

## HEALTH STATUS

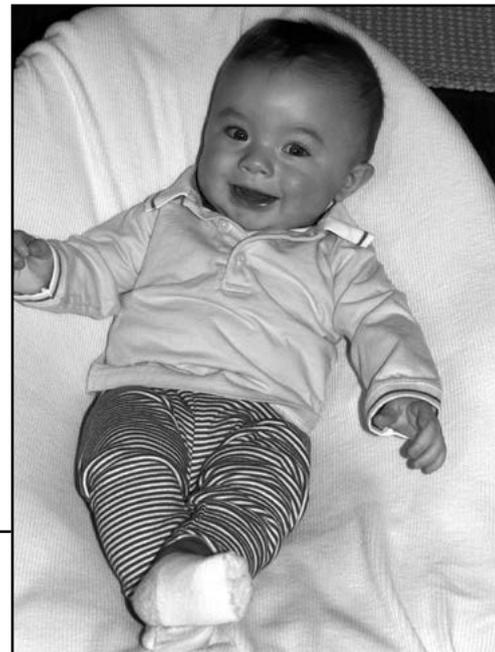
Monitoring the health status of infants, children, and adolescents allows health professionals, program planners, and policymakers to assess the impact of past and current health intervention and prevention programs and identify areas of need within the child population. Although indicators of child health and well-being are often assessed on an annual basis, some surveillance systems collect data at regular intervals, such as every 2, 4, or 5 years. Trends can be identified by examining and comparing data from one data collection period to the next whenever multiple years of data are available.

In the following section, mortality, disease, injury, and health behavior indicators are presented by age group: Infants, Children, and Adolescents. The health status indicators in this section are based on vital statistics and national surveys and surveillance systems. Population-based samples are designed to yield information that is representative of the maternal and child populations that are affected by, or in need of, specific health services or interventions.



**HEALTH STATUS - INFANTS**

---



## LOW BIRTH WEIGHT AND VERY LOW BIRTH WEIGHT

Infants born at low birth weight (less than 2,500 grams or 5.5 pounds) and especially very low birth weight (less than 1,500 grams or 3.25 pounds) are more likely to experience physical and developmental health problems and to die in the first year of life than are infants of normal birth weight. The developmental problems of low birth weight infants exact a significant emotional and financial toll, often requiring increased levels of medical, educational, and parental care. The majority of very low birth weight infants are born prematurely, whereas those born at moderately low birth weight include a mix of prematurity as well as fetal

growth restriction that may be related to factors such as maternal hypertension, tobacco smoke exposure, or inadequate weight gain during pregnancy.<sup>14</sup>

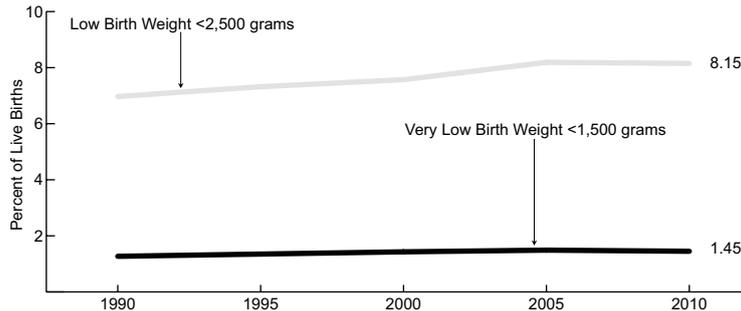
In 2010, 8.15 percent of infants were born at low birth weight, including 1.45 percent who were born at very low birth weight. After steady increases, rates of low and very low birth weight peaked in 2006 at 8.26 and 1.49 percent, respectively, and have declined only slightly since then. Reasons for the increase in low birth weight may mirror those behind increases in prematurity, including increases in obstetric interventions, maternal age, and fertility treatments.<sup>15</sup> A rise in multiple births, which increase with maternal age and fertility treatments

and are at high risk of low birth weight, has strongly influenced the rise in low birth weight; however, rates of low birth weight have also increased for singleton births.<sup>15</sup>

Infants born to non-Hispanic Black women have the highest rates of low and very low birth weight (13.53 and 2.98 percent, respectively), levels that are about two or more times greater than for infants born to women of other racial and ethnic groups. For example, low and very low birth weight rates among non-Hispanic Whites were 7.14 and 1.16 percent, respectively. Given their heightened risk of death, the large disparity in very low birth weight is a major contributor to the mortality gap between non-Hispanic Black and White infants.<sup>16</sup>

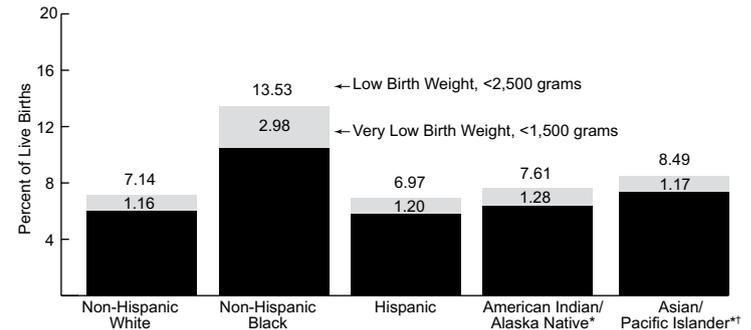
### Low and Very Low Birth Weight, 1990—2010

Source (II.1, II.2): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



### Low and Very Low Birth Weight, by Maternal Race/Ethnicity,\* 2010

Source (II.1): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



\*Includes Hispanics. †Separate data for Asians and Native Hawaiians and Other Pacific Islanders not available.

## PRETERM BIRTH

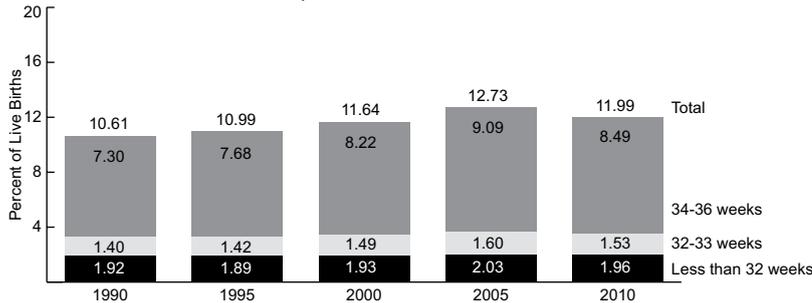
Babies born preterm, before 37 completed weeks of gestation, are at increased risk of immediate and long-term complications, as well as death. Complications that can occur during the newborn period include respiratory distress, jaundice, anemia, and infection, while long-term complications can include learning and behavioral problems, cerebral palsy, lung problems, and vision and hearing loss. As a result of these risks, preterm birth is a leading cause of infant death and childhood disability. Although the risk of complications is greatest among those babies who are born the earliest, even those babies born “late preterm” (34 to 36 weeks of gestation) are more likely than full-term babies to experience morbidity and mortality.<sup>17</sup>

In 2010, 11.99 percent of infants were born preterm. Overall, 8.49 percent of babies were born at 34 to 36 weeks’ gestation, 1.53 percent were born at 32-33 weeks, and 1.96 percent were “very preterm” (less than 32 weeks). Between 1990 and 2006, the preterm birth rate increased more than 20 percent, from 10.61 to 12.80 percent, but has declined in the 4 years since 2006 (data not shown). The greatest trends in preterm birth have been observed among the largest category of late preterm infants born at 34 to 36 weeks’ gestation. For example, late preterm birth decreased by 7.1 percent from 2006 to 2010 (9.14 to 8.49 percent) while very preterm birth decreased by only 3.4 percent during the same time period (2.04 to 1.97 percent).

The preterm birth rate varies by race and ethnicity. In 2010, 17.12 percent of babies born to non-Hispanic Black women were born preterm, compared to 10.69 percent of babies born to Asian/Pacific Islander women. Among babies born to non-Hispanic White women, 10.77 percent were born preterm, while the same was true of 11.79 percent of babies born to Hispanic women and 13.60 percent of babies born to American Indian/Alaska Native women. The causes of preterm birth are not well understood but are linked to infection and vascular disease, as well as medical conditions, such as diabetes and hypertension, which may necessitate labor induction or cesarean delivery.<sup>18</sup>

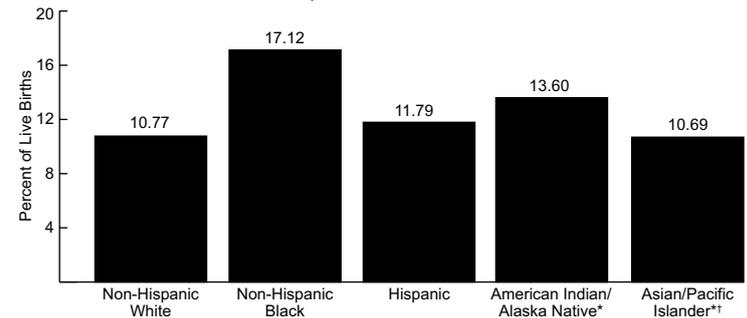
### Preterm Birth, by Completed Weeks of Gestation, 1990–2010

Source (II.1, II.3): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



### Preterm Birth, by Maternal Race/Ethnicity,\* 2010

Source (II.1): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



\*Includes Hispanics. \*\*Separate data for Asians and Native Hawaiians and Other Pacific Islanders not available.

## BREASTFEEDING

Breastfeeding has been shown to promote the health and development of infants, as well as their immunity to disease. It also confers a number of maternal benefits, such as a decreased risk of breast and ovarian cancers.<sup>19</sup> The American Academy of Pediatrics Section on Breastfeeding recommends exclusive breastfeeding—with no supplemental food or liquids—through the first 6 months of life, and continued supplemental breastfeeding through at least the first year.<sup>20</sup>

Breastfeeding practices vary considerably by a number of factors including maternal age, maternal education, household income, and

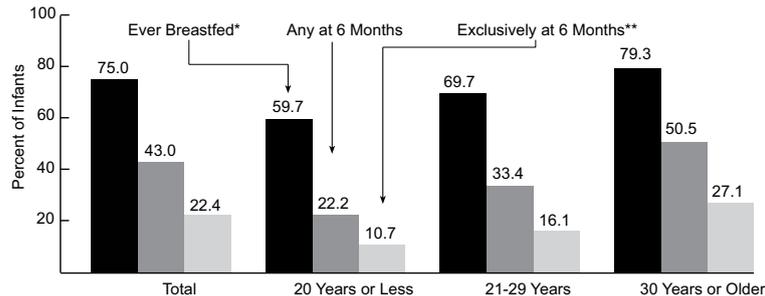
race/ethnicity.<sup>21</sup> Among infants born in 2007, 75.0 percent were breastfed or fed breastmilk at least once. While this represents a substantial increase in breastfeeding initiation over the past 25 years, the overall prevalence of any breastfeeding for 6 months and the prevalence of exclusive breastfeeding for 6 months remain below national objectives.<sup>22</sup> Less than half (43.0 percent) of infants born in 2007 were breastfed for 6 months and only 22.4 percent were exclusively breastfed.

Children born to mothers aged 30 years or older were the most likely to have been breastfed

(79.3 percent), while children born to mothers aged 20 years or younger were the least likely to (59.7 percent). A similar pattern exists for exclusive breastfeeding, as 27.1 percent of children born to mothers aged 30 years or older were exclusively breastfed for 6 months compared to 10.7 percent of children born to mothers aged 20 years or less. Increased maternal education is also associated with successful breastfeeding practices. Mothers who had graduated from college were more likely to both initiate breastfeeding and to breastfeed for 6 months exclusively than those with less education.

### Breastfeeding Among Children Born in 2007, by Maternal Age and Duration

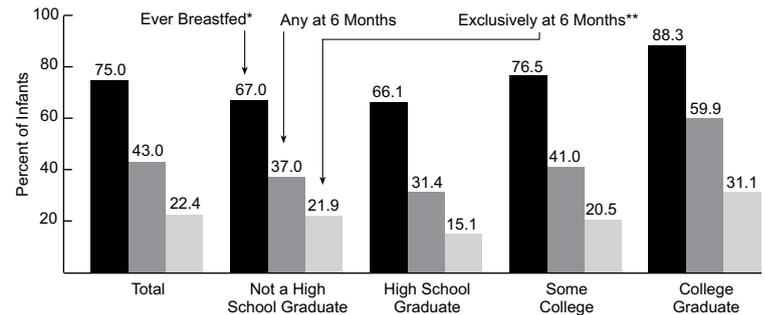
Source (II.4): Centers for Disease Control and Prevention, National Immunization Survey



\*Reported that child was ever breastfed or fed human breastmilk. \*\*Exclusive breastfeeding is defined as only human breastmilk—no solids, water, or other liquids.

### Breastfeeding Among Children Born in 2007, by Maternal Education and Duration

Source (II.4): Centers for Disease Control and Prevention, National Immunization Survey



\*Reported that child was ever breastfed or fed human breastmilk. \*\*Exclusive breastfeeding is defined as only human breastmilk—no solids, water, or other liquids.

## PREGNANCY-RELATED MORTALITY

A pregnancy-related death is defined as a death which occurs during or within 1 year after the end of a pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes such as injury.<sup>23</sup> This definition includes more deaths than the traditional definition of maternal mortality, which counts pregnancy-related deaths only up to 42 days after the end of pregnancy. Although maternal mortality in the United States declined dramatically over the last century, this trend has reversed somewhat in the last several decades, and racial and ethnic disparities in both maternal and pregnancy-related

mortality persist.<sup>24,25,26</sup>

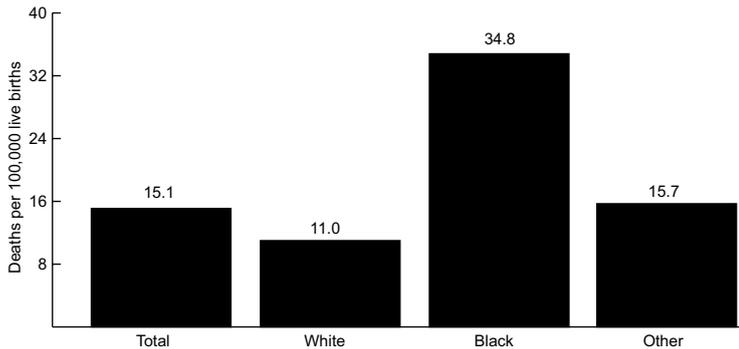
In 2006–2007, the latest years for which data are available, a total of 1,294 deaths were found to be pregnancy-related (15.1 deaths per 100,000 live births). This represents a substantial increase from 1987 levels of 7.2 pregnancy-related deaths per 100,000 live births.<sup>26</sup> However, the extent to which this increase may reflect improved identification and coding of pregnancy-related deaths is unclear.<sup>25</sup> The pregnancy-related mortality ratio among Black women was approximately 3.2 times the rate for White women in 2006–2007 (34.8 versus 11.0 per 100,000), a disparity that has remained relatively constant. The pregnancy-related mortality ratio also increased with age. Women aged 35–

39 years were more than twice as likely to die from pregnancy-related causes as women aged 20–24; for women older than 39 years, the risk increased five-fold (data not shown).<sup>25</sup>

Some of the most common causes of pregnancy-related death in 2006–2007 were cardiovascular disease (13.5%), diseases of the heart muscle (cardiomyopathy, 12.6%), uncontrolled bleeding (hemorrhage, 11.9%), and non-cardiovascular medical conditions (11.8%). In 1987–1990, hemorrhage was the leading cause of pregnancy-related deaths (29%); hypertensive disorders of pregnancy, including preeclampsia and eclampsia, accounted for almost 18 percent of pregnancy-related deaths, compared to 11.1 percent in 2006–2007.<sup>23,26</sup>

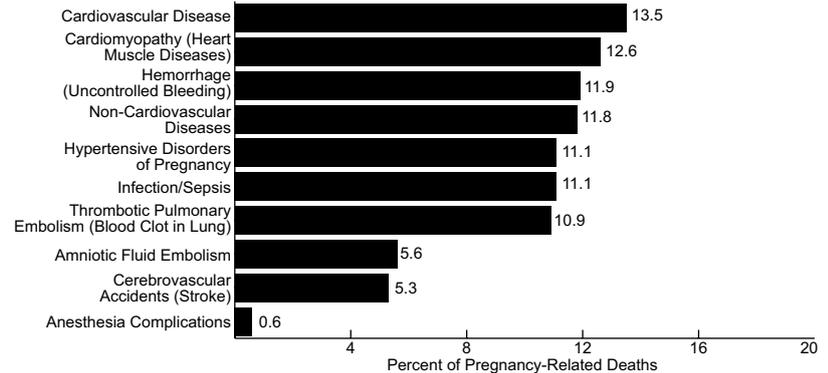
### Pregnancy-Related Mortality Ratios, by Race, 2006–2007

Source (II.5): Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Pregnancy Mortality Surveillance System



### Leading Causes of Pregnancy-Related Deaths,\* 2006–2007

Source (II.5): Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Pregnancy Mortality Surveillance System



\*The cause of death was unknown for 5.6% of all pregnancy-related deaths.

## INFANT MORTALITY

In 2010, 24,586 infants died before their first birthday, reflecting an infant mortality rate of 6.15 deaths per 1,000 live births. This represents a decrease of 3.8 percent from the 2009 rate (6.39 deaths per 1,000 live births) and 10.5 percent from the 2005 rate (6.87 per 1,000 live births).

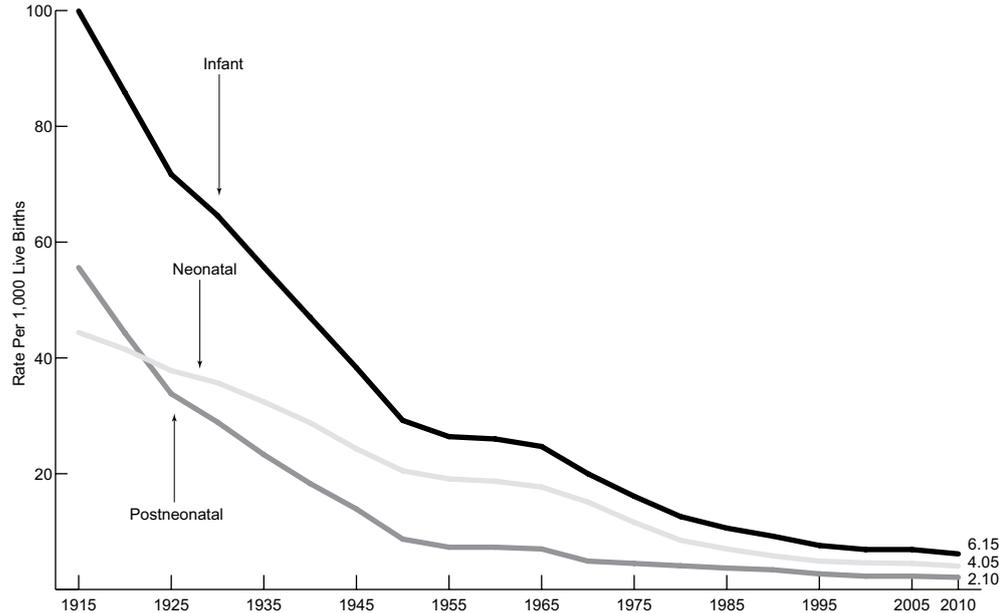
Currently, about two-thirds of infant deaths in the United States occur before 28 days (neonatal mortality: 4.05 per 1,000 live births), with the remaining third occurring in the postneonatal period between 28 days and under 1 year (2.10 per 1,000 live births). Neonatal mortality is generally related to short gestation and low birth

weight, maternal complications of pregnancy, and congenital malformations, while postneonatal mortality is generally related to Sudden Infant Death Syndrome (SIDS), congenital malformations, and unintentional injuries.<sup>27</sup> In 2010, the leading causes of infant mortality were congenital malformations, followed by disorders related to short gestation and low birth weight, and SIDS.<sup>28</sup>

With the exception of 2000 to 2005, infant mortality had been consistently declining at least every few years since it was first assessed in 1915. The substantial infant mortality decline over the 20th century has been attributed to economic growth, improved nutrition, and new sanitary measures, as well as advances in clinical medicine and access to care.<sup>29,30</sup> Infant mortality declines in the 1990s were aided particularly by the approval of synthetic surfactants to reduce the severity of respiratory distress syndrome (RDS), a common affliction of preterm infants, and the recommendation that infants be placed on their backs to sleep to prevent Sudden Infant Death Syndrome (SIDS). The lack of progress between 2000 and 2005 has been attributed to increases in preterm birth,<sup>31</sup> which have begun to decline in the last several years, perhaps due to practice-based efforts to reduce preterm deliveries that are not medically necessary.<sup>32</sup>

### Infant, Neonatal, and Postneonatal Mortality Rates,\* 1915-2010\*\*

Source (II.6, II.7, II.8): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



\*Infant deaths are under 1 year; neonatal deaths are under 28 days; postneonatal deaths are between 28 days and under 1 year.

\*\*Data from 1915-1932 are a subset from states with birth registration, which became 100% by 1933.

Despite improvements in infant mortality over time, disparities by race and ethnicity persist. Due to inconsistencies in the reporting of race and ethnicity on the birth and death certificate, infant mortality rates by race and ethnicity are more accurately assessed from maternal race and ethnicity, which is achieved by linking infant death certificates to their correspond-

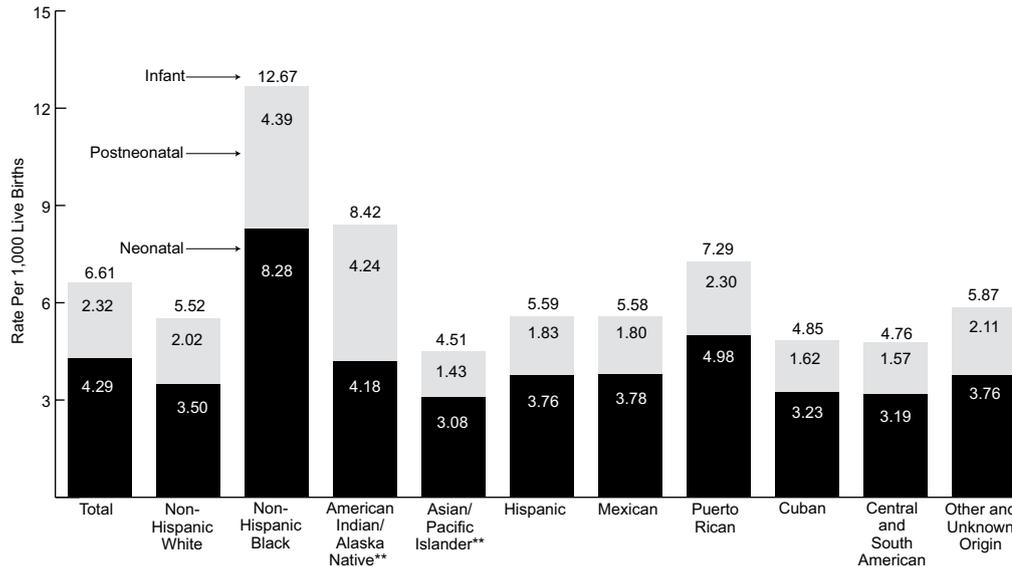
ing birth certificates. In 2008, the latest year for which linked data are available, the infant mortality rate was highest for infants of non-Hispanic Black mothers (12.67 per 1,000 live births)—a rate 2.3 times that of non-Hispanic Whites (5.52 per 1,000 live births)—a rate 2.3 times that of non-Hispanic Whites (5.52 per 1,000). Infant mortality was also higher among infants born to American Indian/Alaska Native and Puerto Rican moth-

ers (8.42 and 7.29 per 1,000, respectively). Although infant mortality was lowest among Asian/Pacific Islanders (4.51 per 1,000), there is considerable variability within this population and higher infant mortality rates have been shown among Native Hawaiians.<sup>33</sup>

Similar to overall infant mortality, neonatal mortality was highest among infants of non-Hispanic Black mothers (8.28 per 1,000), followed by Puerto Rican and American Indian/Alaska Native mothers (4.98 and 4.18 per 1,000, respectively). Postneonatal mortality was more than twice as high for both non-Hispanic black and American Indian/Alaska Native mothers (4.39 and 4.24 per 1,000, respectively) than for non-Hispanic Whites (2.02 per 1,000). Consistent with these patterns in the timing of excess infant mortality, the majority of the infant mortality disparity for non-Hispanic Blacks compared to non-Hispanic Whites is due to causes related to prematurity and, to a lesser extent, SIDS, congenital malformations, and injury.<sup>34,35</sup> The American Indian/Alaska Native infant mortality gap is mostly explained by SIDS, congenital malformations, and injury while the excess among Puerto Rican mothers is almost entirely related to prematurity.<sup>34,35</sup>

### Infant, Neonatal, and Postneonatal Mortality Rates,\* by Race/Ethnicity, 2008

Source (II.9): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



\*Infant deaths are under 1 year; neonatal deaths are under 28 days; postneonatal deaths are between 28 days and under 1 year.

\*\*Includes Hispanics

## INTERNATIONAL INFANT MORTALITY

In 2008, the U.S. infant mortality rate (6.6 infant deaths per 1,000 live births) was higher than the rate for many other industrialized nations. Differences in infant mortality rates among industrialized nations may reflect variation in the definition, measurement, and reporting of fetal and infant deaths. However, recent analyses of the differences in gestational age-specific infant mortality indicate that this disparity is most likely related to the high rate of preterm birth in the United States.<sup>36</sup> Infants born preterm (or less than 37 weeks gestation) have higher rates of death and disability than infants born at term (37 weeks gestation or more).<sup>37</sup> Although the United States compares favorably with European countries with respect to the survival of preterm infants, the higher rate of preterm birth in the United States overall significantly impacts the infant mortality rate.

In 2008, the United States ranked 28th in infant mortality among industrialized nations. In comparison, Iceland and Sweden, both with infant mortality rates of 2.5 deaths per 1,000 live births, were ranked first, followed by Finland and Japan, both with a rate of 2.6 deaths per 1,000. The United States did not always rank this low; in 1960, it ranked 12th, with Iceland, Norway and the Netherlands reporting the three lowest rates among industrialized nations that year.

## International Infant Mortality Rates and Rankings,\* Selected Countries,\*\* 1960 and 2008

Source (II.10): The Organization for Economic Co-operation and Development (OECD)

Country	Rank 1960	Rank 2008
Australia	6	21
Austria	20	13
Belgium	18	13
Canada	13	24
Chile	28	29
Czech Republic	5	7
Denmark	9	19
Finland	7	3
France	14	15
Germany	19	11
Greece	21	5
Hungary	24	25
Iceland	1	1
Ireland	16	15
Israel	---	15
Italy	23	8
Japan	17	3
Mexico	27	30
Netherlands	3	15
New Zealand	11	23
Norway	2	5
Poland	25	25
Portugal	26	8
Republic of Korea	---	11
Slovak Republic	15	26
Spain	22	8
Sweden	4	1
Switzerland	8	19
Turkey	29	30
United Kingdom	10	22
United States	12	28

\*Rankings are from lowest to highest infant mortality rates (IMR). Countries with the same IMR receive the same rank.

\*\*Countries with at least 2.5 million population and listed in the OECD database.

--- Data not available.



---

**HEALTH STATUS - CHILDREN**

## VACCINE-PREVENTABLE DISEASES

The number of reported cases of vaccine-preventable diseases has generally decreased over the past several decades. In 2009, there were no reported cases of diphtheria, polio, or smallpox in the United States, and no cases of tetanus or of rubella (German measles) among children under 5 years of age.

From 2008 to 2009, the number of reported cases of hepatitis A, measles, and meningococcal disease decreased among children under 5 years of age. The overall incidence of hepatitis A began dropping dramatically once routine vaccination for children living in high-risk areas was recommended beginning in 1996, and in 2005, the Centers for Disease Control and Prevention (CDC) instituted the recommendation that all children be immunized for hepatitis A starting at 1 year of age. The latter recommendation was made because two-thirds of cases were occurring in States where the vaccine was not currently recommended.

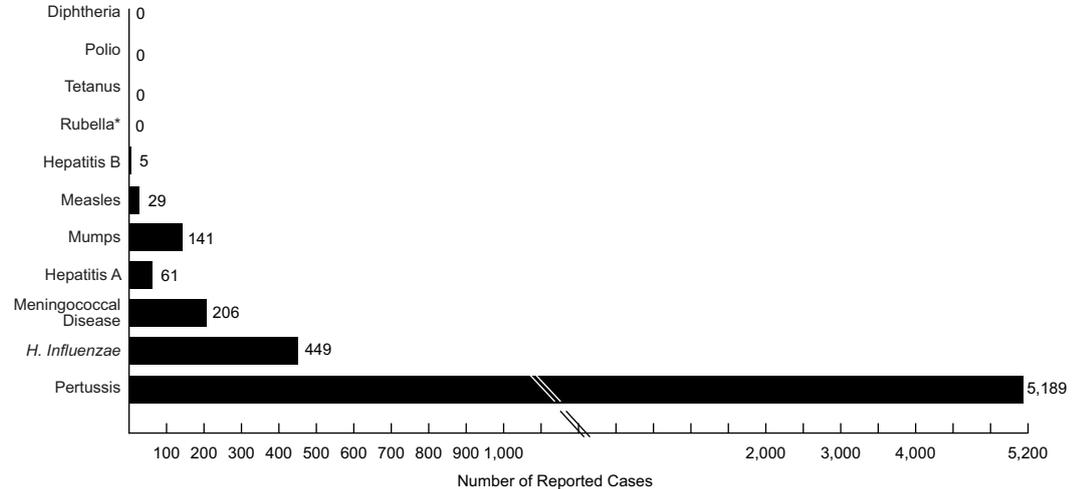
The number of cases of pertussis (or whooping cough) and mumps among children aged 0 to 4 years increased between 2008 and 2009 from 3,468 to 5,189 and from 60 to 141, respectively. According to the CDC, pertussis occurs cyclically and decreases in the incidence of the disease may not be due to increases in

immunization rates. The highest reported rate occurred among infants under 6 months of age, a population that is too young to be fully vaccinated. In 2006, the United States experienced a multi-state outbreak of mumps, primarily in Midwestern states. In the following 2 years, the

number of reported cases returned to usual levels; however, beginning in July 2009, another outbreak has been documented primarily in New York and New Jersey.<sup>38</sup> Reported cases of hepatitis B and *H. influenzae* remained relatively unchanged from 2008 to 2009.

### Reported Cases of Selected Vaccine-Preventable Diseases Among Children 0-4 Years, 2009

Source (II.11): Centers for Disease Control and Prevention, National Notifiable Diseases Surveillance System



\*Does not include cases of congenital rubella.

## PEDIATRIC HIV AND AIDS

Human immunodeficiency virus (HIV) is a disease that destroys cells that are critical to a healthy immune system. Acquired immunodeficiency syndrome (AIDS) is diagnosed when HIV has weakened the immune system enough that the body has difficulty fighting disease and infections. Estimates presented in previous editions of Child Health USA have included the estimated numbers and rates of diagnoses of HIV infection based on data from 45 areas (40 States and 5 U.S. dependent areas) that have had confidential name-based HIV infection re-

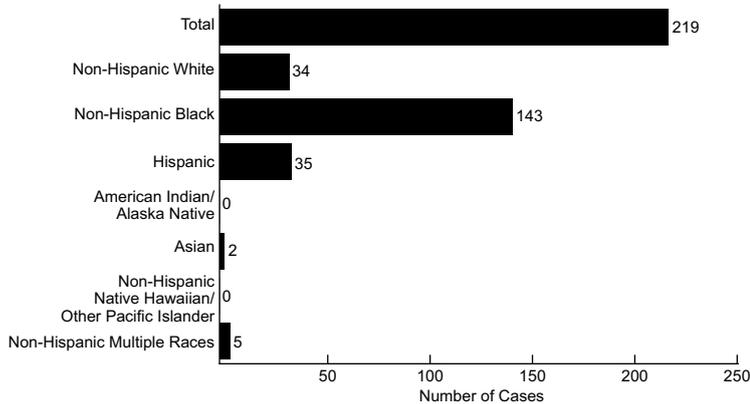
porting for a sufficient length of time. We are now able to present results from 51 areas that meet this standard of reporting.

In 2010, an estimated 219 children younger than 13 years of age were diagnosed with HIV, and 23 were diagnosed with AIDS. HIV and AIDS disproportionately affect racial and ethnic minorities. In 2010, there were four times as many diagnoses of HIV infection among Non-Hispanic Black as compared to Non-Hispanic White children, but Non-Hispanic Blacks represented only 15 percent of the total U.S. population in this age group.

The number of pediatric AIDS cases has declined substantially since 1992, when an estimated 961 cases were reported. A major factor in this decline is the increasing use of antiretroviral therapy before, during, and after pregnancy to reduce perinatal transmission of HIV and the promotion of universal prenatal HIV testing. Perinatal transmission accounts for 91 percent of all AIDS cases among children in the United States. Antiretroviral therapy during pregnancy can reduce the transmission rate to 2 percent or less, while without treatment the transmission rate is 25 percent.<sup>39</sup>

### Estimated Numbers of Diagnoses of HIV Infection\* Reported in Children Under Age 13, by Race/Ethnicity, 2010

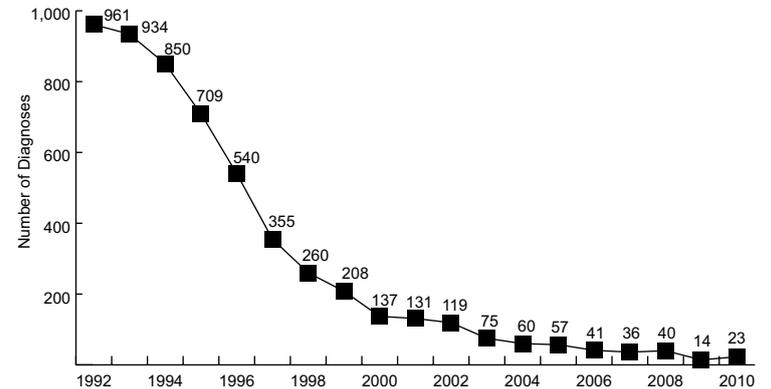
Source (II.12): Centers for Disease Control and Prevention. HIV Surveillance Report, 2010



\*Includes persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis.

### Estimated Number of AIDS Diagnoses in Children Aged 13 Years and Younger in the U.S.,\* by Year of Diagnosis, 1992-2010

Source (II.12): Centers for Disease Control and Prevention. HIV Surveillance Report, 2010



\*United States and 6 dependent areas.

## HOSPITALIZATION

In 2010, there were over 3.0 million hospital discharges among people aged 1–21 years, equaling 3.5 hospital discharges per 100 children, adolescents, and young adults. While injuries are the leading cause of death among this age group, they were not the most common cause of hospitalization. In 2010, diseases of the respiratory system, including asthma and pneumonia, were the most common causes of hospitalization among children aged 1–4 and 5–9 years. Among children aged 1–4 years, diseases of the respiratory system accounted for 38.4 percent of discharges; the same was true for 26.8 percent of 5- to 9-year-olds. Mental disorders were the most common cause of hospitalization among children aged 10–14 years (29.0 percent of discharges) and the second most common cause among adolescents aged 15–19 years (16.6 percent of discharges) and young adults aged 20–21 years (10.3 percent). Among adolescents aged 15–19 years and young adults aged 20–21 years, labor and delivery (among females) was the most common cause of hospitalization, resulting in 371,000 and 321,000 discharges, respectively.

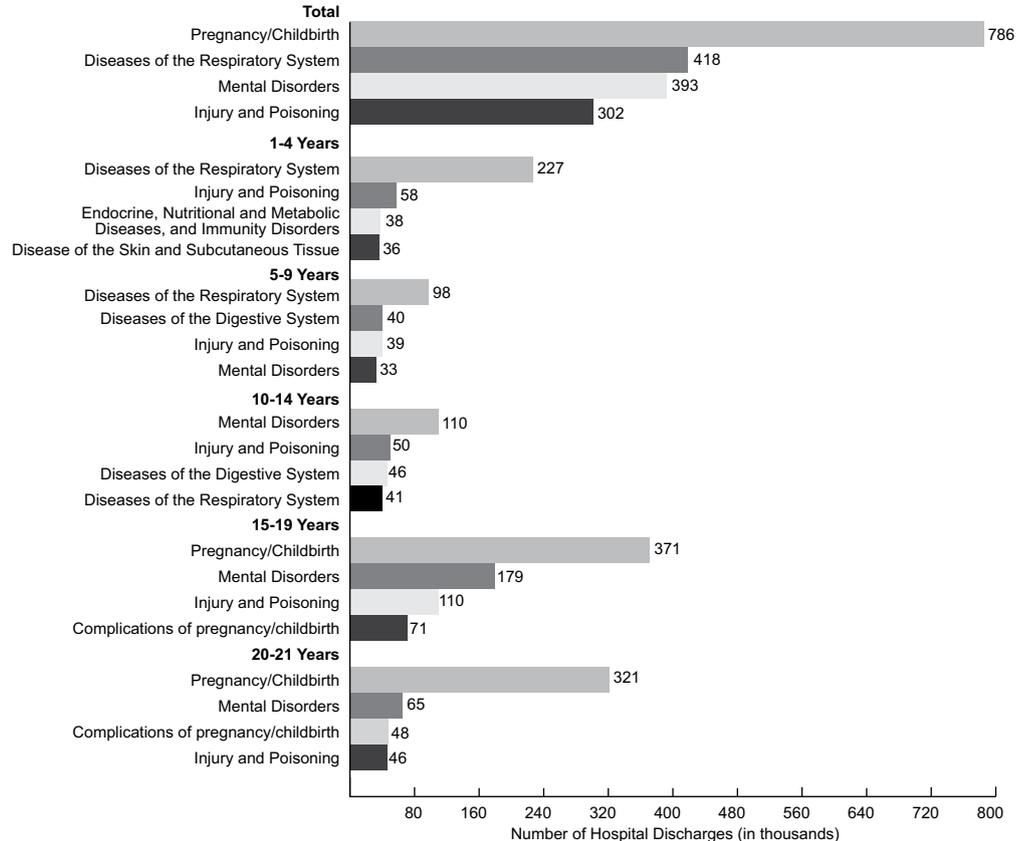
Between 1990 and 2010, overall hospital discharge rates among children, adolescents and young adults aged 1–14 years did not change significantly. However, there was a change in the

rate for at least one of the most common individual category of discharges: the rate of dis-

charge related to injury and poisoning decreased by 40.2 percent over the last two decades.

### Major Causes of Hospitalization, by Age, 2010

Source (II.13): Centers for Disease Control and Prevention, National Hospital Discharge Survey

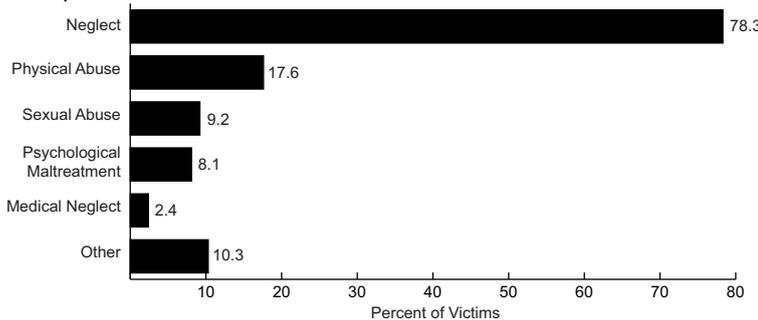


## ABUSE AND NEGLECT

State child protective services (CPS) agencies received approximately 3.3 million referrals, involving an estimated 5.9 million children, alleging abuse or neglect in 2010. Investigations determined that an estimated 695,000 unique children were victims of abuse or neglect in 2010, equaling a victimization rate of 9.2 per 1,000 children in the population. Neglect was the most common type of maltreatment (experienced by 78.3 percent of victims), followed by physical abuse (17.6 percent), sexual abuse (9.2 percent), psychological maltreatment (8.1 percent), and medical neglect (2.4 percent). About 10 percent of victims experienced other types of maltreatment including abandonment, threats of harm, or congenital drug addiction.

### Abuse and Neglect Among Children Under Age 18, by Type of Maltreatment, 2010

Source (II.14): Administration for Children and Families, National Child Abuse and Neglect Data System



In 2010, children aged 0–3 years accounted for 34.0 percent of all victims, with 12.7 percent younger than 1 year of age. About one-quarter of victims were between the ages of 4 and 7 years, 18.7 percent were aged 8–11 years, 17.3 percent were aged 12–15 years, and 6.2 percent were aged 16–17 years. Victimization was split between the sexes, with boys accounting for 48.5 percent and girls accounting for 51.2 percent (data not shown). A variety of risk factors have been associated with child maltreatment, including child health and disability status, caregiver substance abuse, intimate partner or domestic violence, and poverty.<sup>40</sup>

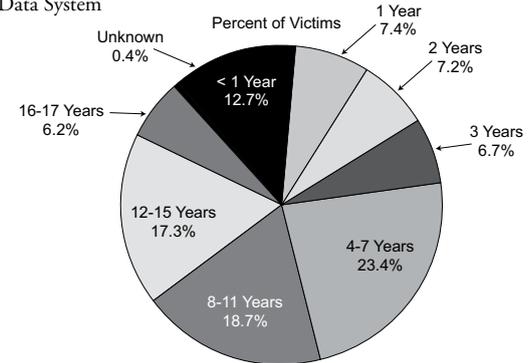
The effects of child maltreatment can be serious and long-lasting, ranging from increased risk of chronic emotional, behavioral and physi-

cal illness<sup>41</sup> to delinquency and criminality<sup>42</sup> to lower levels of socioeconomic achievement.<sup>43</sup> Taken together, the lifetime cost per victim of nonfatal child maltreatment has been estimated at \$210,012, while the lifetime cost associated with 1 year of all confirmed cases has been estimated at \$124 billion.<sup>44</sup>

Overall, 81.2 percent of perpetrators of abuse or neglect were parents of the victim (either alone or in conjunction with another person). Additional categories of perpetrators included other relatives (6.1 percent), unmarried partners of parents (4.4 percent), and professionals such as childcare workers (0.4 percent; data not shown). Other types of perpetrators included foster parents, friends and neighbors, and legal guardians.

### Abuse and Neglect Victims, by Age, 2010

Source (II.14): Administration for Children and Families, National Child Abuse and Neglect Data System



## CHILD INJURY AND MORTALITY

In 2010, the mortality rate among children aged 1–4 years was 26.5 per 100,000 children in that age group, and the rate among children aged 5–14 years was 12.9 per 100,000. Only the mortality rate for children aged 5–14 years declined significantly from 2009 levels, by 1 death per 100,000 or 7.2 percent.<sup>45</sup> However, both the 1–4 year and 5–14 year age groups experienced significant mortality declines from 2000, by 17.9 and 28.9 percent, respectively.<sup>45,46</sup> These declines may be largely attributed to decreases in unintentional injury,<sup>47</sup> which remains the leading cause of child death, accounting for over 30 percent of all deaths in 2010. Congenital anomalies (or birth defects) were the second

most common cause of death for 1- to 4-year-olds (3.1 per 100,000) and the third leading cause for 5- to 14-year-olds (0.7 per 100,000). The rate of cancer death was similar for both age groups, about 2 deaths per 100,000, but constituted a greater proportion of deaths among children aged 5–14 years (second leading cause) compared to 1- to 4-year-olds (fourth leading cause) due to their lower overall mortality rate.

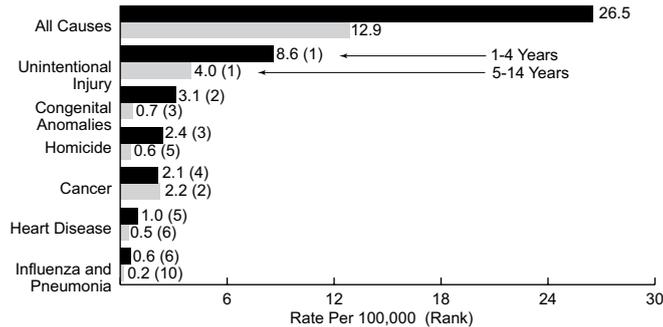
The leading causes of unintentional injury also vary by age. In 2009, drowning accounted for the largest number of unintentional injury deaths among children aged 1–4 years, while motor vehicle accidents was the leading cause among children aged 5–14 years (data not shown).<sup>48</sup>

Child injury and mortality vary greatly by

race and ethnicity. In 2010, mortality rates among children aged 1–14 years were at least twice as high among non-Hispanic American Indian/Alaska Native and non-Hispanic Black children as non-Hispanic Asian/Pacific Islander children, who had the lowest rates. For example, there were 50.1 and 40.2 deaths per 100,000 non-Hispanic American Indian/Alaska Native and non-Hispanic Black children aged 1–4 years, respectively, compared to 18.5 deaths per 100,000 non-Hispanic Asian/Pacific Islander children of the same age. Unintentional injury death rates are also highest among non-Hispanic American Indian/Alaska Native and non-Hispanic Black children (data not shown).<sup>48</sup>

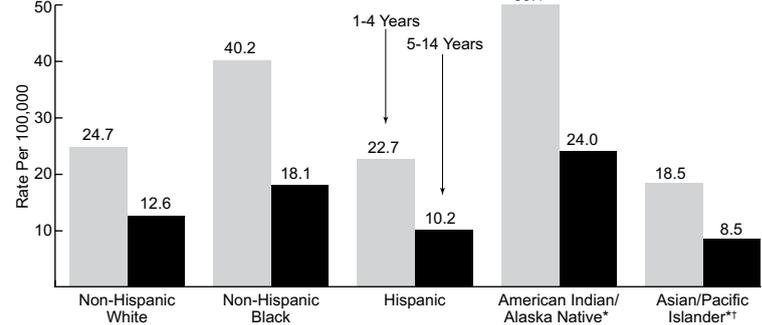
### Mortality Rates Among Children Aged 1–14, by Selected Leading Cause and Age, 2010

Source (II.8): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



### Mortality Rates Among Children Aged 1–14, by Race/Ethnicity\* and Age, 2010

Source (II.8): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



\*May include Hispanics.

†Separate estimates for Asians and Native Hawaiians and Other Pacific Islanders were not available.

## ENVIRONMENTAL HEALTH

Secondhand Smoke (SHS) includes smoke from a burning cigarette, cigar or pipe as well as smoke that has been exhaled by someone using these products. SHS contains more than 7,000 chemicals, including more than 250 which are toxic or known to cause cancer. Exposure to SHS among children has been linked to ear infections, increased severity of asthma symptoms, respiratory symptoms and infections, and increased risk of Sudden Infant Death Syndrome (SIDS).<sup>49,50</sup> According to the Surgeon General, there is no safe level of SHS exposure for children; even brief periods can be harmful.<sup>50</sup>

In 2009-2010, 29.9 percent of children aged 3–11 years and 31.0 percent of children aged 12–19 years were exposed to SHS, representing nearly 5.5 and 4.4 million children, respectively, in each age group (data not shown). Children were identified as having been exposed to SHS if they had a serum cotinine level greater than or equal to 0.05 ng/mL and less than or equal to 10 ng/mL. Exposure to SHS among children aged 3–19 years varied by poverty and race/ethnicity. More than 45 percent of children living in households with incomes below 100 percent of poverty were exposed to SHS compared to 17.2 percent of children living in households with incomes above 300 percent of poverty. Non-Hispanic Black children were most likely to have been exposed to SHS (50.2 percent)

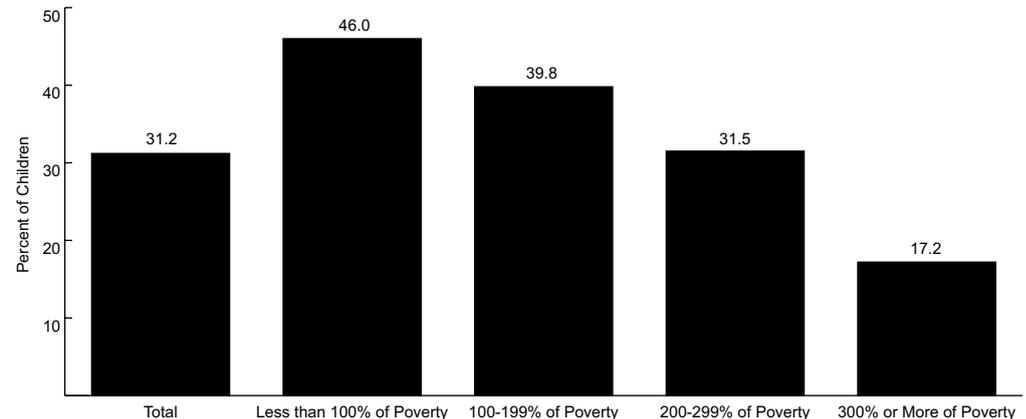
compared to less than 30 percent among children of all other racial/ethnic groups (data not shown).

Environmental contaminants to the air, water, food, and soil can adversely affect children's health and development. Children are particularly vulnerable to environmental toxins because they may be exposed to relatively higher amounts of contaminants than adults through engagement in developmentally-appropriate activities, such as putting their hands in their mouths or playing on the ground, and because their organs are still developing.<sup>51,52</sup> One example of a common environmental exposure

among children is lead, which can cause delays in children's cognitive development and attention deficit disorders. Since lead was removed from gasoline, the major source of lead exposure is contaminated dust, paint, and soil. There is no safe level of lead in blood, but a blood lead level of 10 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ) is considered elevated. In 2009-2010, 50 percent of children aged 1–5 had lead levels below 1.2  $\mu\text{g}/\text{dL}$ , and 95 percent of children had levels below 3.4  $\mu\text{g}/\text{dL}$  (data not shown). These levels represented a decline of 66 percent and 72 percent, respectively, from those reported in 1988-1991.<sup>53</sup>

### Exposure to Secondhand Smoke,\* Among Children Aged 3-19 Years, 2009-2010

Source (II.15): Centers for Disease Control and Prevention, National Health and Nutrition Examination Survey



\*Defined as having a serum cotinine level greater than or equal to 0.05 ng/mL and less than or equal to 10 ng/mL. \*\*Poverty guideline defined by the U.S. Department of Health and Human Services was \$22,050 for a family of four in 2010.

**HEALTH STATUS - ADOLESCENTS**



## SEXUAL ACTIVITY AND EDUCATION

In 2011, 47.4 percent of high school students reported having had sexual intercourse at least once, while the remaining 52.6 percent were abstinent. Sexual activity increased with grade level: 32.9 percent of 9th grade students reported having had sexual intercourse, compared to 43.8 percent of 10th graders, 53.2 percent of 11th graders and 63.1 percent of 12th graders (data not shown). Within each grade, no difference was observed between males and females in the proportion having had sexual intercourse, with the exception of 9th grade, where males were significantly more likely to report having had sexual intercourse than females (37.8 versus 27.8 per-

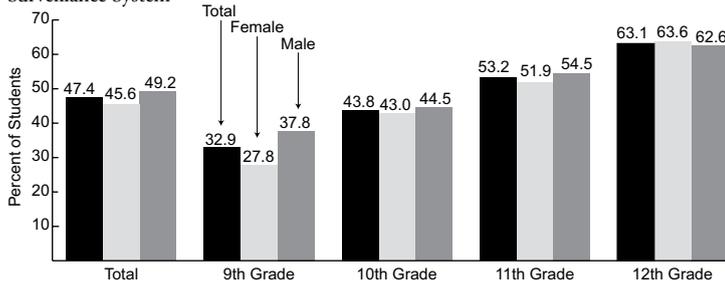
cent). Males were also significantly more likely to report having had sexual intercourse for the first time before age 13 than females (9.0 versus 3.2 percent; data not shown).

Contraceptive use also varies significantly by sex. Overall, 67.0 percent of males and 53.6 percent of females reported condom use at last intercourse. Use of a hormonal contraceptive (by self or partner) was less common than condom use and was reported by 16.6 percent of males and 30.0 percent of females. Less than 10 percent of adolescents used both a condom and a form of hormonal contraception during last sexual intercourse. Among females, 15.1 percent reported not using any method to prevent pregnancy at last sexual intercourse, compared to 10.6 percent of males.

According to data from the National Survey of Family Growth, 16 percent of females and 28 percent of males had their first experience of sexual intercourse with someone they had just met or with whom they were “just friends” (data not shown).<sup>54</sup> There were large differences by race and ethnicity in the percentage of females whose first sex was with someone they were not regularly involved with. Hispanic female teenagers were less likely than their non-Hispanic White or non-Hispanic Black counterparts to have had first sex with someone they had just met (8.7, 16.0, and 21.0 percent, respectively). There was no significant difference between non-Hispanic Black and non-Hispanic White females in the percentage who had “just met” their first sexual partner.

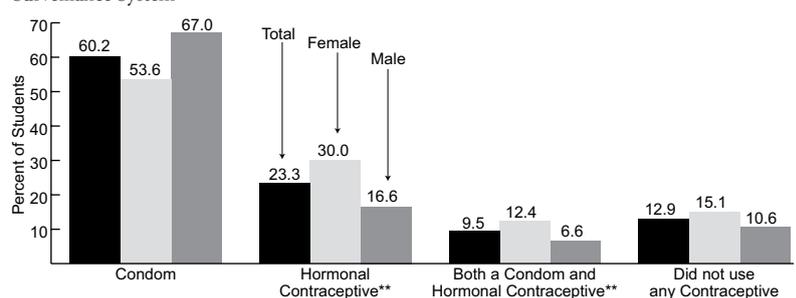
### High School Students Who Have Ever Had Sexual Intercourse, by Sex and Grade Level, 2011

Source (II.16): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



### Contraceptive Method Used\* Among High School Students Who Are Currently Sexually Active, by Sex, 2011

Source (II.16): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



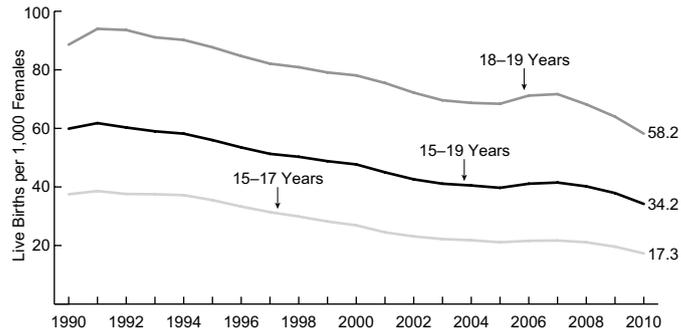
\*Used during last sexual intercourse by student or their partner. \*\*Hormonal contraceptive refers to birth control pills, Depo-Provera or other injectable, Nuva Ring or other birth control ring, Implanon or other implant, or any IUD.

## ADOLESCENT CHILDBEARING

In 2010, the birth rate among adolescent females aged 15–19 years decreased to 34.2 per 1,000 females—the lowest rate ever recorded. This continues the general decline in teen birth rates since the most recent peak in 1991, when the rate was 61.8 per 1,000 females, and represents a decline of 44 percent over that period. In 2010, the birth rate among adolescents aged 15–17 years was lower than for 18- to 19-year-olds (17.3 versus 58.2 births per 1,000) and adolescents aged 15–17 years experienced larger declines in childbearing from the 1991 peak compared with 18- to 19-year-olds (55 versus 38 percent).

### Birth Rates Among Adolescent Females Aged 15–19 Years, 1990–2010

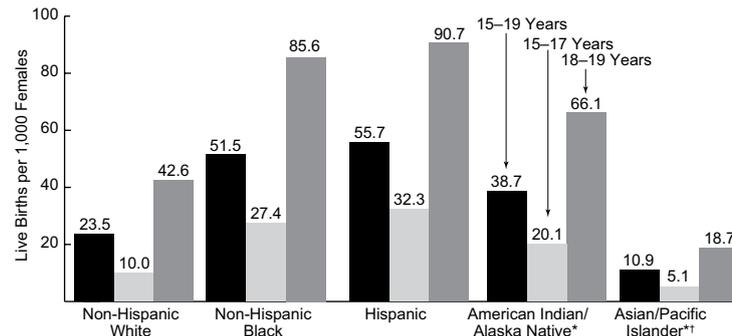
Source (II.1, II.2): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



Although adolescent birth rates reached historic lows for all race and ethnic groups in 2010, disparities remained. Among adolescents aged 15–19 years, Hispanic and non-Hispanic Black females had the highest birth rates in 2010 (55.7 and 51.5 births per 1,000)—rates more than five times higher than those of Asian/Pacific Islander females (10.9 births per 1,000) and twice as high as non-Hispanic White females (23.5 births per 1,000). American Indian/Alaska Native adolescents aged 15–19 years also had higher birth rates (38.7 births per 1,000) than Asian/Pacific Islander and non-Hispanic White females. These disparities persist for both younger and older adolescents, aged 15–17 years and 18–19 years, respectively.

### Birth Rates Among Adolescent Females Aged 15–19 Years, by Race/Ethnicity\* and Age, 2010

Source (II.1): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



\*May include Hispanics.

†Separate estimates for Asians and Native Hawaiians and Other Pacific Islanders were not available.

Declines in adolescent childbearing over the past two decades have been attributed to delays in the age at first intercourse and increased use of highly effective contraceptive methods, including IUDs or hormonal methods.<sup>55</sup> Racial and ethnic disparities in the age of sexual debut have been eliminated due to delays in sexual initiation for non-Hispanic Black and Hispanic females compared with non-Hispanic White females. However, racial and ethnic disparities in contraceptive use persist. In 2006–2010, 65.7 percent of sexually active non-Hispanic White adolescent females used highly effective contraceptive methods, compared to 46.5 percent non-Hispanic Black and 53.7 percent of Hispanic adolescent females (data not shown).<sup>55</sup>

## SEXUALLY TRANSMITTED INFECTIONS

Sexually transmitted infections (STIs), such as chlamydia, gonorrhea, and genital human papillomavirus (HPV) can pose serious, long-term health complications for adolescents and young adults.<sup>56</sup> Although young people aged 15–24 years represent only one-quarter of the sexually experienced population, they acquire nearly half of all new STIs.<sup>57</sup>

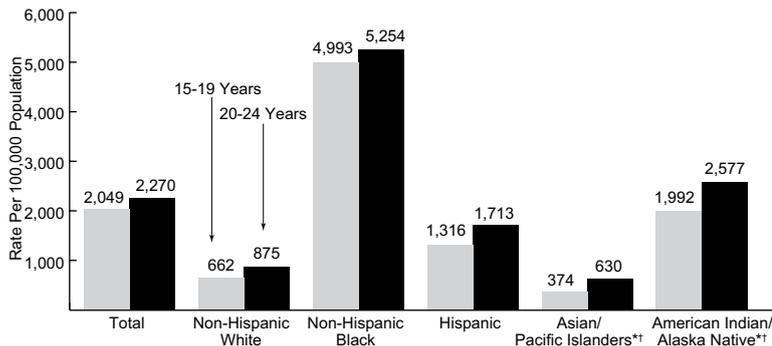
Among adolescents and young adults, Chlamydia continues to be the most common of all the STIs reported to the Centers for Dis-

ease Control and Prevention (CDC). There were 2,049 chlamydial infections per 100,000 adolescents aged 15-19 years and 2,270 per 100,000 young adults aged 20-24 years in 2010. Gonorrhea was less common, with rates of 410 and 490 per 100,000 in these age groups, respectively. Rates for both diseases vary by race and ethnicity. Among adolescents aged 15-19 years, the highest rate of chlamydia was reported among non-Hispanic Blacks (4,993 per 100,000), followed by American Indian/Alaska Natives (1,992 per 100,000). Rates of gonorrhea were also highest among these two racial/ethnic groups for adolescents and young adults.

Unlike chlamydia and gonorrhea, HPV infections are not required to be reported to the CDC; however, persistent infection of specific types of HPV can lead to cancer.<sup>58</sup> The overall prevalence of all types of HPV among females aged 14-59 is estimated to be 42.5 percent.<sup>59</sup> A vaccine for certain types of HPV was approved in 2006 for use in females aged 9–26 years and licensed in October 2009 for use in males aged 9-26 years.<sup>60</sup> In 2010, 53.0 percent of females aged 13–17 years had received at least one dose of the three-dose series.<sup>61</sup>

### Reported Chlamydia Infection Rates Among Adolescents and Young Adults, by Age and Race/Ethnicity, 2010

Source (II.17): Centers for Disease Control and Prevention, STD Surveillance System

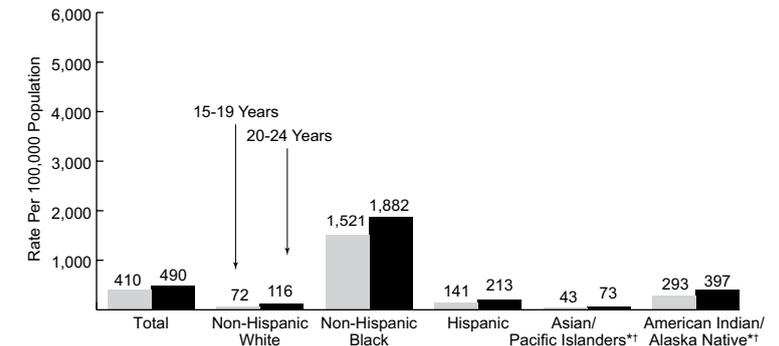


\*Separate estimates for Asians and Native Hawaiians and Other Pacific Islanders were not available.

\*\*May include Hispanics.

### Reported Gonorrhea Infection Rates Among Adolescents and Young Adults, by Age and Race/Ethnicity, 2010

Source (II.17): Centers for Disease Control and Prevention, STD Surveillance System



\*Separate estimates for Asians and Native Hawaiians and Other Pacific Islanders were not available.

\*\*May include Hispanics.

## ADOLESCENT AND YOUNG ADULT HIV AND AIDS

Human immunodeficiency virus (HIV) is a disease that destroys cells that are critical to a healthy immune system. Acquired immunodeficiency syndrome (AIDS) is diagnosed when HIV has weakened the immune system enough that the body has difficulty fighting disease and infections. HIV prevention is a particularly important issue for adolescents and young adults, as these groups experience the majority of new HIV infections. In 2009, those aged 15–29 accounted for 39 percent of all new HIV infections in the U.S., while this age group represented 21 percent of the U.S. population in 2010.<sup>62</sup> Early age at sexual initiation, unprotected sex, drug use, older sex partners and lack of awareness places adolescents at an increased risk of contracting HIV.

In 2009, more than 37,000 adolescents and young adults between 13–24 years of age were living with a diagnosed HIV infection. Between 2007 and 2010, the rate of diagnosed HIV infection remained stable for younger adolescents (aged 13–14 years) while increasing for those aged 15–24 years (data not shown). A similar pattern by age group was observed for the rate of AIDS diagnosis, with rates increasing for those aged 15–24 years. In 2009, 11,094 persons aged 13–24 years were living with an AIDS diagnosis. Between 2007 and 2009, the rate of deaths with an AIDS diagnosis remained stable for the U.S.

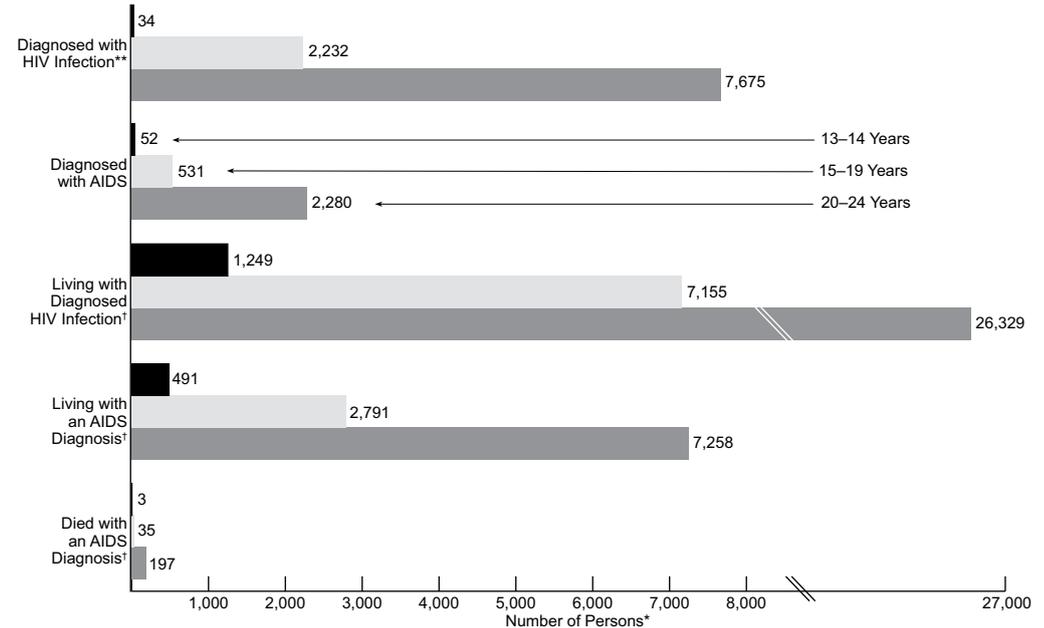
population as a whole, but increased among persons aged 20–24 years (data not shown).

Abstaining from sex and drug use is the most effective way to avoid HIV infection. Adolescents and young adults can also reduce their risks by informing themselves of how to negotiate safer sex, where to get tested for HIV, and

how to use a condom correctly. The CDC has developed interventions that can be carried out locally to help reduce the risk to adolescents. One such program, *Choosing Life: Empowerment! Action! Results!*, is for those older than 16 years of age and living with HIV infection or AIDS or at high risk for HIV.<sup>63</sup>

### Selected Data on HIV\* and AIDS Among Adolescents and Young Adults, by Age, 2009

Source (II.18): Centers for Disease Control and Prevention. HIV Surveillance Report, 2010



\*Estimated numbers reflect statistical adjustment for reporting delays and missing risk-factor information, but not for incomplete reporting. Data for United States and dependent areas. \*\*Estimates for 2010. †Estimates for 2009.

## PHYSICAL ACTIVITY

The U.S. Department of Health and Human Services recommends that children and adolescents get 1 hour or more of physical activity every day, most of which should be moderate- to vigorous-intensity aerobic activity.<sup>64</sup> Data from the 2011 Youth Risk Behavior Surveillance System showed that 28.7 percent of high school students were physically active for at least 60 minutes on each of the 7 previous days. This represents an increase in adolescent physical activity from the 2009 level of 19.4 percent.

Overall, 13.8 percent of students did not participate in 60 or more minutes of physical activity on any day in the preceding week. The rate was higher for females (17.7 percent) than males (10.0 percent) and among Asian (22.2 percent), non-Hispanic Black (19.6 percent), and Hispanic (15.9 percent) high school students compared to non-Hispanic Whites (11.0 percent; data not shown).

Participation in recommended levels of physical activity varied by sex and grade level. Among high school students in all grades, a smaller proportion of females reported 60 minutes of physical activity on each of the previous seven days than males. Among 9th graders, 22.2 percent of females achieved recommended levels of physical activity, compared to 38.8 percent of their male counterparts. By 12th grade, only 14.9 percent of females met the recom-

mended levels compared to 34.9 percent of males in the same grade.

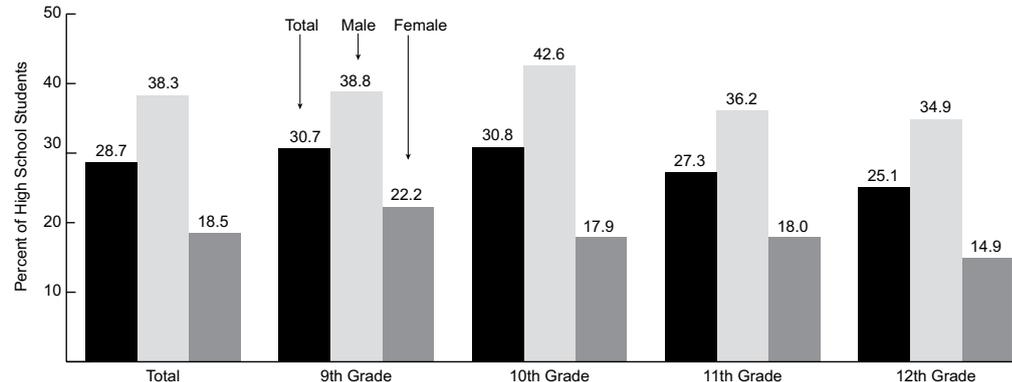
In 2011, 51.8 percent of high school students attended physical education (PE) classes at least one day per average school week. The rate decreased with each grade level: 68.1 percent of 9th grade students attended PE class on one or more days in an average week, while the same was true for 54.6 percent of 10th graders, 42.9 percent of 11th graders and 38.5 percent of 12th grade students. Overall, only 31.5 percent of high school students attended daily PE classes in 2011 (data not shown).

In 2011, 58.4 percent of high school students reported playing on at least one sports

team in the past year. This was more common among younger adolescents than older adolescents (61.4 percent of 9th graders compared to 52.5 percent of 12th graders). Sports participation also varied by sex. Just over one-half of adolescent females (52.6 percent) reported playing on at least one sports team in the past year, compared to 64.0 percent of males. These differences increased with age: while 57.1 percent of 9th grade females reported sports participation in 2011, only 44.5 percent of 12th grade females did so. Among males, the rates of past-year sports team participation declined from 65.6 percent among 9th graders to 60.2 percent among 12th graders (data not shown).

### Physical Activity\* Among High School Students, by Sex and Grade Level, 2011

Source (II.19): Centers for Disease Control and Prevention, High School Youth Risk Behavior Survey



\*Defined as physical activity that increased their heart rate and made them breathe hard some of the time for a total of at least 60 minutes on each of the last 7 days.

## SEDENTARY BEHAVIORS

The American Academy of Pediatrics recommends that parents limit children's media time to 1–2 hours per day.<sup>65</sup> This includes time spent watching TV or videos as well as time spent playing video games. In 2011, 32.4 percent of high school students reported watching 3 or more hours of television per day on an average school day. There was no significant difference in the proportion of males and females who reported this behavior. However, younger students, those in 9th grade, were slightly more likely to watch 3 or more hours of television (33.9 percent) than the oldest students, those in 12th grade (30.4 percent; data not shown).

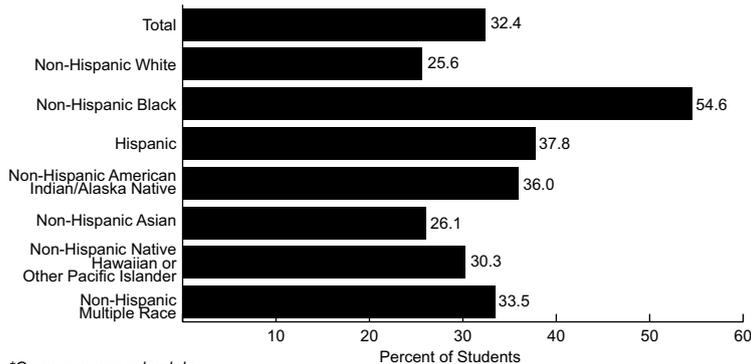
The proportion of students who reported 3 or more hours of television watching varied significantly by race/ethnicity. Over half (54.6 percent) of non-Hispanic Black students reported this behavior, while the same was true for about one-quarter of non-Hispanic White and Asian students (25.6 percent and 26.1 percent, respectively), and slightly more than one-third of Hispanic (37.8 percent) and non-Hispanic American Indian/Alaska Native (36.0 percent) students.

In the same year, nearly one-third (31.1 percent) of high school students reported using computers for something other than school work, such as video or computer games, for 3 or

more hours per day on an average school day. The proportion varied by sex and grade level. Overall, males were more likely to report non-school related computer usage of 3 or more hours than females (35.3 percent versus 26.6 percent) as were 9th grade students (32.5 percent) compared to those in 12th grade (28.8 percent). Across all grade levels, a greater proportion of males reported 3 or more hours of daily non-school related computer use during weekdays. Daily computer use also varied by race/ethnicity, with non-Hispanic Asians and Blacks more likely to report this level of computer use than non-Hispanic White or Hispanic students (data not shown).

### High School Students Who Watched 3 or More Hours of Television per Day,\* by Race/Ethnicity, 2011

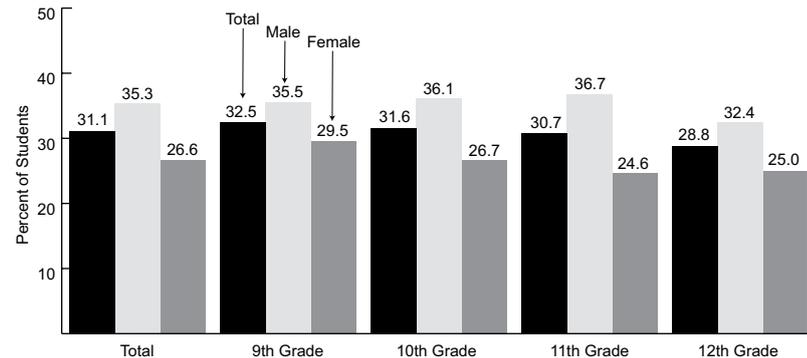
Source (II.19): Centers for Disease Control and Prevention, High School Youth Risk Behavior Survey



\*On an average school day.

### High School Students Who Used Computers for 3 or More Hours per Day for Something Other than School Work,\* by Sex and Grade, 2011

Source (II.19): Centers for Disease Control and Prevention, High School Youth Risk Behavior Survey



\*On an average school day.

## DIETARY BEHAVIORS

The *Dietary Guidelines for Americans 2010* recommends eating a variety of nutrient-dense foods and beverages while maintaining calorie balance to reach and maintain a healthy weight. The *Guidelines* encourage all individuals aged 2 years and older to consume a variety of fruits and vegetables, whole grains, fat-free or low-fat milk products, as well as a variety of protein foods, including seafood, lean meats and poultry, eggs, beans and peas, soy products, and nuts and seeds, while limiting sodium, solid fats, added sugars, and refined grains.<sup>66</sup>

In 2011, 5.7 percent of high school students reported that they did not eat any vegetables during the past 7 days, while 11.7 percent reported that they did not eat any fruit during the past week. Overall, males were more likely than females to report no vegetable or fruit consumption in the past week (6.9 percent versus 4.5 percent and 12.6 percent versus 10.7 percent, respectively; data not shown). The proportion of adolescents who reported neither vegetable nor fruit consumption also varied by race and ethnicity. Non-Hispanic White and Asian students were generally less likely to report no vegetable consumption than non-Hispanic Black and Hispanic students. Non-Hispanic Blacks were also more likely to report no fruit consumption in the past week.

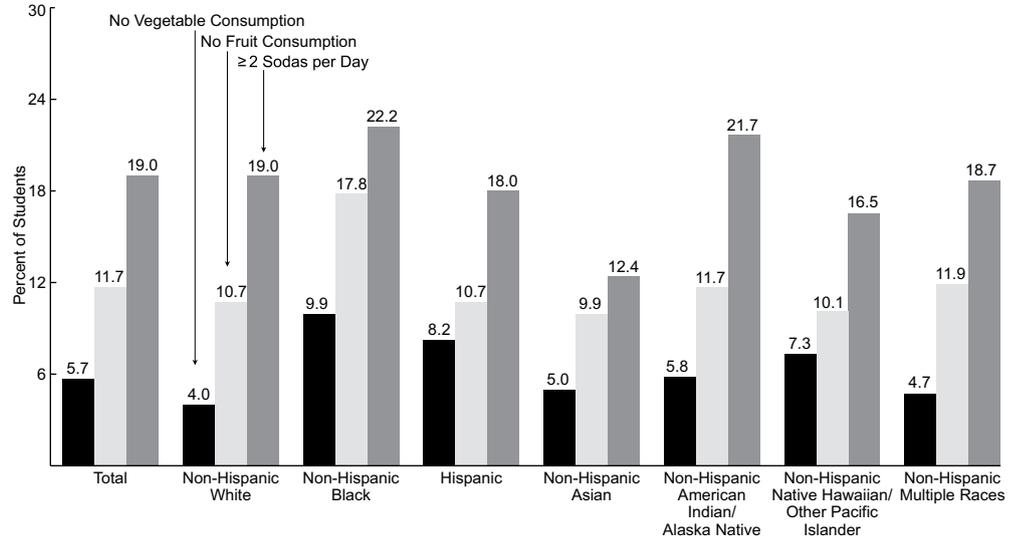
Overall, 15.3 percent of high school students reported eating vegetables three or more times per day and nearly one-quarter (22.4 percent) reported eating fruit or drinking 100% fruit juice three or more times per day in the past 7 days. Males were more likely to report this level of fruit and vegetable consumption than females; no trends were observed by grade level (data not shown).

Because soda, energy drinks, and sports drinks are a major source of added sugar for Americans, the Guidelines recommend limit-

ing the consumption of such beverages in order to lower calorie consumption. In 2011, nearly one-fifth (19.0 percent) of high school students drank two or more cans, bottles or glasses of soda per day during the last 7 days.<sup>67</sup> Males were more likely than females to consume two or more sodas a day (21.8 percent versus 16.1 percent; data not shown). Few racial/ethnic differences were observed, with the notable exception of non-Hispanic Asian students, of whom only 12.4 percent reported consuming this amount of soda.

### High School Students Who Engaged in Selected Dietary Behaviors, by Race/Ethnicity, 2011

Source (II.19): Centers for Disease Control and Prevention, High School Youth Risk Behavior Survey



## OVERWEIGHT AND OBESITY

Body mass index (BMI) is the ratio of weight to height, which is used to define overweight and obesity as well as normal weight status and underweight. In children, BMI is used in conjunction with age and sex, since both of these factors affect body composition. Children who fall between the 85th and 94th percentile of BMI-for-age are considered overweight, while children who are in the 95th percentile or above are considered obese; those who fall below the 5th percentile are considered underweight and those between the 5th and 84th percentile are considered to be normal weight. In 2009–10,

14.7 percent of children aged 2–19 years were overweight, 16.9 percent were obese, 64.1 percent were normal weight, and 4.3 percent were underweight based on measured height and weight (data not shown).

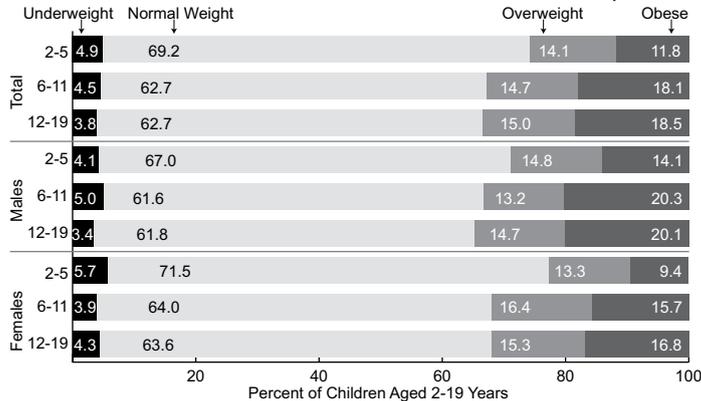
Weight status among children varies by a number of factors, including age and sex, race/ethnicity, and household income. School-aged children were more likely to be obese than preschool-aged children: approximately 18 percent of children aged 6–11 years and 12–19 years were considered to be obese, compared to 11.8 percent of children aged 2–5 years.

The prevalence of overweight and obesity

also varied by race/ethnicity. Nearly one-quarter of non-Hispanic Black children were considered to be obese in 2009–10 and another 15 percent considered to be overweight. Similarly, nearly 40 percent of Mexican-American and other Hispanic children were either overweight or obese. In comparison, approximately 28 percent of non-Hispanic White children were overweight or obese. Racial/ethnic differences were particularly pronounced among females: between 18–24 percent of non-Hispanic Black, Mexican-American, and other Hispanic girls were obese, compared to 11.5 percent of their non-Hispanic White counterparts.

### Weight Status\* Among Children Aged 2-19 Years, by Age and Sex, 2009-10

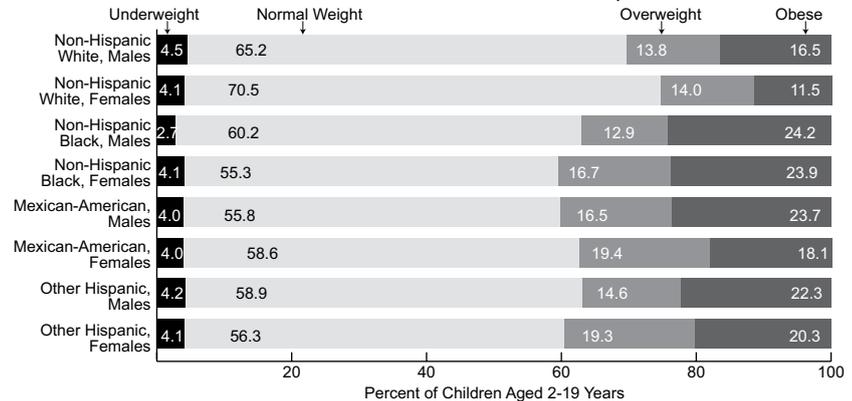
Source (II.15): CDC, National Health and Nutrition Examination Survey



\*Underweight is a BMI-for-age under the 5th percentile, normal weight is a BMI-for-weight between the 5th and 84th percentile, overweight is a BMI-for-age between the 85th and 94th percentile, and obesity is a BMI-for-age in the 95th percentile or above; based on parent-reported height and weight.

### Weight Status\* Among Children Aged 2-19 Years, by Race/Ethnicity and Sex, 2009-10

Source (II.15): CDC, National Health and Nutrition Examination Survey



\*Underweight is a BMI-for-age under the 5th percentile, normal weight is a BMI-for-weight between the 5th and 84th percentile, overweight is a BMI-for-age between the 85th and 94th percentile, and obesity is a BMI-for-age in the 95th percentile or above; based on parent-reported height and weight.

## WEIGHT CONTROL BEHAVIORS

In 2011, 46.0 percent of high school students reported that they were trying to lose weight. Nearly twice as many adolescent females (61.2 percent) reported that they were trying to lose weight as males (31.6 percent); this ratio persisted across all grade levels (data not shown). Non-Hispanic Black students were less likely to report trying to lose weight (40.9 percent) than non-Hispanic Whites (44.8 percent), and Hispanic students (52.6 percent). Among all racial/ethnic groups, with the exception of non-Hispanic American Indian/Alaska Native students,

females were more likely to report trying to lose weight than males.

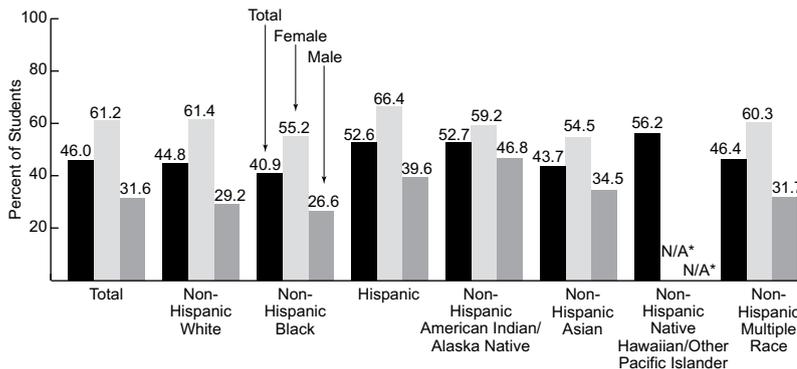
The Youth Risk Behavior Surveillance System asked students about behaviors to lose or keep from gaining weight in the 30 days prior to the survey: fasting for 24 hours or more, taking supplements, including diet pills, powders or liquids, and vomiting or taking laxatives. Overall, 12.2 percent, 5.1 percent, and 4.3 percent of high school students reported engaging in each of these behaviors, respectively.

The proportion of students reporting each of these behaviors was similar across grade

level; however, significant sex differences were observed. For example, more than twice as many females reported fasting for 24 hours or more than males (17.4 percent compared to 7.2 percent) and 6.0 percent of females reporting vomiting or taking laxatives, compared to 2.5 percent of males. The prevalence of weight control behaviors also varied by race/ethnicity. Non-Hispanic American Indian/Alaska Native students were more likely than non-Hispanic Black, Asian, and White students to report either fasting for 24 hours or more or vomiting/taking laxatives (data not shown).

### High School Students Who Tried to Lose Weight in the Past 12 Months, by Race/Ethnicity and Sex, 2011

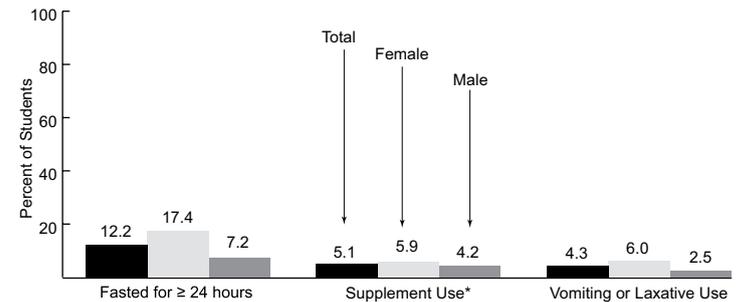
Source (II.19): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



\*Sex-specific data for Native Hawaiian/Other Pacific Islanders do not meet standards for reliability or precision.

### High School Students Who Engaged in Selected Weight Control Behaviors in Past 30 Days, by Sex, 2011

Source (II.19): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



\*Includes diet pills, powders or liquids.

## MENTAL HEALTH

In 2010, 8.0 percent of adolescents aged 12–17 years, or 1.9 million adolescents, experienced at least one major depressive episode (MDE), which is defined as having at least 2 weeks of a depressed mood or loss of interest or pleasure in daily activities, plus a majority of specific depression symptoms, such as altered sleeping patterns, fatigue, and feelings of worthlessness (data not shown).<sup>68</sup> Females were more likely than males to experience MDE (11.8 percent versus 4.4 percent). Occurrence of MDE increased with age, from 3.3 percent among children age 12 years to 10.9 and 10.3 percent

among children ages 16 and 17, respectively (data not shown).

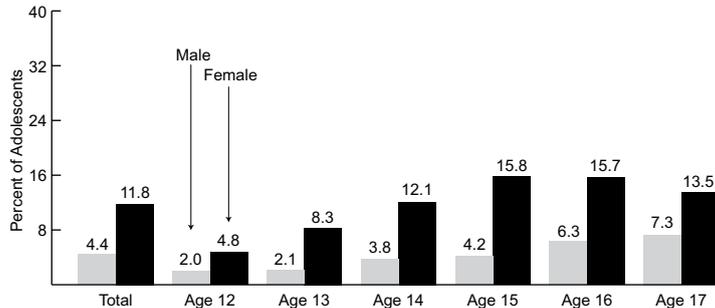
Among adolescents experiencing MDE in 2010, over two-thirds (1.3 million) also experienced severe impairment, defined by the degree to which activities and roles, such as completing chores at home, going to school or work, or maintaining close family relationships, are affected. MDE with severe impairment was more common among older adolescents and females (data not shown).

In 2010, adolescents aged 12 to 17 with past-year MDE were more likely than those without MDE to have used illicit drugs in the past year

(37.2 compared to 17.8 percent). Adolescents with past-year MDE were also more likely to report daily cigarette and heavy alcohol use in the past month compared with those without past-year MDE. Among adolescents with past-year MDE who used illicit drugs, 25.3 percent reported using marijuana or hashish, and 17.0 percent reported non-medical use of psychotherapeutics such as pain relievers, tranquilizers, stimulants, and sedatives. Among adolescents who did not experience past-year MDE, the proportion who reported using these substances was 12.9 and 6.5 percent, respectively (data not shown).

### Occurrence of Major Depressive Episode (MDE)\* in the Past Year Among Adolescents Aged 12–17 Years, by Age and Sex, 2010

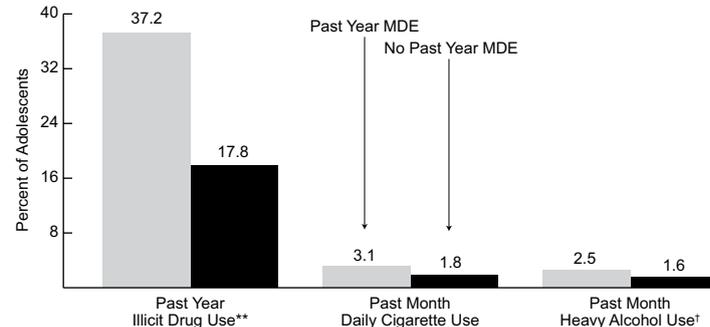
Source (II.20): Substance Abuse and Mental Health Service Administration, National Survey of Drug Use and Health



\*MDE is defined as a period of at least two weeks when a person experienced a depressed mood or loss of pleasure in daily activities and had a majority of specific depression symptoms.

### Substance Use Among Adolescents Aged 12–17 Years, by Past-Year Major Depressive Episode (MDE)\*, 2010

Source (II.20): Substance Abuse and Mental Health Service Administration, National Survey of Drug Use and Health



\*MDE is defined as a period of at least two weeks when a person experienced a depressed mood or loss of pleasure in daily activities and had a majority of specific depression symptoms. \*\*Illicit Drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used non-medically. †Heavy Alcohol Use is defined as drinking five or more drinks on the same occasion on each of 5 or more days in the past 30 days.

## SUICIDE

In 2009, the latest year for which mortality data were available, suicide was the third leading cause of death among persons aged 15–24 years, resulting in over 4,300 deaths, for a rate of 10.2 deaths per 100,000 population. The most common methods used in suicides of adolescents and young adults include firearms (45.6 percent), suffocation (38.6 percent), and poisoning (8.0 percent).<sup>69</sup>

In 2011, data from the Youth Risk Behavior Surveillance System showed that 15.8 percent of high school students had seriously consid-

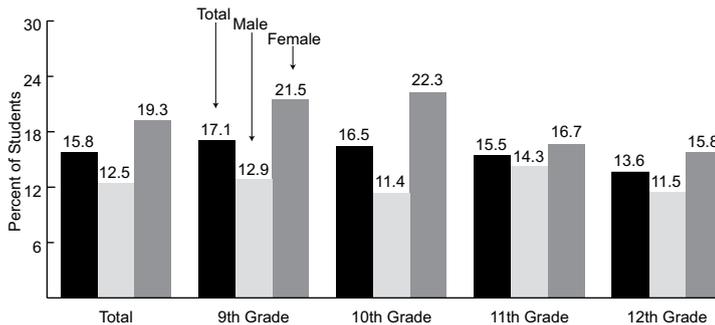
ered attempting suicide during the 12 months prior to the survey. Younger students, those in 9th and 10th grade, were more likely than the oldest students to consider suicide (17.1 and 16.5 percent, respectively versus 13.6 percent). Female students were more likely than males to have considered suicide at each grade level, with the exception of 11th grade, in which no significant difference by sex was observed.

In the same year, 7.8 percent of high school students reported having attempted suicide one or more times in the past 12 months, reflecting a significant increase since 2009 (6.3 percent).

Overall, females (9.8 percent) were more likely to report at least one suicide attempt than males (5.8 percent; data not shown). The proportion of students who reported having attempted suicide also varied by race/ethnicity. Non-Hispanic White students were less likely to report attempted suicide (6.2 percent) than students of all other racial and ethnic groups. Female students were significantly more likely to report attempted suicide among all racial and ethnic groups except non-Hispanic Blacks and students of more than one race (data not shown).

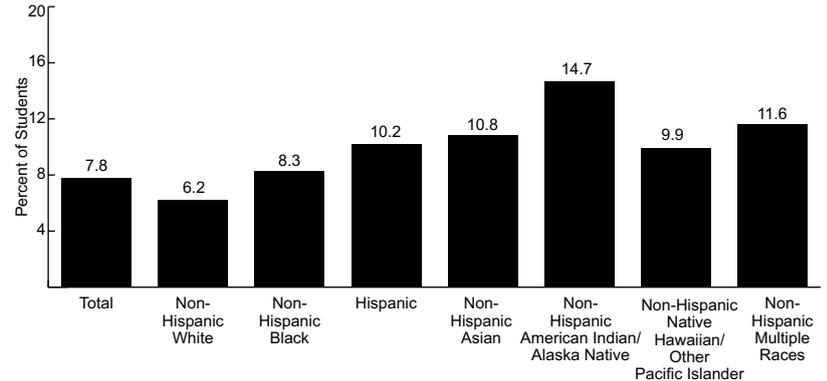
### High School Students Who Considered Attempting Suicide in the Past 12 Months, by Grade Level and Sex, 2011

Source (II.19): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



### High School Students Who Attempted Suicide One or More Times in the Past 12 Months, by Race/Ethnicity, 2011

Source (II.19): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



## VIOLENCE

Physical violence among adolescents occurs in multiple forms and is a critical public health issue in the United States. Instances of violence include homicide, which was the second leading cause of death among all persons aged 10–24 years in 2009 (the latest year for which data are available).<sup>70</sup> For non-Hispanic Blacks aged 10–24 years, homicide was the leading cause of death, among Hispanics it was the second leading cause of death, and among non-Hispanic American Indians and Alaska Natives it was the third leading cause of death. Among both non-Hispanic Whites and Asian/Pacific Islanders it

was the fourth leading cause of death among individuals in this age group (data not shown).<sup>70</sup>

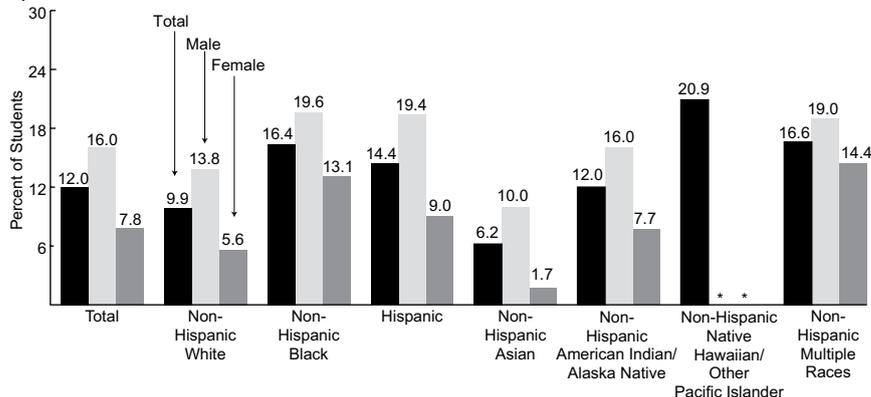
Data from the Youth Risk Behavior Surveillance System show that, in 2011, 12.0 percent of high school students reported being in a physical fight on school property during the preceding 12 months. Among males, 16.0 percent reported having been in a fight; this is more than twice the rate reported by females (7.8 percent). This disparity was most pronounced among non-Hispanic Whites, where males were almost three times as likely as females to have been in a fight (13.8 percent versus 5.6 percent), although significant sex differences were

observed across all racial/ethnic groups. Overall, non-Hispanic Asian students were least likely to report having been in a fight (6.2 percent) while over one-fifth of non-Hispanic Native Hawaiian or Other Pacific Islander students reported having been in a physical fight on school property in the past year.

Approximately 1 out of every 10 high school students reported that they were hit, slapped, or physically hurt on purpose by their boyfriend or girlfriend at least once in the past 12 months. The prevalence of dating violence was similar across grade levels and among males and females.

### High School Students in a Physical Fight on School Property in the Past 12 Months, by Race/Ethnicity\* and Sex, 2011

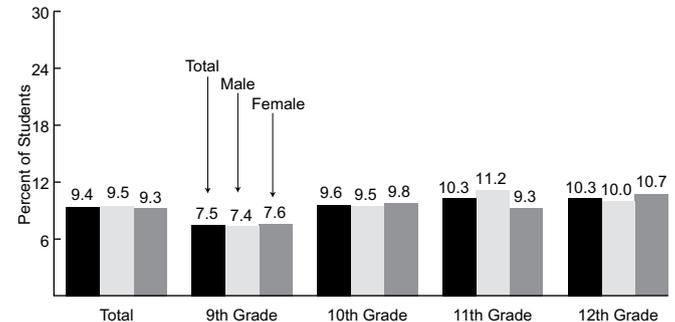
Source (II.19): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



\*Sex-specific data for American Indian/Alaska Natives and Native Hawaiian/Other Pacific Islanders do not meet standards for reliability or precision.

### High School Students Experiencing Dating Violence\* in the Past 12 Months, by Grade Level and Sex, 2011

Source (II.19): Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System



\*Dating violence was defined as having been hit, slapped, or physically hurt on purpose by a boyfriend or girlfriend.

## BULLYING

Bullying is defined as unwanted, aggressive behavior among school-aged children that may be repeated, or has the potential to be repeated, and involves a real or perceived imbalance of power. Making threats, spreading rumors, attacking someone physically or verbally, and excluding someone from a group on purpose are all examples of bullying. There is no specific factor that puts children at risk of being bullied or bullying others, although some groups, such as lesbian, gay, bisexual, or transgendered (LGBT) youth, youth with disabilities, and socially isolated youth may be at higher risk.

Being bullied has been associated with a wide range of both short- and long-term emotional,

physical, and developmental consequences, including depression, anxiety, headaches, sleeping problems, stomach ailments, and decreased academic achievement. Children who bully are also more likely to engage in violent and risky behaviors, such as drug and alcohol use and early sexual activity. Even children who witness bullying can be negatively affected. Cyberbullying, or bullying that takes place using electronic technology, is different from other types of bullying in that it can happen at any time, messages and images can be posted anonymously and distributed quickly, and can be very difficult to delete after posting.<sup>71</sup>

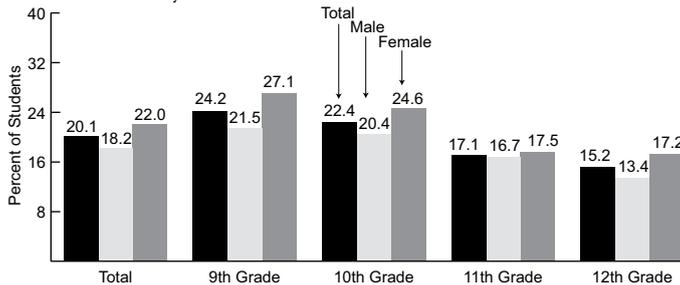
In 2011, 20.1 percent of high school students reported that they had been bullied on school property in the past year. The likelihood of a

child being bullied varied by a number of factors including sex and grade level. Females were more likely than males to have been bullied overall (22.0 percent versus 18.2 percent) while 24.2 percent of 9th graders reported being bullied compared to 15.2 percent of 12th graders.

Approximately one in six (16.2 percent) of high school students reported having been electronically bullied through email, chat rooms, instant messaging, Web sites or texting in the prior 12 months. Females were approximately twice as likely as males to have been electronically bullied at all grade levels (data not shown). Females were also more likely than males to have been electronically bullied across all racial and ethnic groups for whom race- and sex-specific data are available.

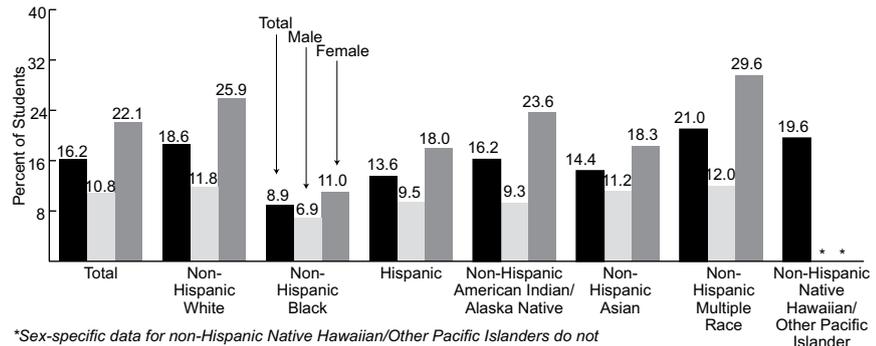
### High School Students Who Were Bullied on School Property in the Past Year, by Sex and Grade, 2011

Source (II.19): Centers for Disease Control and Prevention, High School Youth Risk Behavior Survey



### High School Students Who Were Electronically Bullied in the Past Year, by Sex and Race/Ethnicity, 2011

Source (II.19): Centers for Disease Control and Prevention, High School Youth Risk Behavior Survey



\*Sex-specific data for non-Hispanic Native Hawaiian/Other Pacific Islanders do not meet standards for reliability or precision.

## CIGARETTE SMOKING

In 2012, a report by the Surgeon General found that the majority of cigarette use begins in adolescence or young adulthood and reported that, “of every three young smokers, only one will quit, and one of those remaining smokers will die from tobacco-related causes.”<sup>72</sup>

The percent of teens who report smoking in the past month began a rapid increase in the early 1990s, with the rates among 8th and 10th grade students reaching a peak in 1996 (at 21.0 and 30.4 percent, respectively), and the rate among 12th grade students peaking a year later (36.5 percent). After years of steady

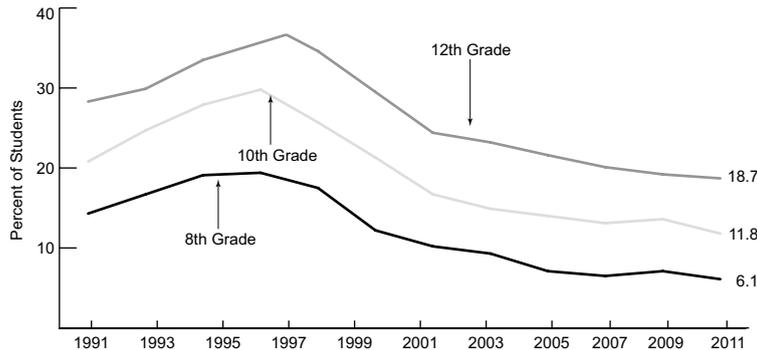
progress, declines in the use of cigarettes by adolescents and young adults have decelerated. In 2009, cigarette smoking among adolescents decreased to 12.7 percent, according to the annual Monitoring the Future study.<sup>73</sup> Between 2009 and 2010, the overall percentage of high school students who reported smoking cigarettes in the past 30 days rose from 12.7 percent in 2009 to 12.8 percent, but this change was not statistically significant. In 2011, declines in past-month smoking occurred among students in all three grades to 6.1 percent of 8th, 11.8 percent of 10th and 18.7 percent of 12th grade students. The decline between 2010 and 2011 was statis-

tically significant for 10th grade students only.

Despite a population-wide decline, certain subgroups of adolescents remain significantly more likely to smoke than their peers. Students who plan to complete a four-year college education are less than half as likely to smoke than students who either do not plan to attend college or plan to attend college for less than four years. This difference exists at each grade level. With regard to race and ethnicity, non-Hispanic White students are the most likely to report smoking in the past month, followed by Hispanic students (data not shown).

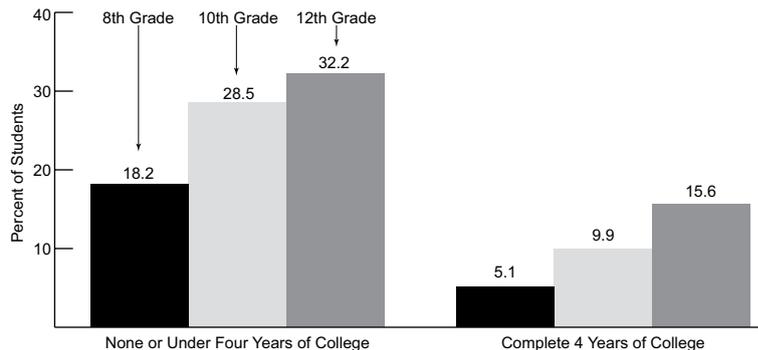
### Cigarette Use Among Students in the Past 30 Days, by Grade, 1991–2011

Source (II.21): National Institutes of Health, National Institute on Drug Abuse, Monitoring the Future Study



### Cigarette Use Among Students in the Past 30 Days, by College Plans, 2010–2011

Source (II.21): National Institutes of Health, National Institute on Drug Abuse, Monitoring the Future Study



## SUBSTANCE ABUSE

In 2010, the percent of adolescents aged 12–17 years who reported using illicit drugs in the past month was 10.1, similar to the 2009 estimate (10.0). Illicit drug use varied by age, with 4.0 percent of youth aged 12–13 years reporting drug use in the past month, compared to 9.3 percent of youth aged 14–15 years and 16.6 percent of youth aged 16–17 years (data not shown). There was also variation by race/ethnicity, with rates ranging from 4.1 percent among non-Hispanic Asian youth to 12.7 percent among non-Hispanic American Indian/Alaska Native youth. Rates for non-Hispanic White, non-Hispanic Black, and Hispanic youth were 9.7 percent, 10.8 percent, and 11.8 percent, respectively (data not shown).

Marijuana is consistently the most commonly used illicit drug among adolescents overall, with 7.4 percent reporting past-month use in 2010. This was followed by nonmedical use of prescription-type psychotherapeutics, such as pain relievers, tranquilizers, stimulants, and sedatives (3.0 percent). Differences by age were observed, however, with younger adolescents aged 12–13 years being more likely to report non-medical use of psychotherapeutic drugs.

Illicit drug use is associated with other health risk behaviors. In 2010, 52.9 percent of adolescents who reported cigarette use in the past month also reported illicit drug use,

compared to only 6.2 percent of adolescents who did not report smoking. Adolescents who reported alcohol use in the past month were also more likely to use illicit drugs than adolescents who did not report alcohol use: 70.6 percent of heavy drinkers (i.e., adolescents who consumed five or more drinks on the same occasion on each of 5 or more days in the past 30 days), also used illicit drugs.

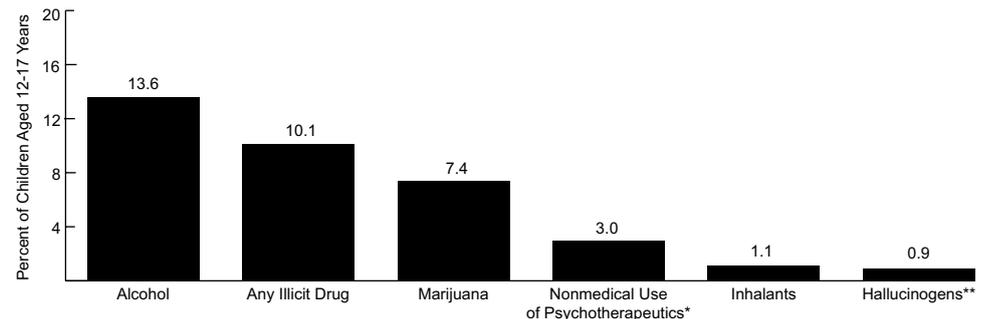
Alcohol continues to be the most commonly used drug among adolescents, with 13.6 percent reporting past-month use in 2010. The prevalence of alcohol use among males and females was similar: 13.7 and 13.5 percent, respectively). Greater variation was evident by race/ethnicity, with rates ranging from 4.8 percent among Asian youth to 14.9 percent of non-Hispanic White youth (data not shown).

In 2010, 30.1 percent of adolescents perceived smoking marijuana once a month to be a great risk, while 49.5 percent perceived the same risk regarding cocaine use. Smoking one or more packs of cigarettes a day was considered a great risk by 65.5 percent of adolescents. Drinking five or more drinks once or twice per week was considered a great risk by 40.8 percent of adolescents (data not shown).

While 14.3 percent of adolescents were approached by someone selling drugs in the past month, nearly 50 percent reported that marijuana would be fairly or very easy to obtain; 22.1 percent reported the same for crack, 19.0 percent for cocaine, 12.9 percent for LSD, and 11.6 percent for heroin (data not shown).

### Past Month Drug Use Among Adolescents Aged 12-17 Years, by Drug Type, 2010

Source (II.22): Substance Abuse and Mental Health Service Administration, National Survey of Drug Use and Health



\*Includes non-medical use of pain relievers, sedatives, stimulants, and tranquilizers; does not include over-the-counter substances.

\*\*Includes LSD, PCP, and Ecstasy.

## ADOLESCENT MORTALITY

In 2010, the latest year for which data are available, there were 10,887 deaths among adolescents aged 15–19 years, representing a rate of 49.4 per 100,000.<sup>74</sup> The rate of adolescent mortality declined by 7.7 percent from the previous year and 26.4 percent from 2000. This decline may be largely attributable to decreases in unintentional injury,<sup>75</sup> which remains the leading cause of adolescent death, followed by homicide, suicide, cancer, and heart disease.

The mortality rate of adolescent males aged 15–19 was more than twice that of females in 2010 (69.6 versus 28.1 per 100,000, respectively). This disparity is largely due to higher rates of unintentional injury, homicide, and suicide

death among male adolescents. For example, homicide death rates were more than five times higher among males than females (14.0 versus 2.3 per 100,000). Homicide and suicide, when combined, account for almost as many deaths as unintentional injuries among male adolescents.

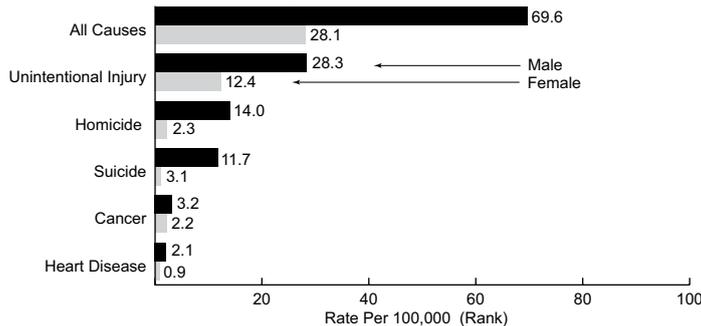
Racial and ethnic disparities also exist, with non-Hispanic American Indian/Alaska Native adolescents experiencing the highest rate of mortality among both males and females (138.6 and 57.6 per 100,000, respectively). Non-Hispanic Black males had the second highest rate of adolescent mortality (108.0 per 100,000) while non-Hispanic Asian/Pacific Islander females had the lowest rate (16.0 per 100,000). Unintentional injury was the leading cause of

death among male and female adolescents of all racial/ethnic groups, except non-Hispanic Black males, for whom homicide was the leading cause of death (data not shown).

The primary cause of unintentional injury death was motor vehicle crashes (63.8 percent), followed by poisoning (16.4 percent) which is the only unintentional injury mechanism to increase over the past decade.<sup>74,75</sup> Poisoning includes prescription drug overdoses. Homicide deaths to adolescents were predominantly attributable to firearms (84.8 percent) while both firearms and suffocation were leading mechanisms of suicide death (40.3 and 45.3 percent, respectively; data not shown).<sup>74</sup>

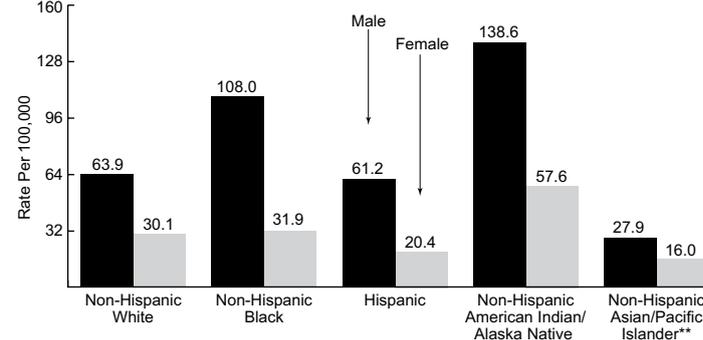
### Mortality Rates Among Adolescents Aged 15–19 Years, by Selected Leading Cause and Sex, 2010

Source (II.23): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



### Mortality Rates Among Adolescents Aged 15–19 Years, by Race/Ethnicity\* and Sex, 2010

Source (II.23): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System



\*Multiple-race data were bridged to single-race categories \*\*Separate estimates for Asians and Native Hawaiians and Other Pacific Islanders were not available.

## CHILDREN WITH SPECIAL HEALTH CARE NEEDS

The National Survey of Children with Special Health Care Needs (NS-CSHCN) asks parents about the types of chronic health conditions experienced by their children and how these conditions impact both the child and their family. These chronic conditions include developmental difficulties such as Down Syndrome and Autism Spectrum Disorder, seizure disorders such as epilepsy, mental health disorders such as depression and anxiety, and other conditions which have lasted, or are expected to last, 12 or more months. Among CSCHN, the conditions (from a list of 20 specific conditions) that children are most commonly reported to

have are allergies, asthma, ADD/ADHD, and developmental delay. Co-morbidities are common, as more than half of all CSHCN experience more than one chronic condition. In the 2009–10 NS-CSHCN, 28.0 percent of all CSHCN reported 2 conditions, while an additional 29.1 percent of CSHCN reported 3 or more conditions.

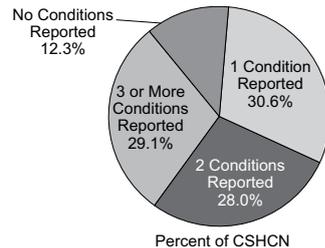
The impact of these conditions on the child varies by a number of factors. In general, CSHCN are as likely to participate in organized activities, volunteer and work for pay as those children without special health care needs; however, children with functional limitations experience additional barriers to participation.<sup>76</sup> The parents of over one-third of CSHCN reported

that in the past 12 months their child's condition never affected the child's ability to do the things that other children could do. A consistent barrier, where the condition always limited the child, was reported for 15.3 percent of CSHCN.

CSCHN who only require prescription medication to care for their condition are the least likely to experience a great deal of difficulty doing the things that other children can do (5.1 percent) as compared to children who require additional services (13.6 percent) or who have a functional limitation (40.9 percent). Only 10.7 percent of CSHCN who have a functional limitation experience "very little" difficulty in participation.

### Number of Health Conditions\* Reported for CSHCN, 2009–10

Source (II.24): Health Resources and Services Administration, Maternal and Child Health Bureau and Centers for Disease Control and Prevention, National Center for Health Statistics, National Survey of Children with Special Health Care Needs



\*Of 20 addressed in the survey. Because CSHCN status is determined by the presence of health-related impacts rather than a specific diagnosis, children may have a special health care need without having been diagnosed with one of the 20 conditions parents were asked about on the survey.

### Degree to Which Special Health Care Need Affects the Child's Ability to Do Things, by Type of Special Health Care Need, 2009–10

Source (II.24): Health Resources and Services Administration, Maternal and Child Health Bureau and Centers for Disease Control and Prevention, National Center for Health Statistics, National Survey of Children with Special Health Care Needs

