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# Appendix A: Data Tables

## Environments and Contaminants

### Criteria Air Pollutants

**Table E1: Percentage of children ages 0 to 17 years living in counties with pollutant concentrations above the levels of the current air quality standards, 1999-2009\***

| 1999-2004 | | | | | | |
|---|---|---|---|---|---|---|
| **Pollutant** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** |
| **Any standard** | 74.9 | 76.1 | 76.3 | 75.9 | 77.4 | 73.8 |
| **Ozone (8-hour)** | 65.2 | 64.9 | 66.3 | 66.1 | 67.8 | 61.6 |
| **PM$_{2.5}$ (24-hour)** | 55.0 | 62.5 | 60.8 | 60.9 | 56.8 | 56.0 |
| **Sulfur dioxide (1-hour)** | 31.1 | 28.8 | 26.6 | 25.6 | 21.6 | 20.5 |
| **PM$_{2.5}$ (annual)** | 24.2 | 29.6 | 24.7 | 20.9 | 19.1 | 16.4 |
| **Nitrogen dioxide (1-hour)** | 23.2 | 19.4 | 17.4 | 18.9 | 17.5 | 16.3 |
| **PM$_{10}$ (24-hour)** | 7.9 | 6.3 | 6.0 | 4.8 | 7.8 | 5.2 |
| **Carbon monoxide (8-hour)** | 5.7 | 4.4 | 0.7 | 4.1 | <0.1 | 0.1 |
| **Lead (3-month)** | 2.3 | 1.6 | 2.2 | 1.2 | 1.6 | 1.2 |
| 2005-2009 | | | | | | |
| **Pollutant** | **2005** | **2006** | **2007** | **2008** | **2009** | |
| **Any standard** | 75.9 | 72.9 | 74.4 | 69.2 | 58.6 | |
| **Ozone (8-hour)** | 66.2 | 65.3 | 64.1 | 59.2 | 48.9 | |
| **PM$_{2.5}$ (24-hour)** | 60.2 | 45.7 | 53.6 | 37.1 | 32.2 | |
| **Sulfur dioxide (1-hour)** | 20.9 | 16.6 | 15.5 | 16.7 | 11.4 | |
| **PM$_{2.5}$ (annual)** | 24.3 | 12.5 | 16.1 | 7.3 | 2.1 | |
| **Nitrogen dioxide (1-hour)** | 13.9 | 12.5 | 10.9 | 12.6 | 8.7 | |
| **PM$_{10}$ (24-hour)** | 5.0 | 5.1 | 12.5 | 4.0 | 2.8 | |
| **Carbon monoxide (8-hour)** | 0.2 | 0.3 | 0.1 | 0.2 | 0.0 | |
| **Lead (3-month)** | 1.6 | 1.2 | 5.0 | 5.0 | 4.2 | |

DATA: U.S. Environmental Protection Agency, Office of Air and Radiation, Air Quality System

\* EPA periodically reviews air quality standards and may change them based on updated scientific findings. Measuring concentrations above the level of a standard is not equivalent to violating the standard. The level of a standard may be exceeded on multiple days before the exceedance is considered a violation of the standard. See the indicator text for additional discussion. The indicator is calculated with reference to the current levels of the air quality standards for all years shown. Note that EPA promulgated a revised annual PM$_{2.5}$ standard in December 2012, which has not been incorporated into this analysis.

**Table E1a: Percentage of children ages 0 to 17 years living in counties with pollutant concentrations above the levels of the current air quality standards, by race/ethnicity, 2009***

| Pollutant | All Races/ Ethnicities | White non-Hispanic | Black non-Hispanic | American Indian/Alaska Native non-Hispanic | Asian or Pacific Islander non-Hispanic | Hispanic |
|---|---|---|---|---|---|---|
| Any standard | 58.6 | 51.9 | 62.7 | 38.1 | 70.0 | 71.4 |
| Ozone (8-hour) | 48.9 | 40.9 | 52.2 | 29.5 | 60.7 | 65.2 |
| PM$_{2.5}$ (24-hour) | 32.2 | 24.0 | 34.0 | 19.8 | 47.7 | 48.8 |
| Sulfur dioxide (1-hour) | 11.4 | 9.9 | 17.4 | 5.2 | 10.2 | 11.5 |
| PM$_{2.5}$ (annual) | 2.1 | 1.1 | 0.8 | 1.7 | 2.7 | 5.3 |
| Nitrogen dioxide (1-hour) | 8.7 | 4.0 | 9.8 | 2.8 | 12.8 | 19.4 |
| PM$_{10}$ (24-hour) | 2.8 | 2.5 | 0.9 | 5.8 | 1.8 | 4.8 |
| Carbon monoxide (8-hour) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lead (3-month) | 4.2 | 2.0 | 2.6 | 1.2 | 8.2 | 10.0 |

DATA: U.S. Environmental Protection Agency, Office of Air and Radiation, Air Quality System

* EPA periodically reviews air quality standards and may change them based on updated scientific findings. Measuring concentrations above the level of a standard is not equivalent to violating the standard. The level of a standard may be exceeded on multiple days before the exceedance is considered a violation of the standard. See the indicator text for additional discussion. The indicator is calculated with reference to the current levels of the air quality standards for all years shown. Note that EPA promulgated a revised annual PM$_{2.5}$ standard in December 2012, which has not been incorporated into this analysis.

**Table E1b: Percentage of children ages 0 to 17 years living in counties with pollutant concentrations above the levels of the current air quality standards, by family income, 2009***

| Pollutant | All Incomes | < Poverty Level | ≥ Poverty Level | ≥ Poverty (Detail) 100-200% of Poverty Level | ≥ 200% of Poverty Level |
|---|---|---|---|---|---|
| Any standard | 58.6 | 59.0 | 58.6 | 56.3 | 59.3 |
| Ozone (8-hour) | 48.9 | 49.9 | 48.7 | 47.2 | 49.3 |
| PM$_{2.5}$ (24-hour) | 32.2 | 36.5 | 31.3 | 32.9 | 30.8 |
| Sulfur dioxide (1-hour) | 11.4 | 12.5 | 11.1 | 11.2 | 11.1 |
| PM$_{2.5}$ (annual) | 2.1 | 3.1 | 1.9 | 2.6 | 1.6 |
| Nitrogen dioxide (1-hour) | 8.7 | 12.2 | 8.1 | 10.1 | 7.4 |
| PM$_{10}$ (24-hour) | 2.8 | 2.6 | 2.8 | 3.1 | 2.7 |
| Carbon monoxide (8-hour) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lead (3-month) | 4.2 | 5.7 | 3.9 | 4.9 | 3.6 |

DATA: U.S. Environmental Protection Agency, Office of Air and Radiation, Air Quality System

* EPA periodically reviews air quality standards and may change them based on updated scientific findings. Measuring concentrations above the level of a standard is not equivalent to violating the standard. The level of a standard may be exceeded on multiple days before the exceedance is considered a violation of the standard. See the indicator text for additional discussion. The indicator is calculated with reference to the current levels of the air quality standards for all years shown. Note that EPA promulgated a revised annual PM$_{2.5}$ standard in December 2012, which has not been incorporated into this analysis.

**Table E2: Percentage of children ages 0 to 17 years living in counties with 8-hour ozone and 24-hour PM$_{2.5}$ concentrations above the levels of air quality standards, by frequency of occurrence, 2009\***

| Ozone (8-hour) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1999-2005** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** |
| **No days with concentrations above the standard** | 2.9 | 4.4 | 4.2 | 4.6 | 3.7 | 9.4 | 5.1 |
| **1-3 days** | 4.6 | 9.6 | 6.9 | 6.7 | 8.7 | 22.8 | 9.3 |
| **4-10 days** | 10.8 | 22.9 | 16.2 | 9.6 | 28.5 | 21.0 | 17.7 |
| **11-25 days** | 26.7 | 16.2 | 29.5 | 21.5 | 18.1 | 10.0 | 28.1 |
| **26 or more days** | 23.2 | 16.2 | 13.7 | 28.4 | 12.5 | 7.8 | 11.2 |
| **No monitoring data** | 31.8 | 30.7 | 29.6 | 29.2 | 28.4 | 29.0 | 28.7 |
| **2006-2009** | **2006** | **2007** | **2008** | **2009** | | | |
| **No days with concentrations above the standard** | 6.4 | 8.0 | 13.6 | 24.3 | | | |
| **1-3 days** | 10.6 | 11.2 | 18.6 | 27.7 | | | |
| **4-10 days** | 24.8 | 19.8 | 23.9 | 11.8 | | | |
| **11-25 days** | 19.6 | 25.9 | 8.5 | 3.0 | | | |
| **26 or more days** | 10.4 | 7.2 | 8.2 | 6.4 | | | |
| **No monitoring data** | 28.3 | 28.0 | 27.2 | 26.8 | | | |
| **PM$_{2.5}$ (24-hour)** | | | | | | | |
| **1999-2005** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** |
| **No days with concentrations above the standard** | 13.4 | 10.6 | 12.5 | 12.9 | 16.4 | 14.6 | 11.1 |
| **1-7 days** | 36.3 | 41.5 | 39.1 | 37.5 | 37.4 | 40.0 | 41.9 |
| **8-10 days** | 3.3 | 2.5 | 1.7 | 4.3 | 3.8 | 5.3 | 4.7 |
| **11-25 days** | 9.2 | 11.2 | 12.6 | 11.1 | 9.8 | 8.3 | 10.7 |
| **26 or more days** | 6.2 | 7.2 | 7.4 | 7.8 | 5.4 | 2.2 | 2.4 |
| **No monitoring data** | 31.6 | 27.0 | 26.8 | 26.5 | 27.2 | 29.6 | 29.1 |
| **2006-2009** | **2006** | **2007** | **2008** | **2009** | | | |
| **No days with concentrations above the standard** | 25.4 | 17.5 | 33.9 | 38.4 | | | |
| **1-7 days** | 34.9 | 38.4 | 29.3 | 28.4 | | | |
| **8-10 days** | 6.5 | 1.8 | 4.8 | 0.8 | | | |
| **11-25 days** | 1.0 | 10.2 | 1.3 | 1.9 | | | |
| **26 or more days** | 1.8 | 1.9 | 1.0 | 0.9 | | | |
| **No monitoring data** | 30.4 | 30.2 | 29.7 | 29.6 | | | |

DATA: U.S. Environmental Protection Agency, Office of Air and Radiation, Air Quality System

\* EPA periodically reviews air quality standards and may change them based on updated scientific findings. Measuring concentrations above the level of a standard is not equivalent to violating the standard. The level of a standard may be exceeded on multiple days before the exceedance is considered a violation of the standard. See the indicator text for additional discussion. The indicator is calculated with reference to the current levels of the air quality standards for all years shown.

**Table E3: Percentage of days with good, moderate, or unhealthy air quality for children ages 0 to 17 years, 1999-2009**

| Pollution Level | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1999-2005** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** |
| **Good** | 41.2 | 43.2 | 44.0 | 45.5 | 47.1 | 49.4 | 47.7 |
| **Moderate** | 22.1 | 23.3 | 23.3 | 21.6 | 21.5 | 20.4 | 21.2 |
| **Unhealthy** | 8.8 | 7.2 | 7.0 | 7.6 | 6.0 | 4.8 | 5.7 |
| **No monitoring data** | 27.9 | 26.3 | 25.7 | 25.3 | 25.4 | 25.4 | 25.4 |
| **2006-2009** | **2006** | **2007** | **2008** | **2009** | | | |
| **Good** | 48.9 | 48.6 | 51.9 | 56.6 | | | |
| **Moderate** | 20.5 | 20.5 | 18.3 | 15.5 | | | |
| **Unhealthy** | 5.0 | 4.9 | 3.7 | 2.8 | | | |
| **No monitoring data** | 25.7 | 26.0 | 26.0 | 25.1 | | | |

DATA: U.S. Environmental Protection Agency, Office of Air and Radiation, Air Quality System

NOTE: Good, moderate, and unhealthy air quality are defined using EPA's Air Quality Index (AQI). The health information that supports EPA's periodic reviews of the air quality standards informs decisions on the AQI breakpoints and may change based on updated scientific findings. See text for additional discussion.

**Table E3a: Percentage of days with good, moderate, or unhealthy air quality for children ages 0 to 17 years, by race/ethnicity, 2009**

| Pollution Level | All Races/ Ethnicities | White non- Hispanic | Black non- Hispanic | American Indian/ Alaska Native | Asian or Pacific Islander | Hispanic |
|---|---|---|---|---|---|---|
| **Good** | 56.6 | 54.5 | 60.8 | 50.3 | 65.4 | 57.3 |
| **Moderate** | 15.5 | 12.1 | 16.0 | 11.6 | 20.1 | 23.2 |
| **Unhealthy** | 2.8 | 1.6 | 1.9 | 1.7 | 4.5 | 6.0 |
| **No monitoring data** | 25.1 | 31.8 | 21.3 | 36.5 | 10.0 | 13.5 |

DATA: U.S. Environmental Protection Agency, Office of Air and Radiation, Air Quality System

NOTE: Good, moderate, and unhealthy air quality are defined using EPA's Air Quality Index (AQI). The health information that supports EPA's periodic reviews of the air quality standards informs decisions on the AQI breakpoints and may change based on updated scientific findings. See text for additional discussion.

**Table E3b: Percentage of days with good, moderate, or unhealthy air quality for children ages 0 to 17 years, by family income, 2009**

| Pollution Level | All Incomes | < Poverty Level | ≥ Poverty Level | > Poverty (Detail) | |
|---|---|---|---|---|---|
| | | | | 100-200% of Poverty Level | ≥ 200% of Poverty Level |
| **Good** | 56.6 | 53.6 | 57.2 | 52.8 | 58.7 |
| **Moderate** | 15.5 | 16.9 | 15.3 | 15.9 | 15.1 |
| **Unhealthy** | 2.8 | 3.6 | 2.6 | 3.2 | 2.4 |
| **No monitoring data** | 25.1 | 26.0 | 24.9 | 28.1 | 23.8 |

DATA: U.S. Environmental Protection Agency, Office of Air and Radiation, Air Quality System

NOTE: Good, moderate, and unhealthy air quality are defined using EPA's Air Quality Index (AQI). The health information that supports EPA's periodic reviews of the air quality standards informs decisions on the AQI breakpoints and may change based on updated scientific findings. See text for additional discussion.

## Hazardous Air Pollutants

**Table E4: Percentage of children ages 0 to 17 years living in census tracts where estimated hazardous air pollutant concentrations were greater than health benchmarks in 2005**

| Health Benchmark | |
|---|---|
| Cancer, one in 100,000 | 99.9 |
| Cancer, one in 10,000 | 6.6 |
| Other health effects | 56.4 |

DATA: U.S. Environmental Protection Agency, National Air Toxics Assessment

**Table E4a: Percentage of schoolchildren attending schools in census tracts where estimated hazardous air pollutant concentrations were greater than health benchmarks in 2005**

| Health Benchmark | |
|---|---|
| Cancer, one in 100,000 | 100.0 |
| Cancer, one in 10,000 | 6.2 |
| Other health effects | 56.6 |

DATA: U.S. Environmental Protection Agency, National Air Toxics Assessment

**Table E4b: Percentage of children ages 0 to 17 years living in census tracts where the cancer risk from estimated hazardous air pollutant concentrations was at least one in 10,000 in 2005, by race/ethnicity and family income**

| Race / Ethnicity | All Incomes | < Poverty Level | ≥ Poverty Level |
|---|---|---|---|
| All Races/Ethnicities | 6.6 | 9.3 | 5.9 |
| White | 4.1 | 6.5 | 3.7 |
| Black | 7.2 | 7.4 | 7.0 |
| Asian | 14.4 | 21.1 | 13.5 |
| American Indian/Alaska Native | 4.1 | 3.5 | 4.4 |
| Native Hawaiian or Other Pacific Islander | 8.2 | 9.1 | 7.8 |
| Hispanic | 16.2 | 16.9 | 15.9 |
| All Other Races† | 17.0 | 19.9 | 16.0 |

DATA: U.S. Environmental Protection Agency, National Air Toxics Assessment

NOTE: Race categories include children of Hispanic ethnicity. Hispanic children may be of any race.

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

**Table E4c: Percentage of children ages 0 to 17 years living in census tracts where the non-cancer risk from estimated hazardous air pollutant concentrations exceeded health benchmarks in 2005, by race/ethnicity and family income**

| Race / Ethnicity | All Incomes | < Poverty Level | ≥ Poverty Level |
|---|---|---|---|
| All Races/Ethnicities | 56.4 | 57.3 | 56.2 |
| White | 49.3 | 46.0 | 50.0 |
| Black | 72.9 | 71.8 | 73.5 |
| Asian | 81.4 | 84.4 | 81.0 |
| American Indian/Alaska Native | 32.1 | 28.0 | 34.2 |
| Native Hawaiian or Other Pacific Islander | 57.2 | 57.1 | 57.3 |
| Hispanic | 68.7 | 63.8 | 70.8 |
| All Other Races† | 70.3 | 68.5 | 71.0 |

DATA: U.S. Environmental Protection Agency, National Air Toxics Assessment

NOTE: Race categories include children of Hispanic ethnicity. Hispanic children may be of any race.

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

## Indoor Environments

**Table E5: Percentage of children ages 0 to 6 years regularly exposed to environmental tobacco smoke in the home, by family income, 1994, 2005, and 2010**

| Year | All Incomes | < Poverty Level | 100-200% of Poverty Level | ≥ 200% of Poverty Level |
|------|-------------|-----------------|---------------------------|-------------------------|
| 1994 | 27.3 | 37.1 | 32.7 | 18.5 |
| 2005 | 8.4 | 14.6 | 11.7 | 4.7 |
| 2010 | 6.1 | 10.2 | 8.1 | 3.0 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

**Table E5a: Percentage of children ages 0 to 6 years regularly exposed to environmental tobacco smoke in the home, by race/ethnicity and family income, 2010**

| Race / Ethnicity | All Incomes (n=6,890) | < Poverty Level (n=2,072) | ≥ Poverty Level (n=4,818) | > Poverty (Detail) 100-200% of Poverty Level (n=1,787) | > 200% of Poverty Level (n=3,030) |
|---|---|---|---|---|---|
| **All Races/Ethnicities** (n=6,890) | | 10.2 | 4.7 | 8.1 | 3.0 |
| **White non-Hispanic** (n=2,662) | 7.5 | 19.9 | 5.2 | 11.5 | 3.1 |
| **Black or African-American non-Hispanic** (n=1,049) | 8.5 | 10.4 | 7.0 | 7.8 | 6.3 |
| **Asian non-Hispanic** (n=381) | NA** | NA** | NA** | NA** | NA** |
| **Hispanic** (n=2,492) | 2.2 | 2.5* | 2.1 | 2.5* | 1.6* |
| **Mexican** (n=1,687) | 2.2 | 2.6* | 1.9* | NA** | NA** |
| **Puerto Rican** (n=209) | 4.8* | NA** | NA** | NA** | NA** |
| **All Other Races†** (n=306) | 9.5 | 13.7* | 8.3* | 2.5* | NA** |
| **American Indian/Alaska Native non-Hispanic** (n=22) | NA** | NA** | NA** | NA** | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

**Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate).

**Table E6: Percentage of children ages 0 to 5 years living in homes with interior lead hazards, 1998-1999 and 2005-2006**

| Year | Interior Lead Dust | Interior Deteriorated Lead-Based Paint | Either Interior Lead Dust or Interior Deteriorated Lead-Based Paint |
|---|---|---|---|
| 1998-1999 | 16.2 | 11.9 | 21.6 |
| 2005-2006 | 12.5 | 10.6 | 14.6 |

DATA: U.S. Department of Housing and Urban Development, National Survey of Lead and Allergens in Housing, American Healthy Homes Survey

NOTE: Lead hazards are defined here by current federal standards indicating that floor and window lead dust should not exceed 40 micrograms of lead per square foot ($\mu g/ft^2$) and 250 $\mu g/ft^2$, respectively, in order to protect children from developing "elevated" blood lead levels as defined by the CDC at the time the standards were issued. EPA is currently reviewing the lead dust standards to determine whether they should be lowered.

## Drinking Water Contaminants

**Table E7: Estimated percentage of children ages 0 to 17 years served by community water systems that did not meet all applicable health-based drinking water standards, 1993-2009**

| 1993-1997 | | | | | |
|---|---|---|---|---|---|
| Type of standard violated | 1993 | 1994 | 1995 | 1996 | 1997 |
| Any health-based standard | 19.2 | 15.7 | 10.7 | 9.7 | 9.4 |
| Total coliforms | 10.1 | 8.6 | 4.0 | 4.2 | 3.5 |
| Surface water treatment[#] | 6.3 | 5.5 | 4.1 | 3.7 | 3.4 |
| Lead and copper[†] | 2.8 | 1.7 | 1.9 | 1.8 | 1.8 |
| Chemical and radionuclide | 1.1 | 0.9 | 1.3 | 0.8 | 1.0 |
| Nitrate/nitrite | 0.3 | 0.1 | 0.2 | 0.2 | 0.4 |

| 1998-2003 | | | | | | |
|---|---|---|---|---|---|---|
| Type of standard violated | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
| Any health-based standard | 8.2 | 7.6 | 8.1 | 5.1 | 11.8 | 8.4 |
| Total coliforms | 2.9 | 3.1 | 2.9 | 2.1 | 2.5 | 3.0 |
| Surface water treatment[#] | 2.8 | 2.4 | 3.2 | 1.3 | 6.3 | 1.5 |
| Disinfectants and disinfection byproducts | NA‡ | NA‡ | NA‡ | NA‡ | 1.5 | 3.0 |
| Lead and copper[†] | 1.5 | 1.4 | 1.2 | 1.1 | 0.8 | 0.6 |
| Chemical and radionuclide | 0.9 | 0.7 | 0.8 | 0.7 | 0.8 | 0.8 |
| Nitrate/nitrite | 0.6 | 0.3 | 0.5 | 0.2 | 0.2 | 0.3 |

| 2004-2009 | | | | | | |
|---|---|---|---|---|---|---|
| Type of standard violated | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| Any health-based standard | 10.4 | 12.6 | 10.6 | 7.8 | 6.7 | 7.4 |
| Total coliforms | 3.5 | 3.3 | 2.3 | 2.4 | 2.3 | 2.5 |
| Surface water treatment[#] | 3.3 | 5.2 | 5.0 | 2.6 | 1.5 | 2.0 |
| Disinfectants and disinfection byproducts | 2.6 | 2.6 | 1.6 | 1.4 | 1.4 | 1.3 |
| Lead and copper[†] | 0.9 | 0.8 | 0.4 | 0.4 | 0.5 | 0.8 |
| Chemical and radionuclide | 1.1 | 0.9 | 1.2 | 1.2 | 1.1 | 1.1 |
| Nitrate/nitrite | 0.1 | 0.1 | 0.5 | 0.2 | 0.1 | 0.1 |

DATA: U.S. Environmental Protection Agency, Office of Water, Safe Drinking Water Information System Federal Version

[#] "Surface water treatment" includes violations of the Surface Water Treatment Rule and of the Interim Enhanced Surface Water Treatment Rule.

† Lead and copper represents the lead and copper rule, which is a set of standards and implementation measures.

‡ The standard for disinfectants and disinfection byproducts was first implemented in 2002.

NOTE: A new standard for disinfection byproducts was implemented beginning in 2002 for larger drinking water systems and 2004 for smaller systems.[1] Revisions to the standard for surface water treatment took effect in 2002.[2] A revised standard for radionuclides went into effect in 2003.[3] A revised standard for arsenic went into effect in 2006.[4] No other revisions to the standards have taken effect during the period of trend data.

**Table E8: Estimated percentage of children ages 0 to 17 years served by community water systems with violations of drinking water monitoring and reporting requirements, 1993-2009**

| 1993-1997 | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Type of standard violated** | **1993** | **1994** | **1995** | **1996** | **1997** |
| **Any violation** | 19.4 | 14.1 | 12.6 | 10.8 | 10.5 |
| **Chemical and radionuclide** | 7.9 | 5.9 | 6.3 | 4.8 | 4.3 |
| **Lead and copper** | 6.4 | 3.8 | 3.0 | 3.4 | 3.9 |
| **Total coliforms** | 5.5 | 5.8 | 4.4 | 3.7 | 3.6 |
| **Surface water treatment#** | 1.9 | 1.1 | 0.4 | 0.3 | 0.3 |

| 1998-2003 | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Type of standard violated** | **1998** | **1999** | **2000** | **2001** | **2002** | **2003** |
| **Any violation** | 16.6 | 15.6 | 14.8 | 16.8 | 20.6 | 19.1 |
| **Chemical and radionuclide** | 6.3 | 5.7 | 4.8 | 6.4 | 8.2 | 8.2 |
| **Lead and copper** | 7.3 | 7.3 | 7.9 | 6.9 | 6.5 | 6.7 |
| **Total coliforms** | 4.0 | 3.5 | 3.1 | 4.4 | 2.7 | 4.3 |
| **Disinfectants and disinfection byproducts** | NA‡ | NA‡ | NA‡ | NA‡ | 1.8 | 1.7 |
| **Surface water treatment#** | 0.3 | 0.8 | 0.4 | 0.3 | 3.3 | 2.6 |

| 2004-2009 | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Type of standard violated** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** |
| **Any violation** | 19.6 | 22.5 | 20.6 | 22.1 | 19.2 | 13.4 |
| **Chemical and radionuclide** | 7.6 | 6.8 | 7.9 | 8.8 | 5.6 | 4.1 |
| **Lead and copper** | 7.4 | 8.0 | 8.0 | 7.7 | 7.4 | 3.1 |
| **Total coliforms** | 4.7 | 4.4 | 4.7 | 4.4 | 4.1 | 3.1 |
| **Disinfectants and disinfection byproducts** | 6.5 | 6.5 | 4.7 | 5.6 | 3.5 | 3.5 |
| **Surface water treatment#** | 2.9 | 3.8 | 2.4 | 2.1 | 2.4 | 1.2 |

DATA: U.S. Environmental Protection Agency, Office of Water, Safe Drinking Water Information System Federal Version

# "Surface water treatment" includes violations of the Surface Water Treatment Rule and of the Interim Enhanced Surface Water Treatment Rule.

‡ The standard for disinfectants and disinfection byproducts was first implemented in 2002.

NOTE: A new standard for disinfection byproducts was implemented beginning in 2002 for larger drinking water systems and 2004 for smaller systems.[1] Revisions to the standard for surface water treatment took effect in 2002.[2] A revised standard for radionuclides went into effect in 2003.[3] A revised standard for arsenic went into effect in 2006.[4] No other revisions to the standards have taken effect during the period of trend data.

## Chemicals in Food

**Table E9: Percentage of sampled apples, carrots, grapes, and tomatoes with detectable residues of organophosphate pesticides, 1998-2009**

|  | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Apples** | NA | 80.7 | 54.9 | 49.3 | 45.5 | NA | 50.5 | 45.0 | NA | NA | NA | 34.7 |
| **Carrots** | NA | NA | 10.3 | 6.2 | 8.3 | NA | NA | NA | 3.5 | 5.4 | NA | NA |
| **Grapes** | NA | NA | 20.6 | 14.8 | NA | NA | 16.5 | 16.2 | NA | NA | NA | 7.7 |
| **Tomatoes** | 37.4 | 29.9 | NA | NA | NA | 14.6 | 11.8 | NA | NA | 9.7 | 9.5 | NA |

DATA: U.S. Department of Agriculture, Pesticide Data Program

NOTE: For purposes of indicator calculation, only the 43 organophosphate pesticides measured by the pesticide data program in each year 1998-2009 were considered, so that indicator data are comparable over time. "NA" indicate that the food was not sampled by the Pesticide Data Program in a particular year. Improvements in measurement technology increase the capability to detect pesticide residues in more recent samples. In this analysis, limits of detection are held constant so that indicator data are comparable over time. A separate analysis found that actual detections of pesticide residues were similar or only slightly greater than the values shown in this table.

## Contaminated Lands

**Table E10: Percentage of children ages 0 to 17 years living within one mile of Superfund and Corrective Action sites that may not have all human health protective measures in place, 2009**

| Race / Ethnicity | All Incomes | < Poverty Level | ≥ Poverty Level |
|---|---|---|---|
| **All Races/Ethnicities** | 5.8 | 7.7 | 5.4 |
| **White** | 4.7 | 5.9 | 4.6 |
| **Black** | 8.1 | 9.6 | 7.4 |
| **American Indian/Alaska Native** | 5.1 | 3.7 | 5.5 |
| **Asian** | 8.6 | 10.5 | 8.3 |
| **Native Hawaiian or Other Pacific Islander** | 10.4 | 11.8 | 10.2 |
| **Hispanic** | 8.0 | 8.5 | 7.8 |
| **All Other Races†** | 8.5 | 9.3 | 8.3 |

DATA: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, CERCLIS, and RCRAInfo

NOTE: Race categories include children of Hispanic ethnicity. Hispanic children may be of any race.

**†** The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

**Table E11: Distribution by race/ethnicity and family income of children living near selected contaminated lands\* in 2009, compared with the distribution by race/ethnicity and income of children in the general U.S. population**

| Race / Ethnicity | Population | All Incomes | < Poverty Level |
|---|---|---|---|
| **White** | Children living near selected sites | 55.6 | 36.0 |
| | All children | 68.6 | 47.3 |
| **Black** | Children living near selected sites | 21.1 | 37.6 |
| | All children | 15.1 | 30.1 |
| **American Indian/ Alaska Native** | Children living near selected sites | 1.0 | 0.8 |
| | All children | 1.2 | 1.7 |
| **Asian** | Children living near selected sites | 5.1 | 3.5 |
| | All children | 3.4 | 2.6 |
| **Native Hawaiian or Other Pacific Islander** | Children living near selected sites | 0.3 | 0.2 |
| | All children | 0.2 | 0.1 |
| **All Other Races†** | Children living near selected sites | 17.0 | 21.8 |
| | All children | 11.6 | 18.1 |
| **Hispanic** | Children living near selected sites | 23.5 | 31.7 |
| | All children | 17.1 | 28.7 |

DATA: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, CERCLIS, and RCRAInfo

\*Within one mile of Superfund and Corrective Action sites that may not have all human health protective measures in place.

NOTE: Race categories include children of Hispanic ethnicity. Hispanic children may be of any race.

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

# Biomonitoring

## Lead

**Table B1: Lead in children ages 1 to 5 years: Median and 95th percentile concentrations in blood, 1976-2010**

| | Blood lead concentration (µg/dL) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1976-1980 | 1988-1991 | 1991-1994 | 1999-2000 | 2001-2002 | 2003-2004 | 2005-2006 | 2007-2008 | 2009-2010 |
| **Median** | 15.0 | 3.5 | 2.6 | 2.2 | 1.6 | 1.6 | 1.4 | 1.4 | 1.2 |
| **95th percentile** | 29.0 | 12.1 | 9.7 | 7.0 | 5.8 | 5.1 | 3.8 | 4.1 | 3.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

**Table B1a: Lead in children ages 1 to 17 years: Blood lead concentrations by age group, 2009-2010**

| | Blood lead concentration (µg/dL) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ages 1 to 17 years | Age 1 year | Age 2 years | Ages 3 to 5 years | Ages 6 to 10 years | Ages 11 to 15 years | Ages 16 to 17 years |
| **Median** | 0.8 | 1.2 | 1.2 | 1.1 | 0.8 | 0.7 | 0.7 |
| **95th percentile** | 2.2 | 4.2 | 3.5 | 2.8 | 2.1 | 1.7 | 1.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

**Table B2. Lead in children ages 1 to 5 years: Median concentrations in blood, by race/ethnicity and family income, 2007-2010**

| | Median blood lead concentration (µg/dL) | | |
|---|---|---|---|
| Race / Ethnicity | All Incomes‡ (n=1,653) | < Poverty Level (n=642) | ≥ Poverty Level (n=898) |
| **All Races/Ethnicities** (n=1,653) | 1.3 | 1.5 | 1.2 |
| **White Non-Hispanic** (n=536) | 1.2 | 1.5* | 1.2 |
| **Black Non-Hispanic** (n=338) | 1.6 | 1.7* | 1.4 |
| **Mexican-American** (n=490) | 1.2 | 1.3 | 1.1 |
| **All Other Races/Ethnicities†** (n=289) | 1.2 | 1.6 | 1.1 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B2a. Lead in children ages 1 to 5 years: 95th percentile concentrations in blood, by race/ethnicity and family income, 2007-2010**

| Race / Ethnicity | 95th percentile blood lead concentration (µg/dL) | | |
|---|---|---|---|
| | All Incomes‡ (n=1,653) | < Poverty Level (n=642) | ≥ Poverty Level (n=898) |
| All Races/Ethnicities (n=1,653) | 3.9 | 4.7 | 3.3 |
| White non-Hispanic (n=536) | 3.5 | 4.5* | 3.4 |
| Black non-Hispanic (n=338) | 5.8 | 6.8* | 4.2 |
| Mexican-American (n=490) | 3.3 | 4.1 | 3.2 |
| All Other Races/Ethnicities† (n=289) | 3.5 | 4.2 | 2.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B2b. Lead in children ages 1 to 5 years: Median concentrations in blood, by race/ethnicity and family income, 1991-1994**

| Race / Ethnicity | Median blood lead concentration (µg/dL) | | |
|---|---|---|---|
| | All Incomes‡ (n=2,367) | < Poverty Level (n=974) | ≥ Poverty Level (n=1,253) |
| All Races/Ethnicities (n=2,367) | 2.6 | 4.0 | 2.2 |
| White Non-Hispanic (n=623) | 2.3 | 3.2* | 2.1 |
| Black Non-Hispanic (n=773) | 4.3 | 5.1 | 3.5 |
| Mexican-American (n=822) | 3.1 | 3.7 | 2.6 |
| All Other Races/Ethnicities† (n=149) | 2.5 | NA** | 2.0* |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

## Mercury

**Table B3: Mercury in women ages 16 to 49 years: Median and 95th percentile concentrations in blood, 1999-2010**

| | Concentration of mercury in blood (µg/L) | | | | | |
|---|---|---|---|---|---|---|
| | **1999-2000** | **2001-2002** | **2003-2004** | **2005-2006** | **2007-2008** | **2009-2010** |
| **Median** | 0.9 | 0.7 | 0.8 | 0.8 | 0.7 | 0.8 |
| **95th percentile** | 7.4 | 3.7 | 4.5 | 4.0 | 3.7 | 4.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

**Table B3a. Mercury in women ages 16 to 49 years: Median concentrations in blood, by race/ethnicity and family income, 2007-2010**

| | Median concentration of mercury in blood (µg/L) | | |
|---|---|---|---|
| **Race / Ethnicity** | **All Incomes‡** *(n=3,456)* | **< Poverty Level** *(n=915)* | **≥ Poverty Level** *(n=2,261)* |
| **All Races/Ethnicities** *(n=3,456)* | 0.7 | 0.6 | 0.8 |
| **White non-Hispanic** *(n=1,430)* | 0.7 | 0.5 | 0.7 |
| **Black non-Hispanic** *(n=665)* | 0.8 | 0.8 | 0.9 |
| **Mexican-American** *(n=722)* | 0.6 | 0.6 | 0.7 |
| **All Other Races/Ethnicities†** *(n=639)* | 1.3 | 0.8 | 1.5 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

**Table B3b. Mercury in women ages 16 to 49 years: 95<sup>th</sup> percentile concentrations in blood, by race/ethnicity and family income, 2007-2010**

| Race / Ethnicity | 95<sup>th</sup> percentile concentration of mercury in blood (µg/L) | | |
|---|---|---|---|
| | All Incomes‡ <br> (n=3,456) | < Poverty Level <br> (n=915) | ≥ Poverty Level <br> (n=2,261) |
| All Races/Ethnicities <br> (n=3,456) | 3.9 | 2.9 | 4.0 |
| White non-Hispanic <br> (n=1,430) | 3.7 | 2.9 | 3.7 |
| Black non-Hispanic <br> (n=665) | 2.9 | 2.3 | 3.3 |
| Mexican-American <br> (n=722) | 2.3 | 1.9 | 2.4 |
| All Other Races/Ethnicities† <br> (n=639) | 6.7 | NA** | 6.5 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B3c: Mercury in children ages 1 to 5 years: Median and 95<sup>th</sup> percentile concentrations in blood, 1999-2010**

| | Concentration of mercury in blood (µg/L) | | | | | |
|---|---|---|---|---|---|---|
| | 1999-2000 | 2001-2002 | 2003-2004 | 2005-2006 | 2007-2008 | 2009-2010 |
| Median | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 |
| 95<sup>th</sup> percentile | 2.3 | 1.9 | 1.8 | 1.4 | 1.3 | 1.3 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

**Table B3d: Mercury in children ages 1 to 17 years: Median and 95<sup>th</sup> percentile concentrations in blood, by age group, 2007-2010**

| | Concentration of mercury in blood (µg/L) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ages 1 to 17 years | Age 1 year | Age 2 years | Ages 3 to 5 years | Ages 6 to 10 years | Ages 11 to 15 years | Ages 16 to 17 years |
| Median | 0.4 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.5 |
| 95<sup>th</sup> percentile | 1.9 | 1.2 | 1.3 | 1.4 | 1.7 | 2.2 | 2.8 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

## Cotinine

**Table B4: Cotinine in nonsmoking children ages 3 to 17 years: Median and 95<sup>th</sup> percentile concentrations in blood serum, 1988-2010**

| | Concentration of cotinine in serum (ng/mL) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1988-1991 | 1991-1994 | 1999-2000 | 2001-2002 | 2003-2004 | 2005-2006 | 2007-2008 | 2009-2010 |
| **Median** | 0.25 | 0.21 | 0.11 | 0.06* | 0.10 | 0.05 | 0.05 | 0.03 |
| **95<sup>th</sup> percentile** | 3.2 | 3.2 | 3.1 | 3.2 | 3.2 | 2.3 | 2.6 | 2.1 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Based on children ages 3 to 17 years with serum cotinine $\leq$ 10 ng/mL (ages 4 to 17 years for 1988-1991 and 1991-1994).

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B4a. Cotinine in nonsmoking children ages 3 to 17 years: Median concentrations in blood serum, by race/ethnicity and family income, 2007-2010**

| | Median concentration of cotinine in serum (ng/mL) | | |
|---|---|---|---|
| **Race / Ethnicity** | **All Incomes‡** *(n=4,284)* | **< Poverty Level** *(n=1,323)* | **≥ Poverty Level** *(n=2,648)* |
| **All Races/Ethnicities** *(n=4,284)* | 0.04 | 0.14 | 0.03 |
| **White non-Hispanic** *(n=1,310)* | 0.04 | NA** | 0.04 |
| **Black non-Hispanic** *(n=955)* | 0.11 | 0.38 | 0.06 |
| **Mexican-American** *(n=1,229)* | 0.02 | 0.03 | 0.02 |
| **All Other Races/Ethnicities†** *(n=790)* | 0.03 | 0.09 | 0.02 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Based on children ages 3 to 17 years with serum cotinine $\leq$ 10 ng/mL.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B4b. Cotinine in nonsmoking children ages 3 to 17 years: 95th percentile concentrations in blood serum, by race/ethnicity and family income, 2007-2010**

| Race / Ethnicity | 95th percentile concentration of cotinine in serum (ng/mL) | | |
|---|---|---|---|
| | All Incomes‡ (n=4,284) | < Poverty Level (n=1,323) | ≥ Poverty Level (n=2,648) |
| **All Races/Ethnicities** (n=4,284) | 2.5 | 4.1 | 2.0 |
| **White non-Hispanic** (n=1,310) | 2.9 | 5.8 | 2.3 |
| **Black non-Hispanic** (n=955) | 2.6 | 3.0 | 2.3 |
| **Mexican-American** (n=1,229) | 0.8 | 0.9* | 0.7* |
| **All Other Races/Ethnicities†** (n=790) | 1.5 | NA** | 0.7* |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Based on children ages 3 to 17 years with serum cotinine ≤ 10 ng/mL.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B4c: Cotinine in nonsmoking children ages 3 to 17 years: Median and 95th percentile concentrations in blood serum, by age group, 2007-2010**

| | Concentration of cotinine in serum (ng/mL) | | | | |
|---|---|---|---|---|---|
| | Ages 3 to 17 years | Ages 3 to 5 years | Ages 6 to 10 years | Ages 11 to 15 years | Ages 16 to 17 years |
| **Median** | 0.04 | 0.06 | 0.05 | 0.03 | 0.04 |
| **95th percentile** | 2.5 | 2.9 | 2.5 | 2.3 | 2.9 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

**Table B5: Cotinine in nonsmoking women ages 16 to 49 years: Median and 95th percentile concentrations in blood serum, 1988-2010**

| | Concentration of cotinine in serum (ng/mL) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1988-1991 | 1991-1994 | 1999-2000 | 2001-2002 | 2003-2004 | 2005-2006 | 2007-2008 | 2009-2010 |
| **Median** | 0.21 | 0.15 | 0.06 | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 |
| **95th percentile** | 2.3 | 2.1 | 1.7 | 1.6 | 2.2 | 1.5 | 1.9 | 1.5 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- Based on women ages 16 to 49 years with serum cotinine ≤ 10 ng/mL.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

**Table B5a. Cotinine in nonsmoking women ages 16 to 49 years: Median concentrations in blood serum, by race/ethnicity and family income, 2007-2010**

| Race / Ethnicity | Median concentration of cotinine in serum (ng/mL) | | |
| --- | --- | --- | --- |
| | All Incomes‡ (n=2,601) | < Poverty Level (n=583) | ≥ Poverty Level (n=1,781) |
| All Races/Ethnicities (n=2,601) | 0.03 | 0.05 | 0.03 |
| White non-Hispanic (n=949) | 0.03 | NA** | 0.03 |
| Black non-Hispanic (n=475) | 0.10 | 0.33 | 0.06 |
| Mexican-American (n=654) | 0.03 | 0.04 | 0.02 |
| All Other Races/Ethnicities† (n=523) | 0.03 | 0.03* | 0.03 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- Based on women ages 16 to 49 years with serum cotinine ≤ 10 ng/mL.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B5b. Cotinine in nonsmoking women ages 16 to 49 years: 95<sup>th</sup> percentile concentrations in blood serum, by race/ethnicity and family income, 2007-2010**

| Race / Ethnicity | 95th percentile concentration of cotinine in serum (ng/mL) | | |
| | All Incomes‡ (n=2,601) | < Poverty Level (n=583) | ≥ Poverty Level (n=1,781) |
|---|---|---|---|
| **All Races/Ethnicities** (n=2,601) | 1.6 | 3.5 | 1.4 |
| **White non-Hispanic** (n=949) | 1.4 | 3.7* | 1.0 |
| **Black non-Hispanic** (n=475) | 3.4 | 8.3 | 3.0 |
| **Mexican-American** (n=654) | 1.6* | 2.5 | NA** |
| **All Other Races/Ethnicities†** (n=523) | NA** | NA** | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- Based on women ages 16 to 49 years with serum cotinine ≤ 10 ng/mL.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

## Perfluorochemicals (PFCs)

**Table B6. Perfluorochemicals in women ages 16 to 49 years: Median concentrations in blood serum, 1999-2008**

| Year | Median concentration of PFCs in serum (ng/mL) | | | |
| | PFOS | PFOA | PFHxS | PFNA |
|---|---|---|---|---|
| **1999-2000** | 23.8 | 4.6 | 1.3 | 0.5 |
| **2003-2004** | 14.6 | 3.0 | 1.4 | 0.8 |
| **2005-2006** | 11.6 | 2.9 | 1.2 | 0.8 |
| **2007-2008** | 8.7 | 3.2 | 1.1 | 1.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- PFOS = perfluorooctane sulfonic acid, PFOA = perfluorooctanoic acid, PFHxS = perfluorohexane sulfonic acid, and PFNA = perfluorononanoic acid.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

**Table B6a. Perfluorochemicals in women ages 16 to 49 years: 95th percentile concentrations in blood serum, 1999-2008**

| Year | 95th percentile concentration of PFCs in serum (ng/mL) | | | |
|---|---|---|---|---|
| | PFOS | PFOA | PFHxS | PFNA |
| 1999-2000 | 50.1 | 8.4 | 4.9 | 1.3 |
| 2003-2004 | 42.2 | 8.4 | 7.1* | NA** |
| 2005-2006 | 27.8 | 6.4 | 5.4 | 2.2 |
| 2007-2008 | 22.8 | 7.9 | 4.9 | 3.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- PFOS = perfluorooctane sulfonic acid, PFOA = perfluorooctanoic acid, PFHxS = perfluorohexane sulfonic acid, and PFNA = perfluorononanoic acid.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B6b. Perfluorochemicals in women ages 16 to 49 years: Median concentrations in blood serum, by race/ethnicity and family income, 2005-2008**

| | Race / Ethnicity | Median concentration of PFCs in serum (ng/mL) | | |
|---|---|---|---|---|
| | | All Incomes‡ (n=1,121) | < Poverty Level (n=278) | ≥ Poverty Level (n=780) |
| **PFOS** | All Races/Ethnicities (n=1,121) | 10.1 | 8.1 | 11.0 |
| | White non-Hispanic (n=453) | 11.4 | 8.1* | 11.6 |
| | Black non-Hispanic (n=255) | 11.2 | NA** | 11.2 |
| | Mexican-American (n=272) | 7.4 | 8.1* | 7.3 |
| | All Other Races/Ethnicities† (n=141) | 8.3 | NA** | 10.5 |
| **PFOA** | All Races/Ethnicities (n=1,121) | 3.1 | 2.7 | 3.2 |
| | White non-Hispanic (n=453) | 3.5 | 3.3* | 3.5 |
| | Black non-Hispanic (n=255) | 2.7 | NA** | 2.6 |
| | Mexican-American (n=272) | 2.3 | 2.1* | 2.4 |
| | All Other Races/Ethnicities† (n=141) | 2.4 | NA** | 2.6 |
| **PFHxS** | All Races/Ethnicities (n=1,121) | 1.2 | 1.0 | 1.2 |
| | White non-Hispanic (n=453) | 1.3 | 1.1* | 1.3 |
| | Black non-Hispanic (n=255) | 1.1 | NA** | 1.1 |
| | Mexican-American (n=272) | 0.9 | 0.9* | 1.0 |
| | All Other Races/Ethnicities† (n=141) | 0.8 | NA** | 1.1 |
| **PFNA** | All Races/Ethnicities (n=1,121) | 1.0 | 1.0 | 1.0 |
| | White non-Hispanic (n=453) | 1.1 | 1.0* | 1.1 |
| | Black non-Hispanic (n=255) | 1.1 | NA** | 1.2 |
| | Mexican-American (n=272) | 0.8 | 0.9* | 0.8 |
| | All Other Races/Ethnicities† (n=141) | 1.1 | NA** | 1.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- PFOS = perfluorooctane sulfonic acid, PFOA = perfluorooctanoic acid, PFHxS = perfluorohexane sulfonic acid, and PFNA = perfluorononanoic acid.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B6c. Perfluorochemicals in women ages 16 to 49 years: 95th percentile concentrations in blood serum, by race/ethnicity and family income, 2005-2008**

| | Race / Ethnicity | 95th percentile concentration of PFCs in serum (ng/mL) | | |
|---|---|---|---|---|
| | | All Incomes‡ (n=1,121) | < Poverty Level (n=278) | ≥ Poverty Level (n=780) |
| PFOS | All Races/Ethnicities (n=1,121) | 25.7 | 22.6 | 27.8 |
| | White non-Hispanic (n=453) | 28.4 | 23.9* | 28.4 |
| | Black non-Hispanic (n=255) | 25.7 | NA** | 25.7 |
| | Mexican-American (n=272) | 17.3 | 17.3* | 16.4 |
| | All Other Races/Ethnicities† (n=141) | 24.9 | NA** | 31.0 |
| PFOA | All Races/Ethnicities (n=1,121) | 7.5 | 5.6 | 7.8 |
| | White non-Hispanic (n=453) | 8.1 | 5.8* | 8.1 |
| | Black non-Hispanic (n=255) | 6.5 | NA** | 6.1 |
| | Mexican-American (n=272) | 5.5 | 5.4* | 5.6 |
| | All Other Races/Ethnicities† (n=141) | 5.8 | NA** | 5.8 |
| PFHxS | All Races/Ethnicities (n=1,121) | 5.1 | 5.4 | 5.1 |
| | White non-Hispanic (n=453) | 5.6 | 6.0* | 5.6 |
| | Black non-Hispanic (n=255) | 4.2 | NA** | 3.7 |
| | Mexican-American (n=272) | 4.6 | 4.0* | 5.2 |
| | All Other Races/Ethnicities† (n=141) | 2.1 | NA** | 2.1 |
| PFNA | All Races/Ethnicities (n=1,121) | 2.8 | 2.7 | 2.6 |
| | White non-Hispanic (n=453) | 2.9 | 2.0* | 2.7 |
| | Black non-Hispanic (n=255) | NA** | NA** | 2.3 |
| | Mexican-American (n=272) | 2.3 | 2.3* | 2.0 |
| | All Other Races/Ethnicities† (n=141) | 2.8 | NA** | 2.8 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- PFOS = perfluorooctane sulfonic acid, PFOA = perfluorooctanoic acid, PFHxS = perfluorohexane sulfonic acid, and PFNA = perfluorononanoic acid.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

## Polychlorinated Biphenyls (PCBs)

**Table B7. PCBs in women ages 16 to 49 years: Median concentrations in blood serum, by race/ethnicity and family income, 2001-2004**

| Race / Ethnicity | Median concentration of PCBs in serum (ng/g lipid) | | |
| --- | --- | --- | --- |
| | All Incomes‡ (n=1,164) | < Poverty Level (n=299) | ≥ Poverty Level (n=810) |
| All Races/Ethnicities (n=1,164) | 30.1 | 25.8 | 31.8 |
| White non-Hispanic (n=477) | 33.6 | 29.0* | 34.8 |
| Black non-Hispanic (n=281) | 32.2 | 30.3* | 37.4 |
| Mexican-American (n=305) | 18.0 | 16.1* | 18.9 |
| All Other Races/Ethnicities† (n=101) | 31.6 | NA** | 38.0* |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B7a. PCBs in women ages 16 to 49 years: 95<sup>th</sup> percentile concentrations in blood serum, by race/ethnicity and family income, 2001-2004**

| Race / Ethnicity | 95th percentile concentration of PCBs in serum (ng/g lipid) | | |
|---|---|---|---|
| | All Incomes‡ (n=1,164) | < Poverty Level (n=299) | ≥ Poverty Level (n=810) |
| All Races/Ethnicities (n=1,164) | 106.2 | 87.6 | 111.3 |
| White non-Hispanic (n=477) | 108.7 | 87.6* | 114.6 |
| Black non-Hispanic (n=281) | 101.8 | 74.3* | 118.0 |
| Mexican-American (n=305) | 49.1 | NA** | 58.1 |
| All Other Races/Ethnicities† (n=101) | 245.2 | NA** | 191.3* |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

## Polybrominated Diphenyl Ethers (PBDEs)

**Table B8. PBDEs in women ages 16 to 49 years: Median concentrations in blood serum, by race/ethnicity and family income, 2003-2004**

| Race / Ethnicity | Median concentration of PBDEs in serum (ng/g lipid) |
|---|---|
| **All Races/Ethnicities** <br> *(n=540)* | 44.2 |
| **White non-Hispanic** <br> *(n=233)* | 48.9 |
| **Black non-Hispanic** <br> *(n=132)* | 47.6* |
| **Mexican-American** <br> *(n=131)* | 41.0* |
| **All Other Races/Ethnicities†** <br> *(n=44)* | NA** |
| **Income** | |
| **All Incomes‡** <br> *(n=540)* | 44.2 |
| **< Poverty Level** <br> *(n=156)* | 41.8 |
| **> Poverty Level** <br> *(n=352)* | 43.9 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B8a. PBDEs in children ages 12 to 17 years: Median concentrations in blood serum, by race/ethnicity and family income, 2003-2004**

| Race / Ethnicity | Median concentration of PBDEs in serum (ng/g lipid) |
|---|---|
| **All Races/Ethnicities** *(n=464)* | 52.9 |
| **White non-Hispanic** *(n=114)* | 47.5* |
| **Black non-Hispanic** *(n=176)* | 50.4* |
| **Mexican-American** *(n=145)* | 62.9* |
| **All Other Races/Ethnicities† *(n=29)* | NA** |
| **Income** | |
| **All Incomes‡** *(n=464)* | 52.9 |
| **< Poverty Level** *(n=147)* | 62.6 |
| **> Poverty Level** *(n=304)* | 49.8 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

## Phthalates

**Table B9: Phthalate metabolites in women ages 16 to 49 years: Median concentrations in urine, 1999-2008**

| | Median concentration of phthalate metabolites in urine (µg/L) | | | | |
|---|---|---|---|---|---|
| | **1999-2000** | **2001-2002** | **2003-2004** | **2005-2006** | **2007-2008** |
| **DEHP metabolites** | Ø | 41.9 | 44.5 | 40.6 | 50.6 |
| **DBP metabolites[1]** | 32.6 | 26.7 | 32.1 | 32.2 | 36.3 |
| **BBzP metabolite** | 13.8 | 13.6 | 12.3 | 9.9 | 12.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- DEHP = di-2-ethylhexyl phthalate, DBP = dibutyl phthalate(di-n-butyl phthalate and di-isobutyl phthalate), and BBzP = butyl benzyl phthalate.

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

Ø The estimate is not reported because the DEHP metabolites MEOHP and MEHHP were not measured in 1999-2000.

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[1] The primary urinary metabolites of DBP (di-n-butyl phthalate and di-isobutyl phthalate) are mono-n-butyl phthalate (MnBP) and mono-isobutyl phthalate (MiBP). The urinary levels of MnBP and MiBP were measured together for the NHANES 1999–2000 survey cycle, but for the following years were measured separately. Indicators B9 and B10 present the combined urinary levels of MnBP and MiBP for each survey cycle.

**Table B9a: Phthalate metabolites in women ages 16 to 49 years: 95<sup>th</sup> percentile concentrations in urine, 1999-2008**

| | 95th percentile concentration of phthalate metabolites in urine (µg/L) | | | | |
|---|---|---|---|---|---|
| | **1999-2000** | **2001-2002** | **2003-2004** | **2005-2006** | **2007-2008** |
| **DEHP metabolites** | Ø | 577.9* | 462.2 | 521.3* | 567.2 |
| **DBP metabolites** | NA** | 128.2 | 139.6 | 144.9 | 160.2 |
| **BBzP metabolite** | 73.9 | 99.7 | 67.8 | 67.5 | 70.5 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- DEHP = di-2-ethylhexyl phthalate, DBP = dibutyl phthalate (di-n-butyl phthalate and di-isobutyl phthalate), and BBzP = butyl benzyl phthalate.

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

- Phthalates do not accumulate in bodily tissues; thus, the distribution of NHANES urinary phthalate metabolite levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[5-7]

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

Ø The estimate is not reported because the DEHP metabolites MEOHP and MEHHP were not measured in 1999-2000.

**Table B9b. Phthalate metabolites in women ages 16 to 49 years: Median concentrations in urine by race/ethnicity and family income, 2005-2008**

| | Race / Ethnicity | Median concentration of phthalate metabolites in urine (µg/L) | | |
|---|---|---|---|---|
| | | All Incomes‡ *(n=1,187)* | < Poverty Level *(n=289)* | ≥ Poverty Level *(n=824)* |
| **DEHP metabolites** | **All Races/Ethnicities** *(n=1,187)* | 43.9 | 48.0 | 41.7 |
| | **White non-Hispanic** *(n=456)* | 46.5 | NA** | 41.7 |
| | **Black non-Hispanic** *(n=291)* | 58.0 | 49.8* | 65.2 |
| | **Mexican-American** *(n=283)* | 35.5 | 44.8* | 32.3 |
| | **All Other Races/Ethnicities†** *(n=157)* | 43.3 | 40.5* | 44.6 |
| **DBP metabolites** | **All Races/Ethnicities** *(n=1,187)* | 33.2 | 37.3 | 31.9 |
| | **White non-Hispanic** *(n=456)* | 29.9 | 38.6* | 27.5 |
| | **Black non-Hispanic** *(n=291)* | 48.3 | 41.2* | 51.6 |
| | **Mexican-American** *(n=283)* | 39.9 | 32.0* | 46.5 |
| | **All Other Races/Ethnicities†** *(n=157)* | 31.4 | 29.5* | 31.4 |
| **BBzP metabolite** | **All Races/Ethnicities** *(n=1,187)* | 10.9 | 13.3 | 10.4 |
| | **White non-Hispanic** *(n=456)* | 10.7 | 13.4* | 10.4 |
| | **Black non-Hispanic** *(n=291)* | 14.3 | 14.5* | 14.2 |
| | **Mexican-American** *(n=283)* | 11.5 | 10.7* | 12.0 |
| | **All Other Races/Ethnicities†** *(n=157)* | 5.8* | 11.9* | 5.3* |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- DEHP = di-2-ethylhexyl phthalate, DBP = dibutyl phthalate (di-n-butyl phthalate and di-isobutyl phthalate), and BBzP = butyl benzyl phthalate.

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B10: Phthalate metabolites in children ages 6 to 17 years: Median concentrations in urine, 1999-2008**

| | Median concentration of phthalate metabolites in urine (µg/L) | | | | |
|---|---|---|---|---|---|
| | **1999-2000** | **2001-2002** | **2003-2004** | **2005-2006** | **2007-2008** |
| **DEHP metabolites** | Ø | 56.9 | 59.5 | 62.4 | 45.2 |
| **DBP metabolites** | 37.9 | 36.3 | 39.7 | 41.8 | 41.3 |
| **BBzP metabolite** | 24.8 | 22.4 | 22.1 | 18.5 | 16.3 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- DEHP = di-2-ethylhexyl phthalate, DBP = dibutyl phthalate (di-n-butyl phthalate and di-isobutyl phthalate), and BBzP = butyl benzyl phthalate.

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

Ø The estimate is not reported because the DEHP metabolites MEOHP and MEHHP were not measured in 1999-2000.

**Table B10a: Phthalate metabolites in children ages 6 to 17 years: 95th percentile concentrations in urine, 1999-2008**

| | 95th percentile concentration of phthalate metabolites in urine (µg/L) | | | | |
|---|---|---|---|---|---|
| | **1999-2000** | **2001-2002** | **2003-2004** | **2005-2006** | **2007-2008** |
| **DEHP metabolites** | Ø | 387.4 | 455.6 | 524.5 | 563.9 |
| **DBP metabolites** | 165.7 | 175.1 | 191.4 | 166.2 | 190.9 |
| **BBzP metabolite** | 122.3 | 143.1 | 151.1 | 104.0 | 107.1 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- DEHP = di-2-ethylhexyl phthalate, DBP = dibutyl phthalate (di-n-butyl phthalate and di-isobutyl phthalate), and BBzP = butyl benzyl phthalate.

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

- Phthalates do not accumulate in bodily tissues; thus, the distribution of NHANES urinary phthalate metabolite levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[5-7]

Ø The estimate is not reported because the DEHP metabolites MEOHP and MEHHP were not measured in 1999-2000.

**Table B10b. Phthalate metabolites in children ages 6 to 17 years: Median concentrations in urine, by race/ethnicity and family income, 2005-2008**

| | Race / Ethnicity | Median concentration of phthalate metabolites in urine (µg/L) | | |
| | | All Incomes‡ (n=1,586) | < Poverty Level (n=453) | ≥ Poverty Level (n=1,056) |
|---|---|---|---|---|
| **DEHP metabolites** | All Races/Ethnicities *(n=1,586)* | 54.0 | 57.3 | 53.0 |
| | White non-Hispanic *(n=435)* | 57.9 | 58.9* | 58.1 |
| | Black non-Hispanic *(n=465)* | 55.1 | 52.2* | 56.9 |
| | Mexican-American *(n=487)* | 44.4 | 53.4 | 38.4 |
| | All Other Races/Ethnicities† *(n=199)* | 48.1 | NA** | 47.7 |
| **DBP metabolites** | All Races/Ethnicities *(n=1,586)* | 41.8 | 49.9 | 40.2 |
| | White non-Hispanic *(n=435)* | 40.9 | 54.1* | 40.3 |
| | Black non-Hispanic *(n=465)* | 47.2 | 46.6* | 48.2 |
| | Mexican-American *(n=487)* | 38.5 | 43.5 | 33.7 |
| | All Other Races/Ethnicities† *(n=199)* | 41.0 | NA** | 39.8 |
| **BBzP metabolite** | All Races/Ethnicities *(n=1,586)* | 17.4 | 18.7 | 17.1 |
| | White non-Hispanic *(n=435)* | 18.2 | 19.4* | 18.0 |
| | Black non-Hispanic *(n=465)* | 19.0 | 23.1* | 18.4 |
| | Mexican-American *(n=487)* | 13.7 | 14.1 | 13.3 |
| | All Other Races/Ethnicities† *(n=199)* | 15.2 | NA** | 12.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- DEHP = di-2-ethylhexyl phthalate, DBP = dibutyl phthalate (di-n-butyl phthalate and di-isobutyl phthalate), and BBzP = butyl benzyl phthalate.

- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B10c: Phthalate metabolites in children ages 6 to 17 years: Median concentrations in urine by age group, 2005-2008**

| | Median concentration of phthalate metabolites in urine (µg/L) | | | |
| | Ages 6 to 17 years | Ages 6 to 10 years | Ages 11 to 15 years | Ages 16 to 17 years |
|---|---|---|---|---|
| **DEHP metabolites** | 54.0 | 57.1 | 53.6 | 51.1 |
| **DBP metabolites** | 41.8 | 41.4 | 43.8 | 38.2 |
| **BBzP metabolite** | 17.4 | 20.1 | 16.5 | 13.5 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- DEHP = di-2-ethylhexyl phthalate, DBP = dibutyl phthalate (di-n-butyl phthalate and di-isobutyl phthalate), and BBzP = butyl benzyl phthalate.
- Values below the limit of detection are assumed equal to the limit of detection divided by the square root of 2.

# Bisphenol A (BPA)

### Table B11: Bisphenol A in women ages 16 to 49 years: Median and 95th percentile concentrations in urine, 2003-2010

| | Concentration of BPA in urine (µg/L) | | | |
|---|---|---|---|---|
| | 2003-2004 | 2005-2006 | 2007-2008 | 2009-2010 |
| **Median** | 3.1 | 2.0 | 2.5 | 2.1 |
| **95th percentile** | 15.9 | 9.8 | 15.1 | 9.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.
- BPA does not appear to accumulate in bodily tissues; thus the distribution of NHANES urinary BPA levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6-8]

### Table B11a: Bisphenol A in women ages 16 to 49 years: Median concentrations in urine, by race/ethnicity and family income, 2007-2010

| | Median concentration of BPA in urine (µg/L) | | |
|---|---|---|---|
| Race / Ethnicity | All Incomes‡ (n=1,179) | < Poverty Level (n=329) | ≥ Poverty Level (n=755) |
| **All Races/Ethnicities** (n=1,179) | 2.3 | 3.0 | 2.1 |
| **White non-Hispanic** (n=499) | 2.1 | 3.3 | 2.0 |
| **Black non-Hispanic** (n=242) | 3.7 | 3.3* | 4.2 |
| **Mexican-American** (n=227) | 2.3 | 2.2* | 2.3 |
| **All Other Races/Ethnicities†** (n=211) | 2.1 | 3.1* | 1.8 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.
- The reported measurements of BPA in urine include both BPA itself and biologically inactive metabolites of BPA.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B11b: Bisphenol A in women ages 16 to 49 years: 95th percentile concentrations in urine, by race/ethnicity and family income, 2007-2010**

| Race / Ethnicity | 95th percentile concentration of BPA in urine (µg/L) | | |
|---|---|---|---|
| | All Incomes‡ (n=1,179) | < Poverty Level (n=329) | ≥ Poverty Level (n=755) |
| All Races/Ethnicities (n=1,179) | 12.2 | 14.5 | 10.6 |
| White non-Hispanic (n=499) | 9.7 | NA** | 8.1 |
| Black non-Hispanic (n=242) | 15.1 | 14.8* | 15.1 |
| Mexican-American (n=227) | 14.7 | NA** | 17.8 |
| All Other Races/Ethnicities† (n=211) | NA** | 23.0* | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

- The reported measurements of BPA in urine include both BPA itself and biologically inactive metabolites of BPA.

- BPA does not appear to accumulate in bodily tissues; thus the distribution of NHANES urinary BPA levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6-8]

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B12: Bisphenol A in children ages 6 to 17 years: Median and 95th percentile concentrations in urine, 2003-2010**

| | Concentration of BPA in urine (µg/L) | | | |
|---|---|---|---|---|
| | **2003-2004** | **2005-2006** | **2007-2008** | **2009-2010** |
| **Median** | 4.0 | 2.4 | 2.4 | 2.0 |
| **95th percentile** | 16.0 | 16.5 | 12.2 | 9.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: BPA does not appear to accumulate in bodily tissues; thus the distribution of NHANES urinary BPA levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6-8]

**Table B12a: Bisphenol A in children ages 6 to 17 years: Median concentrations in urine, by race/ethnicity and family income, 2007-2010**

| | Median concentration of BPA in urine (µg/L) | | |
|---|---|---|---|
| **Race / Ethnicity** | **All Incomes‡** <br> *(n=1,417)* | **< Poverty Level** <br> *(n=426)* | **≥ Poverty Level** <br> *(n=873)* |
| **All Races/Ethnicities** <br> *(n=1,417)* | 2.2 | 2.4 | 2.1 |
| **White non-Hispanic** <br> *(n=425)* | 2.1 | 2.7* | 2.0 |
| **Black non-Hispanic** <br> *(n=343)* | 2.8 | 3.1* | 2.7 |
| **Mexican-American** <br> *(n=379)* | 2.1 | 2.0 | 2.2 |
| **All Other Races/Ethnicities†** <br> *(n=270)* | 1.8 | 1.9* | 2.0 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: The reported measurements of BPA in urine include both BPA itself and biologically inactive metabolites of BPA.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B12b: Bisphenol A in children ages 6 to 17 years: 95th percentile concentrations in urine, by race/ethnicity and family income, 2007-2010**

| Race / Ethnicity | 95th percentile concentration of BPA in urine (µg/L) | | |
|---|---|---|---|
| | All Incomes‡ *(n=1,417)* | < Poverty Level *(n=426)* | ≥ Poverty Level *(n=873)* |
| **All Races/Ethnicities** *(n=1,417)* | 11.9 | 10.4 | 12.2 |
| **White non-Hispanic** *(n=425)* | 12.2 | 10.4* | 12.2 |
| **Black non-Hispanic** *(n=343)* | 12.6 | NA** | 12.4 |
| **Mexican-American** *(n=379)* | 12.3 | 6.9 | 15.6* |
| **All Other Races/Ethnicities†** *(n=270)* | 9.1 | 4.7* | 9.1 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- The reported measurements of BPA in urine include both BPA itself and biologically inactive metabolites of BPA.

- BPA does not appear to accumulate in bodily tissues; thus the distribution of NHANES urinary BPA levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6-8]

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B12c: Bisphenol A in children ages 6 to 17 years: Median and 95th percentile concentrations by age group, 2007-2010**

| | Concentration of BPA in urine (µg/L) | | | |
|---|---|---|---|---|
| | Ages 6 to 17 years | Ages 6 to 10 years | Ages 11 to 15 years | Ages 16 to 17 years |
| **Median** | 2.2 | 2.1 | 2.2 | 2.2 |
| **95th percentile** | 11.9 | 10.4 | 12.2 | 12.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- The reported measurements of BPA in urine include both BPA itself and biologically inactive metabolites of BPA.

- BPA does not appear to accumulate in bodily tissues; thus the distribution of NHANES urinary BPA levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6-8]

## Perchlorate

**Table B13. Perchlorate in women ages 16 to 49 years: Median and 95th percentile concentrations in urine, 2001-2008**

| | Concentration of perchlorate in urine (µg/L) | | | |
|---|---|---|---|---|
| | **2001-2002** | **2003-2004** | **2005-2006** | **2007-2008** |
| **Median** | 3.3 | 2.9 | 3.2 | 3.4 |
| **95th percentile** | 15.0 | NA** | 13.0 | 16.5 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

- Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6,7,9]

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

**Table B13a. Perchlorate in women ages 16 to 49 years: Median concentrations in urine, by race/ethnicity and family income, 2005-2008**

| | Median concentration of perchlorate in urine (µg/L) | | |
|---|---|---|---|
| **Race / Ethnicity** | **All Incomes‡** *(n=3,529)* | **< Poverty Level** *(n=861)* | **≥ Poverty Level** *(n=2,453)* |
| **All Races/Ethnicities** *(n=3,529)* | 3.3 | 3.4 | 3.2 |
| **White Non-Hispanic** *(n=1,365)* | 3.2 | 3.2 | 3.2 |
| **Black Non-Hispanic** *(n=858)* | 3.5 | 3.5 | 3.5 |
| **Mexican-American** *(n=843)* | 3.6 | 3.5 | 3.5 |
| **All Other Races/Ethnicities†** *(n=463)* | 3.3 | 3.6 | 3.0 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

**Table B13b. Perchlorate in women ages 16 to 49 years: 95th percentile concentrations in urine, by race/ethnicity and family income, 2005-2008**

| Race / Ethnicity | 95th percentile concentration of perchlorate in urine (µg/L) | | |
| --- | --- | --- | --- |
| | All Incomes‡ (n=3,529) | < Poverty Level (n=861) | ≥ Poverty Level (n=2,453) |
| **All Races/Ethnicities** (n=3,529) | 14.5 | 14.4 | 14.4 |
| **White Non-Hispanic** (n=1,365) | 13.2 | 14.2 | 13.2 |
| **Black Non-Hispanic** (n=858) | 16.5 | 14.5* | 19.4 |
| **Mexican-American** (n=843) | 16.0 | 16.5 | 15.3 |
| **All Other Races/Ethnicities†** (n=463) | 14.7 | 13.1 | 14.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

- Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6,7,9]

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B13c. Perchlorate in children ages 6 to 17 years: Median and 95th percentile concentrations in urine, 2001-2008**

| | Concentration of perchlorate in urine (µg/L) | | | |
| --- | --- | --- | --- | --- |
| | 2001-2002 | 2003-2004 | 2005-2006 | 2007-2008 |
| **Median** | 4.9 | 4.5 | 4.6 | 4.8 |
| **95th percentile** | 15.0 | 16.0 | 14.9 | 18.6 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6,7,9]

**Table B13d. Perchlorate in children ages 6 to 17 years: Median concentrations in urine, by race/ethnicity and family income, 2005-2008**

| Race / Ethnicity | Median concentration of perchlorate in urine (µg/L) | | |
|---|---|---|---|
| | All Incomes‡ (n=4,638) | < Poverty Level (n=1,294) | ≥ Poverty Level (n=3,096) |
| All Races/Ethnicities (n=4,638) | 4.7 | 4.5 | 4.8 |
| White Non-Hispanic (n=1,282) | 4.9 | 4.7 | 4.9 |
| Black Non-Hispanic (n=1,383) | 4.4 | 4.2 | 4.5 |
| Mexican-American (n=1,397) | 4.9 | 4.7 | 5.0 |
| All Other Races/Ethnicities† (n=576) | 4.1 | 3.9* | 4.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B13e. Perchlorate in children ages 6 to 17 years: 95th percentile concentrations in urine, by race/ethnicity and family income, 2005-2008**

| Race / Ethnicity | 95th percentile concentration of perchlorate in urine (µg/L) | | |
|---|---|---|---|
| | All Incomes‡ (n=4,638) | < Poverty Level (n=1,294) | ≥ Poverty Level (n=3,096) |
| All Races/Ethnicities (n=4,638) | 17.2 | 16.0 | 17.5 |
| White Non-Hispanic (n=1,282) | 17.6 | 16.0 | 17.7 |
| Black Non-Hispanic (n=1,383) | 17.5 | 15.4 | 17.7 |
| Mexican-American (n=1,397) | 15.6 | 15.9 | 15.4 |
| All Other Races/Ethnicities† (n=576) | 16.9 | 16.9* | 16.9 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6,7,9]

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table B13f: Perchlorate in children ages 6 to 17 years: Median and 95th percentile concentrations by age group, 2005-2008**

| | Concentration of perchlorate in urine (µg/L) | | | |
|---|---|---|---|---|
| | Ages 6 to 17 years | Ages 6 to 10 years | Ages 11 to 15 years | Ages 16 to 17 years |
| **Median** | 4.7 | 4.9 | 4.7 | 4.4 |
| **95th percentile** | 17.2 | 17.1 | 17.5 | 16.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.[6,7,9]

# Health

## Respiratory Diseases

**Table H1: Percentage of children ages 0 to 17 years with asthma, 1997-2010**

| 1997-2003 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **1997** | **1998** | **1999** | **2000** | **2001** | **2002** | **2003** |
| **Asthma attack prevalence** | 5.5 | 5.3 | 5.3 | 5.5 | 5.7 | 5.8 | 5.5 |
| **Current asthma prevalence‡** | | | | | 8.7 | 8.3 | 8.5 |
| 2004-2009 | | | | | | | |
| | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** |
| **Asthma attack prevalence** | 5.5 | 5.2 | 5.6 | 5.2 | 5.6 | 5.5 | 5.7 |
| **Current asthma prevalence‡** | 8.5 | 8.9 | 9.3 | 9.1 | 9.4 | 9.6 | 9.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the following survey questions: "Has a doctor or other health professional ever told you that <child's name> had asthma?" and if yes, "During the past 12 months, has <child's name> had an episode of asthma or an asthma attack?" For 2001-2010 the survey included the question: "Does <child's name> still have asthma?" Responses are provided by a parent or other knowledgeable household adult.

‡ This survey question was first asked in 2001.

**Table H1a: Percentage of children ages 0 to 17 years with current asthma, 2001-2010, by sex**

| | **2001** | **2002** | **2003** | **2004** | **2005** |
|---|---|---|---|---|---|
| **All children** | 8.7 | 8.3 | 8.5 | 8.5 | 8.9 |
| **Boys** | 9.9 | 9.5 | 9.5 | 10.2 | 10.0 |
| **Girls** | 7.5 | 7.2 | 7.5 | 6.7 | 7.8 |
| | **2006** | **2007** | **2008** | **2009** | **2010** |
| **All children** | 9.3 | 9.1 | 9.4 | 9.6 | 9.4 |
| **Boys** | 11.0 | 9.7 | 11.4 | 11.3 | 10.5 |
| **Girls** | 7.5 | 8.5 | 7.4 | 7.9 | 8.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the following survey questions: "Has a doctor or other health professional ever told you that <child's name> had asthma?" and if yes, "During the past 12 months, has <child's name> had an episode of asthma or an asthma attack?" For 2001-2010 the survey included the question: "Does <child's name> still have asthma?" Responses are provided by a parent or other knowledgeable household adult.

**Table H1b: Percentage of children ages 0 to 17 years with asthma, 1980-1996†**

| 1980-1987 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1980** | **1981** | **1982** | **1983** | **1984** | **1985** | **1986** | **1987** |
| **Asthma in the past 12 months** | 3.6 | 3.7 | 4.1 | 4.5 | 4.3 | 4.8 | 5.1 | 5.3 |
| 1988-1996 | | | | | | | | |
| | **1988** | **1989** | **1990** | **1991** | **1992** | **1993** | **1994** | **1995** | **1996** |
| **Asthma in the past 12 months** | 5.0 | 6.1 | 5.8 | 6.4 | 6.3 | 7.2 | 6.9 | 7.5 | 6.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

† The survey questions for asthma changed in 1997; data before 1997 cannot be directly compared to data in 1997 and later, and are thus shown in this separate table. For 1980 to 1996, the asthma survey question was "Did <child's name> have asthma in the past 12 months?"

**Table H1c: Percentage of children ages 0 to 17 years with current asthma who reported an asthma attack in the past 12 months, 2001-2010**

| 2001-2008 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** |
| **Asthma attack prevalence among those with current asthma** | 61.7 | 64.9 | 62.7 | 61.2 | 56.7 | 56.1 | 54.8 | 57.2 |
| **2009-2010** | | | | | | | | |
| | **2009** | **2010** | | | | | | |
| **Asthma attack prevalence among those with current asthma** | 53.9 | 58.3 | | | | | | |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the following survey questions: "Has a doctor or other health professional ever told you that <child's name> had asthma?" and if yes, "During the past 12 months, has <child's name> had an episode of asthma or an asthma attack?" For 2001-2010 the survey included the question: "Does <child's name> still have asthma?" Responses are provided by a parent or other knowledgeable household adult.

**Table H2: Percentage of children ages 0 to 17 years reported to have current asthma by race/ethnicity and family income, 2007-2010**

| | | | | > Poverty Level (Detail) | |
|---|---|---|---|---|---|
| **Race / Ethnicity** | **All** *(n = 40,569)* | **< Poverty Level** *(n = 8,160)* | **>Poverty Level** *(n = 32,409)* | **100-200% of Poverty Level** *(n = 9,603)* | **> 200% of Poverty Level** *(n = 22,806)* |
| **All Races/Ethnicities** *(n = 40,569)* | 9.4 | 12.2 | 8.7 | 9.9 | 8.2 |
| **White non-Hispanic** *(n = 17,692)* | 8.2 | 10.6 | 7.9 | 9.6 | 7.5 |
| **Black or African-American non-Hispanic** *(n = 6,628)* | 16.0 | 18.8 | 14.4 | 15.0 | 13.9 |
| **Asian non-Hispanic** *(n = 2,255)* | 6.8 | NA** | 7.2 | 5.7* | 7.7 |
| **Hispanic** *(n = 12,343)* | 7.9 | 8.7 | 7.5 | 7.3 | 7.8 |
| **Mexican** *(n = 8,114)* | 7.0 | 6.6 | 7.2 | 6.5 | 8.0 |
| **Puerto Rican** *(n=1,116)* | 16.5 | 23.3 | 12.6 | 15.3 | 11.0 |
| **All Other Races†** *(n = 1,651)* | 12.4 | 15.5 | 11.4 | 14.8 | 9.7 |
| **American Indian or Alaska Native non-Hispanic** *(n = 219)* | 10.7 | 13.0* | NA** | NA** | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate).

**Table H2a: Percentage of children ages 0 to 17 years reported to have current asthma by age and sex, 2007-2010**

|  | Ages 0 to 17 years | Ages 0 to 5 years | Ages 6 to 10 years | Ages 11 to 17 years |
|---|---|---|---|---|
| All children | 9.4 | 7.1 | 10.0 | 11.0 |
| Boys | 10.7 | 8.8 | 11.9 | 11.7 |
| Girls | 8.0 | 5.2 | 8.1 | 10.3 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

**Table H3: Children's emergency room visits and hospitalizations for asthma and other respiratory causes, ages 0 to 17 years, 1996-2008**

|  | Rate per 10,000 children | | | |
|---|---|---|---|---|
| **1996-1999** | **1996** | **1997** | **1998** | **1999** |
| **Emergency Room Visits** |  |  |  |  |
| Asthma and all other respiratory causes | 636.4 | 631.5 | 654.7 | 619.9 |
| All respiratory causes other than asthma | 521.9 | 519.4 | 530.3 | 515.4 |
| Upper respiratory | 408.4 | 409.3 | 426.0 | 403.0 |
| Pneumonia or influenza | 56.3 | 52.0 | 58.0 | 58.8 |
| Other lower respiratory | 57.2 | 58.0 | 46.3 | 53.6 |
| Asthma | 114.4 | 112.1 | 124.4 | 104.5 |
| **Hospitalizations** |  |  |  |  |
| Asthma and all other respiratory causes | 90.3 | 102.2 | 86.3 | 101.4 |
| All respiratory causes other than asthma | 59.9 | 69.1 | 61.4 | 72.5 |
| Upper respiratory | 28.9 | 37.2 | 27.6 | 39.5 |
| Pneumonia or influenza | 29.6 | 30.6 | 33.1 | 32.0 |
| Other lower respiratory | 1.4 | 1.3 | 0.7 | 1.0 |
| Asthma | 30.4 | 33.1 | 25.0 | 28.9 |

|  | Rate per 10,000 children | | | |
|---|---|---|---|---|
| **2000-2003** | **2000** | **2001** | **2002** | **2003** |
| **Emergency Room Visits** |  |  |  |  |
| Asthma and all other respiratory causes | 622.7 | 624.0 | 721.1 | 740.2 |
| All respiratory causes other than asthma | 521.8 | 532.3 | 621.3 | 644.8 |
| Upper respiratory | 428.1 | 426.8 | 494.4 | 499.1 |
| Pneumonia or influenza | 54.1 | 63.3 | 79.8 | 94.3 |
| Other lower respiratory | 39.7 | 42.2 | 47.1 | 51.5 |
| Asthma | 100.9 | 91.7 | 99.9 | 95.4 |
| **Hospitalizations** |  |  |  |  |
| Asthma and all other respiratory causes | 84.6 | 85.0 | 86.7 | 89.6 |
| All respiratory causes other than asthma | 57.3 | 61.0 | 62.1 | 61.1 |
| Upper respiratory | 32.5 | 33.7 | 33.6 | 29.8 |
| Pneumonia or influenza | 23.9 | 26.6 | 27.8 | 30.2 |
| Other lower respiratory | 1.0 | NA** | 0.6 | 1.2 |
| Asthma | 27.2 | 24.0 | 24.6 | 28.4 |

| 2004-2007 | Rate per 10,000 children | | | |
| --- | --- | --- | --- | --- |
| | 2004 | 2005 | 2006 | 2007 |
| **Emergency Room Visits** | | | | |
| **Asthma and all other respiratory causes** | 528.8 | 639.8 | 584.3 | 625.1 |
| **All respiratory causes other than asthma** | 426.0 | 537.8 | 504.1 | 538.5 |
| **Upper respiratory** | 331.6 | 441.3 | 396.9 | 416.2 |
| **Pneumonia or influenza** | 56.9 | 62.6 | 61.1 | 87.6 |
| **Other lower respiratory** | 37.4 | 33.9 | 46.1 | 34.6 |
| **Asthma** | 102.8 | 102.1 | 80.2 | 86.6 |
| **Hospitalizations** | | | | |
| **Asthma and all other respiratory causes** | 80.4 | 72.8 | 66.3 | 61.4 |
| **All respiratory causes other than asthma** | 55.8 | 52.5 | 47.3 | 42.3 |
| **Upper respiratory** | 30.5 | 25.8 | 23.5 | 23.1 |
| **Pneumonia or influenza** | 24.2 | 26.4 | 22.9 | 18.9 |
| **Other lower respiratory** | 1.1 | 0.4* | 0.9 | NA** |
| **Asthma** | 24.6 | 20.3 | 18.9 | 19.1 |

| 2008 | Rate per 10,000 children |
| --- | --- |
| | 2008 |
| **Emergency Room Visits** | |
| **Asthma and all other respiratory causes** | 619.1 |
| **All respiratory causes other than asthma** | 516.6 |
| **Upper respiratory** | 388.2 |
| **Pneumonia or influenza** | 91.3 |
| **Other lower respiratory** | 37.1 |
| **Asthma** | 102.6 |
| **Hospitalizations** | |
| **Asthma and all other respiratory causes** | 56.0 |
| **All respiratory causes other than asthma** | 39.9 |
| **Upper respiratory** | 19.1 |
| **Pneumonia or influenza** | 20.3 |
| **Other lower respiratory** | NA** |
| **Asthma** | 16.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey and National Hospital Discharge Survey

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, exceeds 40% (RSE = standard error divided by the estimate) or there are fewer than 30 sampled hospitalizations.

**Table H3a: Children's emergency room visits for asthma and other respiratory causes, by race/ethnicity, ages 0 to 17 years, 2005-2008**

| | Rate per 10,000 children | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2005-2008** |
| **All Races/Ethnicities** *(n=5,366)* | 639.8 | 584.3 | 625.1 | 619.1 | 617.1 |
| **White non-Hispanic** *(n=2,248)* | 484.8 | 442.3 | 518.8 | 500.9 | 486.6 |
| **Black non-Hispanic** *(n=1,557)* | 1,242.7 | 1,276.0 | 1,183.5 | 1,258.0 | 1,240.1 |
| **American Indian/Alaska Native non-Hispanic** *(n=33)* | NA** | NA** | NA** | NA** | 536.2 |
| **Asian and Pacific Islander non-Hispanic** *(n=179)* | 409.4* | 404.7 | 341.8* | 333.1* | 371.4 |
| **Hispanic** *(n=1,331)* | 788.9 | 600.4 | 656.4 | 646.7 | 671.5 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, exceeds 40% (RSE = standard error divided by the estimate) or there are fewer than 30 sampled emergency room visits.

**Table H3b: Children's emergency room visits for asthma and other respiratory causes, by age, 2005-2008**

| | Rate per 10,000 children | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2005-2008** |
| **Ages 0 to 17 years** | 639.8 | 584.3 | 625.1 | 619.1 | 617.1 |
| **Age < 1 year** | 2,344.8 | 2,040.5 | 2,098.3 | 2,090.4 | 2,142.1 |
| **Age 1 year** | 1,884.3 | 1,696.4 | 1,823.1 | 1,727.5 | 1,782.3 |
| **Age 2 years** | 1,081.9 | 957.2 | 1,015.0 | 972.7 | 1,006.3 |
| **Ages 3 to 5 years** | 778.4 | 668.1 | 719.8 | 751.9 | 729.5 |
| **Ages 6 to 10 years** | 391.6 | 384.1 | 389.5 | 382.7 | 387.0 |
| **Ages 11 to 15 years** | 252.6 | 251.0 | 276.7 | 268.3 | 262.0 |
| **Ages 16 to 17 years** | 333.2 | 310.2 | 362.9 | 346.1 | 338.2 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey

**Table H3c: Children's hospitalizations for asthma and other respiratory causes, by race,† ages 0 to 17 years, 2005-2008**

| | Rate per 10,000 children | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2005-2008** |
| **All Races‡** *(n=18,088)* | 72.8 | 66.3 | 61.4 | 56.0 | 64.1 |
| **White** *(n=9,213)* | 61.7 | 56.5 | 47.7 | 42.7 | 52.1 |
| **Black** *(n=4,154)* | 94.1 | 91.6 | 78.0 | 72.3 | 84.0 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Discharge Survey

† Estimates for ethnicity not available. Race categories include children of Hispanic ethnicity.

‡ Includes races other than White and Black.

**Table H3d: Children's hospitalizations for asthma and other respiratory causes, by age, 2005-2008**

| | Rate per 10,000 children | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2005-2008** |
| **Ages 0 to 17 years** | 72.8 | 66.3 | 61.4 | 56.0 | 64.1 |
| **Age < 1 year** | 477.2 | 399.6 | 364.8 | 344.3 | 395.5 |
| **Age 1 year** | 232.7 | 211.9 | 173.5 | 152.2 | 191.9 |
| **Age 2 years** | 115.9 | 112.2 | 117.9 | 89.7 | 108.8 |
| **Ages 3 to 5 years** | 70.1 | 68.2 | 53.9 | 53.3 | 61.3 |
| **Ages 6 to 10 years** | 33.0 | 28.8 | 29.0 | 27.6 | 29.6 |
| **Ages 11 to 15 years** | 15.3 | 13.8 | 17.2 | 13.1 | 14.9 |
| **Ages 16 to 17 years** | 8.7 | 15.0 | 13.9 | 14.1 | 12.9 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Discharge Survey

## Childhood Cancer

**Table H4: Cancer incidence and mortality for children ages 0 to 19 years, 1992-2009**

| **1992-1997** | | | | | | |
|---|---|---|---|---|---|---|
| | Age-adjusted rate per million children | | | | | |
| | **1992** | **1993** | **1994** | **1995** | **1996** | **1997** |
| **Incidence** | 158.4 | 161.4 | 153.3 | 154.8 | 160.9 | 154.4 |
| **Mortality** | 33.1 | 32.6 | 31.2 | 29.8 | 28.7 | 28.8 |
| **1998-2003** | | | | | | |
| | Age-adjusted rate per million children | | | | | |
| | **1998** | **1999** | **2000** | **2001** | **2002** | **2003** |
| **Incidence** | 164.1 | 158.0 | 162.3 | 166.6 | 171.9 | 156.6 |
| **Mortality** | 27.5 | 28.0 | 28.2 | 27.5 | 28.0 | 27.4 |
| **2004-2009** | | | | | | |
| | Age-adjusted rate per million children | | | | | |
| | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** |
| **Incidence** | 167.2 | 174.6 | 157.5 | 172.3 | 172.5 | 175.4 |
| **Mortality** | 27.2 | 26.6 | 24.6 | 24.9 | 24.4 | 23.5 |

DATA: National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) Program

**Table H4a: Cancer incidence for children ages 0 to 19 years by race/ethnicity and sex, 2007-2009**

| | Age-adjusted rate per million children | | |
|---|---|---|---|
| | **Male** | **Female** | **All** |
| **All Races/Ethnicities** *(n=5,974)* | 183.3 | 163.0 | 173.4 |
| **White non-Hispanic** *(n=2,963)* | 199.7 | 175.2 | 187.8 |
| **Black non-Hispanic** *(n=574)* | 137.2 | 129.5 | 133.4 |
| **American Indian/Alaska Native non-Hispanic** *(n=69)* | 120.8 | 152.6 | 136.8 |
| **Asian or Pacific Islander non-Hispanic** *(n=560)* | 155.7 | 147.5 | 151.7 |
| **Hispanic** *(n=1,717)* | 181.9 | 156.1 | 169.3 |

DATA: National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) Program

**Table H4b: Cancer mortality for children ages 0 to 19 years by race/ethnicity and sex, 2007-2009**

| | Age-adjusted rate per million children | | |
|---|---|---|---|
| | **Male** | **Female** | **All** |
| **All Races/Ethnicities** *(n=6,071)* | 26.1 | 22.4 | 24.3 |
| **White non-Hispanic** *(n=3,384)* | 25.8 | 21.7 | 23.8 |
| **Black non-Hispanic** *(n=900)* | 25.6 | 23.4 | 24.5 |
| **American Indian/Alaska Native non-Hispanic** *(n=55)* | 23.6 | 20.5 | 22.1 |
| **Asian or Pacific Islander non-Hispanic** *(n=248)* | 26.0 | 16.5 | 21.3 |
| **Hispanic** *(n=1,386)* | 27.9 | 25.4 | 26.7 |

DATA: National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) Program

Following the recommendations of the National Cancer Institute, the mortality rates for all the groups except for "All races/ethnicities" excluded data from the following states, which had large numbers with unknown ethnicity: North Dakota and South Carolina. See http://seer.cancer.gov/seerstat/variables/mort/origin_recode_1990+/index.html.

**Table H4c: Cancer incidence for children 0 to 19 years by age, 2007-2009**

| | Age-adjusted rate per million children |
|---|---|
| **Ages 0 to 4 years** | 207.6 |
| **Ages 5 to 9 years** | 116.9 |
| **Ages 10 to 14 years** | 139.0 |
| **Ages 15 to 19 years** | 232.3 |
| **Ages 0 to 19 years** | 173.4 |

DATA: National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) Program

**Table H5: Cancer incidence for children ages 0 to 19 years, by type, 1992-2006**

| | Age-adjusted rate per million children | | | | |
|---|---|---|---|---|---|
| | **1992-1994** | **1995-1997** | **1998-2000** | **2001-2003** | **2004-2006** |
| **Acute lymphoblastic leukemia** | 29.5 | 32.3 | 33.4 | 32.4 | 34.5 |
| **Central nervous system tumors** | 28.7 | 26.8 | 26.9 | 29.6 | 27.0 |
| **Germ cell tumors** | 11.3 | 11.5 | 10.8 | 12.0 | 12.6 |
| **Soft tissue sarcomas** | 10.2 | 11.5 | 12.0 | 11.5 | 12.3 |
| **Hodgkin's lymphoma** | 12.3 | 11.6 | 12.2 | 11.2 | 10.8 |
| **Acute myeloid leukemia** | 7.3 | 7.7 | 8.3 | 8.0 | 8.5 |
| **Non-Hodgkin's lymphoma** | 7.4 | 7.2 | 7.7 | 9.0 | 8.8 |
| **Neuroblastoma** | 7.4 | 7.7 | 6.9 | 7.3 | 8.0 |
| **Malignant melanoma** | 4.4 | 4.7 | 4.7 | 5.8 | 5.7 |
| **Thyroid carcinoma** | 5.2 | 5.2 | 6.2 | 6.1 | 5.5 |
| **Osteosarcoma** | 4.9 | 4.8 | 4.8 | 5.3 | 4.5 |
| **Wilms' tumor** | 5.7 | 5.8 | 5.5 | 4.7 | 4.4 |
| **Other and unspecified carcinomas†** | 3.8 | 3.9 | 3.9 | 3.6 | 3.3 |
| **Ewing's sarcoma** | 3.2 | 2.3 | 2.2 | 2.5 | 2.8 |
| **Burkitt's lymphoma** | 2.0 | 1.9 | 2.3 | 2.4 | 2.2 |
| **Hepatoblastoma** | 1.1 | 1.2 | 1.8 | 1.5 | 1.7 |

DATA: National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) Program

† "Other and unspecified carcinomas" represents all carcinomas and other malignant epithelial neoplasms other than thyroid carcinoma and malignant melanoma.

**Table H5a: Cancer incidence rates per million children for malignant cancers by age and type, 2004-2006**

| | Age-adjusted rate per million children | | | | |
|---|---|---|---|---|---|
| | Ages 0 to 4 years | Ages 5 to 9 years | Ages 10 to 14 years | Ages 15 to 19 years | Ages 0 to 19 years |
| Acute lymphoblastic leukemia | 66.3 | 33.6 | 22.8 | 17.0 | 34.5 |
| Central nervous system tumors | 35.1 | 30.4 | 23.2 | 19.7 | 27.0 |
| Germ cell tumors | 7.5 | 2.9 | 9.2 | 30.8 | 12.6 |
| Soft-tissue sarcomas | 11.1 | 7.1 | 12.8 | 18.3 | 12.3 |
| Hodgkin's lymphoma | NA** | 4.1 | 12.0 | 26.0 | 10.8 |
| Acute myeloid leukemia | 13.2 | 4.6 | 7.3 | 9.0 | 8.5 |
| Non-Hodgkin's lymphoma | 3.2 | 5.2 | 10.5 | 15.9 | 8.8 |
| Neuroblastoma | 28.5 | 2.8 | 1.4 | NA** | 8.0 |
| Malignant melanoma | 0.9* | 1.7 | 4.3 | 15.5 | 5.7 |
| Thyroid carcinoma | NA** | 1.6 | 4.6 | 15.5 | 5.5 |
| Osteosarcoma | NA** | 2.6 | 7.3 | 7.9 | 4.5 |
| Wilms' tumor | 13.4 | 3.8 | NA** | NA** | 4.4 |
| Other and unspecified carcinomas† | NA** | NA** | 3.5 | 9.0 | 3.3 |
| Ewing's sarcoma | NA** | 1.6 | 3.5 | 5.1 | 2.8 |
| Burkitt's lymphoma | 1.5 | 2.6 | 2.4 | 2.2 | 2.2 |
| Hepatoblastoma | 6.9 | NA** | NA** | NA** | 1.7 |

DATA: National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) Program

† "Other and unspecified carcinomas" represents all carcinomas and other malignant epithelial neoplasms other than thyroid carcinoma and malignant melanoma.

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate).

## Neurodevelopmental Disorders

**Table H6: Percentage of children ages 5 to 17 years reported to have attention-deficit/hyperactivity disorder, by sex, 1997-2010**

| | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| All children | 6.3 | 6.7 | 6.4 | 7.5 |
| Boys | 9.5 | 9.6 | 9.6 | 10.6 |
| Girls | 3.0 | 3.7 | 3.0 | 4.2 |
| | 2001 | 2002 | 2003 | 2004 |
| All children | 7.2 | 8.1 | 7.2 | 8.3 |
| Boys | 10.3 | 11.6 | 10.3 | 11.5 |
| Girls | 3.9 | 4.4 | 4.0 | 4.8 |
| | 2005 | 2006 | 2007 | 2008 |
| All children | 7.4 | 8.5 | 8.1 | 9.1 |
| Boys | 10.4 | 12.3 | 11.2 | 12.5 |
| Girls | 4.4 | 4.5 | 4.8 | 5.5 |
| | 2009 | 2010 | | |
| All children | 9.8 | 9.5 | | |
| Boys | 13.2 | 12.5 | | |
| Girls | 6.1 | 6.2 | | |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Attention Deficit/Hyperactivity Disorder (ADHD) or Attention Deficit Disorder (ADD)?" Responses are provided by a parent or other knowledgeable household adult.

### Table H6a: Percentage of children reported to have attention-deficit/hyperactivity disorder, by age and sex, 2007-2010

|  | Ages 5 to 17 years | Ages 5 to 10 years | Ages 11 to 17 years |
|---|---|---|---|
| **All children** | 9.1 | 6.7 | 11.1 |
| **Boys** | 12.4 | 8.9 | 15.3 |
| **Girls** | 5.7 | 4.4 | 6.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Attention Deficit/Hyperactivity Disorder (ADHD) or Attention Deficit Disorder (ADD)?" Responses are provided by a parent or other knowledgeable household adult.

### Table H6b: Percentage of children ages 5 to 17 years reported to have attention-deficit/hyperactivity disorder, by race/ethnicity and family income, 2007-2010

|  | All Incomes (n =28,880) | < Poverty Level (n=5,418) | ≥ Poverty Level (n=23,462) | > Poverty Level (Detail) 100-200% of Poverty Level (n=6,703) | > 200% of Poverty Level (n=16,759) |
|---|---|---|---|---|---|
| **All Races/Ethnicities** (n=28,880) | 9.1 | 11.3 | 8.6 | 10.2 | 7.9 |
| **White non-Hispanic** (n=12,917) | 10.7 | 16.5 | 10.1 | 14.3 | 9.0 |
| **Black or African-American non-Hispanic** (n=4,830) | 10.2 | 13.3 | 8.5 | 9.7 | 7.8 |
| **Asian non-Hispanic** (n=1,589) | 1.6 | NA** | 1.9 | NA** | 2.0 |
| **Hispanic** (n=8,450) | 4.8 | 5.6 | 4.4 | 4.8 | 4.1 |
| **Mexican** (n=5,545) | 4.2 | 4.9 | 3.8 | 4.3 | 3.2 |
| **Puerto Rican** (n=794) | 10.1 | 12.7 | 8.7 | 10.3 | 7.7 |
| **All Other Races†** (n=1,094) | 11.6 | 16.2 | 10.2 | 14.9 | 7.8 |
| **American Indian or Alaska Native non-Hispanic** (n=165) | 9.9* | NA** | 7.1* | NA** | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Attention Deficit/Hyperactivity Disorder (ADHD) or Attention Deficit Disorder (ADD)?" Responses are provided by a parent or other knowledgeable household adult.

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

\* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

\*\* Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate).

**Table H7: Percentage of children ages 5 to 17 years reported to have a learning disability, by sex, 1997-2010**

|  | **1997** | **1998** | **1999** | **2000** |
|---|---|---|---|---|
| **All children** | 8.7 | 8.2 | 8.1 | 8.7 |
| **Boys** | 11.4 | 10.4 | 11.0 | 10.9 |
| **Girls** | 6.0 | 5.9 | 5.0 | 6.4 |
|  | **2001** | **2002** | **2003** | **2004** |
| **All children** | 8.6 | 9.2 | 8.3 | 8.8 |
| **Boys** | 11.0 | 11.5 | 10.2 | 10.6 |
| **Girls** | 6.1 | 6.7 | 6.3 | 6.9 |
|  | **2005** | **2006** | **2007** | **2008** |
| **All children** | 7.8 | 8.6 | 8.4 | 9.1 |
| **Boys** | 9.7 | 10.8 | 10.8 | 11.2 |
| **Girls** | 5.8 | 6.4 | 5.8 | 6.9 |
|  | **2009** | **2010** |  |  |
| **All children** | 9.1 | 8.6 |  |  |
| **Boys** | 11.7 | 10.1 |  |  |
| **Girls** | 6.5 | 7.1 |  |  |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a representative from a school or a health professional ever told you that <child's name> had a learning disability?" Responses are provided by a parent or other knowledgeable household adult.

**Table H7a: Percentage of children reported to have a learning disability, by age and sex, 2007-2010**

|  | **Ages 5 to 17 years** | **Ages 5 to 10 years** | **Ages 11 to 17 years** |
|---|---|---|---|
| **All children** | 8.8 | 7.5 | 9.9 |
| **Boys** | 10.9 | 9.3 | 12.4 |
| **Girls** | 6.6 | 5.6 | 7.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a representative from a school or a health professional ever told you that <child's name> had a learning disability?" Responses are provided by a parent or other knowledgeable household adult.

**Table H7b: Percentage of children ages 5 to 17 years reported to have a learning disability, by race/ethnicity and family income, 2007-2010**

| | All Incomes (n=28,889) | < Poverty Level (n=5,414) | ≥ Poverty Level (n=23,475) | ≥ Poverty Level (Detail) | |
| --- | --- | --- | --- | --- | --- |
| | | | | 100-200% of Poverty Level (n=6,700) | > 200% of Poverty Level (n=16,775) |
| **All Races/Ethnicities** (n=28,889) | 8.8 | 12.6 | 7.9 | 10.3 | 7.0 |
| **White non-Hispanic** (n=12,929) | 9.3 | 17.1 | 8.4 | 11.7 | 7.6 |
| **Black or African-American non-Hispanic** (n=4,830) | 10.2 | 13.6 | 8.3 | 10.9 | 6.5 |
| **Asian non-Hispanic** (n=1,594) | 2.7 | NA** | 2.9 | NA** | 3.2 |
| **Hispanic** (n=8,445) | 7.2 | 8.7 | 6.6 | 7.7 | 5.4 |
| **Mexican** (n=5,542) | 7.1 | 7.9 | 6.7 | 7.6 | 5.7 |
| **Puerto Rican** (n=792) | 10.8 | 14.5 | 8.6 | 11.1 | 7.2 |
| **All Other Races†** (n=1,091) | 11.2 | 15.8 | 9.8 | 16.2 | 6.6 |
| **American Indian or Alaska Native non-Hispanic** (n=163) | 13.9 | NA** | 12.0* | NA** | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a representative from a school or a health professional ever told you that <child's name> had a learning disability?" Responses are provided by a parent or other knowledgeable household adult.

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate).

**Table H8: Percentage of children ages 5 to 17 years reported to have autism, 1997-2010**

| | 1997 | 1998 | 1999 | 2000 |
| --- | --- | --- | --- | --- |
| **All children** | 0.1* | 0.2 | 0.2 | 0.3 |
| | **2001** | **2002** | **2003** | **2004** |
| **All children** | 0.3 | 0.4 | 0.4 | 0.7 |
| | **2005** | **2006** | **2007** | **2008** |
| **All children** | 0.6 | 0.7 | 0.9 | 0.7 |
| | **2009** | **2010** | | |
| **All children** | 1.2 | 1.0 | | |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Autism?" Responses are provided by a parent or other knowledgeable household adult.

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

**Table H8a: Percentage of children reported to have autism, by age and sex, 2007-2010**

|  | Ages 5 to 17 years | Ages 5 to 10 years | Ages 11 to 17 years |
|---|---|---|---|
| All children | 1.0 | 1.1 | 0.8 |
| Boys | 1.5 | 1.7 | 1.3 |
| Girls | 0.4 | 0.5 | 0.3 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Autism?" Responses are provided by a parent or other knowledgeable household adult.

**Table H8b: Percentage of children ages 5 to 17 years reported to have autism, by race/ethnicity and family income, 2007-2010**

|  | All Incomes (n = 28,919) | < Poverty Level (n = 5,425) | ≥ Poverty Level (n = 23,494) | ≥ Poverty Level (Detail) 100-200% of Poverty Level (n = 6,703) | ≥ 200% of Poverty Level (n = (16,792) |
|---|---|---|---|---|---|
| All Races/Ethnicities (n = 28,919) | 1.0 | 1.0 | 0.9 | 0.8 | 1.0 |
| White non-Hispanic (n = 12,938) | 1.1 | 1.8 | 1.0 | 1.1 | 1.0 |
| Black or African-American non-Hispanic (n = 4,840) | 0.7 | NA** | 0.9 | 1.0* | 0.8 |
| Asian non-Hispanic (n = 1,594) | 0.8* | NA** | 0.7* | NA** | 0.9* |
| Hispanic (n = 8,452) | 0.6 | 0.8 | 0.5 | NA** | 0.5 |
| Mexican (n = 5,547) | 0.5 | 0.8 | 0.4 | 0.3* | 0.4* |
| Puerto Rican (n = 793) | 0.9* | NA** | NA** | NA** | NA** |
| All Other Races† (n = 1,095) | 1.7* | NA** | 1.7* | NA** | NA** |
| American Indian or Alaska Native non-Hispanic (n = 165) | NA** | NA** | NA** | NA** | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Autism?" Responses are provided by a parent or other knowledgeable household adult.

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate).

**Table H9: Percentage of children ages 5 to 17 years reported to have intellectual disability (mental retardation), 1997-2010**

|  | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| All children | 0.6 | 0.7 | 0.8 | 0.9 |
|  | **2001** | **2002** | **2003** | **2004** |
| All children | 0.9 | 0.6 | 0.7 | 0.9 |
|  | **2005** | **2006** | **2007** | **2008** |
| All children | 0.7 | 0.8 | 0.8 | 0.7 |
|  | **2009** | **2010** |  |  |
| All children | 0.8 | 0.7 |  |  |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Mental Retardation?" Responses are provided by a parent or other knowledgeable household adult.

**Table H9a: Percentage of children reported to have intellectual disability (mental retardation), by age and sex, 2007-2010**

|  | Ages 5 to 17 years | Ages 5 to 10 years | Ages 11 to 17 years |
|---|---|---|---|
| **All children** | 0.8 | 0.6 | 0.9 |
| **Boys** | 0.9 | 0.8 | 1.0 |
| **Girls** | 0.6 | 0.5 | 0.7 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Mental Retardation?" Responses are provided by a parent or other knowledgeable household adult.

**Table H9b: Percentage of children ages 5 to 17 years reported to have intellectual disability (mental retardation), by race/ethnicity and family income, 2007-2010**

|  | All Incomes (n = 28,920) | < Poverty Level (n = 5,423) | ≥ Poverty Level (n = 23,497) | ≥ Poverty Level (Detail) 100-200% of Poverty Level (n = 6,705) | ≥ 200% of Poverty Level (n = 16,791) |
|---|---|---|---|---|---|
| **All Races/Ethnicities** (n = 28,920) | 0.8 | 1.2 | 0.7 | 1.0 | 0.6 |
| **White non-Hispanic** (n = 12,939) | 0.7 | 1.4* | 0.6 | 1.0 | 0.5 |
| **Black or African-American non-Hispanic** (n = 4,836) | 1.0 | 1.2* | 0.9 | 1.1* | 0.7* |
| **Asian non-Hispanic** (n = 1,594) | 0.7* | NA** | 0.7* | NA** | 0.7* |
| **Hispanic** (n =8,456) | 0.8 | 1.0* | 0.7 | 0.9 | 0.4 |
| **Mexican** (n = 5,549) | 0.8 | 1.1* | 0.6 | 1.0 | 0.2* |
| **Puerto Rican** (n = 795) | 0.6* | NA** | NA** | NA** | NA** |
| **All Other Races†** (n = 1,095) | 0.8* | NA** | NA** | NA** | NA** |
| **American Indian or Alaska Native non-Hispanic** (n = 165) | NA** | NA** | NA** | NA** | NA** |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

NOTE: Data represent responses to the survey question: "Has a doctor or health professional ever told you that <child's name> had Mental Retardation?" Responses are provided by a parent or other knowledgeable household adult.

† The "All Other Races" category includes all other races not specified, together with those individuals who report more than one race.

* The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate).

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate).

## Obesity

**Table H10. Percentage of children ages 2 to 17 years who were obese, 1976-2008**

| | 1976-1980 | 1988-1991 | 1991-1994 | 1999-2000 | 2001-2002 | 2003-2004 | 2005-2006 | 2007-2008 |
|---|---|---|---|---|---|---|---|---|
| **All Races/Ethnicities** | 5.4 | 9.4 | 11.0 | 13.8 | 15.2 | 16.8 | 15.3 | 16.9 |
| **White non-Hispanic** | 4.7 | 8.8 | 9.7 | 10.5* | 13.4 | 15.7 | 13.0 | 15.4 |
| **Black non-Hispanic** | 7.3 | 11.2 | 13.4 | 18.2 | 17.9 | 19.7 | 20.1 | 19.9 |
| **Mexican-American** | 10.7* | 13.3 | 15.6 | 20.7 | 19.6 | 19.4 | 22.7 | 21.0 |
| **All Other Races/Ethnicities†** | 6.5 | 6.9* | 11.3* | 17.5 | 16.4 | 16.0 | 12.3 | 16.3 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

**Table H10a. Percentage of children who were obese, by age group, 1976-2008**

| | 1976-1980 | 1988-1991 | 1991-1994 | 1999-2000 | 2001-2002 | 2003-2004 | 2005-2006 | 2007-2008 |
|---|---|---|---|---|---|---|---|---|
| **Ages 2-5 years** | 4.7 | 7.3 | 7.1 | 10.4 | 10.5 | 13.6 | 10.9 | 10.1 |
| **Ages 6-10 years** | 6.2 | 10.1 | 12.7 | 14.3 | 16.0 | 17.3 | 14.5 | 19.3 |
| **Ages 11-15 years** | 5.5 | 9.1 | 13.2 | 15.9 | 17.0 | 18.0 | 18.1 | 19.5 |
| **Ages 16-17 years** | 4.8 | 12.3 | 8.8 | 13.4 | 16.3 | 18.1 | 17.9 | 18.2 |
| **Ages 2-17 years** | 5.4 | 9.4 | 11.0 | 13.8 | 15.2 | 16.8 | 15.3 | 16.9 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey

**Table H11. Percentage of children ages 2-17 who were obese, by race/ethnicity and family income, 2005-2008**

| Race / Ethnicity | All Incomes‡ (n=6654) | < Poverty Level (n=1,955) | ≥ Poverty Level (n=4,314) | > Poverty (Detail) 100-200% of Poverty Level (n=1,691) | > 200% of Poverty Level (n=2,623) |
|---|---|---|---|---|---|
| All Races/Ethnicities (n=6,654) | 16.1 | 19.9 | 15.1 | 18.4 | 13.8 |
| White non-Hispanic (n=1,915) | 14.2 | 17.4 | 13.7 | 17.9 | 12.5 |
| Black non-Hispanic (n=1,874) | 20.0 | 19.7 | 19.9 | 21.6 | 18.8 |
| Mexican-American (n=2,012) | 21.9 | 22.3 | 21.6 | 21.0 | 22.3 |
| All Other Races/Ethnicities† (n=853) | 14.5 | 22.7 | 11.9 | 11.9 | 11.9 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey

† The "All Other Races/Ethnicities" category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

## Adverse Birth Outcomes

**Table H12: Percentage of babies born preterm, by race/ethnicity, 1993-2008**

| 1993-2000 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| All Races/ Ethnicities | 11.0 | 11.0 | 11.0 | 11.0 | 11.4 | 11.6 | 11.8 | 11.6 |
| White non-Hispanic | 9.1 | 9.3 | 9.4 | 9.5 | 9.9 | 10.2 | 10.5 | 10.4 |
| Black or African-American non-Hispanic | 18.6 | 18.2 | 17.8 | 17.5 | 17.6 | 17.6 | 17.6 | 17.4 |
| Asian or Pacific Islander non-Hispanic | 10.0 | 10.1 | 9.9 | 10.0 | 10.2 | 10.3 | 10.4 | 9.9 |
| American Indian or Alaska Native non-Hispanic | 12.3 | 12.0 | 12.4 | 11.9 | 12.2 | 12.2 | 12.7 | 12.6 |
| Hispanic | 11.0 | 10.9 | 10.9 | 10.9 | 11.2 | 11.4 | 11.4 | 11.2 |
|    Mexican | 10.6 | 10.6 | 10.6 | 10.5 | 10.8 | 11.0 | 11.1 | 11.0 |
|    Puerto Rican | 13.3 | 13.4 | 13.4 | 13.2 | 13.7 | 13.9 | 13.7 | 13.5 |
| Unknown Ethnicity | 10.1 | 11.0 | 10.5 | 9.8 | 10.7 | 10.5 | 10.5 | 10.8 |

| 2001-2008 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** |
| **All Races/Ethnicities** | 11.9 | 12.1 | 12.3 | 12.5 | 12.7 | 12.8 | 12.7 | 12.3 |
| **White non-Hispanic** | 10.8 | 11.0 | 11.3 | 11.5 | 11.7 | 11.7 | 11.5 | 11.1 |
| **Black or African-American non-Hispanic** | 17.6 | 17.7 | 17.8 | 17.9 | 18.4 | 18.5 | 18.3 | 17.5 |
| **Asian or Pacific Islander non-Hispanic** | 10.3 | 10.4 | 10.4 | 10.5 | 10.7 | 10.9 | 10.8 | 10.6 |
| **American Indian or Alaska Native non-Hispanic** | 13.2 | 13.0 | 13.5 | 13.7 | 14.2 | 14.3 | 14.1 | 13.8 |
| **Hispanic** | 11.4 | 11.6 | 11.8 | 12.0 | 12.1 | 12.2 | 12.3 | 12.1 |
| **Mexican** | 11.2 | 11.4 | 11.7 | 11.8 | 11.8 | 11.8 | 11.9 | 11.6 |
| **Puerto Rican** | 13.7 | 14.0 | 13.8 | 14.0 | 14.3 | 14.4 | 14.5 | 14.1 |
| **Unknown Ethnicity** | 11.3 | 11.2 | 12.8 | 12.8 | 13.2 | 13.1 | 13.6 | 13.9 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System

### Table H12a. Percentage of babies born preterm, by mother's age, 1993-2008

| 1993-2000 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **Ages < 20 years** | 14.3 | 14.2 | 13.8 | 13.6 | 13.8 | 14.0 | 14.1 | 13.9 |
| **Ages 20 to 39 years** | 10.4 | 10.5 | 10.5 | 10.5 | 10.9 | 11.2 | 11.3 | 11.2 |
| **Ages 40+ years** | 13.2 | 13.7 | 13.7 | 13.8 | 14.4 | 14.9 | 15.2 | 15.1 |
| **2001-2008** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** |
| **Ages < 20 years** | 14.1 | 14.0 | 14.3 | 14.5 | 14.7 | 14.8 | 14.6 | 14.1 |
| **Ages 20 to 39 years** | 11.6 | 11.7 | 12.0 | 12.1 | 12.4 | 12.4 | 12.3 | 12.0 |
| **Ages 40+ years** | 15.6 | 16.0 | 16.3 | 16.6 | 16.8 | 17.0 | 17.2 | 17.1 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System

### Table H12b. Percentage of babies born preterm, by all births, singletons, and multiples, 1993-2008

| 1993-2000 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **All births** | 11.0 | 11.0 | 11.0 | 11.0 | 11.4 | 11.6 | 11.8 | 11.6 |
| **Singletons** | 9.9 | 9.9 | 9.8 | 9.7 | 10.0 | 10.1 | 10.3 | 10.1 |
| **Multiples** | 53.1 | 54.0 | 54.6 | 55.6 | 57.3 | 58.4 | 59.4 | 58.7 |
| **2001-2008** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** |
| **All births** | 11.9 | 12.1 | 12.3 | 12.5 | 12.7 | 12.8 | 12.7 | 12.3 |
| **Singletons** | 10.4 | 10.4 | 10.6 | 10.8 | 11.0 | 11.1 | 11.0 | 10.6 |
| **Multiples** | 59.4 | 60.1 | 61.2 | 61.4 | 62.1 | 61.9 | 61.6 | 60.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System

**Table H13: Percentage of babies born at term with low birth weight, by race/ethnicity, 1993-2008**

| 1993-2000 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **All Races/Ethnicities** | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.5 | 2.5 | 2.5 |
| **White non-Hispanic** | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 |
| **Black or African-American non-Hispanic** | 4.6 | 4.5 | 4.5 | 4.4 | 4.3 | 4.3 | 4.3 | 4.3 |
| **Asian or Pacific Islander non-Hispanic** | 2.9 | 3.0 | 3.1 | 3.1 | 3.0 | 3.1 | 3.0 | 3.1 |
| **American Indian or Alaska Native non-Hispanic** | 2.4 | 2.3 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.2 |
| **Hispanic** | 2.4 | 2.4 | 2.3 | 2.3 | 2.4 | 2.3 | 2.3 | 2.3 |
| **Mexican** | 2.3 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.1 | 2.2 |
| **Puerto Rican** | 3.4 | 3.2 | 3.3 | 3.3 | 3.3 | 3.4 | 3.1 | 3.2 |
| **Unknown Ethnicity** | 2.5 | 2.6 | 2.4 | 2.4 | 2.4 | 2.2 | 2.5 | 2.2 |
| 2001-2008 | | | | | | | | |
| | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** |
| **All Races/Ethnicities** | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.7 | 2.8 |
| **White non-Hispanic** | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 | 2.3 | 2.4 |
| **Black or African-American non-Hispanic** | 4.2 | 4.3 | 4.4 | 4.5 | 4.5 | 4.5 | 4.5 | 4.6 |
| **Asian or Pacific Islander non-Hispanic** | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 | 3.3 | 3.2 | 3.3 |
| **American Indian or Alaska Native non-Hispanic** | 2.4 | 2.4 | 2.5 | 2.6 | 2.5 | 2.5 | 2.4 | 2.4 |
| **Hispanic** | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 | 2.5 | 2.4 | 2.4 |
| **Mexican** | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.2 | 2.3 |
| **Puerto Rican** | 3.2 | 3.2 | 3.4 | 3.2 | 3.3 | 3.4 | 3.4 | 3.3 |
| **Unknown Ethnicity** | 2.2 | 2.3 | 2.5 | 2.6 | 2.3 | 2.8 | 2.9 | 3.1 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System

**Table H13a. Percentage of babies born at term with low birth weight, by mother's age, 1993-2008**

| 1993-2000 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **Ages < 20 years** | 3.4 | 3.5 | 3.5 | 3.6 | 3.6 | 3.5 | 3.5 | 3.5 |
| **Ages 20-39 years** | 2.5 | 2.5 | 2.4 | 2.5 | 2.4 | 2.4 | 2.4 | 2.4 |
| **Ages 40+ years** | 2.9 | 3.1 | 3.1 | 3.1 | 3.1 | 3.0 | 3.1 | 3.2 |
| 2001-2008 | | | | | | | | |
| | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** |
| **Ages < 20 years** | 3.5 | 3.5 | 3.6 | 3.7 | 3.7 | 3.7 | 3.6 | 3.7 |
| **Ages 20-39 years** | 2.4 | 2.4 | 2.5 | 2.5 | 2.5 | 2.6 | 2.6 | 2.6 |
| **Ages 40+ years** | 3.2 | 3.2 | 3.2 | 3.4 | 3.4 | 3.4 | 3.3 | 3.4 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System

**Table H13b. Percentage of babies born at term with low birth weight, by all births, singletons, and multiples, 1993-2008**

| 1993-2000 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **All births** | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.5 | 2.5 | 2.5 |
| **Singletons** | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.2 |
| **Multiples** | 13.4 | 13.0 | 13.1 | 13.0 | 12.3 | 12.1 | 11.9 | 12.0 |
| **2001-2008** | | | | | | | | |
| | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** |
| **All births** | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.7 | 2.8 |
| **Singletons** | 2.2 | 2.3 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 |
| **Multiples** | 12.2 | 12.1 | 12.0 | 12.0 | 12.0 | 12.3 | 12.3 | 12.6 |

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System

# Supplementary Topics

## Birth Defects

**Table S1: Birth defects in Texas, 1999-2007**

| | Cases per 10,000 live births | | |
|---|---|---|---|
| | **1999-2001** | **2002-2004** | **2005-2007** |
| **Musculoskeletal** | 131.1 | 148.1 | 164.8 |
| **Cardiac and Circulatory** | 118.4 | 137.4 | 157.9 |
| **Genitourinary** | 91.7 | 105.1 | 118.4 |
| **Eye and Ear** | 45.2 | 57.5 | 62.1 |
| **Gastrointestinal** | 51.5 | 51.0 | 57.8 |
| **Central Nervous System** | 30.5 | 33.6 | 40.7 |
| **Respiratory** | 23.5 | 24.1 | 25.3 |
| **Chromosomal** | 23.0 | 22.8 | 23.9 |
| **Oral Cleft** | 17.0 | 16.2 | 16.9 |

DATA: Texas Birth Defects Registry

**Table S1a: Birth defects in Texas, 2005-2007, by race/ethnicity**

| | Cases per 10,000 live births | | | |
|---|---|---|---|---|
| | **White non-Hispanic** *(n=414,420)* | **Black non-Hispanic** *(n=134,427)* | **Hispanic** *(n=594,073)* | **Other non-Hispanic** *(n=48,327)* |
| **Musculoskeletal** | 171.6 | 163.2 | 162.1 | 142.6 |
| **Cardiac and Circulatory** | 154.6 | 151.1 | 164.5 | 125.8 |
| **Genitourinary** | 132.2 | 115.1 | 109.6 | 120.2 |
| **Eye and Ear** | 60.1 | 48.0 | 67.3 | 52.4 |
| **Gastrointestinal** | 60.2 | 46.1 | 60.2 | 39.5 |
| **Central Nervous System** | 41.8 | 43.7 | 39.5 | 35.8 |
| **Respiratory** | 23.1 | 23.4 | 27.6 | 20.5 |
| **Chromosomal** | 23.5 | 19.9 | 25.3 | 18.2 |
| **Oral Cleft** | 18.1 | 11.1 | 17.5 | 15.7 |

DATA: Texas Birth Defects Registry

## Contaminants in Schools and Child Care Facilities

**Table S2: Percentage of environmental and personal media samples with detectable pesticides in child care facilities, 2001**

| | Pentachlorophenol | Chlorpyrifos | *cis*-Permethrin | Diazinon |
|---|---|---|---|---|
| **Indoor Air (Regional Data)** | 83.2 | 100.0 | 40.3 | 100.0 |
| **Hand Wipes (Regional Data)** | 20.0 | 65.0 | 86.5 | 48.3 |
| **Dust (Regional Data)** | 95.2 | 100.0 | 100.0 | 100.0 |
| **Floor Wipes (National Data)** | NA | 89.0 | 72.0 | 67.0 |

DATA: Children's Total Exposure to Pesticides and Other Persistent Organic Pollutants Study (Regional Data); First National Environmental Health Survey of Child Care Centers (National Data)

NOTE: Data are from both national and regional sources, and are identified accordingly. Regional data are from samples collected in North Carolina and Ohio only.

**Table S3: Percentage of environmental and personal media samples with detectable industrial chemicals in child care facilities, 2001**

|  | Dibutyl Phthalate | PCB-52 | Polycyclic Aromatic Hydrocarbons | Bisphenol A |
|---|---|---|---|---|
| **Indoor Air** | 100.0 | 97.6 | 45.3 | 59.7 |
| **Hand Wipes** | 75.0 | 8.3 | 65.0 | 95.2 |
| **Dust** | 100.0 | 65.1 | 45.3 | 62.3 |

DATA: Children's Total Exposure to Pesticides and Other Persistent Organic Pollutants Study

NOTE: Regional data, from samples collected in North Carolina and Ohio only.

**Table S4: Pesticides used inside California schools by commercial applicators, 2002-2007**

|  | Pounds of Pesticide Applied | | | | | |
|---|---|---|---|---|---|---|
|  | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **Pyrethrin and Pyrethroid Insecticides** | 9,452 | 2,515 | 2,430 | 2,274 | 2,556 | 1,794 |
| **Organophosphate Insecticides** | 919 | 244 | 39 | 119 | 36 | 70 |
| **Other Insecticides** | 2,125 | 2,037 | 4,883 | 2,205 | 641 | 142 |
| **Herbicides** | 295 | 4,031 | 613 | 1,099 | 1,174 | 701 |
| **Fumigants** | 651 | 556 | 3,890 | 392 | 149 | 249 |
| **Rodenticides** | 1 | 589 | 219 | 0.4 | 0.7 | 120 |
| **Miscellaneous Pesticides** | 434 | 52 | 121 | 88 | 76 | 124 |

DATA: California Department of Pesticide Regulation, Schools Pesticide Use Reporting Database

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# Appendix B: Metadata

## Air Quality System (AQS)
### (Used for Indicators E1, E2, and E3)

| | |
|---|---|
| Brief description of the data set | The U.S. Environmental Protection Agency compiles air quality monitoring data in the Air Quality System (AQS). Ambient air concentrations are measured at a national network of more than 4,000 monitoring stations and are reported by state, local, and tribal agencies to EPA AQS. |
| Who provides the data set? | U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. |
| How are the data gathered? | Concentrations are measured at a national network of more than 4,000 monitoring stations and are reported by state, local, and tribal agencies to EPA AQS. |
| What documentation is available describing data collection procedures? | The Ambient Monitoring Technology Information Center (AMTIC) at http:/www.epa.gov/ttn/amtic/ contains information and files on ambient air quality monitoring programs, details on monitoring methods, relevant documents and articles, information on air quality trends and federal regulations related to ambient air quality monitoring. The Air Trends site at http:/www.epa.gov/airtrends contains information on air quality trends. The Green Book site at http://www.epa.gov/air/oaqps/greenbk contains information on nonattainment areas. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include measured ambient air pollutant concentrations (lead, carbon monoxide, ozone, $PM_{10}$, $PM_{2.5}$, sulfur dioxide, and nitrogen dioxide), Air Quality Index, and monitor information (location, monitoring objective). |
| What is the spatial representation of the database (national or other)? | National. However, not all counties are represented since not all counties have air pollution monitors. |
| Are raw data (individual measurements or survey responses) available? | Individual hourly or daily measurements by monitor and pollutant are available. |
| How are database files obtained? | Raw data: http:/www.epa.gov/ttn/airs/aqsdatamart/basic_info.htm. http:/www.epa.gov/ttn/airs/airsaqs/detaildata/downloadaqsdata.htm. Annual summary data (includes annual means and maxima): http://www.epa.gov/ttn/airs/aqsdatamart/. For some indicators additional annual summary data were compiled by EPA staff. This includes annual maximum rolling three-month average lead concentrations, county maximum $PM_{2.5}$ annual means using OAQPS data completeness and weighted average calculations, $PM_{2.5}$ exceedance count data, and air quality index data. |
| Are there any known data quality or data analysis concerns? | Individual measurements of questionable validity or attributed to exceptional events (e.g., forest fires) are flagged. Monitoring data are not collected in some counties for some pollutants. |

## Air Quality System (AQS)
(Used for Indicators E1, E2, and E3)

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|---|---|
| What documentation is available describing quality assurance procedures? | http://www.epa.gov/ttn/amtic/quality.html.<br><br>http://www.epa.gov/airprogm/oar/oaqps/qa/index.html. |
| For what years are data available? | 1970–present. AQS contains some monitoring data from the late 1950s and early 1960s, but there is not an appreciable amount of data for lead until 1970, sulfur dioxide until 1971, nitrogen dioxide until 1974, carbon monoxide and ozone until 1975, and $PM_{10}$ until 1987. AQS also contains monitoring data for $PM_{2.5}$ beginning with 1999; $PM_{2.5}$ was measured only infrequently prior to 1999. |
| What is the frequency of data collection? | Hourly or daily. Less frequent monitoring occurs at some monitors (e.g., every three or six days for PM or only in the ozone season for ozone). |
| What is the frequency of data release? | AIRNow releases ozone and PM2.5 data hourly. Raw data are updated by states approximately monthly. Annual summary data are updated quarterly. |
| Are the data comparable across time and space? | Counties without air quality monitors cannot be compared with counties with air quality monitors, and some counties are monitored more extensively than others. Although monitor locations and monitoring frequencies change, the network is reasonably stable. An exception occurred for $PM_{2.5}$ in 1999 as the new monitoring network was built up. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | The data can be stratified by region, state, county, and metropolitan area. |

## American Healthy Homes Survey (AHHS)
(Used for Indicator E6)

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|---|---|
| Brief description of the data set | A nationally representative sample of homes was selected for this survey. AHHS measured levels of lead, lead hazards, and allergens in homes nationwide. AHHS also surveyed additional potential health hazards such as arsenic, pesticides, and molds. The lead and arsenic data included the levels of lead in paint, dust and soil, and arsenic in dust and soil, and levels of paint deterioration. |
| Who provides the data set? | U.S. Department of Housing and Urban Development (HUD). |
| How are the data gathered? | Data were collected from participants in private and public residences. A 3-stage cluster sample was used to select a nationally representative sample of 1,131 homes. Samples were collected via surface wipes from four common living areas, homeowner vacuum bags, and soil samples from outside the home. Lead testing in paint was conducted using a portable X-Ray Fluorescence (XRF) instrument. Demographic and other information was collected using a questionnaire. All samples and survey information were collected during a single day. |
| What documentation is available describing data collection procedures? | http://www.hud.gov/offices/lead/NHHC/presentations/R-15_Findings_from_AHH_survey.pdf. Slide four and five of the presentation.<br><br>American Healthy Homes Survey, Draft Final Report. June, 2009. |

## American Healthy Homes Survey (AHHS)
(Used for Indicator E6)

| | |
|---|---|
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant environmental contaminant data include measurements of lead paint, lead dust, lead in soils, mold, allergens/endotoxins in dust, arsenic in soil, indoor moisture measurements, and indoor pesticide residues.<br><br>Other relevant information found in this database includes housing type and age, demographic information on residents (age, race, income group, ethnicity), electrical safety, structural stability, moisture, pest control, ventilation, injury prevention, fire safety, deterioration of carpet, and plumbing facilities. |
| What is the spatial representation of the database (national or other)? | National. |
| Are raw data (individual measurements or survey responses) available? | Not currently. |
| How are database files obtained? | HUD provided data files directly to EPA for purposes of developing an indicator for America's Children and the Environment.<br><br>Summary tables are available in "American Healthy Homes Survey, Final Report, Lead and Arsenic Findings," June 2009. http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS_REPORT.pdf. |
| Are there any known data quality or data analysis concerns? | None reported. |
| What documentation is available describing quality assurance procedures? | "American Healthy Homes Survey, Final Report, Lead and Arsenic Findings," June 2009. http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS_REPORT.pdf |
| For what years are data available? | 2005/2006. |
| What is the frequency of data collection? | Data were collected once, from June 2005 to March 2006. |
| What is the frequency of data release? | The final report was released in April 2011 and can be found at http://portal.hud.gov/hudportal/documents/huddoc?id=AHHS_REPORT.pdf. |
| Are the data comparable across time and space? | As a one-time survey, time comparisons within the AHHS are not possible, but AHHS results can be compared with the earlier NSLAH survey (1999-2000). Geographic comparisons should be possible using the raw data, since the same data were collected at all homes. The Final Report gives some comparisons between the four Census regions. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | The data can be stratified by residents' age, race, and ethnicity, Data can also be stratified by household income, census region, year of home construction, and by the housing type (rented or owned). However, estimates of lead hazards in the home for children ages 0 to 5 years broken out by race/ethnicity and income are not statistically reliable, due to the relatively small number of homes in each group. |

## California School Pesticide Use Reporting Database
(Used for Measure S4)

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|---|---|
| Brief description of the data set | A California state-wide database containing the records of pesticide use in California schools and child day care facilities. The records include only pesticides applied by licensed commercial pest management services. Each record contains the name of the school, name of the pesticide product, registration number of the pesticide product, sites of application inside or outside the school, amount of product applied, unit of the measure, and the application date and time. A supplementary dataset giving the percentages of active ingredients in each pesticide product was also obtained from the California Department of Pesticide Regulation (DPR). |
| Who provides the data set? | California Department of Pesticide Regulation. |
| How are the data gathered? | As per California pesticide regulations, all businesses engaged in pest control are required to report pesticide use at school sites using a prescribed form to the DPR. More information is available at: http://www.cdpr.ca.gov/docs/legbills/6624fin.pdf. |
| What documentation is available describing data collection procedures? | The form that pest control companies use to report the pesticide use at school sites is available at: http://www.cdpr.ca.gov/docs/enforce/prenffrm/prenf117.pdf.<br><br>The data reported by pest control companies are aggregated by the DPR and provided for the general public. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant information includes the amount and type of pesticides used at school sites in California by commercial applicators. This information is relevant to determine exposure of school children to pesticides during their time spent inside the school. |
| What is the spatial representation of the database (national or other)? | State (California). |
| Are raw data (individual measurements or survey responses) available? | Yes. The database contains all instances of pesticide use at school sites that are reported to the DPR. The raw data can be obtained directly from DPR.<br><br>The supplementary data files with data on the contents of each pesticide product are available for download at: http://www.cdpr.ca.gov/docs/label/prodtables.htm. |
| How are database files obtained? | The database files are obtained from DPR through email correspondence. |
| Are there any known data quality or data analysis concerns? | The specific gravity for some pesticides is not reported. The amounts used in different school locations are not reported or reported as zero. The database excludes non-commercial pesticide applications such as by school staff. |
| What documentation is available describing QA procedures? | Not available. |
| For what years are data available? | 2002 – present. |
| What is the frequency of data collection? | All instances of pesticide use at school and child day care sites by pest management companies need to be reported. The DPR aggregates these data on yearly basis. |

## California School Pesticide Use Reporting Database
(Used for Measure S4)

| | |
|---|---|
| What is the frequency of data release? | Yearly. |
| Are the data comparable across time and space? | Pesticide use can be compared between years or between schools. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified only by county or at the individual school or child day care facility level. No demographic data are included in this database, although school ID codes are available so that these data can be matched with California or federal school population data. |

## Census: American Community Survey Data
(Used for Indicator E4)

| | |
|---|---|
| Brief description of the data set | The U.S. Census Bureau collects detailed population data for a sample of the United States population and provides information for 1-, 3-, and 5-year averages. |
| Who provides the data set? | U.S. Census Bureau. |
| How are the data gathered? | The American Community Survey collects detailed population information for a sample of the United States population using a mail survey and/or personal interviews. |
| What documentation is available describing data collection procedures? | http://www.census.gov/acs/www/data_documentation/summary_file/<br><br>http://www.census.gov/acs/www/data_documentation/documentation_main/ |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant information includes populations by year or group of years, county, census tract, census block group, race, ethnicity, age, and sex. |
| What is the spatial representation of the database (national or other)? | National. |
| Are raw data (individual measurements or survey responses) available? | Not publicly released. |
| How are database files obtained? | http://www.census.gov/acs/www/data_documentation/data_via_ftp/ (all available data tables)<br><br>http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml (selected data tables) |
| Are there any known data quality or data analysis concerns? | All data are based on a sample and not the entire census. 1-year estimates are only available for areas with populations above 65,000, are less reliable but more current than 3-year or 5-year estimates, and provide the least detailed information. 3-year estimates are only available for areas with populations above 20,000. 5-year estimates are available for all areas, are more reliable but less current than 1-year or 3-year estimates, and provide the most detailed information. |

## Census: American Community Survey Data
(Used for Indicator E4)

| | |
|---|---|
| What documentation is available describing quality assurance procedures? | http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml |
| For what years are data available? | 1-year ACS files are released annually, beginning with 2002 data. 3-year ACS files are released annually, beginning with 2005-2007 data. 5-year ACS files are released annually, beginning with 2005-2009 data. |
| What is the frequency of data collection? | Every year. |
| What is the frequency of data release? | Every year. |
| Are the data comparable across time and space? | Populations for counties, census tracts, or census block groups may not be comparable between years or periods due to boundary changes. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | The data can be stratified by race, ethnicity, region (state, county, census tract, census block group, MSA, urban area), and income. Stratifications by age, race/ethnicity, and income combined are only available for census tracts in the 5-year data and for higher geographies in the 1- and 3-year data. |

## Census: Decennial Data
(Used for Indicators E1, E2, E3, E10, E11)

| | |
|---|---|
| Brief description of the data set | The U.S. Census Bureau collects detailed population data for the entire United States every 10 years. |
| Who provides the data set? | U.S. Census Bureau. |
| How are the data gathered? | The decennial census collects detailed population information for the entire United States every 10 years using a mail survey and/or personal interviews. In 1990, 2000, and 2010 the entire population was asked a small set of questions (including age, sex, race, and ethnicity). In 1990 and 2000 about one in six households were also asked more detailed questions (including income). |
| What documentation is available describing data collection procedures? | http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include populations (by year, county, census tract, census block group, census block,) race, ethnicity, age, sex, and income (not for 2010 and not for census blocks). |
| What is the spatial representation of the database (national or other)? | National. |
| Are raw data (individual measurements or survey responses) available? | Not publicly released. |

## Census: Decennial Data
(Used for Indicators E1, E2, E3, E10, E11)

| | |
|---|---|
| How are database files obtained? | http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml (county and national populations) |
| | http://geolytics.com/USCensus,Census-2000-Products,Categories.asp (2000 census blocks) |
| Are there any known data quality or data analysis concerns? | Populations by county, race, and income level are not released for combinations with populations below 100 or where the estimate is based on a sample of 50 or less. Income data are based on a sample and not the entire census. Census block locations are given by the census block centroid (geographical center) which does not account for the shape and size of the census block. |
| What documentation is available describing quality assurance procedures? | http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml |
| For what years are data available? | 1990, 2000, 2010. |
| What is the frequency of data collection? | Every 10 years. |
| What is the frequency of data release? | Every 10 years. |
| Are the data comparable across time and space? | Detailed race data for different decades are not comparable due to changing race group definitions, such as the treatment of respondents with multiple races. Comparisons between populations below reporting thresholds are not possible. Populations for some smaller regions (census blocks, block groups, tracts, and occasionally counties) are not comparable for different decades due to boundary changes. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by race, ethnicity, and location (region, state, county, census tract, census block group, census block, MSA, urban area). Income data are available from the American Community Survey (2005 and later) and from samples from the 1990 and 2000 censuses. |

## Census: Intercensal and Postcensal Data
(Used for Indicators E1, E2, E3, E7, E8, E12, H3)

| | |
|---|---|
| Brief description of the data set | The U.S. Census Bureau collects detailed population data for the entire United States every 10 years. These data are combined with birth, death, migration, and net international immigration data to estimate populations for the years between (intercensal) or after (postcensal) censuses. |
| Who provides the data set? | U.S. Census Bureau. |

## Census: Intercensal and Postcensal Data
(Used for Indicators E1, E2, E3, E7, E8, E12, H3)

| | |
|---|---|
| How are the data gathered? | The decennial census collects detailed population information for the entire United States every 10 years using a mail survey and/or personal interviews. Intercensal data estimate populations between censuses by combining the decennial census data from the two censuses with birth, death, migration, and net international immigration data. Postcensal data estimate populations after a census by combining the decennial census data from the previous census with birth, death, migration, and net international immigration data. For the 2000s, bridged race estimates of populations in four single race categories were calculated using a statistical regression model with person-level and county-level covariates to estimate the proportion of people in a given detailed multiple race category that would select each single race category. |
| What documentation is available describing data collection procedures? | http://www.cdc.gov/nchs/nvss/bridged_race.htm (US census populations with bridged race categories)<br><br>http://www.census.gov/popest/data/historical/index.html |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include populations by year, county, race, ethnicity, age, and sex. |
| What is the spatial representation of the database (national or other)? | National. |
| Are raw data (individual measurements or survey responses) available? | Not publicly released. |
| How are database files obtained? | http://www.cdc.gov/nchs/nvss/bridged_race.htm (US census populations with bridged race categories)<br><br>http://www.census.gov/popest/data/historical/index.html (population estimates) |
| Are there any known data quality or data analysis concerns? | Due to the uncertainties in the statistical methods used to estimate intercensal and postcensal populations, the population counts at the more detailed geographical or demographic stratification levels are less precise. |
| What documentation is available describing quality assurance procedures? | http://www.census.gov/popest/methodology/2009-stco-char-meth.pdf (methods for bridged race categories including consistency with other population estimates). |
| For what years are data available? | 1977–present. |
| What is the frequency of data collection? | Varies. |
| What is the frequency of data release? | Monthly, quarterly, or annually. |

## Census: Intercensal and Postcensal Data
(Used for Indicators E1, E2, E3, E7, E8, E12, H3)

| Are the data comparable across time and space? | Postcensal data for each calendar year between the census and the current year are updated annually using information on the components of population change. Since the components of population change data are revised (e.g., a preliminary natality file is replaced with a final natality file), and since estimation methodologies are improved, population estimates from different annual updates are not comparable. For example, the year 2007 population estimates from the 2008 and 2009 series are not the same because the population change estimates for the years 2001 to 2007 used in the 2008 series were updated for the 2009 series, and the estimation methodologies were also revised (e.g., for international migration and for the effects of hurricanes Katrina and Rita). Race data for different decades may not be comparable due to changing race group definitions. |
|---|---|
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by race, ethnicity, and location (region, state, county). Income data are available from the American Community Survey (2005 and later) and from the 1990 and 2000 censuses. |

## EPA Superfund Program and the RCRA Corrective Action Program Site Information
(Used for Indicators E10 and E11)

| Brief description of the data set | A list of all Superfund sites and RCRA Corrective Action sites that may not have all human health protective measures in place. The list includes the site name, state in which the site is located, whether the site is a federal facility, latitude, longitude, and the acreage. |
|---|---|
| Who provides the data set? | The U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Superfund Program and the RCRA Corrective Action Program provide data from two independent databases.<br><br>Superfund site information is reported in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database. CERCLIS includes lists of involved parties and site status (e.g., Human Exposure Under Control, Ground Water Migration Under Control, and Site Wide Ready for Anticipated Use) and the measures Construction Completion and Final Assessment Decisions.<br><br>Information on RCRA Corrective Action sites is maintained in the Resource Conservation and Recovery Act Information (RCRAInfo) Database. RCRAInfo includes site status (e.g., Human Exposure Under Control) among other types of data. For both programs, status designation of Human Exposure Under Control was used as the milestone to determine that a site has all human health protective measures in place. |

## EPA Superfund Program and the RCRA Corrective Action Program Site Information
(Used for Indicators E10 and E11)

| | |
|---|---|
| How are the data gathered? | Acreage and latitude/longitude information in RCRAInfo is collected from a variety of sources, such as RCRA permit applications, owners or operators, or public documents. Acreage and latitude/longitude information in CERCLIS is obtained from Preliminary Assessment reports, Site Inspection reports, Records of Decision, Five Year Reviews, or other official site documents. |
| | Acreage in RCRAInfo refers to the entire site. In CERCLIS, there are a number of types of acreage data. The CERCLIS field labeled "property boundary acreage" was used for calculation of Indicators E10 and E11. Although not meant to serve as estimates of the contaminated acres for Superfund sites, this information is similar to the acreage in RCRAInfo for Corrective Action facilities. |
| | For Corrective Action facilities, updates and progress are recorded by Regional or authorized State program staff as milestones are achieved. As Superfund site information changes, the CERCLIS database is updated by EPA regional offices. |
| | EPA undertook a one-time effort to collect site acreage starting in 2007. These data are updated whenever more accurate information is obtained. |
| What documentation is available describing data collection procedures? | Not applicable. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include latitude, longitude, and estimated acres for contaminated sites. |
| What is the spatial representation of the database (national or other)? | National; each relevant site in the United States is individually identified. |
| Are raw data (individual measurements or survey responses) available? | Latitude/longitude and acreage are available for each site. |
| How are database files obtained? | Requests for datasets from CERCLIS or RCRAInfo must be made to EPA offices. |
| | Summary information on individual Corrective Action or Superfund sites can be found at: |
| | http://www.epa.gov/osw/hazard/correctiveaction/facility/index.htm |
| | and |
| | http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm |
| | respectively. |
| | Some of the information in CERCLIS and RCRAInfo (name, address, cleanup progress) is also available on the EPA webpages "Envirofacts" and "Cleanups in My Community," http://www.epa.gov/enviro/ and http://iaspub.epa.gov/Cleanups/. |

## EPA Superfund Program and the RCRA Corrective Action Program Site Information
(Used for Indicators E10 and E11)

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|---|---|
| Are there any known data quality or data analysis concerns? | The site latitude and longitude specify a point at the site, which could represent the location of the site entry point or of some other area within the site. |
| | Actual geographic boundaries of each site (or contaminated areas on each site) are not available in digital form. In absence of geographic boundaries, CERCLIS boundary acres and RCRAInfo site acreage were used to estimate entire site area, fenceline to fenceline. No effort was made to approximate site shape. It is not specified if all site acres are areas of suspected contamination or areas of known contamination. Thus, the area used to represent each site is larger than the area of actual, known contamination. |
| | The "all human health protective measures in place" designation indicates that there is no complete pathway for human exposures to unacceptable levels of contamination, based on current site conditions. Sites lacking this designation are of three types: sites where a possible exposure route has been identified, sites that have not been fully assessed, or sites that have not been reviewed for the designation. Thus, sites that may not have all human health protective measures in place include both sites where there is a possible route of human exposure and sites where there may be no existing exposure routes. |
| What documentation is available describing quality assurance procedures? | Not applicable. |
| For what years are data available? | Data represent site status, including designation of all human health protective measures in place, as of October 2009. Designations are not available for earlier years. |
| What is the frequency of data collection? | Data collection frequency varies. Information is updated as site information changes. |
| What is the frequency of data release? | Data are released on a yearly basis. |
| Are the data comparable across time and space? | Acres used to describe site area are collected differently for sites in each program (see above). Procedures applied within each program will be consistent over time. Contamination level and exposure potential will vary across sites. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | This site list does not contain information on race/ethnicity or income. The data can be stratified by location, specifically by state. Additionally, the latitude and longitude are provided for each site, which allows for more exact location stratifications and for linkage to Census data on local population demographics. |

## National Air Toxics Assessment (NATA)
(Used for Indicator E4)

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|---|---|
| Brief description of the data set | The National Air Toxics Assessment is EPA's ongoing comprehensive evaluation of air toxics in the United States. NATA provides estimates of the risk of cancer and other serious health effects from inhaling air toxics in order to inform both national and more localized efforts to identify and prioritize air toxics, emission source types, and locations that are of greatest potential concern in terms of contributing to population risk. |
| Who provides the data set? | U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. |
| How are the data gathered? | Emissions inventory data for individual HAPs are collected from data reported by large individual facilities (point sources) and estimated for area and mobile sources using various emissions inventory models. The compiled inventory is called the National Emissions Inventory. Ambient concentrations are estimated using an air dispersion model. Population exposures are estimated based on a screening-level inhalation exposure model. |
| What documentation is available describing data collection procedures? | See http:/www.epa.gov/nata2005 for detailed description of NATA organization and data collection practices. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include modeled ambient concentrations, exposure concentrations, cancer risks, and non-cancer hazard indices for each HAP in each county and each census tract. |
| What is the spatial representation of the database (national or other)? | National. |
| Are raw data (individual measurements or survey responses) available? | Modeled ambient and exposure concentrations for each HAP in each county and census tract are available. |
| How are database files obtained? | http://www.epa.gov/ttn/atw/nata2005/tables.html. |
| Are there any known data quality or data analysis concerns? | NATA results provide answers to questions about emissions, ambient air concentrations, exposures and risks across broad geographic areas (such as counties, states, and the nation) at a moment in time. These assessments are based on assumptions and methods that limit the range of questions that can be answered reliably. The results cannot be used to identify exposures and risks for specific individuals, or even to identify exposures and risks in small geographic regions. These estimates reflect chronic exposures resulting from the inhalation of the air toxics emitted and do not consider exposures that may occur indoors or as a results of exposures other than inhalation (i.e., dermal or ingestion). Methods used in NATA were peer reviewed by EPA's Science Advisory Board; the SAB report is available at http://www.epa.gov/ttn/atw/sab/sabrept1201.pdf. |
| What documentation is available describing quality assurance procedures? | See http:/www.epa.gov/nata2005 and. http://www.epa.gov/ttn/atw/nata2005/05pdf/nata_tmd.pdf |

## National Air Toxics Assessment (NATA)
(Used for Indicator E4)

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|---|---|
| For what years are data available? | 1996, 1999, 2002, 2005. |
| What is the frequency of data collection? | Approximately every three years. |
| What is the frequency of data release? | Approximately every three years. |
| Are the data comparable across time and space? | Data for different NATA assessments are not comparable across time due to improvements in the estimated national emissions inventory, increases in the numbers of modeled HAPs, and improvements in the health data information. Data may not be comparable over space due to quality differences in emissions inventory reporting. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by state, county, and census tract; when combined with census data, NATA estimates can be stratified by race/ethnicity and income. |

## National Health and Nutrition Examination Survey (NHANES)
(Used in Indicators B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, H10, and H11)

| | |
|---|---|
| Brief description of the data set | The National Health and Nutrition Examination Survey (NHANES) is a program of studies designed to assess the health and nutritional status of the civilian noninstitutionalized population of the United States, using a combination of interviews, physical examinations, and laboratory analysis of biological specimens. |
| Who provides the data set? | Centers for Disease Control and Prevention, National Center for Health Statistics. |
| How are the data gathered? | Laboratory data are obtained by analysis of blood and urine samples collected from survey participants at NHANES Mobile Examination Centers. Health status is assessed by physical examination. Demographic and other survey data regarding health status, nutrition, and health-related behaviors are collected by personal interview, either by self-reporting or, for children under 16 and some others, as reported by an informant. |
| What documentation is available describing data collection procedures? | See http://www.cdc.gov/nchs/nhanes.htm for detailed survey and laboratory documentation by survey period. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include concentrations of environmental chemicals (in urine, blood, and serum), body measurements, health status (as assessed by physical examination, laboratory measurements, and interview responses), and demographic information. |
| What is the spatial representation of the database (national or other)? | NHANES sampling procedures provide nationally representative data. Analysis of data for any other geographic area (region, state, etc.) is possible only by special arrangement with the NCHS Research Data Center, and such analyses may not be representative of the specified area. |
| Are raw data (individual measurements or survey responses) available? | Individual laboratory measurements and survey responses are generally available. Individual survey responses for some questions and some measurements are not publicly released. |

## National Health and Nutrition Examination Survey (NHANES)

(Used in Indicators B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, H10, and H11)

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| How are database files obtained? | http://www.cdc.gov/nchs/nhanes.htm. |
| Are there any known data quality or data analysis concerns? | Some environmental chemicals have large percentages of values below the detection limit. Data gathered by interview, including demographic information, and responses regarding health status, nutrition, and health-related behaviors are self-reported, or (for individuals age 16 years and younger) reported by an adult informant. In some cases, the size of a particular sample is too small in an individual 2-year survey cycle to produce statistically reliable estimates; this can be addressed by combining two or more consecutive 2-year survey cycles. |
| What documentation is available describing quality assurance procedures? | http://www.cdc.gov/nchs/nhanes.htm includes detailed documentation on laboratory and other quality assurance procedures. Data quality information is available at http://www.cdc.gov/nchs/about/policy/quality.htm. |
| For what years are data available? | Some data elements were collected in predecessors to NHANES beginning in 1959; collection of data on environmental chemicals began with measurement of blood lead in NHANES II, 1976-1980. The range of years for measurement of environmental chemicals varies; apart from lead and cotinine (initiated in NHANES III), measurement of environmental chemicals began with 1999-2000 or later NHANES. |
| What is the frequency of data collection? | Data are collected on continuous basis, but are grouped into NHANES cycles: NHANES II (1976-1980); NHANES III phase 1 (1988-1991); NHANES III phase 2 (1991-1994); and continuous two-year cycles beginning with 1999-2000 and continuing to the present. |
| What is the frequency of data release? | Data are released in two-year cycles (e.g. 1999-2000); particular data sets from a two-year NHANES cycle are released as available. |
| Are the data comparable across time and space? | Detection limits can vary across time, affecting some comparisons. Some contaminants are not measured in every NHANES cycle. Within any NHANES two-year cycle, data are generally collected and analyzed in the same manner for all sampling locations. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data are collected to be representative of the U.S. population based on age, sex, and race/ethnicity. The public release files allow stratification by these and other demographic variables, including family income range and poverty income ratio. Data cannot be stratified geographically except by special arrangement with the NCHS Research Data Center. |

## National Health Interview Survey (NHIS)

(Used for Indicators E5, H1, H2, H6, H7, H8, and H9)

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|---|---|
| Brief description of the data set | The National Health Interview Survey (NHIS) collects data on a broad range of health topics through personal household interviews. The results of NHIS provide data to track health status, health care access, and progress toward achieving national health objectives. |
| Who provides the data set? | Centers for Disease Control and Prevention, National Center for Health Statistics. |

## National Health Interview Survey (NHIS)
**(Used for Indicators E5, H1, H2, H6, H7, H8, and H9)**

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| How are the data gathered? | Data are obtained using a health questionnaire through a personal household interview. Interviewers obtain information on health history and demographic characteristics, including age, household income, and race and ethnicity from respondents, or from a knowledgeable household adult for children age 17 years and younger. |
| What documentation is available describing data collection procedures? | See http://www.cdc.gov/nchs/nhis.htm for detailed survey documentation by survey year. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include health history (e.g., asthma, mental health, childhood illnesses), smoking in residences (for selected years), demographic information, and health care use and access information. |
| What is the spatial representation of the database (national or other)? | NHIS sampling procedures provide nationally representative data, and may also be analyzed by four broad geographic regions: North, Midwest, South and West. Analysis of data for any other smaller geographic areas (state, etc.) is possible only by special arrangement with the NCHS Research Data Center. |
| Are raw data (individual measurements or survey responses) available? | Data for each year of the NHIS are available for download and analysis (http://www.cdc.gov/nchs/nhis/nhis_questionnaires.htm). Annual reports from the NHIS are also available (http://www.cdc.gov/nchs/nhis/nhis_products.htm) as are interactive data tables (http://www.cdc.gov/nchs/hdi.htm). The files available for download generally contain individual responses to the survey questions; however, for some questions the responses are categorized Some survey responses are not publicly released. |
| How are database files obtained? | Raw data: http://www.cdc.gov/nchs/nhis.htm. |
| Are there any known data quality or data analysis concerns? | Data are self-reported, or (for individuals age 17 years and younger) reported by a knowledgeable household adult, usually a parent. Responses to some demographic questions (race/ethnicity, income) are statistically imputed for survey participants lacking a reported response. |
| What documentation is available describing quality assurance procedures? | http://www.cdc.gov/nchs/data/series/sr_02/sr02_130.pdf provides a summary of quality assurance procedures. |
| For what years are data available? | Data from the NHIS are available from 1957–present. Availability of data addressing particular issues varies based on when questions were added to the NHIS. The survey is redesigned on a regular basis; many questions of interest for children's environmental health indicators were modified or first asked with the redesign that was implemented in 1997. For environmental tobacco smoke (regular smoking in the home), comparable data are available for 1994, 2005, and 2010. |
| What is the frequency of data collection? | Continuous throughout the year. |
| What is the frequency of data release? | Annually. |
| Are the data comparable across time and space? | Survey design and administration are consistent across locations and from year to year. Many questions were revised or added in 1997, so data for prior years may not be comparable to data from 1997 to present. |

## National Health Interview Survey (NHIS)
(Used for Indicators E5, H1, H2, H6, H7, H8, and H9)

| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by race, ethnicity, income, and region (four regions only). |
|---|---|

## National Hospital Ambulatory Medical Care Survey (NHAMCS)
(Used for Indicator H3)

| Brief description of the data set | The National Hospital Ambulatory Medical Care Survey (NHAMCS) is designed to collect information on the services provided in hospital emergency and outpatient departments and in ambulatory surgery centers. |
|---|---|
| Who provides the data set? | Centers for Disease Control and Prevention, National Center for Health Statistics. |
| How are the data gathered? | Sampled hospitals are noninstitutional general and short-stay hospitals located in all states and Washington DC, but exclude federal, military, and Veteran's Administration hospitals. Data from sampled visits are obtained on the demographic characteristics, expected source(s) of payments, patients' complaints, physician's diagnoses, diagnostic and screening services, procedures, types of health care professionals seen, and causes of injury. |
| What documentation is available describing data collection procedures? | See http://www.cdc.gov/nchs/ahcd/ahcd_data_collection.htm#nhamcs_collection for data collection documentation. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include physicians' diagnoses for ambulatory visits to hospital emergency rooms and outpatient departments as well as demographic information. |
| What is the spatial representation of the database (national or other)? | NHAMCS sampling procedures provide nationally representative data, and may also be analyzed by four broad geographic regions: North, Midwest, South and West. In addition the database identifies whether or not the hospital is in an MSA. Analysis of data for any other geographic area (state, patient or facility zip code) is possible only by special arrangement with the NCHS Research Data Center. |
| Are raw data (individual measurements or survey responses) available? | Data for each year of the NHAMCS are available for download and analysis (http://www.cdc.gov/nchs/ahcd/ahcd_questionnaires.htm). Annual reports from the NHAMCS are also available (http://www.cdc.gov/nchs/ahcd/ahcd_products.htm) as are interactive data tables (http://www.cdc.gov/nchs/hdi.htm). |
| How are database files obtained? | http://www.cdc.gov/nchs/ahcd/ahcd_questionnaires.htm. |
| Are there any known data quality or data analysis concerns? | Responses to some demographic and other questions (birth year, sex, race, ethnicity, immediacy of being seen) are statistically imputed for survey participants lacking a reported response. |
| What documentation is available describing quality assurance procedures? | http://www.cdc.gov/nchs/ahcd/ahcd_questionnaires.htm summarizes the quality assurance procedures. |

## National Hospital Ambulatory Medical Care Survey (NHAMCS)
(Used for Indicator H3)

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|---|---|
| For what years are data available? | 1992–present. |
| What is the frequency of data collection? | Continuously throughout the year. |
| What is the frequency of data release? | Annually. |
| Are the data comparable across time and space? | Changes to some survey questions or to the set of possible responses make their responses non-comparable for different time periods (e.g., reason for visit). Some diagnosis codes are not comparable from year to year due to annual revisions to the International Classification of Diseases (ICD-9). |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by race, ethnicity, and region (four regions only). For 2006 and later, data can also be stratified by median income, % below poverty, % with college degree or higher level of education, and urban/rural classification for patient's zip code (the zip code itself is not included in the public release version). |

## National Hospital Discharge Survey (NHDS)
(Used for Indicator H3)

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|---|---|
| Brief description of the data set | The National Hospital Discharge Survey (NHDS) is an annual probability survey that collects information on the characteristics of inpatients discharged from non-federal short-stay hospitals in the United States. |
| Who provides the data set? | Centers for Disease Control and Prevention, National Center for Health Statistics. |
| How are the data gathered? | Sampled hospitals are short-stay general or children's general hospitals located in all states and Washington DC, with an average length of stay of fewer than 30 days and six or more beds staffed for patients use. Federal, military, and Veteran's Administration hospitals are excluded, as are hospital units of institutions. Data from sampled hospital discharges are obtained on the demographic characteristics and physician's diagnoses. |
| What documentation is available describing data collection procedures? | See http://www.cdc.gov/nchs/nhds/nhds_collection.htm for data collection documentation. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include physician's diagnoses for discharges from hospitals, as well as demographic information. |
| What is the spatial representation of the database (national or other)? | NHDS sampling procedures provide nationally representative data, and may also be analyzed by four broad geographic regions: North, Midwest, South and West. Analysis of data for any other geographic area (state, patient zip code) is possible only by special arrangement with the NCHS Research Data Center. |
| Are raw data (individual measurements or survey responses) available? | Individual hospital discharge data are available. Some survey responses are not publicly released. |
| How are database files obtained? | http://www.cdc.gov/nchs/nhds/nhds_questionnaires.htm. |

## National Hospital Discharge Survey (NHDS)
(Used for Indicator H3)

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|---|---|
| Are there any known data quality or data analysis concerns? | The survey is designed to represent in-patient discharges to short-stay general or children's general hospitals, excluding federal and military hospitals. Data are obtained from a detailed complex survey sampling scheme including samplings of hospitals and discharges within hospitals. Survey responses must be appropriately weighted using the provided analysis weights to obtain national estimates. The public release version includes coefficients for variance estimation equations for approximate variance estimation. The available data are for discharges and not admissions. Some age and sex values were imputed. |
| What documentation is available describing quality assurance procedures? | http://www.cdc.gov/nchs/data/series/sr_01/sr01_039.pdf includes a description of the quality assurance procedures. |
| For what years are data available? | 1965–present. |
| What is the frequency of data collection? | Continuously throughout the year. |
| What is the frequency of data release? | Annually. |
| Are the data comparable across time and space? | Some diagnosis codes are not comparable from year to year due to annual revisions to the International Classification of Diseases (ICD-9). |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by race and region (four regions only). NHDS does not release information on Hispanic ethnicity or income of patients due to high non-response rates for these items. Although race is reported, there are also high non-response rates for race. |

## National Survey of Lead and Allergens in Housing (NSLAH)
(Used for Indicator E6)

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|---|---|
| Brief description of the data set | A nationally representative sample of homes was selected for this survey. NSLAH measured levels of lead, lead hazards, allergens, and endotoxins in homes nationwide. The lead data included the levels of lead in paint, dust and soil, and levels of paint deterioration. |
| Who provides the data set? | National Institute of Environmental Health Sciences (NIEHS) and U.S. Department of Housing and Urban Development (HUD). |
| How are the data gathered? | A nationally representative sample of 1,984 housing units in which children could reside was drawn from 75 primary sampling units (metropolitan statistical areas or counties), and 831 eligible housing units were recruited and completed a survey. Measurements of lead paint and dust were gathered from the surveyed homes in specific rooms; soil lead was gathered from the surveyed homes through core sampling. |

## National Survey of Lead and Allergens in Housing (NSLAH)
(Used for Indicator E6)

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|---|---|
| What documentation is available describing data collection procedures? | National Survey of Lead and Allergens in Housing. Final Report. Volume I. Analysis of Lead Hazards. April 2001. At http://www.nchh.org/Portals/0/Contents/Article0312.pdf. |
| | National Survey of Lead and Allergens in Housing. Draft Final Report. Volume II. Design and Methodology. March 2001. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant information includes lead-based paint hazards in housing (prevalence, deteriorated, loadings), dust lead, soil lead (children's play areas, yard), indoor allergens (dust mite, cockroach, cat, dog, mouse, Alternaria), endotoxins, race, ethnicity, age, sex, income, asthma and allergies health history, housing characteristics (building age; heating, cooling, and cooking equipment), pets, and pests. Pesticide data were not collected. |
| What is the spatial representation of the database (national or other)? | National. |
| Are raw data (individual measurements or survey responses) available? | Not currently. |
| How are database files obtained? | Data have not been publicly released. HUD provided data files directly to EPA for purposes of developing an indicator for America's Children and the Environment. |
| | Summary tables are obtained from: |
| | National Survey of Lead and Allergens in Housing. Final Report. Volume I. Analysis of Lead Hazards. April 2001. At http://www.nchh.org/Portals/0/Contents/Article0312.pdf. |
| | NSLAH data summaries are also available in "American Healthy Homes Survey, Final Report, Lead and Arsenic Findings," June 2009, Draft Final Report (not yet publicly released). |
| Are there any known data quality or data analysis concerns? | http://www.nchh.org/Portals/0/Contents/Article0312.pdf. |
| | Chapter 7 of the study report outlines sources of error in data collection and analysis. Concerns include: response rate, non-response bias, and measurement errors. |
| What documentation is available describing quality assurance procedures? | http://www.nchh.org/Portals/0/Contents/Article0312.pdf. |
| | Chapter 7, sections 7.4 ("Quality of Field Data Collection") and section 7.5 ("Paint Testing Quality Assurance"), pages 7-32 through 7-36. |
| For what years are data available? | The main field study (survey and in-home lead) was conducted in 1998-1999, with an augmentation of the soil sampling in 2000. |
| What is the frequency of data collection? | Data were collected once, from 1998-1999, with an augmentation of the soil sampling in 2000. |
| What is the frequency of data release? | Raw data have not been publicly released. The report was published in April 2001. |
| Are the data comparable across time and space? | As a one-time survey, time comparisons within the NSLAH are not possible, but NSLAH results can be compared with the later AHHS survey (2005-2006). Geographic comparisons should be possible using the raw data, since the same data were collected at all homes. |

## National Survey of Lead and Allergens in Housing (NSLAH)
(Used for Indicator E6)

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| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by residents' age, race, ethnicity, and household income, as well as by census region. Data can also be stratified by year of home construction, and by the housing type (rented or owned). However, estimates of lead hazards in the home for children ages 0 to 5 years broken out by race/ethnicity and income are not statistically reliable, due to the relatively small number of homes in each group. |

## National Vital Statistics System (NVSS)
(Used for Indicators H12 and H13)

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|---|---|
| Brief description of the data set | The National Vital Statistics System (NVSS) collects and disseminates data on births, deaths, marriages, divorces, and fetal deaths from vital event registration systems. The results of NVSS provide nearly complete data to track these vital statistics nationwide. |
| Who provides the data set? | Centers for Disease Control and Prevention, National Center for Health Statistics. |
| How are the data gathered? | Data are obtained from birth, death, marriage and divorce certificates collected by the various jurisdictions legally responsible for registration of these events. |
| What documentation is available describing data collection procedures? | See http://www.cdc.gov/nchs/data_access/Vitalstatsonline.htm for user's guides by calendar year. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include births, deaths, marriages, divorces, demographic information, cause of mortality, and state and county (data prior to 2004 only). Birth data include birth order, period of gestation, method of delivery, birth weight, abnormal conditions of the newborn, and congenital abnormalities. |
| What is the spatial representation of the database (national or other)? | Nearly complete national registration data have been collected since 1985. State and county locations are recorded until 2004. |
| Are raw data (individual measurements or survey responses) available? | Data for each calendar year are available for download and analysis from (http://www.cdc.gov/nchs/data_access/Vitalstatsonline.htm) with records for each birth, death, marriage, or divorce certificate.<br><br>Annual and monthly reports from the NVSS are available<br><br>(http://www.cdc.gov/nchs/nvss/nvss_products.htm).<br><br>Raw NVSS data are also available from the National Bureau of Economic Research at http://www.nber.org/data/#demographic<br><br>Personal identification data (e.g., names) is not available. |
| How are database files obtained? | Raw data:<br><br>http://www.cdc.gov/nchs/data_access/Vitalstatsonline.htm and http://www.nber.org/data/#demographic.<br><br>Queriable, less detailed data set including births, deaths, and fetal deaths, with broad response categories: CDC WONDER at http://wonder.cdc.gov<br><br>Prebuilt or user-built birth data tables are available at http://www.cdc.gov/nchs/VitalStats.htm. |

## National Vital Statistics System (NVSS)
(Used for Indicators H12 and H13)

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|---|---|
| Are there any known data quality or data analysis concerns? | For approximately 0.5% of the birth records, the mother's race was not stated and in those cases the mother's race was statistically imputed. From 2003, some states allowed reporting of multiple races, and in those cases the multiple race was bridged to a primary race using statistical methods. |
| What documentation is available describing quality assurance procedures? | See http://www.cdc.gov/nchs/data_access/Vitalstatsonline.htm for user's guides by calendar year. |
| For what years are data available? | Online data: Births 1968-2009. Mortality multiple cause 1968-2009. Fetal death 1982-2006. |
| What is the frequency of data collection? | Continuous. |
| What is the frequency of data release? | Annually. |
| Are the data comparable across time and space? | Some response variables have response categories that have changed over time. Cause of mortality International Classification of Diseases coding systems have changed over time. Birth certificate categories changed between the 1989 and 2003 versions of the birth certificates. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by race and ethnicity. State and county data are complete prior to 1989, contain county and city information only for counties with populations above 100,000 for 1989 to 2004, and contain no location information from 2005 forward. There are no income data. |

## Pesticide Data Program (PDP)
(Used for Indicator E9)

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| Brief description of the data set | The Pesticide Data Program (PDP), initiated in 1991, focuses on measuring pesticide residues in foods that are important parts of children's diets, including apples, apple juice, bananas, carrots, grapes, green beans, orange juice, peaches, pears, potatoes, and tomatoes. Samples are collected from food distribution centers in 10 states across the country. Different foods are sampled each year and then analyzed in various state and federal laboratories for the presence of residues of about 300 pesticides and similar chemicals. |
| Who provides the data set? | U.S. Department of Agriculture, Agricultural Marketing Service. |
| How are the data gathered? | Food and water samples are collected by the participating states. Food samples are prepared as if for consumption (washed, peeled, etc.). The pesticide residues are measured at state and federal laboratories, and compiled into a database managed by USDA. |
| What documentation is available describing data collection procedures? | Standard operating procedures, including data collection, are described here: http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateG&topNav=&leftNav=ScienceandLaboratories&page=PDPProgramSOPs&description=PDP+Standard+Operating+Procedures+(SOPs)&acct=pestcddataprg. |

## Pesticide Data Program (PDP)
(Used for Indicator E9)

| | |
|---|---|
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include pesticide residue concentrations measured in samples of fruits, vegetables, grains, and other food and drink products, particularly foods most likely consumed by infants and young children. |
| What is the spatial representation of the database (national or other)? | National. In 2009, sampling services for food samples were provided by 10 states (California, Colorado, Florida, Maryland, Michigan, New York, Ohio, Texas, Washington, and Wisconsin). Approximately half of the U.S. population resides in these 10 states. |
| Are raw data (individual measurements or survey responses) available? | Individual food and drink sample data are available. |
| How are database files obtained? | Data files are freely available from: http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=Template G&topNav=&leftNav=ScienceandLaboratories&page=PDPDownloadData/Reports&description=Download+PDP+Data/Reports&acct=pestcddataprg. |
| Are there any known data quality or data analysis concerns? | Detection limits vary by pesticide, laboratory, commodity and over time. The list of commodities sampled varies from year to year. The set of pesticides analyzed has generally expanded over time. |
| What documentation is available describing quality assurance procedures? | http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateG&topNav=&leftNav=ScienceandLaboratories&page=PDPProgramSOPs&description=PDP+Standard+Operating+Procedures+(SOPs)&acct=pestcddataprg <br><br> includes documentation on quality assurance/quality control. |
| For what years are data available? | 1992 – present. |
| What is the frequency of data collection? | Annually. |
| What is the frequency of data release? | Annually. |
| Are the data comparable across time and space? | Detection limits vary by pesticide, laboratory, commodity and over time. The list of commodities sampled varies considerably from year to year. The set of pesticides analyzed has also varied with time. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by state where sample is collected and state or country of origin. |

## Safe Drinking Water Information System Federal Version (SDWIS/FED)
(Used for Indicators E7 and E8)

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|---|---|
| Brief description of the dataset | SDWIS/FED is EPA's national database that manages and collects public water system information from states, including reports of drinking water standard violations, reporting and monitoring violations, and other basic information, such as water system location, type, and population served. (http://water.epa.gov/scitech/datait/databases/drink/sdwisfed/basicinformation.cfm ) |
| Who provides the data set? | U.S. Environmental Protection Agency, Office of Ground Water and Drinking Water. |
| How are the data gathered? | Violation data for all public water systems are provided by states and EPA regions. Public water systems are required to follow treatment and reporting requirements, to measure contaminant levels, and to report violations of standards. |
| What documentation is available describing data collection procedures? | Information is available at http://water.epa.gov/scitech/datait/databases/drink/sdwisfed/basicinformation.cfm |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include violations of national standards for drinking water—due to contaminant levels exceeding allowable levels, violations of treatment requirements, or violations of monitoring and reporting requirements—and total population served by each public water system. |
| What is the spatial representation of the database (national or other)? | SDWIS/FED includes data for all public water systems in the United States. |
| Are raw data (individual measurements or survey responses) available? | Separate reports for each violation of drinking water standards or monitoring and reporting requirements for individual public water systems are available; measured contaminant levels are not available in SDWIS/FED. |
| How are database files obtained? | SDWIS/FED violation and inventory data were obtained from OGWDW staff who compiled the data into a dataset listing the water system, state, violation type and code, chemical contaminant code, violation dates, and the population served |
| Are there any known data quality or data analysis concerns? | The estimated number of people served by each public water system is approximate. Estimates are updated when there is a significant change in a water system's population. Some water systems serve more than one state (the primary state is reported) and water systems often serve more than one county. Many people obtain drinking water from more than one public water system. Although the data are largely accurate, EPA is aware of underreporting of some violation data in SDWIS/FED. Several states have recently found and corrected significant errors in their violation databases. |
| What documentation is available describing quality assurance procedures? | EPA routinely evaluates drinking water programs by conducting data verification audits, which evaluate state compliance decisions and reporting to SDWIS/FED. Every three years, the agency prepares summary evaluations based on the data verification. These evaluations are available at: http://www.epa.gov/safewater/databases/sdwis/datareliability.html. |
| For what years are data available? | 1976 – present. |
| What is the frequency of data collection? | Quarterly. |
| What is the frequency of data release? | Quarterly. |

## Safe Drinking Water Information System Federal Version (SDWIS/FED)
**(Used for Indicators E7 and E8)**

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|---|---|
| Are the data comparable across time and space? | Violations across time are often not comparable because of changes in regulations and changes in drinking water standards (maximum contaminant levels), and variability over time in monitoring and reporting violations. Data may not be geographically comparable due to variations in state enforcement and database quality. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Data can be stratified by state and county, with some uncertainty because boundaries of public water systems do not coincide with state and county boundaries. The state and county reported in SDWIS/FED are the primary state and county served by the water system. Data cannot be stratified by demographic characteristics because SDWIS/FED reports only the total population served by a public water system, without any demographic information. |

## Surveillance, Epidemiology, and End Results (SEER) Program
**(Used for Indicators H4 and H5)**

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|---|---|
| Brief description of the data set | The Surveillance, Epidemiology, and End Results (SEER) program is an authoritative source of information on cancer incidence and mortality in the United States. SEER collects and publishes cancer data from a set of 17 population-based regional cancer registries located throughout the country. |
| Who provides the data set? | National Cancer Institute. |
| How are the data gathered? | Data on all diagnosed cancer cases in the geographical area for a cancer registry are compiled each year and submitted to SEER. Mortality data for all causes of death in the entire US are collected by the National Center for Health Statistics. Population data are provided by the Census Bureau. |
| What documentation is available describing data collection procedures? | See http://seer.cancer.gov/index.html for detailed description of SEER organization and data collection practices. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include cancer incidence and mortality (including cancer type, tumor site, tumor morphology, and stage at diagnosis, first course of treatment, and follow-up for vital status), demographic information, and state and county. |
| What is the spatial representation of the database (national or other)? | The most recent SEER database for cancer incidence has 18 population-based cancer registries in 14 states and covers 28% of the U.S. population. A subset of the current SEER includes 13 population-based cancer registries in 10 states and covers 14% of the U.S. population. The registries include: the Alaska Native, Atlanta, Connecticut, Detroit, Hawaii, Iowa, Los Angeles, New Mexico, Rural Georgia, San Francisco-Oakland, San Jose-Monterey, Seattle-Puget Sound, and Utah tumor registries. These data are taken to represent cancer incidence for the entire United States. See below for further discussion. The SEER database also includes national mortality data for all causes of death from the National Vital Statistics System. |
| Are raw data (individual measurements or survey responses) available? | Yes. |

## Surveillance, Epidemiology, and End Results (SEER) Program
(Used for Indicators H4 and H5)

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|---|---|
| How are database files obtained? | http://seer.cancer.gov/data/access.html includes various methods of accessing SEER data. Raw data for each person can be obtained. For ACE, annual summary cancer incidence and mortality rate data were obtained using SEER*Stat software available from the same website. |
| Are there any known data quality or data analysis concerns? | The population covered by SEER is comparable to the general U.S. population with regard to measures of poverty and education. The SEER population tends to be somewhat more urban and has a higher proportion of foreign-born persons than the general U.S. population. Cancer mortality data for North Dakota and South Carolina have significant percentages of persons with unknown ethnicity. |
| What documentation is available describing quality assurance procedures? | http://seer.cancer.gov/qi/index.html provides information on SEER quality improvement. |
| For what years are data available? | Data are available from the original 9 SEER registries from 1973–present, but over time the coverage of SEER has increased to cover more individuals and geographic regions. See below for further discussion. |
| What is the frequency of data collection? | Annually. |
| What is the frequency of data release? | Annually. |
| Are the data comparable across time and space? | The national coverage has increased over time from 9 to 18 cancer registries. Time comparisons should be between the same set of registries. Thus, long-term trend comparisons use SEER 9 (the original 9 registries) beginning with 1973 and cover the smallest percentage (9.5% in 2000) of the U.S. population. The full set of registries (SEER 18) has the broadest coverage (28%), but provides data only from the year 2000 forward. SEER 13 covers 14% of the population and provides data from 1992 forward. Population coverage varies by state. |
| | Over time the cancer classifications used by SEER have changed. As scientific knowledge has improved, some cancers that were once more generally classified are now given a more exact definition. However, with each annual update SEER updates the current and previous years' data to reflect the latest classification scheme. The one exception would be for conditions that are now classified as malignant cancers but were not previously and were therefore not registered by the SEER cancer registries for earlier years. This applies only to a limited number of rare tumor types, so it is not expected to contribute to changes in cancer incidence over time. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | The data can be stratified by race and ethnicity, as well as median county income. Incidence data within the given SEER registry can be geographically stratified by state and county Mortality data can be geographically stratified by state and county. |

## Texas Birth Defects Registry
(Used for Measure S1)

| | |
|---|---|
| Brief description of the data set | Since 1994, the Texas Birth Defects Epidemiology and Surveillance Branch has maintained the Texas Birth Defects Registry, a population-based birth defects surveillance system. Through multiple sources of information, the Registry monitors all births in Texas (approximately 380,000 each year) and identifies cases of birth defects. The Texas Registry staff routinely visit all hospitals and birthing centers where affected babies are delivered or treated. There they review logs and discharge lists to find potential cases, and then review medical records of the potential cases to identify actual cases with birth defects. |
| Who provides the data set? | Texas Department of State Health Services. |
| How are the data gathered? | The Texas Birth Defects Registry uses active surveillance:<br>▪ Does not require reporting by hospitals or medical professionals.<br>▪ Trained program staff regularly visit medical facilities.<br>   ▪ Have legislative authority to review all relevant records.<br>   ▪ Review log books, hospital discharge lists, and other records to identify potential cases.<br>   ▪ Review medical charts for potential cases to identify those with birth defects.<br>▪ Program staff use medical charts for each potential birth defect identified.<br>Records in the birth defect registry are matched to birth certificates and fetal death certificates filed with the Vital Statistics Unit of Texas DSHS to gather demographic data. |
| What documentation is available describing data collection procedures? | Methods report available at: http://www.dshs.state.tx.us/birthdefects/Data/99-04_Methods.pdf. |
| What types of data relevant for children's environmental health indicators are available from this database? | Relevant data include the following birth defects: central nervous system defects; ear and eye defects; cardiac and circulatory defects; respiratory defects; oral clefts; gastrointestinal defects; genitourinary defects, including hypospadias; musculoskeletal defects; and chromosomal defects. |
| What is the spatial representation of the database (national or other)? | Prior to 1999: selected health service regions of Texas. 1999 onward: entire state of Texas. |
| Are raw data (individual measurements or survey responses) available? | Raw data for 1996-2007 are available through special request. |
| How are database files obtained? | Routinely published tabulations of data for 1995-2007 (by birth defect, overall and broken down by selected demographic factors) can be accessed at: http://www.dshs.state.tx.us/birthdefects/Data/reports.shtm.<br><br>A queriable database of data for 1999-2006, where users can design their own tabulations, can be found at: http://soupfin.tdh.state.tx.us/bdefdoc.htm.<br><br>Other tabulations or raw data are also available through 2007, by written request. Go to http://www.dshs.state.tx.us/birthdefects/Data/reports.shtm and click on "Birth Defects Data Request and Access Policy." |

## Texas Birth Defects Registry
(Used for Measure S1)

| | |
|---|---|
| Are there any known data quality or data analysis concerns? | Registry only includes birth defects diagnosed within one year of delivery (with the exception of fetal alcohol syndrome). Secondly, diagnoses made outside Texas or in Texas facilities that staff members do not have access to are excluded. |
| | Due to flooding during June 2001, several hospitals in Houston lost medical records. An estimated 50 fetuses and infants were born during this time with diagnosed birth defects at the affected hospitals. |
| | Data collected from medical records are subject to differences in clinical practice. |
| What documentation is available describing quality assurance procedures? | An article in *Birth Defects Research Part A: Clinical and Molecular Teratology* highlights quality issues: |
| | Miller, E. 2006. Evaluation of the Texas Birth Defects Registry: An active surveillance system. *Birth Defects Research Part A: Clinical and Molecular Teratology.* 76(11): 787-792. |
| | See: http://www3.interscience.wiley.com/journal/113455770/abstract. |
| For what years are data available? | 1996-2007. |
| What is the frequency of data collection? | Ongoing. |
| What is the frequency of data release? | Annual. |
| Are the data comparable across time and space? | Yes, generally. However, data from different locations may not be comparable due to differences in clinical practice. Identification of some birth defects may change over time as more sensitive examinations and technologies lead to more accurate recording of birth defects and/or better diagnosis of subtle defects. Prior to 1999, only certain regions were included in the registry. |
| Can the data be stratified by race/ethnicity, income, and location (region, state, county or other geographic unit)? | Using the interactive data query system (http://soupfin.tdh.state.tx.us/bdefdoc.htm), data can be stratified by mother's race/ethnicity, mother's age group, infant's sex, and geographical unit (statewide, public health region, county, and border residence status.) |

# Appendix C: Alignment of ACE3 Indicators with Healthy People 2020 Objectives

Healthy People 2020 (www.healthypeople.gov), an initiative of the U.S. Department of Health and Human Services, provides science-based, 10-year national objectives for improving the health of all Americans. This appendix provides examples of the alignment of the topics and indicators presented in *America's Children and the Environment, Third Edition (ACE3)* with Healthy People 2020 objectives.

Objectives in Healthy People 2020 are organized by topic area; the table below provides a key to the topic area acronyms used in the objective titles.

| | |
|---|---|
| **EH** | Environmental Health |
| **TU** | Tobacco Use |
| **RD** | Respiratory Disease |
| **MICH** | Maternal Infant and Child Health |
| **NWS** | Nutrition and Weight Status |
| **PA** | Physical Activity |

## Environments and Contaminants

### Criteria Air Pollutants

**ACE3 Indicators**

- E1: Percentage of children ages 0 to 17 years living in counties with pollutant concentrations above the level of the current air quality standards, 1999–2009
- E2: Percentage of children ages 0 to 17 years living in counties with 8-hour ozone and 24-hour PM2.5 concentrations above the levels of air quality standards, by frequency of occurrence, 2009
- E3: Percentage of days with good, moderate, or unhealthy air quality for children ages 0 to 17 years, 1999–2009

**Healthy People 2020 Objective**

- EH-1: Reduce the number of days the Air Quality Index (AQI) exceeds 100

## Hazardous Air Pollutants

### ACE3 Indicator

- E4: Percentage of children ages 0 to 17 years living in census tracts where estimated hazardous air pollutant concentrations were greater than health benchmarks in 2005

### Healthy People 2020 Objective

- EH-3: Reduce air toxic emissions to decrease the risk of adverse health effects caused by airborne toxics
  - EH-3.1: Mobile sources
  - EH-3.2: Area sources
  - EH-3.3: Major sources

## Indoor Environments

### ACE3 Indicators

- E5: Percentage of children ages 0 to 6 years regularly exposed to environmental tobacco smoke in the home, by family income, 1994, 2005, and 2010
- E6: Percentage of children ages 0 to 5 years living in homes with interior lead hazards, 1998–1999 and 2005–2006

### Healthy People 2020 Objectives

- TU–11: Reduce the proportion of nonsmokers exposed to secondhand smoke
  - TU–11.1: Children aged 3 to 11 years
- EH-8: Reduce blood lead levels in children
  - EH-8.1: Eliminate elevated blood lead levels in children
  - EH-8.2: Reduce the mean blood lead levels in children
- EH-18: Reduce the number of U.S. homes that are found to have lead-based paint or related hazards
  - EH-18.1: Reduce the number of U.S. homes that are found to have lead-based paint
  - EH-18.2: Reduce the number of U.S. homes that have paint-lead hazards
  - EH-18.3: Reduce the number of U.S. homes that have dust-lead hazards

## Drinking Water Contaminants

### ACE3 Indicators

- E7: Estimated percentage of children ages 0 to 17 years served by community water systems that did not meet all applicable health-based drinking water standards, 1993–2009

- E8: Estimated percentage of children ages 0 to 17 years served by community water systems with violations of drinking water monitoring and reporting requirements, 1993–2009

**Healthy People 2020 Objectives**

- EH-4: Increase the proportion of persons served by community water systems who receive a supply of drinking water that meets the regulations of the Safe Drinking Water Act
- EH-5: Reduce waterborne disease outbreaks arising from water intended for drinking among persons served by community water systems

## Chemicals in Food

**ACE3 Indicator**

- E9: Percentage of sampled apples, carrots, grapes, and tomatoes with detectable residues of organophosphate pesticides, 1998–2009

**Healthy People 2020 Objective**

- None

## Contaminated Lands

**ACE3 Indicators**

- E10: Percentage of children ages 0-17 years living within one mile of Superfund and Corrective Action sites that may not have all human health protective measures in place, 2009
- E11: Distribution by race/ethnicity and family income of children living near selected contaminated lands in 2009, compared with the distribution by race/ethnicity and income of children in the general U.S. population

**Healthy People 2020 Objective**

- EH-9: Minimize the risks to human health and the environment posed by hazardous sites

# Biomonitoring

## Lead

**ACE3 Indicators**

- B1: Lead in children ages 1 to 5 years: Median and 95th percentile concentrations in blood, 1976–2010
- B2: Lead in children ages 1 to 5 years: Median concentrations in blood, by race/ethnicity and family income, 2007–2010

**Healthy People 2020 Objectives**

- EH-8: Reduce blood lead levels in children
  - EH-8.1: Eliminate elevated blood lead levels in children
  - EH-8.2: Reduce the mean blood lead levels in children
- EH-16.7: Inspect drinking water outlets for lead
- EH-17: (Developmental) Increase the proportion of persons living in pre-1978 housing that has been tested for the presence of lead-based paint or related hazards
  - EH-17.1: (Developmental) Increase the proportion of pre-1978 housing that has been tested for the presence of lead-based paint
  - EH17.2: (Developmental) Increase the proportion of pre-1978 housing that has been tested for the presence of paint-lead hazards
  - EH-17.3: (Developmental) Increase the proportion of pre-1978 housing that has been tested for the presence of lead in dust
  - EH-17.4: (Developmental) Increase the proportion of pre-1978 housing that has been tested for the presence of lead in soil
- EH-18: Reduce the number of U.S. homes that are found to have lead-based paint or related hazards
  - EH-18.1: Reduce the number of U.S. homes that are found to have lead-based paint
  - EH-18.2: Reduce the number of U.S. homes that have paint-lead hazards
  - EH-18.3: Reduce the number of U.S. homes that have dust-lead hazards
  - EH-18.4: Reduce the number of U.S. homes that have soil-lead hazards
- EH-20: Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites
  - EH-20.3: Lead
- EH-22: Increase the number of States, Territories, Tribes, and the District of Columbia that monitor diseases or conditions that can be caused by exposure to environmental hazards
  - EH-22.1: Lead poisoning

## Mercury

**ACE3 Indicator**

- B3: Mercury in women ages 16 to 49 years: Median and 95th percentile concentrations in blood, 1999–2010

**Healthy People 2020 Objectives**

- EH-20: Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites
  - EH-20.4: Mercury, children aged 1 to 5 years

- EH-20.5: Mercury, females aged 16 to 49 years
- EH-22: Increase the number of States, Territories, Tribes, and the District of Columbia that monitor diseases or conditions that can be caused by exposure to environmental hazards
  - EH-22.3: Mercury poisoning

## Cotinine

**ACE3 Indicators**

- B4: Cotinine in nonsmoking children ages 3 to 17 years: Median and 95th percentile concentrations in blood serum, 1988–2010
- B5: Cotinine in nonsmoking women ages 16 to 49 years: Median and 95th percentile concentrations in blood serum, 1988–2010

**Healthy People 2020 Objectives**

- TU–11: Reduce the proportion of nonsmokers exposed to secondhand smoke
  - TU–11.1 Children aged 3 to 11 years
- TU–13: Establish laws in States, District of Columbia, Territories, and Tribes on smoke-free indoor air that prohibit smoking in public places and worksites
  - TU–13.6 Commercial daycare centers
  - TU–13.11 Vehicles with children

## Perfluorochemicals (PFCs)

**ACE3 Indicator**

- B6: Perfluorochemicals in women ages 16 to 49 years: Median concentrations in blood serum, 1999–2008

**Healthy People 2020 Objective**

- None

## Polychlorinated biphenyls (PCBs)

**ACE3 Indicator**

- B7: PCBs in women ages 16 to 49 years: Median concentrations in blood serum, by race/ethnicity and family income, 2001–2004

**Healthy People 2020 Objective**

- EH-20: Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites.

- EH-20.12 PCB 153, representative of nondioxin-like PCBs.
- EH-20.13 PCB 126, representative of dioxin-like PCBs.

## Polybrominated diphenyl ethers (PBDEs)

**ACE3 Indicator**

- B8: PBDEs in women ages 16 to 49 years: Median concentrations in blood serum, by race/ethnicity and family income, 2003–2004

**Healthy People 2020 Objective**

- EH-20: Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites
  - EH-20.18: BDE 47 (2,2',4,4'-tetrabromodiphenyl ether)

## Phthalates

**ACE3 Indicators**

- B9: Phthalate metabolites in women ages 16 to 49 years: Median concentrations in urine, 1999–2008
- B10: Phthalate metabolites in children ages 6 to 17 years: Median concentrations in urine, 1999–2008

**Healthy People 2020 Objective**

- EH-20: Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites
  - EH-20.17: Mono-n-butyl phthalate

## Bisphenol A (BPA)

**ACE3 Indicators**

- B11: Bisphenol A in women ages 16 to 49 years: Median and 95th percentile concentrations in urine, 2003–2010
- B12: Bisphenol A in children ages 6 to 17 years: Median and 95th percentile concentrations in urine, 2003–2010

**Healthy People 2020 Objective**

- EH-20: Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites
  - EH-20.15: Bisphenol A

## Perchlorate

**ACE3 Indicator**

- B13: Perchlorate in women ages 16 to 49 years: Median and 95th percentile concentrations in urine, 2001–2008

**Healthy People 2020 Objective**

- EH-20: Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites.
  - EH-20.16: Perchlorate

# Health

## Respiratory Diseases

**ACE3 Indicators**

- H1: Percentage of children ages 0 to 17 years with asthma, 1997–2010
- H2: Percentage of children ages 0 to 17 years reported to have current asthma, by race/ethnicity and family income, 2007–2010
- H3: Children's emergency room visits and hospitalizations for asthma and other respiratory causes, ages 0 to 17 years, 1996–2008

**Healthy People 2020 Objectives**

- RD–1: Reduce asthma deaths
  - RD–1.1: Children and adults under age 35 years
- RD–2: Reduce hospitalizations for asthma
  - RD–2.1: Children under age 5 years
- RD–3: Reduce hospital emergency department visits for asthma
  - RD–3.1: Children under age 5 years
- RD–4: Reduce activity limitations among persons with current asthma
- RD–5: Reduce the proportion of persons with asthma who miss school or work days
  - RD–5.1: Reduce the proportion of children aged 5 to 17 years with asthma who miss school days
- RD–6: Increase the proportion of persons with current asthma who receive formal patient education
- RD–7: Increase the proportion of persons with current asthma who receive appropriate asthma care according to National Asthma Education and Prevention Program (NAEPP) guidelines

- RD–7.1: Persons with current asthma who receive written asthma management plans from their health care provider
- RD–7.2: Persons with current asthma with prescribed inhalers who receive instruction on their use
- RD–7.3: Persons with current asthma who receive education about appropriate response to an asthma episode, including recognizing early signs and symptoms or monitoring peak flow results
- RD–7.4: Increase the proportion of persons with current asthma who do not use more than one canister of short-acting inhaled beta agonist per month
- RD–7.5: Persons with current asthma who have been advised by a health professional to change things in their home, school, and work environments to reduce exposure to irritants or allergens to which they are sensitive
- RD– 7.6: (Developmental) Persons with current asthma who have had at least one routine follow-up visit in the past 12 months
- RD– 7.7: (Developmental) Persons with current asthma whose doctor assessed their asthma control in the past 12 months
- RD–8: Increase the numbers of States, Territories, and the District of Columbia with a comprehensive asthma surveillance system for tracking asthma cases, illness, and disability at the State level

## Childhood Cancer

### ACE3 Indicators

- H4: Cancer incidence and mortality for children ages 0 to 19 years, 1992–2009
- H5: Cancer incidence for children ages 0 to 19 years by type, 1992–2006

### Healthy People 2020 Objectives

- C–1: Reduce the overall cancer death rate
- C–12: Increase the number of central, population-based registries from the 50 States and the District of Columbia that capture case information on at least 95 percent of the expected number of reportable cancers
- C–20: Increase the proportion of persons who participate in behaviors that reduce their exposure to harmful ultraviolet (UV) irradiation and avoid sunburn
  - C–20.1: (Developmental) Reduce the proportion of adolescents in grades 9 through 12 who report sunburn
  - C–20.3: Reduce the proportion of adolescents in grades 9 through 12 who report using artificial sources of ultraviolet light for tanning
  - C–20.5: Increase the proportion of adolescents in grades 9 through 12 who follow protective measures that may reduce the risk of skin cancer

- ECBP–4: Increase the proportion of elementary, middle, and senior high schools that provide school health education to promote personal health and wellness in the following areas: hand washing or hand hygiene; oral health; growth and development; sun safety and skin cancer prevention; benefits of rest and sleep; ways to prevent vision and hearing loss; and the importance of health screenings and checkups
  - ECBP–4.4: Sun safety or skin cancer prevention

## Neurodevelopmental Disorders

**ACE3 Indicators**

- H6: Percentage of children ages 5 to 17 years reported to have attention-deficit/hyperactivity disorder, by sex, 1997–2010
- H7: Percentage of children ages 5 to 17 years reported to have a learning disability, by sex, 1997–2010
- H8: Percentage of children ages 5 to 17 years reported to have autism, 1997–2010
- H9: Percentage of children ages 5 to 17 years reported to have intellectual disability (mental retardation), 1997–2010

**Healthy People 2020 Objectives**

- EMC–2.4: Increase the proportion of parents who receive information from their doctors or other health care professionals when they have a concern about their children's learning, development, or behavior
- MICH–29: Increase the proportion of young children with an Autism Spectrum Disorder (ASD) and other developmental delays who are screened, evaluated, and enrolled in early intervention services in a timely manner
  - MICH–29.1: Increase the proportion of young children who are screened for an Autism Spectrum Disorder (ASD) and other developmental delays by 24 months of age
  - MICH–29.2: Increase the proportion of children with an ASD with a first evaluation by 36 months of age
  - MICH–29.3: Increase the proportion of children with an ASD enrolled in special services by 48 months of age
  - MICH–29.4: (Developmental) Increase the proportion of children with a developmental delay with a first evaluation by 36 months of age
  - MICH–29.5: (Developmental) Increase the proportion of children with a developmental delay enrolled in special services by 48 months of age

## Obesity

**ACE3 Indicators**

- H10: Percentage of children ages 2 to 17 years who were obese, 1976–2008

- H11: Percentage of children ages 2 to 17 years who were obese, by race/ethnicity and family income, 2005–2008

**Healthy People 2020 Objectives**

- NWS–5: Increase the proportion of primary care physicians who regularly measure the body mass index of their patients
  - NWS–5.2: Increase the proportion of primary care physicians who regularly assess body mass index (BMI) for age and sex in their child or adolescent patients
- NWS–10: Reduce the proportion of children and adolescents who are considered obese.
  - NWS–10.1: Children aged 2 to 5 years
  - NWS–10.2: Children aged 6 to 11 years
  - NWS–10.3: Adolescents aged 12 to 19 years
- PA–13: (Developmental) Increase the proportion of trips made by walking
  - PA–13.2: Children and adolescents aged 5 to 15 years, trips to school of 1 mile or less
- PA–14: (Developmental) Increase the proportion of trips made by bicycling
  - PA–14.2: Children and adolescents aged 5 to 15 years, trips to school of 2 miles or less
- PA–11: Increase the proportion of physician office visits that include counseling or education related to physical activity
  - PA–11.2: Increase the proportion of physician visits made by all child and adult patients that include counseling about exercise
- PA–15: (Developmental) Increase legislative policies for the built environment that enhance access to and availability of physical activity opportunities

## Adverse Birth Outcomes

**ACE3 Indicators**

- H12: Percentage of babies born preterm, by race/ethnicity, 1993–2008
- H13: Percentage of babies born at term with low birth weight, by race/ethnicity, 1993–2008

**Healthy People 2020 Objectives**

- MICH–9: Reduce preterm births
  - MICH–9.1: Total preterm births
  - MICH–9.2: Late preterm or live births at 34 to 36 weeks of gestation
  - MICH–9.3: Live births at 32 to 33 weeks of gestation
  - MICH–9.4: Very preterm or live births at less than 32 weeks of gestation
- MICH–8: Reduce low birth weight (LBW) and very low birth weight (VLBW)
  - MICH–8.1: Low birth weight (LBW)
  - MICH–8.2: Very low birth weight (VLBW)

# Supplementary Topics

## Birth Defects

**ACE3 Measure**

- S1: Birth defects in Texas, 1999–2007

**Healthy People 2020 Objective**

- MICH–28: Reduce occurrence of neural tube defects
  - MICH–28.1: Reduce the occurrence of spina bifida
  - MICH–28.2: Reduce occurrence of anencephaly

## Contaminants in Schools and Child Care Facilities

**ACE3 Measures**

- S2: Percentage of environmental and personal media samples with detectable pesticides in child care facilities, 2001
- S3: Percentage of environmental and personal media samples with detectable industrial chemicals in child care facilities, 2001
- S4: Pesticides used inside California schools by commercial applicators, 2002–2007

**Healthy People 2020 Objective**

- EH-16: Increase the proportion of the Nation's elementary, middle, and high schools that have official school policies and engage in practices that promote a healthy and safe physical school environment
  - EH-16.1: Have an indoor air quality management program
  - EH-16.4: Reduce exposure to pesticides by using spot treatments and baiting rather than widespread application of pesticide
  - EH-16.5: Reduce exposure to pesticides by marking areas to be treated with pesticides
  - EH-16.6: Reduce exposure to pesticides by informing students and staff prior to application of the pesticide

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