olds as of September 1990. ²⁸ HIV infection: prevalence unknown, but estimates run as high as 3.7 percent in a sample of runaway and homeless adolescents in New York City age 18 and under. ²⁹	Black, non-Hispanic adolescents ages 13 to 19 accounted for 36 percent of all adolescent AIDS cases through August 1990; Hispanic adolescents ages 13 to 19 accounted for 18 percent. Sexually active adolescents, especially those who engage in unsafe sexual practices (e.g., no condoms, multiple sexual partners). Also intravenous drug users who share needles and their partners; adolescents with hemophilia. Homeless and runaway adolescents.
Pregnancy and Parenting ³⁰ :		
• Sexual activity ³¹	In 1988, 53 percent of adolescent females ages 15 to 19 had ever had sexual intercourse. In 1988, about 64 percent of adolescent males ages 15 to 18 had ever had sexual intercourse.	Higher rates of sexual activity among homeless and runaway adolescents, blacks, Hispanics, adolescents of lower socioeconomic status.
• Contraceptive use ³¹	In 1988, 20 percent of sexually active female adolescents ages 15 to 19 reported current condom use.	Higher contraceptive use among non-Hispanic white adolescents, adolescents of higher socioeconomic status, older adolescents.
• Pregnancy ³²	About one million U.S. adolescents become pregnant each year. In 1988, there were 110 pregnancies per 1,000 females adolescents ages 15 to 19. Pregnancy rates for sexually active adolescents ages 15 to 19 declined between 1970 and 1985.	Sexually active females who do not use effective contraceptive methods. Higher pregnancy rates among black and Hispanic adolescents of lower socioeconomic status; American Indian, Native Hawaiian adolescents; homeless and runaway adolescents.
• Abortion ³²	In 1984, over 400,000 adolescents obtained abortions. In 1984, 41 percent of all pregnancies to females ages 15 to 19 (44 per 1,000 females ages 15 to 19) and 56 percent of pregnancies to adolescents under age 15 (8.3 per 1,000 females under age 15) ended in abortion.	Pregnant females who both want and are able to obtain an abortion. In 1983, abortion rates as a percentage of pregnancies were higher for white adolescents (40.5 percent of white adolescent pregnancies) than black adolescents (38.1 percent of black adolescent pregnancies).

26 See ch. 9, "AIDS and Other Sexually Transmitted Diseases: Prevention and Services," in Vol. II.

27 DHHS' Centers for Disease Control only collects data on two sexually transmitted diseases other than AIDS/HIV—gonorrhea and syphilis.

28 These are AIDS data from DHHS' Centers for Disease Control's monthly "HIV/AIDS Surveillance" report.

29 Among homeless and runaway adolescents staying at Covenant House in New York, 3.7 percent tested positive for HIV; see ch. 14 "Hopelessness: Prevention and Services," in Vol. 11, for more information.

30 See ch. 10, "Pregnancy and Parenting: Prevention and Services," in Vol. II.

31 These data are from DHHS' National Survey of Family Growth conducted periodically by the National Center for Health Statistics.

32 Based on information from the Alan Guttmacher Institute.

Problem	Prevalence, incidence, or other measure of burden	Adolescents most at risk according to available data ¹
• Childbearing ³³	In 1988, there were 488,941 births to females under age 20. In 1984, 45.6 percent of all pregnancies to 15-to 19-year-olds.	Pregnant females who do not want or cannot obtain an abortion. For adolescents ages 15 to 19 in 1984, birth rates were higher for black adolescents (96 births per 1,000 black adolescent pregnancies) than for white adolescents (44 per 1,000 white adolescent pregnancies).
• Out-of-wedlock childbearing ³³	In 1988, about 65 percent of the 488,941 babies born to adolescents under age 20 were born out of wedlock (322,406 births, including 312,499 to females ages 15 to 19 and 9,907 to females under age 15 (92 percent of births to adolescent females under 15)).	Adolescents of lower socioeconomic status are more likely to have children out of wedlock than adolescents of higher socioeconomic status. Black females are more likely to bear children out of wedlock than white females.
* Adoption ³⁴	Less than 10 percent of all adolescents who become pregnant choose adoption.	Adolescents of higher socioeconomic status are more likely to choose adoption than adolescents of lower socioeconomic status. In 1982, 7.4 percent of white adolescents and 1 percent of black adolescents put their babies up for adoption.
Mental Health Problems³⁵: . Diagnosable mental disorders ³⁶	National data are not available. A series of local studies show that an estimated 18 to 22 percent of adolescents have one or more diagnosable mental disorders. ³⁷ The most common disorders are attention deficit disorder, oppositional disorder, conduct disorder, and separation anxiety disorder. Prevalence varies by disorder.	Homeless and runaway adolescents. Males; middle and older adolescents; low socioeconomic status adolescents.
. Subjective distress ³⁸	Varies by measure: The National Adolescent Student Health Survey of 8th and 10th graders ³⁹ found in 1987 that, on average, 45 percent of respondents found coping with stressful situations at home and school "hard" (29.8 percent) or "very hard" (15.6 percent), 61 percent felt sad and hopeless in the past month either "sometimes" (36.9 percent) or "often" (13.2 percent). The University of Minnesota Adolescent Health Survey ⁴⁰ found that, on average across grade levels, up to 28 percent of 7th through 12th graders reported experiencing "extreme stresses and strains"; up to 25 percent reported that they were dissatisfied with their personal lives; up to 23 percent reported that life was uninteresting; up to 26 percent reported that they were tired or worn out; and 19 percent reported that they were not feeling emotionally secure—all in one month before the survey.	Females, American Indians and Alaska Native adolescents; on one measure, rural males. ⁴¹

³³Based on data gathered by DHHS' National Center for Health Statistics.³⁴From S.L. Hofferth, "Teenage Pregnancy and Its Resolution," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.) (Washington, DC: National Academy Press, 1987).³⁵See ch. 11, "Mental Health Problems: Prevention and Services," in Vol. II.³⁶Diagnosable mental disorders (e.g., conduct disorder, separation anxiety disorder, depression) are included in the American psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 3rd ed., revised (DSM-R-III).³⁷s.ta-e11 -1i.ch. 11, "Mental Health Problems: Prevention and Services," in Vol. II, for a sample of studies on the prevalence of DSM-III diagnoses among adolescents.³⁸Subjective distress is not necessarily, but is possibly, related to a mental health problem.³⁹The National Adolescent Health Survey, conducted in 1987, sampled 8th and 10th graders and relies on self-reported information.⁴⁰The Adolescent Health Survey, conducted by the University of Minnesota, sampled 7th through 12th graders in the State of Minnesota and relies on self-reported information.⁴¹Of Minnesota adolescents (mostly white, non-Hispanic) surveyed, rural males were most likely to report that "life is uninteresting."

Problem	Prevalence, incidence, or other measure of burden	Adolescents most at risk according to available data ¹
. Suicide attempts	Full extent unknown. In 1987, however, 13 percent of 8th and 15 percent of 10th graders surveyed reported having made a suicide attempt. ⁴²	Adolescents who have experienced family disruption (divorce, death, abandonment); abused adolescents; homeless and runaway adolescents; gay and lesbian adolescents; adolescents with substance abuse problems. White females; American Indians and Alaska Natives.
Alcohol, Tobacco, and Drug Abuse ⁴³ :		
• Alcohol use	Extent of abuse unknown. In 1989, 4.2 percent of high school seniors reported daily use of alcohol. In 1987-89, 15.8 percent of 10th graders and 11.1 percent of high school seniors reported recent heavy drinking. ⁴⁴	Adolescents whose parents, siblings, or peers use alcohol; homeless and runaway adolescents; American Indian adolescents.
• Tobacco use	In 1989, 18.9 percent of high school seniors reported daily cigarette smoking. ⁴⁵ In 1987, 4.4 percent of 10th grade males used smokeless tobacco. ⁴⁶	Adolescents whose parents, siblings, or peers smoke. Adolescents in families of lower socioeconomic status.
. Illicit drug use:	Full extent of abuse unknown. In 1989, 2.9 percent of high school seniors reported daily use of marijuana or hashish; 0.3 percent reported daily use of cocaine; 0.3 percent reported daily use of hallucinogens; 0.3 percent reported daily use of inhalants.	White, non-Hispanic adolescents, then Hispanic adolescents, then black adolescents. ⁴⁷ Availability of income positively related to use of illicit drugs among students. Some evidence that adolescents with mental health problems more likely to be problem users of drugs. American Indian adolescents. Homeless and runaway adolescents.
Delinquent behavior ⁴⁸ :	Estimates vary, depending in part on whether they are based on official arrest records or on data from self-reports or reports of victims. ⁴⁹ In 1988, there were 1.6 million arrests of adolescents. In 1987, about 700,000 adolescents were confined to public or private juvenile justice facilities. ⁵⁰	In comprehensive self-report surveys, almost all adolescents report having committed some delinquent act (typically not a serious delinquent act). Homeless and runaway adolescents (prostitution, panhandling, drug dealing).
. Serious violent offenses	Arrest data and victims' reports show an overall decline since the mid-1970s. However, in 1987, the number of adolescents held in public facilities for serious violent offenses increased for the first time since 1983. For aggravated assault, murder, and nonnegligent manslaughter, arrest data show an increase in recent years; for robbery and forcible rape, they show a decrease.	15- to 17-year-old males, black males, males living in urban areas. The gender gap for arrest rates is narrowing—from 11.4 (males):1 (females) in 1965 to 7.5:1 in 1987 for serious violent offenses.
• Serious property offenses	Arrest data show a major overall decline since the mid-1970s.	15- to 17-year-old males, black males, males living in urban areas, though the gender gap in arrest rates is narrowing—from 6.7 (males):1 (females) in 1965 to 3.6:1 in 1987 for serious property offenses.

⁴²From the National Adolescent Student Health Survey, a one-time self-report survey of 6th and 10th graders in 1987.

⁴³See ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services," in Vol. II.

⁴⁴Heavy drinking is defined as having had 5 or more drinks "on one occasion" (National Adolescent Student Health Survey wording) or "in a row" (Monitoring the Future/High School Seniors Survey wording) in the 2-week period prior to the survey.

⁴⁵Among high school seniors, 7.7 percent smoked 1 to 5 cigarettes daily; 4.4 percent smoked one pack of cigarettes daily, and 11.2 percent reported smoking half a pack of cigarettes or more per day (Monitoring the Future/High School Seniors Survey).

⁴⁶From the National Adolescent Student Health Survey, a one-time self-report survey of 6th and 10th graders in 1987.

⁴⁷From DHHS' National Institute on Drug Abuse national household survey data.

⁴⁸See ch. 13, "Delinquency: Prevention and Services," in Vol. II.

⁴⁹See table 13-11, ch. 13, "Delinquency: Prevention and Services," in Vol. II, for information about the four principal sources of national data on the prevalence, incidence, and demographic correlates of adolescent delinquency: 1) the Uniform Crime Reports, 2) the National Crime Survey, 3) the National Youth Survey, 4) the Monitoring the Future/High School Seniors Survey.

⁵⁰From the U.S. Department of Justice's Office of Juvenile Justice and Delinquency Prevention statistics.

⁵¹For purposes of counting arrests and detentions, "juvenile" is a legal term. A juvenile is a person subject to juvenile court jurisdiction for purposes of adjudication and treatment based on age and offense limitations defined by State law. The upper age of original juvenile court jurisdiction ranges from 16 to 19, but for most States is 17 or 18.

Problem	Prevalence, incidence, or other measure of burden	Adolescents most at risk according to available data ¹
Homelessness ⁵²	Unknown, although DHHS estimated in 1984 (on the basis of 1976 data) that there are as many as 1 million homeless and runaway adolescents each year. ⁵³	Adolescents who leave home because of physical, sexual or emotional abuse; adolescents with substance-abusing parents; adolescents in foster care; formerly institutionalized (e.g., juvenile justice, mental health system) adolescents; adolescents in homeless families; gay adolescents.
Poverty	17 percent (5.3 million) of adolescents live "below the Federal poverty level; another 10 percent (3.0 million) are "near poor" (family incomes between 100 and 149 percent of the Federal poverty level).	Adolescent mothers; adolescents living in single parent female-headed households; black, Hispanic, Asian, American Indian and Alaska Native adolescents; Native Hawaiian adolescents; rural adolescents.
Multiple problems	Full extent unknown. In 1987, using problem behavior theory as a guide, Dryfoos estimated that 10 percent of adolescents ages 11 to 17 are at very high risk of multiple behaviorally based problems; another 40 percent are at medium risk. ⁵⁴ Research on covariation is limited. ⁵⁵	Homeless and runaway adolescents.

⁵²See ch. 14, "Homelessness: Prevention and Services," in Vol. II.⁵³The 1990 census made efforts to count homeless persons, but it is unlikely that it will produce an accurate count.⁵⁴Based on data from J. Dryfoos, *Adolescents at Risk* (New York, NY: Oxford University Press, 1990).⁵⁵Covariation is the tendency of health problems to occur in the same individual at about the same time. Most of the evidence on covariation of adolescent problems is based on cross-sectional studies, so it is still unclear for many problems whether one problem leads to another or the problems occur together, due to a single cause or set of causes (see D.W. Osgood and J.K. Wilson, "Covariation of Adolescent Health Problems," paper prepared under contract to Carnegie Council on Adolescent Development and Carnegie Corporation of New York, for the Office of Technology Assessment, U.S. Congress, Washington, DC, 1990 (Springfield, VA: National Technical Information Service, NTIS No. PB 91-154 377/AS)). Another limitation of the evidence on covariation is that most of the evidence is limited to covariation in adolescent behaviors and does not consider emotional or physical problems.

SOURCE: Office of Technology Assessment, 1991, based on data presented in various chapters in Vol. II of this Report, and in ch. 18, "Issues in the Delivery of Health and Related Services," in this volume.