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**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.

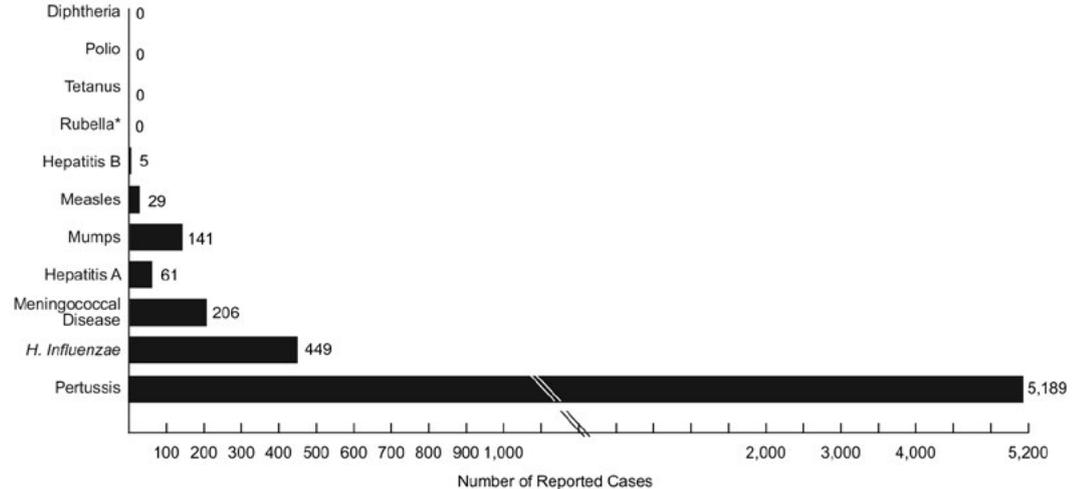
The number of cases of pertussis (or whooping cough) and mumps among children aged 0 to 4 years increased between 2008 and 2009 from 3,468 to 5,189 and from 60 to 141, respectively. According to the CDC, pertussis occurs cyclically and decreases in the incidence of the disease may not be due to increases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

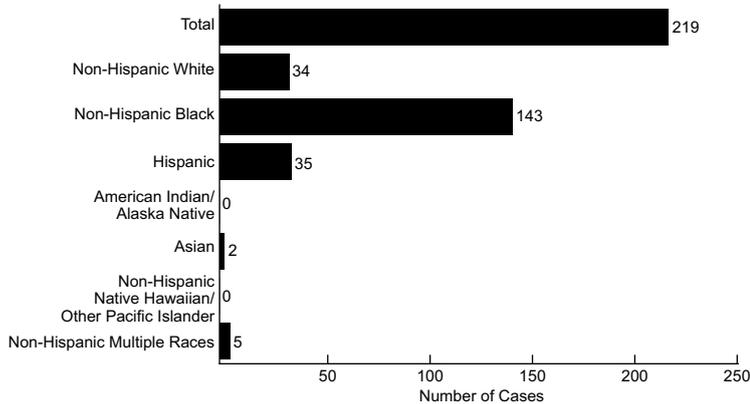
porting for a sufficient length of time. We are now able to present results from 51 areas that meet this standard of reporting.

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

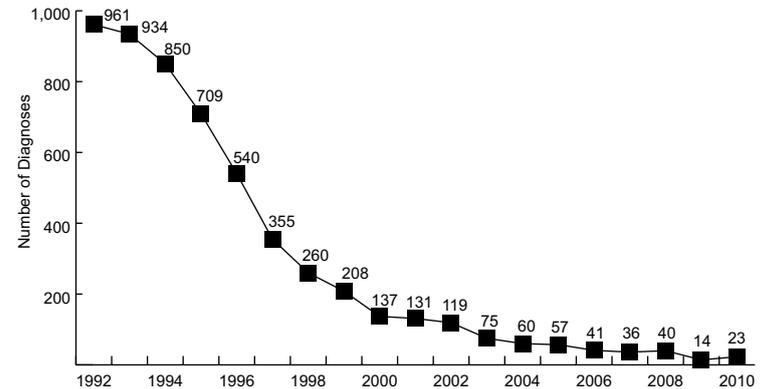
Source (II.12): Centers for Disease Control and Prevention. HIV Surveillance Report, 2010



\*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.

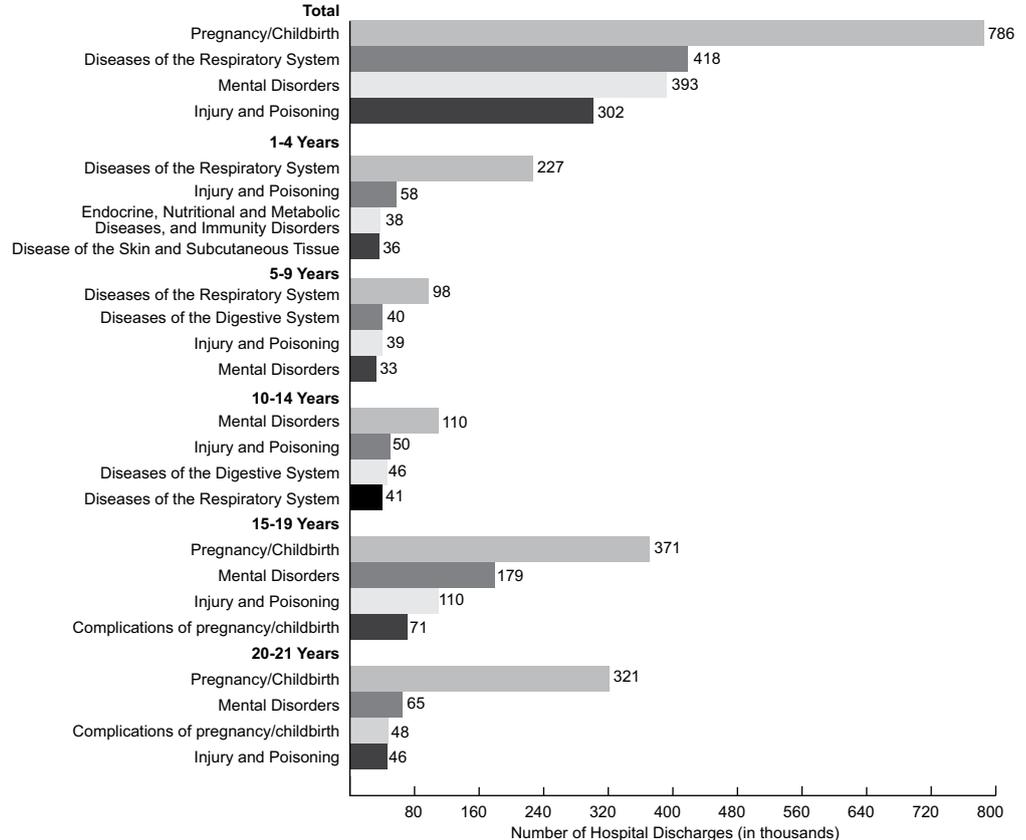
Between 1990 and 2010, overall hospital discharge rates among children, adolescents and young adults aged 1–14 years did not change significantly. However, there was a change in the

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

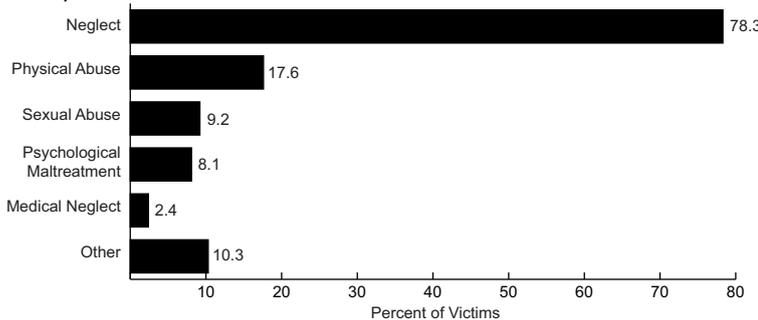


## ABUSE AND NEGLECT

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>

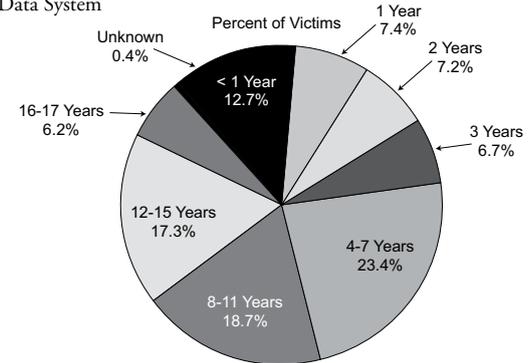
The effects of child maltreatment can be serious and long-lasting, ranging from increased risk of chronic emotional, behavioral and physi-

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.

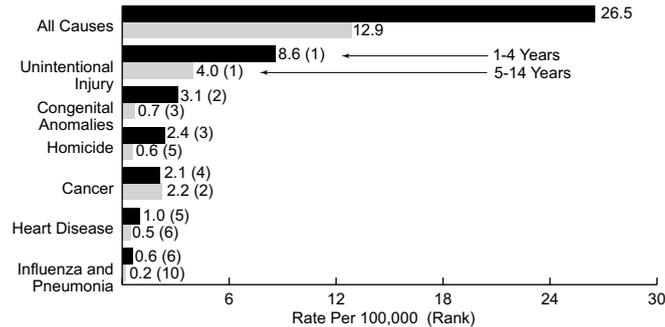
The leading causes of unintentional injury also vary by age. In 2009, drowning accounted for the largest number of unintentional injury deaths among children aged 1–4 years, while motor vehicle accidents was the leading cause among children aged 5–14 years (data not shown).<sup>48</sup>

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>

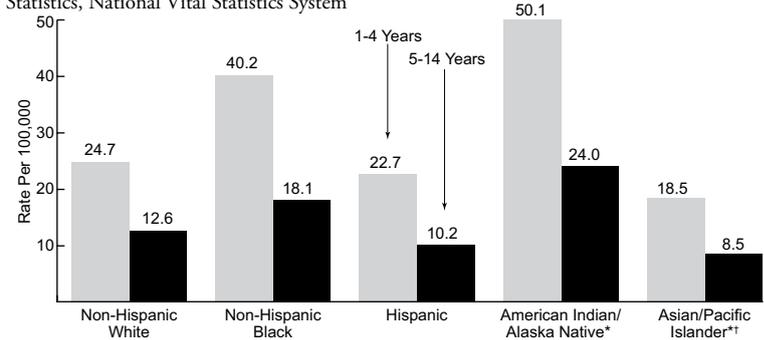
### Mortality Rates Among Children Aged 1–14, by Selected Leading Cause and Age, 2010

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)

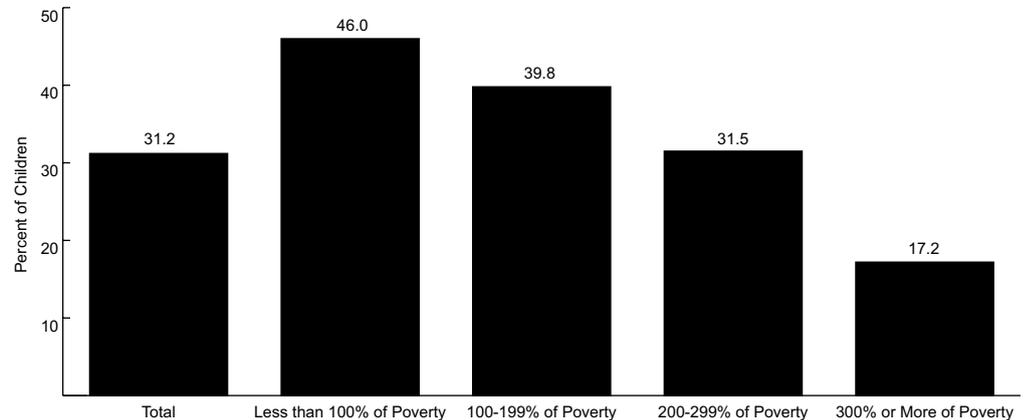
compared to less than 30 percent among children of all other racial/ethnic groups (data not shown).

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.