

# Vital and Health

## Statistics

Series 10, Number 239

\*\*\* Provisional Report  
\*\*\* Minimal Linking  
\*\*\* Report may change  
\*\*\* Will be replaced with final version  
and there will be a printed copy

### Summary Health Statistics for U.S. Children: National Health Interview Survey, 2007

Data from the National Health Interview  
Survey

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Center for Health Statistics

Hyattsville, Maryland  
October 2008  
DHHS Publication No. (PHS) 2009-1567

**National Center for Health Statistics**

Edward J. Sondik, Ph.D., *Director*

Jennifer H. Madans, Ph.D., *Acting Co-Deputy Director*

Michael H. Sadagursky, *Acting Co-Deputy Director*

Jennifer H. Madans, Ph.D., *Associate Director For Science*

Jennifer H. Madans, Ph.D., *Acting Associate Director for  
Planning, Budget, and Legislation*

Michael H. Sadagursky, *Associate Director for Management and  
Operations*

Lawrence H. Cox, Ph.D., *Associate Director for Research and  
Methodology*

Linda Torian, *Acting Director for Information Technology*

Linda Torian, *Acting Director for Information Services*

Linda T. Bilheimer, Ph.D., *Associate Director for Analysis and  
Epidemiology*

Charles J. Rothwell, M.S., *Director for Vital Statistics*

Jane E. Sisk, Ph.D., *Director for Health Care Statistics*

Jane F. Gentleman, Ph.D., *Director for Health Interview  
Statistics*

Clifford L. Johnson, *Director for Health and Nutrition  
Examination Surveys*

**Division of Health Interview Statistics**

Jane F. Gentleman, Ph.D., *Director*

Anne K. Stratton, M.S., *Deputy Director*

Eve Powell-Griner, Ph.D., *Acting Associate Director for Science*

Eve Powell-Griner, Ph.D., *Chief, Data Analysis and Quality  
Assurance Branch*

Anne K. Stratton, M.S., *Acting Chief, Data Production and  
Systems Branch*

Marcie L. Cynamon, M.A., *Chief, Survey Planning and Special  
Surveys Branch*

## Contents

Abstract .....	1
Introduction .....	3
Methods .....	7
Data Source.....	7
Estimation Procedures.....	9
Transition to the 2000-Census-Based Weights.....	10
Age Adjustment.....	11
Change in MSA definitions.....	11
Income and Poverty Status Changes.....	12
Sample Reductions in the 2007 National Health Interview Survey.....	13
Limitations of the Data.....	13
Variance Estimation and Significance Testing.....	14
Further Information .....	15
Selected Highlights .....	17
Asthma (Table 1).....	17
Allergies (Table 2).....	18
Learning Disability and Attention Deficit Hyperactivity Disorder (Table 3).....	19
Prescription Medication Use for at Least 3 Months (Table 4).....	19
Respondent-Assessed Health Status (Tables 5-8).....	20
School-Loss Days Due to Illness or Injury (Tables 9,10).....	21
Usual Place of Health Care (Tables 11,12).....	22
Time Since Last Contact with a Health Care Professional (Tables 13,14).....	23
Selected Measures of Health Care Access (Table 15).....	24
Emergency Room Visits in the past 12 months (Table 16).....	25
Dental Care (Tables 17,18).....	25
References .....	27

Appendix I. Technical Notes on Methods ..... 30  
    Treatment of Unknown Values..... 32  
    Hypothesis Tests..... 36  
Appendix II. Definitions of Selected Terms ..... 38  
    Sociodemographic Terms..... 38  
    Health Characteristics or Outcome Terms..... 46

## Detailed Tables

1. Frequencies and age-adjusted percentages (with standard errors) of ever having asthma and still having asthma for children under 18 years of age, by selected characteristics: United States, 2007

2. Frequencies and age-adjusted percentages (with standard errors) of hay fever, respiratory allergies, and other allergies in the past 12 months for children under 18 years of age, by selected characteristics: United States, 2007

3. Frequencies and age-adjusted percentages (with standard errors) of ever having been told of having a learning disability or Attention Deficit Hyperactivity Disorder for children 3-17 years of age, by selected characteristics: United States, 2007

4. Frequencies and age-adjusted percentages (with standard errors) of having a problem for which prescription medication has been taken regularly for at least 3 months for children under 18 years of age, by selected characteristics: United States, 2007

5. Frequency distributions of respondent-assessed health status for children under 18 years of age, by selected characteristics: United States, 2007

6. Age-adjusted percent distributions (with standard errors) of respondent-assessed health status for children under 18 years of age, by selected characteristics: United States, 2007

7. Frequency distributions of health status compared with a year ago given current health status for children 1-17 years of age, by selected characteristics: United States, 2007

8. Age-adjusted percent distributions (with standard errors) of health status compared with a year ago given current health status for children 1-17 years of age, by selected characteristics: United States, 2007

9. Frequency distributions of number of school days missed in the past 12 months because of illness or injury for children 5-17 years of age, by selected characteristics: United States, 2007

10. Age-adjusted percent distributions (with standard errors) of number of school days missed in the past 12 months because of illness or injury, for children 5-17 years of age, by selected characteristics: United States, 2007

11. Frequencies of having a usual place of health care and frequency distributions of usual place of health care for children with a usual place of health care for children under 18 years of age, by selected characteristics: United States, 2007

12. Age-adjusted percentages (with standard errors) of having a usual place of health care and age-adjusted percent distributions (with standard errors) of usual place of health care for children with a usual place of health care for children under 18 years of age, by selected characteristics: United States, 2007

13. Frequency distributions of length of time since last contact with a health care professional for children under 18 years of age, by selected characteristics: United States, 2007

14. Age-adjusted percent distributions (with standard errors) of length of time since last contact with a health care professional for children under 18 years of age, by selected characteristics: United States, 2007

15. Frequencies and age-adjusted percentages (with standard errors) of selected measures of health care access for children under 18 years of age, by selected characteristics: United States, 2007

16. Frequencies and age-adjusted percentages (with standard errors) of emergency room visits in the past 12 months for children under 18 years of age, by selected characteristics: United States, 2007

17. Frequency distributions of unmet dental need in the past 12 months and frequency distributions of length of time since last dental contact for children 2-17 years of age, by selected characteristics: United States, 2007

18. Age-adjusted percent distributions (with standard errors) of unmet dental need in the past 12 months and age-adjusted percent distributions (with standard errors) of length of time since last dental contact for children 2-17 years of age, by selected characteristics: United States, 2007

## Appendix Tables

I. Age distribution used in age-adjusting data shown in tables 1-18: 2000 standard U.S. population

II. Weighted counts and weighted percentages of children with unknown information for selected health variables: National Health Interview Survey, 2007

III. Weighted counts and weighted percentages of children under 18 years of age with unknown information on selected sociodemographic characteristics: National Health Interview Survey, 2007

IV. Frequencies and percentages (with standard errors) of ever having asthma and still having asthma for children under 18 years of age, by selected characteristics: United States, 2007

V. Frequencies and percentages (with standard errors) of hay fever, respiratory allergies, and other allergies in the past 12 months for children under 18 years of age, by selected characteristics: United States, 2007

VI. Frequencies and percentages (with standard errors) of ever having been told of having a learning disability or Attention Deficit Hyperactivity Disorder for children 3-17 years of age, by selected characteristics: United States, 2007

VII. Frequencies and percentages (with standard errors) of having a problem for which prescription medication has been taken regularly for at least 3 months for children under 18 years of age, by selected characteristics: United States, 2007



VIII. Percent distributions (with standard errors) of respondent-assessed health status for children under 18 years of age, by selected characteristics: United States, 2007

IX. Percent distributions (with standard errors) of health status compared with a year ago given current health status for children 1-17 years of age, by selected characteristics: United States, 2007

X. Percent distributions (with standard errors) of number of school days missed in the past 12 months because of illness or injury for children 5-17 years of age, by selected characteristics: United States, 2007

XI. Percentages (with standard errors) of having a usual place of health care and percent distributions (with standard errors) of usual place of health care for children under 18 years of age with a usual place of health care, by selected characteristics: United States, 2007

XII. Percent distributions (with standard errors) of length of time since last contact with a health care professional for children under 18 years of age, by selected characteristics: United States, 2007

XIII. Frequencies and percentages (with standard errors) of selected measures of health care access for children under 18 years of age, by selected characteristics: United States, 2007

XIV. Frequencies and percentages (with standard errors) of emergency room visits in the past 12 months for children under 18 years of age, by selected characteristics: United States, 2007

XV. Percent distributions (with standard errors) of unmet dental need in the past 12 months and percent distributions (with standard errors) of length of time since last dental contact for children 2-17 years of age, by selected characteristics: United States, 2007

## **Abstract**

### **Objectives**

This report presents both age-adjusted and unadjusted statistics from the 2007 National Health Interview Survey (NHIS) on selected health measures for children under 18 years of age, classified by sex, age, race, Hispanic origin, family structure, parent education, family income, poverty status, health insurance coverage, place of residence, region, and current health status. The topics covered are asthma, allergies, learning disability, Attention Deficit Hyperactivity Disorder (ADHD), prescription medication use, respondent-assessed health status, school-loss days, usual place of health care, time since last contact with a health care professional, selected measures of health care access and utilization, and dental care.

### **Source of Data**

The NHIS is a multistage probability sample survey conducted annually by interviewers of the U. S. Census Bureau for the Centers for Disease Control and Prevention's National Center for Health Statistics and is representative of the civilian noninstitutionalized population of the United States. Data are collected for all family members during face-to-face interviews with adults present at the time of interview. Additional information about children is collected for one randomly selected child per family in face-to-face interviews with an adult proxy respondent familiar with the child's health.

## **Selected Highlights**

In 2007, most U.S. children under 18 years of age had excellent or very good health (83%). However, 9% of children had no health insurance coverage, and 6% of children had no usual place of health care. Thirteen percent of children had ever been diagnosed with asthma. An estimated 8% of children 3-17 years of age had a learning disability, and an estimated 7% of children had ADHD.

Keywords: *child health • health conditions • access to care • health provider contacts • unmet medical need • ADHD*

# **Summary Health Statistics for U.S. Children: National Health Interview Survey, 2007**

by Barbara Bloom, M.P.A.; Robin A. Cohen, Ph.D., and Gulnur Freeman, M.P.A., Division of Health Interview Statistics

Acknowledgement: The authors would like to thank John R. Pleis for his expert programming advice in the preparation of the tables for this report.

## **Introduction**

This report is one of a set of reports summarizing data from the 2007 National Health Interview Survey (NHIS), a multipurpose health survey conducted by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC). This report provides national estimates for a broad range of health measures for the U.S. civilian noninstitutionalized population of children under 18 years of age. Two other reports in this set provide estimates of health measures for the U.S. population and for adults (1,2). These three reports are published for each year of the National Health Interview Survey (NHIS) (3-5) and replace the annual, one-volume Current Estimates series (6).

Estimates are presented for asthma, allergies, learning disability, Attention Deficit Hyperactivity Disorder (ADHD), prescription medication use, respondent-assessed health status, school-loss days, usual place of health care, time since last contact with a health care professional, selected measures of health care access and utilization, and dental care.

(Information regarding injuries to children is in Summary

Health Statistics for the U.S. Population: National Health Interview Survey, 2007 (1).) Estimates are derived from the Sample Child component of the annual NHIS Basic Module and are shown in Tables 1-18 for various subgroups of the population, including those defined by sex, age, race, Hispanic origin, family structure, parent education, family income, poverty status, health insurance coverage, place of residence, region, and current health status. Estimates for other characteristics of special relevance are also included, where appropriate. Appendix I contains brief technical notes including information about age adjustment and unknown values (Tables I-III). Appendix II contains definitions of terms used in this report, and Appendix III contains tables of unadjusted estimates (Tables IV-XV).

NHIS has been an important source of information about health and health care in the United States since it was first conducted in 1957. Given the ever-changing nature of the U.S. population, the NHIS questionnaire has been revised every 10-15 years, with the latest revision occurring in 1997. The first design changes were introduced in 1973 and the first procedural changes in 1975 (7). In 1982, the NHIS questionnaire and data preparation procedures of the survey were extensively revised. The basic concepts of NHIS changed in some cases; in other cases, the concepts were measured in a different way. A more complete explanation of these changes is in Appendix IV of Series 10, No. 150 (8). In 1985, a new sample design for NHIS and a different method of presenting sampling errors were introduced (9,10). In 1995, another change in the sample design was introduced, including the oversampling of black and Hispanic persons (11).

In 1997, the NHIS questionnaire was substantially revised and the means of administration was changed to computer-assisted personal interviewing. This new design improved the ability of NHIS to provide important health information. However, comparisons of the NHIS data collected before and after the beginning of 1997 should not be undertaken without a careful examination of the changes across survey instruments (6,8,10).

In response to the changing demographics of the U.S. population, in 1997 the Office of Management and Budget (OMB) issued new standards for collecting data on race and Hispanic origin (12). Most notably, the new standards allow respondents to the census and Federal surveys to indicate more than one group in answering questions on race. Additionally, the category "Asian or Pacific Islander" is now split into two distinct categories, "Asian" and "Native Hawaiian or Other Pacific Islander" (NHOPI), for data collection purposes. Although NHIS had allowed respondents to choose more than one race group for many years, NHIS became fully compliant with all the new race and ethnicity standards with the fielding of the 1999 survey. The tables in this report reflect these new standards. The text in this report uses shorter versions of the new OMB race and Hispanic origin terms for conciseness, and the tables use the complete terms. For example, the category "Not Hispanic or Latino, black or African American, single race" in the tables is referred to as "non-Hispanic black" in the text.

As has been mentioned previously, the sample for the NHIS is redesigned and redrawn about every ten years to better measure the changing U.S. population and to meet new survey objectives. A new sample design for the NHIS was implemented in 2006. The fundamental structure of the new 2006 NHIS sample

design is very similar to the previous 1995-2005 NHIS sample design, including state-level stratification. The new sample design reduced the NHIS sample size by about 13%, compared with the 1995-2005 NHIS. Oversampling of the black and Hispanic populations has been retained in 2006 to allow for more precise estimation of health characteristics in these growing minority populations. The new sample design also oversamples the Asian population. In addition, the sample adult selection process has been revised so that when black, Hispanic, or Asian persons aged 65 or older are present, they have an increased chance of being selected as the sample adult.

Additionally, beginning in the 2003 NHIS, editing procedures were changed to maintain consistency with the U.S. Census Bureau procedures for collecting and editing data on race and ethnicity. As a result of these changes, in cases where "Other race" was mentioned along with one or more OMB race groups, the "Other race" response is dropped, and the OMB race group information is retained on the NHIS data file. In cases where "Other race" was the only race response, it is treated as missing, and the race is imputed. Although this change has resulted in an increase in the number of persons in the OMB race category "White" because this is numerically the largest group, the change is not expected to have a substantial effect on the estimates in this report. More information about the race/ethnicity editing procedures used by the U.S. Census Bureau can be found at the following Web site:

<http://www.census.gov/popest/archives/files/MRSF-01 US1.pdf>.



## **Methods**

### **Data Source**

The main objective of the NHIS is to monitor the health of the U.S. population through the collection and analysis of data on a broad range of health topics. The target population for NHIS is the civilian noninstitutionalized population of the United States. Persons excluded are patients in long-term care institutions (e.g., nursing homes for the elderly, hospitals for the chronically ill, disabled, or retarded, as well as wards for abused or neglected children), correctional facilities (e.g., prisons or jails, juvenile detention centers, halfway houses), active duty Armed Forces personnel (although their civilian family members are included), and U.S. nationals living in foreign countries. Each year, a representative sample of households across the country is selected for the NHIS using a multistage cluster sample design. Details on sample design can be found in "Design and Estimation for the National Health Interview Survey, 1995-2004" (11). Trained interviewers from the U.S. Census Bureau visit each selected household and administer the NHIS in person. Detailed interviewer instructions can be found in the NHIS Field Representative Manual (13).

The annual NHIS questionnaire, now called the Basic Module or Core, consists of three main components: the Family Core, the Sample Adult Core, and the Sample Child Core. The Family Core collects information for all family members regarding household composition and sociodemographic characteristics, along with basic indicators of health status, activity limitations, and utilization

of health care services. All members of the household 17 years of age and over who are at home at the time of the interview are invited to participate and respond for themselves. For children and adults not at home during the interview, information is provided by a knowledgeable adult family member (18 years of age or over) residing in the household. Although considerable effort is made to ensure accurate reporting, the information from both proxies and self-respondents may be inaccurate because the respondent is unaware of relevant information, has forgotten it, does not wish to reveal it to an interviewer, or does not understand the intended meaning of the question.

The Sample Adult and Sample Child Cores obtain additional information on the health of one randomly selected adult and child in the family; the sample adult responds for himself or herself, and a knowledgeable adult in the family provides proxy responses for the sample child. The Sample Child Core is the primary source of data for this report, with information regarding demographic characteristics, health insurance and access to medical care derived from the Family Core.

The interviewed sample for 2007 consisted of 29,266 households, which yielded 75,764 persons in 29,915 families. There were 10,658 children under 18 years of age eligible for the Sample Child questionnaire. Data were collected for 9,417 sample children, a conditional response rate of 88.4%. The unconditional or final response rate for the Sample Child component was calculated by multiplying the conditional rate by the overall family response rate of 86.6%, yielding a rate of 76.5% (14).

## **Estimation Procedures**

Data presented in this report are weighted to provide national health estimates. The sample child record weight is used for all estimates shown in this report with the exception of estimates for uninsured for health care, unmet medical needs, and delayed care due to cost, where the person record weight was used. The person record weight was used because the data for these three variables were collected for all children, not just the sample child, in order to produce more precise estimates. These weights were calibrated by NCHS staff to produce numbers consistent with the civilian, noninstitutionalized population estimates of the United States by age, sex, and race/ethnicity, based on projections from the 2000 U.S. Census.

For each health measure, weighted frequencies and weighted percentages for all children and for various subgroups of the child population are shown. All counts are expressed in thousands. Counts for persons of unknown status with respect to each health characteristic of interest are not shown separately in the tables, nor are they included in the calculation of percentages to make the presentation of the estimates more straightforward. For all health measures in this report, the overall percentage unknown is typically small, in most cases less than 1%, and is shown in Appendix I. Nevertheless, these unknown cases are included in the total population counts for each table. Therefore, it should be noted that readers may obtain slightly different percentages than those shown in the tables if they elect to calculate percentages based on the frequencies and population counts presented in the tables.

In addition, some of the sociodemographic variables used to delineate various subgroups of the population have unknown values. For most of these variables, the percentage unknown is small. However, in the case of family income, there is no income information for about 8% of sample children in the 2007 survey, and only a broad range for their family's income was provided for about 23% of sample children. Poverty status, which is based on family income, therefore also has a high nonresponse rate (see Appendix I). Estimates in this publication are based on reported income and may differ from other measures of income that are based on imputed income data (which were not available when this report was prepared). Health estimates for persons with these unknown sociodemographic characteristics are not shown in the tables, but readers should refer to Appendix I for more information on the quantities of cases in the unknown income and poverty status categories.

### **Transition to the 2000-Census-Based Weights**

In Summary Health Statistics reports prior to 2003, the weights for the NHIS data were derived from 1990-census-based postcensal population estimates. Beginning with the 2003 data, NHIS transitioned to weights derived from the 2000-census-based population estimates. The impact of this transition was assessed for the 2002 NHIS by comparing estimates for selected health characteristics using the 1990-census-based weights with those using the 2000-census-based weights. Although the effect of new population controls on survey estimates differed by type of health characteristic, the effect of this change on health

characteristic rates was small but was somewhat larger for weighted frequencies (15).

### **Age Adjustment**

Beginning with the 2002 report, estimates are provided in two sets of tables. The first set (Tables 1-18) is age adjusted using the projected 2000 U.S. population as the standard population. Age adjustment was used to permit comparison among various sociodemographic subgroups that may have different age structures (16,17). In most cases, the age groups used for age adjustment are the same age groups presented in the tables. The age-adjusted estimates in this report may not match age-adjusted estimates for the same health characteristics in other reports if different age groups were used for age adjustment or different record weights were used. The second set (Tables IV-XV in Appendix III) provides estimates that are not age adjusted so that readers may compare current estimates with those published in the 1997-2001 Summary Health Statistics reports and may see the effects of age adjustment on the 2007 estimates. (See Appendix I for details on age adjustment.) Frequency tables have been removed from the age-unadjusted set of tables in Appendix III to eliminate redundancy in the report.

### **Change in MSA definitions**

Beginning in 2006, the 2003 OMB standards on criteria for designating MSAs, based on Census 2000, are used for NHIS data. Because the 2003 criteria differ from the 1993 criteria in substantial ways, analysts who compare NHIS frequencies across this transition in OMB standards need to recognize that some of

the differences may be due to change in the definitions of metropolitan areas. Refer to Appendix II for more detail about the MSA definition.

### **Income and Poverty Status Changes**

Starting with the 2007 NHIS, the income amount follow-up questions, which had been in place since 1997, were replaced with a series of unfolding bracket questions. This decision was based on a) the relatively poor performance of the 1997-2006 versions of the follow-up income amount questions, and b) the results of a 2006 field test that compared unfolding bracket follow-up questions to the income amount follow-up questions used since 1997. For more information about the 2006 field test, data analysts should refer to Appendix I.

The unfolding bracket method utilized a series of closed-ended income range questions (e.g., "is it less than \$50,000?") for respondents who failed to provide the exact amount of the family's income. The closed-ended income range questions were constructed so that each successive question established a smaller range for the amount of the family's income in the last calendar year.

Based on results from the 2006 field test, the unfolding bracket follow-up income questions performed better than the follow-up income questions used from 1997-2006. For example, the percentage of unknown responses for a three-category poverty status variable was 17% using the income bracket follow-up questions compared with 31% using the income follow-up questions used from 1997-2006.

Because of these positive results, the unfolding bracket income follow-up questions were implemented during the first quarter of the 2007 NHIS. Due to the differences in the income follow-up questions between 1997-2006 and 2007, income and

poverty status estimates from 2007 may not be comparable with those from prior years.

### **Sample Reductions in the 2007 National Health Interview Survey**

As in 2002-2004 and 2006, the 2007 National Health Interview Survey (NHIS) was faced with a budget shortfall. As a result, NCHS and the Division of Health Interview Statistics (DHIS) decided to reduce the size of the 2007 NHIS sample. The goal of the 2007 sample cuts was strictly monetary savings. The NHIS sample was reduced by approximately 50% during July-September 2007. The 2007 sample reduction was implemented in the same way and during the same time of year as the 2006 sample reduction. Overall, about 13% of the households in the 2007 NHIS sample were deleted from interviewers' assignments. This cutback was in addition to the ongoing 13% reduction due to the new sample design in 2006.

### **Limitations of the Data**

As mentioned above, the redesigned NHIS is somewhat different in content, format, and mode of data collection from earlier versions of the survey. These changes can make it complex to compare 1997-2007 NHIS estimates to those of earlier years. The 2006-2007 NHIS is based on a different sample design, including the oversampling of all Asians as well as Hispanic, black, or Asian sample adults at least 65 years of age, and a permanent sample reduction of 13%, compared to the 1997-2005 NHIS. The change in sample design should be considered when comparing estimates from the 2006-2007 NHIS with those from 2005 and earlier years. Beginning in 2003, the

NHIS uses weights derived from the 2000 U.S. Census-based population estimates. Analysts who compare NHIS frequencies across this transition, e.g., comparing 2005 with 2002, need to recognize that some of the observed differences may be due to the change in the population estimates. Unadjusted percentage estimates shown in the Appendix III tables of this report may be compared with those published in Summary Health Statistics reports of 1997-2001, which did not contain age-adjusted estimates. Age-adjusted estimates in this report should not be compared with earlier unadjusted estimates unless it can be demonstrated that the effect of age adjustment is minimal.

It is important to note that frequencies are underestimates due to item nonresponse and unknowns, both of which are excluded from the tables (with the exception of the "All children" or "Total" columns shown in each table). See Appendix I for more information about the number of unknowns with respect to each health characteristic.

Interpretation of estimates should only be made after reviewing Appendix I, which contains important information about the methods used to obtain the estimates, changes in the survey instrument, and measurement issues currently being evaluated.

### **Variance Estimation and Significance Testing**

The NHIS data are based on a sample of the population and are, therefore, subject to sampling error. Standard errors are reported to indicate the reliability of the estimates. Estimates and standard errors were calculated using SUDAAN software, which takes into account the complex sampling design of the NHIS. The



Taylor series linearization method was used for variance estimation in SUDAAN (18).

Standard errors are shown for all percentages in the tables (but not for the frequencies). Estimates with relative standard errors of greater than 30% and less than or equal to 50% are considered unreliable and are indicated with an asterisk (\*). Estimates with relative standard errors of greater than 50% are indicated with a dagger (†), but the estimates are not shown. The statistical significance of differences between point estimates was evaluated using two-sided t-tests at the 0.05 level and assuming independence. Terms such as "greater than," "less than," "more likely," "less likely," "compared with," or "opposed to" indicate a statistically significant difference between estimates, whereas "similar," "no difference," or "comparable" indicate that the estimates are not significantly different. A lack of commentary about any two estimates should not be interpreted to mean that a t-test was performed and the difference was found to be not significant. Furthermore, these tests did not take multiple comparisons into account.

## **Further Information**

Data users can obtain the latest information about NHIS by periodically checking the Web site:

<http://www.cdc.gov/nchs/nhis.htm>.

This Web site features downloadable public-use data and documentation for recent surveys, as well as important

information about any modifications or updates to the data or documentation.

Researchers may also wish to join the NHIS electronic mail list. To do so, go to:

<http://www.cdc.gov/subscribe.html>.

Fill in the appropriate information, and click the "National Health Interview Survey (NHIS)" researchers' box, followed by the "Subscribe" button at the bottom of the page. The listserv consists of approximately 4,000 NHIS data users located around the world who receive e-news about NHIS surveys (e.g., new releases of data or modifications to existing data), publications, conferences, and workshops.

## **Selected Highlights**

In the following section, brief, bulleted summaries of the estimates shown in Tables 1-18 are presented. All estimates highlighted here were age-adjusted by the direct method using the projected 2000 U.S. population as the standard population. In most cases, the age groups used to adjust estimates are the same age groups presented in the tables. (See table notes for age-adjustment groups.)

### **Asthma (Table 1)**

- Over 9 and one-half million U.S. children under 18 years of age (13%) have ever been diagnosed with asthma; almost six and three-quarters million children (9%) still have asthma.
- Boys (15%) were more likely than girls (11%) to have ever been diagnosed with asthma.
- Non-Hispanic black children were more likely to have ever been diagnosed with asthma or to still have asthma (20% and 15%) than Hispanic children (13% and 9%) or non-Hispanic white children (11% and 7%).
- Children in poor families were more likely to have ever been diagnosed with asthma or to still have asthma (17% and 12%) than children in families that were not poor (12% and 8%).

- Children in fair or poor health were three and one-half times as likely to have ever been diagnosed with asthma and five and one-half times as likely to still have asthma (41% and 41%) as children in excellent or very good health (11% and 7%).

### **Allergies (Table 2)**

- Ten percent of U.S. children under 18 years of age suffered from hay fever in the past 12 months, 10% from respiratory allergies, and 12% from other allergies.
- White children were more likely to have had hay fever or respiratory allergies (11% and 10%) than black children (7% and 7%) or Asian children (8% and 7%).
- Hispanic children were less likely to have had hay fever or respiratory allergies (8% and 7%) than non-Hispanic children (11% and 10%).
- Children with a parent who had more than a high school diploma were more likely to have respiratory allergies, hay fever, and other allergies than children with parents who had less education.
- Children in fair or poor health were almost three times as likely to have had respiratory allergies as children in excellent or very good health (24% and 9%).

### **Learning Disability and Attention Deficit Hyperactivity Disorder (Table 3)**

- In 2007, 4.6 million children 3-17 years of age (8%) had a learning disability; 10% of boys had a learning disability compared with 5% of girls.
- About four and one-half million children 3-17 years of age (7%) had Attention Deficit Hyperactivity Disorder (ADHD). Boys were more than twice as likely as girls to have ADHD (10% and 4%).
- White children (8%) and black children (8%) were twice as likely to have learning disabilities as Asian children (4%).
- In families with an income of less than \$35,000, the percentage of children with a learning disability was twice that of children in families with an income of \$100,000 or more (10% and 5%).
- When compared with children with an excellent or very good health status, children with a fair or poor health status were almost five times as likely to have a learning disability (28% and 6%) and more than twice as likely to have ADHD (16% and 7%).

### **Prescription Medication Use for at Least 3 Months (Table 4)**

- In 2007, there were 9 million children in the United States (12%) who had a health problem for which prescription medication had been taken regularly for at least 3 months.

- Boys (13%) were more likely than girls (11%) to have been on regular medication for at least 3 months.
- Seventeen percent of youths aged 12-17 years were on regular medication compared with 12% of children aged 5-11 years and 8% of children under 5 years of age.
- White children (12%) and black children (12%) were more likely to have been on regular medication for at least 3 months than Asian children (8%).
- Non-Hispanic children (13%) were more likely to have been on regular medication than Hispanic children (9%).
- Children with a parent who had education beyond a high school diploma were more likely to have been on regular medication (14%) than children whose parent had only a high school diploma or equivalent (10%) or did not obtain a high school diploma (8%).
- Children with Medicaid or other public health insurance coverage (15%) were more likely than children with private coverage (12%) or children with no health insurance coverage (5%) to have been on regular medication.

#### **Respondent-Assessed Health Status (Tables 5-8)**

- In 2007, the majority of children in the United States enjoyed excellent health (41 million or 56%), and another 20 million children (27%) had very good health.

- As the level of parent education increases, the percentage of children with excellent health increases.
- Poverty status was associated with children's health. About 4 out of 10 children in poor families were in excellent health compared with 6 out of 10 children in families that were not poor.
- Children with private health insurance (62%) were more likely to be in excellent health than children with Medicaid or other public coverage (46%).
- Two percent of all children were in fair or poor health. Of these, 9% were in worse health than the previous year.
- In general, most children's health status remained about the same as last year.

#### **School-Loss Days Due to Illness or Injury (Tables 9,10)**

- Almost one-third (16 million) of school-aged children (aged 5-17 years) in the United States missed no school in the past 12 months due to illness or injury.
- Asian children (45%) were more likely than black children (37%) or white children (29%) to have missed no school in the past 12 months due to illness or injury.
- Four percent of children missed 11 or more days of school in the past 12 months due to illness or injury.

- Children in single-mother families were twice as likely to have been absent from school for 11 or more days in the past 12 months due to illness or injury compared with children in two-parent families (6% and 3%).

#### **Usual Place of Health Care (Tables 11,12)**

- In 2007 almost all children in the U.S. (94%) had a usual place of health care. Non-Hispanic black children (96%) and non-Hispanic white children (96%) were more likely to have had a usual place of health care than Hispanic children (90%).
- Children in two-parent families (95%) or single-mother families (95%) were more likely to have had a usual place of health care compared with children in single-father families (89%).
- Seventy-one percent of uninsured children had a usual place of health care compared with 97% of children with private health insurance and 96% of children with Medicaid or other public coverage.
- Among children with a usual place of health care, 76% used a doctor's office, 21% used a clinic, 1% used a hospital outpatient clinic, and 1% used an emergency room as their usual place of care.
- Among children with a usual place of health care, almost 9 out of 10 with private health insurance visited a doctor's office for that care compared with 6 out of 10 with Medicaid or other public coverage.



- Children in poor families were more likely to use a clinic as their usual place of health care than children in families that were not poor (38% and 14%).
- Three percent of uninsured children used an emergency room as their usual place of health care compared with 1% of children with Medicaid or other public coverage.

**Time Since Last Contact with a Health Care Professional (Tables 13,14)**

- About three-quarters of all children had contact with a doctor or other health professional at some time in the past 6 months.
- Children with a parent who had more than a high school diploma were more likely to have had contact with a doctor or other health professional at some time during the past 6 months (76%) than children with parents who had less education (73% and 67%).
- Over three-quarters of children with private health insurance or Medicaid had contact with a doctor or other health professional in the past 6 months compared with about one-half of children with no insurance coverage.
- Twelve percent of uninsured children had not had contact with a doctor or other health professional in more than 2 years (including those who never had a contact) compared with 3% for children with private insurance coverage and 4% for children with Medicaid or other public coverage.

### **Selected Measures of Health Care Access (Table 15)**

- In 2007, 6.6 million children (9%) had no health insurance coverage.
- Thirteen percent of children in families with an income less than \$35,000 and 14% of children in families with an income of \$35,000-\$49,999 had no health insurance compared with 2% of children in families with an income of \$100,000 or more.
- Children in poor or near-poor families were more likely to have unmet medical needs and to have delayed medical care than children in families that were not poor.
- Children in near-poor families were more likely to be uninsured for medical care (16%) than children in families that were either poor (12%) or not poor (5%).
- About 1.7 million children (2%) were unable to get needed medical care because the family could not afford it, and medical care for 2.5 million children (3%) was delayed because of worry about the cost.
- Children in single-mother families were more likely to have been unable to get medical care or to have delayed medical care compared with children in two-parent families.

- Regionally, higher proportions of children in the South (12%) and the West (10%) were uninsured than of children in the Midwest (7%), or the Northeast (5%).

#### **Emergency Room Visits in the past 12 months (Table 16)**

- In 2007, 9.5 million children living in the U.S (13%) had an emergency room visit in the past 12 months; 5.3 million children (7%) had two or more visits.
- Black children were more likely to have had two or more visits to an emergency room in the past 12 months (10%) than white children (7%) or Asian children (4%).
- Children in single-mother families were more likely to have had two or more visits to an emergency room in the past 12 months than children in two-parent families (11% and 6%).
- Children with Medicaid or other public coverage were more likely to have had two or more emergency room visits in the past 12 months (11%) than children with no health insurance (8%) or children with private health insurance (5%).

#### **Dental Care (Tables 17,18)**

- In 2007, 4.2 million children aged 2-17 years (6%) had unmet dental needs because their families could not afford dental care.
- Uninsured children (24%) were six times as likely as children with private health insurance (4%) and four times

as likely as children with Medicaid or other public coverage (6%) to have unmet dental needs.

- Children in single-mother families (9%) were more likely to have had unmet dental needs than those in two-parent families (6%).
- Non-Hispanic white children were more likely to have had a dental contact in the past 6 months (64%) than non-Hispanic black children (54%) or Hispanic children (53%).
- Twenty-eight percent of uninsured children had no dental contact for more than 2 years (including those who never had a contact) compared with 16% of children with Medicaid and 13% of children with private health insurance.
- Hispanic children (19%) were more likely than non-Hispanic white children (14%) or non-Hispanic black children (15%) to have had no dental contact for more than 2 years (including those who never had a contact).

## References

1. Adams PF, Barnes PM, Vickerie JL. Summary Health Statistics for the U.S. Population: National Health Interview Survey, 2007. National Center for Health Statistics. Vital Health Stat 10(2xx). 2007. In preparation.
2. Pleis JR, Lucas JW. Summary health statistics for U.S. adults: National Health Interview Survey, 2007. National Center for Health Statistics. Vital Health Stat. 10(2xx) 2007. In preparation.
3. Bloom B, Cohen RA. Summary health statistics for U.S. children: National Health Interview Survey, 2006. National Center for Health Statistics. Vital Health Stat 10(234). 2007.
4. Adams PF, Lucas JW, Barnes PM. Summary Health Statistics for the U.S. Population: National Health Interview Survey 2006. National Center for Health Statistics. Vital Health Stat 10(236). 2008.
5. Pleis JR, Lethbridge-Çejku, M. Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2006. National Center for Health Statistics. Vital Health Stat 10(235). 2007.
6. Adams PF, Hendershot GE, Marano MA. Current estimates from the National Health Interview Survey, 1996. National Center for Health Statistics. Vital Health Stat 10(200). 1999.
7. Kovar MG, Poe GS. The National Health Interview Survey design, 1973-84, and procedures, 1975-83. National Center for Health Statistics. Vital Health Stat 1(18). 1985.
8. National Center for Health Statistics. Current estimates from the National Health Interview Survey, 1982. National Center for Health Statistics. Vital Health Stat 10(150). 1985.
9. Massey JT, Moore TF, Parsons VL, Tadros W. Design and estimation for the National Health Interview Survey, 1985-94. National Center for Health Statistics. Vital Health Stat 2(110). 1989.

10. Moss AJ, Parsons VL. Current estimates from the National Health Interview Survey, 1985. National Center for Health Statistics. Vital Health Stat 10(160). 1986.
11. Botman SL, Moore TF, Moriarity CL, Parsons VL. Design and estimation for the National Health Interview Survey, 1995-2004. National Center for Health Statistics. Vital Health Stat 2(130). 2000.
12. Office of Management and Budget. Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Federal Register 1997; 62 (210):58782-90.
13. U.S. Census Bureau. National Health Interview Survey field representative manual. HIS-100-C. U.S. Department of Commerce acting as a collecting agent for the U.S. Public Health Service. 2006.
14. National Center for Health Statistics. Data file documentation, National Health Interview Survey, 2006 (machine-readable data file and documentation). National Center for Health Statistics, Hyattsville, MD. 2007.  
<http://www.cdc.gov/nchs/nhis.htm>.
15. Lynch C, Parsons V. The impact of 2000 census based population controls on health estimates in the National Health Interview Survey. 2004 Proceedings of the American Statistical Association, Survey Research Methods Section [CD-ROM], Alexandria, VA: American Statistical Association. 2004.
16. Day JC. Population projections of the United States by age, sex, race, and Hispanic origin: 1995 to 2050, U.S. Bureau of the Census, Current Population Reports, P25-1130. Washington: U.S. Government Printing Office. 1996.  
<http://www.census.gov/prod/1/pop/p25-1130/>.
17. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy People Statistical Notes, no 20. Hyattsville, MD: National Center for Health Statistics. 2001.
18. Research Triangle Institute (2004). SUDAAN (Release 9.0.1) [Computer Software]. Research Triangle Park, NC: Research Triangle Institute.
19. DeNavas-Walt C, Proctor BD, Smith J. U.S. Census Bureau. Current Population Reports, Series P60-233, Income, Poverty, and

Health Insurance Coverage in the United States, 2006. U.S. Government Printing Office, Washington, DC. 2007.  
<http://www.census.gov/prod/2007pubs/p60-233.pdf>.

20. Simpson G, Bloom B, Cohen RA, Parsons PE. 1997 access to health care, Part 1: Children. National Center for Health Statistics. Vital Health Stat 10(196). 1997.

21. Bloom B, Simpson G, Cohen RA, Parsons PE. 1997 Access to health care, Part 2: Working-age adults. National Center for Health Statistics. Vital Health Stat 10(197). 1997.

22. Bloom B, Tonthat L. Summary Health Statistics for U.S. Children: National Health Interview Survey, 1997. National Center for Health Statistics. Vital Health Stat 10(203). 2002.

23. Blackwell DL, Tonthat L. Summary Health Statistics for the U.S. Population: National Health Interview Survey 1997. National Center for Health Statistics. Vital Health Stat 10(204). 2002.

24. Blackwell DL, Collins JG, Coles R. Summary Health Statistics for U.S. Adults: National Health Interview Survey, 1997. National Center for Health Statistics. Vital Health Stat 10(205). 2002.

25. Blackwell DL, Tonthat L. Summary Health Statistics for U.S. Children: National Health Interview Survey, 1998. National Center for Health Statistics. Vital Health Stat 10(208). 2002.

26. Blackwell DL, Tonthat L. Summary Health Statistics for the U.S. Population: National Health Interview Survey, 1998. National Center for Health Statistics. Vital Health Stat 10(207). 2002.

27. Pleis JR, Coles R. Summary Health Statistics for U.S. Adults: National Health Interview Survey, 1998. National Center for Health Statistics. Vital Health Stat 10(209). 2002.

## Appendix I

### Technical Notes on Methods

This report is one of a set of statistical reports published by the staff of the National Center for Health Statistics (NCHS). It is based on data contained in the 2005 in-house Sample Child, Household, Family and Person files, which are derived from the Sample Child and Family Core components of the National Health Interview Survey (NHIS). All estimates were weighted using the Sample Child record weight except for "Uninsured for health care", "Unmet medical need", and "Delayed care due to cost" (in Table 15) where the person record weight was used. The person record weight was used because the data for these three variables were collected for all children, not just the sample child, in order to produce more precise estimates. All data used in the report are also available from the public-use data files with the exception of more detailed information on race and Hispanic origin and on the sample design. The detailed sample design information was used to produce the most accurate variance estimates possible. These variables cannot be made available on the public-use file due to potential disclosure of confidential information. Standard errors, produced by using the SUDAAN statistical package, are shown for all percentages in the tables. Estimates with a relative standard error greater than 30% and less than or equal to 50% are preceded by an asterisk (\*) and should be used with caution as they do not meet the standard of reliability or precision. Estimates with a relative standard error greater than 50% are indicated by a dagger (†) but not shown. The relative standard errors are calculated as follows:



$$\text{Relative standard error} = (\text{SE}/\text{Est})100,$$

where SE is the standard error of the estimate, and Est is the estimate (percentage). The reliability of frequencies and their corresponding percentages are determined independently, so it is possible for a particular frequency to be reliable and its associated percentage unreliable, and vice versa. In most instances, however, both estimates were reliable (or unreliable) simultaneously.

Data shown in Tables 1-18 were age adjusted using the projected 2000 U.S. population as the standard population provided by the U.S. Census Bureau (16,17). Age adjustment was used to allow comparison among various population subgroups that have different age structures. This is particularly important for demographic characteristics such as race or ethnicity, education, and marital status. It is also helpful for other characteristics.

Age-adjusted rates are calculated by the direct method as follows:

$$\text{Est} = \frac{\sum_{i=1}^n r_i p_i}{\sum_{i=1}^n p_i},$$

where  $r_i$  = rate in age group  $i$  in the population of interest,

$p_i$  = standard population in age group  $i$ ,

$n$  = total number of age groups used for age adjustment,

and

$\text{Est}$  = age-adjusted rate.

The standard age distribution used for age-adjusting estimates from the NHIS is the projected 2000 U.S. population as the standard population. Table I shows the age distributions used in the DESCRIPT procedure of SUDAAN to perform age adjustment. Using different age groups for age adjustment may result in different estimates. For this reason, age-adjusted estimates for health characteristics in this report may not match age-adjusted estimates for the same health characteristics in other reports. Unadjusted estimates were also calculated and are provided in Appendix III.

For more information on the derivation of age-adjustment weights for use with NCHS survey data, see Klein and Schoenborn (17). That report is available through the NCHS home page at <http://www.cdc.gov/nchs/data/statnt/statnt20.pdf>. The year 2000 U.S. standard resident population is available through the U.S. Census Bureau home page at <http://www.census.gov/prod/1/pop/p25-1130/p251130.pdf>.

### **Treatment of Unknown Values**

In the tables, all unknown values (respondents coded as "refused," "don't know," or "not ascertained") with respect to each table's variables of interest were removed from the denominators when calculating row percentages. In most instances, the overall number of unknowns is quite small and would not have supported disaggregation by the demographic characteristics included in the table. Because these unknowns are not shown separately, users calculating their own percentages based on the frequencies and population counts presented in the tables may obtain slightly different results.

To aid users' understanding of the data, weighted counts and percentages of unknowns (with respect to the variables of interest in each table) are shown in Table II.

Unknowns with respect to the demographic characteristics used in each table are not shown due to small cell counts. However, unknowns with respect to both family income and poverty status typically include a sizable number of persons regardless of the health outcome shown in the table. Missing data on family income and personal earnings in the NHIS have been imputed by NCHS analysts using multiple-imputation methodology. Five ASCII data sets containing imputed values for the survey year and additional information about the imputed income files can be found at

<http://www.cdc.gov/nchs/nhis.htm>. However, income and poverty estimates in this publication are based only on reported income and may differ from other measures that are based on imputed data (which were not available when this report was prepared). Because it is difficult to interpret the relationship between "unknown" income (or poverty status) and the health outcomes displayed in the tables, counts of persons in these unknown categories are not shown in the tables. Table III shows weighted counts of children in the U.S. population with unknown values with respect to family income and poverty status, as well as parent education, health insurance coverage, and current health status.

The "Income and Assets" section in the Family Core of the NHIS instrument allows respondents to report their family income in several ways. Respondents are first asked to provide their family total combined income before taxes from all sources for the previous calendar year in a dollar amount (from \$0 up to \$999,995). Any family income responses greater than \$999,995 are entered as \$999,996. From 1997-2006, respondents who did not

know or refused to state an amount were then asked if their family combined income in the previous calendar year was \$20,000 or more or less than \$20,000. If they again refused to answer or said that they did not know, they were not asked any more questions about their family income. Respondents who replied to the "above-below \$20,000" question were then handed a list of detailed income categories (top-coded at \$75,000 or more) and asked to pick the interval containing their best estimate of their combined family income.

However, for survey year 2007, the income follow-up questions were changed. Modifications in the 1997-2006 income follow-up questions were explored because the 1997-2006 income follow-up questions had not appreciably increased the analytic usability of family income data or of the poverty ratio in the NHIS. During the second quarter of 2006, a portion of the NHIS sample participated in a field test that evaluated an alternative way to ask respondents about family income in an attempt to decrease the frequency of unknown responses to family income and poverty status variables in the NHIS. Based on the results of the 2006 field test, the NHIS family income questions were modified starting with the first quarter of 2007.

In the 2007 NHIS, respondents who did not know or refused to state an income amount were asked if their family's combined income in the previous calendar year was \$50,000 or more or less than \$50,000. If they again refused to answer, or said that they did not know, they were not asked any more questions about their family's income. If the respondent indicated that the family income was less than \$50,000, at most two additional follow-up questions were asked: a) if the family income was less than (or at least) \$35,000, and if the family income was

less than \$35,000, b) if the family income was less than the poverty threshold. The family's poverty threshold was pre-filled by the CAPI instrument using information collected earlier in the interview on the family's size.

If the respondent initially indicated that the family income was \$50,000 or more, at most two additional follow-up questions were asked: a) if the family income was less than (or at least) \$100,000, and if the family income was less than \$100,000, b) if the family income was less than (or at least) \$75,000.

NHIS respondents thus fall into one of four categories with respect to income information: those who supplied a dollar amount (69% for sample children in 2007), those who indicated a range for their income by answering all of the applicable follow-up questions (18% for sample children), those who indicated a less precise range for their family's income by only answering some of the applicable follow-up questions (5% for sample children), and those who provided no income information (8% for sample children) (unweighted results).

Respondents who stated that their family income was below \$35,000 are included in the "Less than \$35,000" category under "Family income" in the tables in this report, along with respondents who gave a dollar amount or an interval estimate that was less than \$35,000. Likewise, respondents who stated that their family income was at or above \$35,000 are included in the "\$35,000 or more" category under "Family income," along with respondents who gave a dollar amount or an interval estimate that was \$35,000 or more. Users will note that the counts for

the detailed (indented) amounts do not sum to the count shown for "\$35,000 or more" for this reason.

A recoded poverty status variable is formed for respondents who either supplied a dollar amount or supplied sufficient income information in the follow-up income questions to construct a three-category poverty status variable (described below). This variable is the ratio of the family income in the previous calendar year to the appropriate 2006 poverty threshold (given the family size and number of children) defined by the U.S. Census Bureau (19). Children who are categorized as "poor" had a ratio less than 1.0, that is, their family income was strictly below the poverty threshold. The "near poor" category includes children with family incomes of 100% to less than 200% of the poverty threshold. Lastly, "not poor" children have family incomes that are 200% of the poverty threshold or greater. The remaining groups of respondents-- those who did not supply sufficient income information in the follow-up questions to categorize as a three-category poverty status variable, as well as those who refused to provide any income information-- are, by necessity, coded as "unknown" with respect to poverty status. Family income information is missing for 7% of all children in the U.S. population, and poverty status information is missing for 14% of all children in the U.S. population (weighted results). Five percent of the child sample is missing information on income, and 10% of the child sample is missing information on poverty status (unweighted results).

### **Hypothesis Tests**

Two-tailed tests of significance were performed on all the comparisons mentioned in the "Selected Highlights" section of

this report (no adjustments were made for multiple comparisons). The test statistic used to determine statistical significance of the difference between two percentages was:

$$Z = \frac{|X_a - X_b|}{\sqrt{S_a^2 + S_b^2}},$$

where  $X_a$  and  $X_b$  are the two percentages being compared, and  $S_a$  and  $S_b$  are the SUDAAN-calculated standard errors of those percentages. The critical value used for two-sided tests at the 0.05 level of significance was 1.96.

## **Appendix II**

### **Definitions of Selected Terms**

#### **Sociodemographic Terms**

*Age*--The age recorded for each child is the age at the last birthday. Age is recorded in single years and grouped using a variety of age categories depending on the purpose of the table.

*Family income*--Each member of a family is classified according to the total income of all family members. Family members are all persons within the household related to each other by blood, marriage, cohabitation, or adoption. The income recorded is the total income received by all family members in the previous calendar year. Income from all sources, including wages, salaries, pensions, government payments, child support or alimony, dividends, and help from relatives, is included. Unrelated individuals living in the same household (e.g., roommates) are considered to be separate families and are classified according to their own incomes.

*Family structure*--Family structure describes the parent(s) living in the household with the sample child. Mother and father can include biological, adoptive, step, in-law, or foster parents. Legal guardians are not classified as parents.

*Health insurance coverage*--NHIS respondents were asked about their health insurance coverage at the time of interview. Respondents reported whether they were covered by private insurance (obtained through the employer or workplace, purchased



directly, or through a local or community program), Medicare, Medigap (supplemental Medicare coverage), Medicaid, State Children Health Insurance Program (SCHIP), Indian Health Service (IHS), military coverage (including VA, TRICARE, or CHAMP-VA), a State-sponsored health plan, another government program, or single-service plans.

For persons under age 65, a health insurance hierarchy of four mutually exclusive categories was developed (20,21). Persons with more than one type of health insurance were assigned to the first appropriate category in the hierarchy listed below:

*Private coverage*--Includes persons who had any comprehensive private insurance plan (including health maintenance organizations and preferred provider organizations). These plans include those obtained through an employer and those purchased directly or through local or community programs.

*Medicaid*--Includes persons who do not have private coverage, but who have Medicaid and/or other State-sponsored health plans including SCHIP.

*Other coverage*--Includes persons who do not have private or Medicaid (or other public coverage), but who have any type of military health plan (includes VA, TRICARE, and CHAMP-VA) or Medicare. This category also includes persons who are covered by other government programs.

*Uninsured*--Includes persons who have not indicated that they are covered at the time of the interview under private health insurance (from employer or workplace, purchased

directly, or through a State, local government, or community program), Medicare, Medicaid, SCHIP, a State-sponsored health plan, other government programs, or military health plan (includes VA, TRICARE, and CHAMP-VA). This category also includes persons who are only covered by IHS or only have a plan that pays for one type of service such as accidents or dental care.

For approximately 1.10% of respondents, coverage status of those who are insured and uninsured is unknown. Weighted frequencies indicate that 1.12% of the population under age 65 years fell into this "unknown" category.

*Hispanic or Latino origin and race*--Hispanic origin and race are two separate and distinct concepts. Thus, Hispanic persons may be of any race. Hispanic origin includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or Spanish origins. All tables show Mexicans or Mexican Americans as a subset of Hispanic persons. Other groups are not shown for reasons of confidentiality or statistical reliability.

In the 1997 and 1998 Summary Health Statistics reports, Hispanic ethnicity was shown as a part of race or ethnicity, which also included categories for non-Hispanic white, non-Hispanic black, and non-Hispanic other (some tables showed Mexican Americans as a subset of Hispanic persons)(22-27). Beginning in 1999, the categories for race were expanded to be consistent with the 1997 Office of Management and Budget (OMB) Federal guidelines (19), and a distinction is now made between the characteristics of race and of Hispanic or Latino origin and race. In addition to reporting estimates according to race, estimates are reported for groups classified by Hispanic or Latino origin and race. "Hispanic

or Latino" includes a subset of "Mexican or Mexican American." "Not Hispanic or Latino" is further divided into "White, single race" and "Black or African American, single race." Persons in these categories indicated only a single race group (see the definition of race in this appendix for more information). Estimates are not shown for other "Not Hispanic or Latino single race" persons or multiple race persons due to statistical unreliability as measured by the relative standard errors of the estimates (but are included in the total for "Not Hispanic or Latino").

The text in this report uses shorter versions of the new OMB race and Hispanic origin terms for conciseness, and the tables use the complete terms. For example, the category "Not Hispanic or Latino, black or African American, single race" in the tables is referred to as "non-Hispanic black" in the text.

*Parent education*--This reflects the highest grade in school completed by the sample child's mother and/or father who are living in the household, regardless of that parent's age. The NHIS does not obtain information pertaining to parents not living in the household. If both parents reside in the household, but information on one parent education is unknown, then the other parent education is used. If both parents reside in the household and education is unknown for both, then parent education (with respect to the child) is unknown.

Only years completed in a school that advances a person toward an elementary or high school diploma, general educational development (GED) high school equivalency diploma, college, university, or professional degree are included. Education in

other schools and home schooling are counted only if the credits are accepted in a regular school system.

*Place of residence*—Place of residence is classified in this report in three categories: large metropolitan statistical area (MSA) of 1,000,000 or more persons, small MSA of less than 1,000,000 persons, and not in an MSA. Generally, an MSA consists of a county or group of counties containing at least one urbanized area of 50,000 or more population. In addition to the county or counties that contain all or part of the urbanized area, an MSA may contain other adjacent counties that are economically and socially integrated with the central city. The number of adjacent counties included in an MSA is not limited, and boundaries may cross State lines

The Office of Management and Budget (OMB) define metropolitan areas according to published standards that are applied to U.S. Census Bureau data. The definition of a metropolitan area is periodically revised. For NHIS data for 1995 through 2005, the MSA definition was based on the 1993 OMB standards using the 1990 census. Beginning in 2006, the 2003 OMB standards, based on Census 2000, are used for NHIS data. The 2003 criteria for designating MSAs differ from the 1993 criteria in substantial ways, including simplification of the classification criteria of metropolitan areas as well as the addition of a new category--micropolitan area--for some of the nonmetropolitan counties. These changes may lessen the comparability of estimates by place of residence in 2006 with estimates from earlier years. Analysts who compare NHIS frequencies across this transition in OMB standards need to recognize that some of the differences may be due to change in the definitions of metropolitan areas. In the tables for this

report, place of residence is based on variables in the 2006 In-house Household data file indicating MSA status and MSA size. These variables are collapsed into three categories based on Census 2000 population: MSAs with a population of 1,000,000 or more, MSAs with a population of less than 1,000,000, and areas that are not within an MSA. Areas not in an MSA include both micropolitan areas and areas outside the core-based statistical areas. For additional information about metropolitan statistical areas see the Census website: [www.census.gov/population/www/estimates/metrodef.html](http://www.census.gov/population/www/estimates/metrodef.html).

*Poverty status*--Poverty status is based on family income and family size using the U.S. Census Bureau poverty thresholds. "Poor" persons are defined as persons whose family incomes are below the poverty threshold. "Near poor" persons have family incomes of 100% to less than 200% of the poverty threshold. "Not poor" persons have family incomes that are 200% of the poverty threshold or greater. More information on the measurement of family income and poverty status is available in Appendix I.

*Race*--In the 1997 and 1998 Summary Health Statistics reports, race/ethnicity consisted of four categories: non-Hispanic white, non-Hispanic black, non-Hispanic other, and Hispanic (some tables showed Mexican Americans as a subset of Hispanic persons) (23-28). Beginning in 1999, the categories for race were expanded to be consistent with the 1997 OMB Federal guidelines (12), which now distinguish persons of "1 race" from persons of "2 or more races." The category "1 race" refers to persons who indicated only a single race group, and includes subcategories for white; black or African American; American Indian or Alaska Native; Asian; and Native Hawaiian or other Pacific Islander. The category "2 or more races" refers to

persons who indicated more than one race group. Estimates for multiple race combinations can only be reported to the extent that they meet the requirements for confidentiality and statistical reliability. In this report, three categories are shown for multiple race individuals (a summary category and two multiple race categories: black or African American and white, and American Indian or Alaska Native and white). Other combinations are not shown separately due to statistical unreliability as measured by the relative standard errors of the estimates (but are included in the total for "2 or more races").

Prior to 2003, "Other race" was a separate race response on the NHIS, although it was not shown separately in the tables of the Summary Health Statistics reports. In the 2003 NHIS, however, editing procedures were changed to maintain consistency with the U.S. Census Bureau procedures for collecting and editing data on race and ethnicity. As a result of these changes, in cases where "Other race" was mentioned along with one or more OMB race groups, the "Other race" response is dropped, and the OMB race group information is retained on the NHIS data file. In cases where "Other race" was the only race response, it is treated as missing and the race is imputed. Although this change has resulted in an increase in the number of persons in the OMB race category "White" because this is numerically the largest group, the change is not expected to have a substantial effect on the estimates in this report. More information about the race or ethnicity editing procedures used by the U.S. Census Bureau can be found at the following Web site: <http://www.census.gov/popest/archives/files/MRSF-01-US1.pdf>.

The text in this report uses shorter versions of the new OMB race and Hispanic origin terms for conciseness, and the tables use the complete terms. For example, the category "not Hispanic or Latino, black or African American, single race" in the tables is referred to as "non-Hispanic black" in the text.

*Region*--In the geographic classification of the U.S. population, States are grouped into the four regions used by the U.S. Census Bureau:

<i>Region</i>	<i>States included</i>
Northeast	Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania;
Midwest	Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, and Nebraska;
South	Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Oklahoma, Arkansas, and Texas;
West	Washington, Oregon, California, Nevada, New Mexico, Arizona, Idaho, Utah, Colorado, Montana, Wyoming, Alaska, and Hawaii.

## **Health Characteristics or Outcome Terms**

*Asthma*--Asthma includes smoker asthma, bronchial asthma, and allergic asthma. Ever had asthma is indicated when a doctor or other health professional reported to the family that the sample child had asthma. Among them, children still having asthma is indicated by parent report.

*Attention Deficit Hyperactivity Disorder (ADHD)*--ADHD is indicated when a doctor or other health professional reported to the family that the sample child has Attention Deficit Hyperactivity Disorder or ADHD. ADHD includes Attention Deficit Disorder (ADD).

*Contacts with health professionals*--A contact with a health professional is defined as a visit to or conversation with a doctor or other health professional by anyone in the family about the health of the sample child during the 2 weeks prior to interview. Contacts include home visits, office visits, or telephone calls for medical advice, prescriptions, or test results. A telephone call to schedule an appointment is not included as a contact. An emergency room visit is included as a contact, but overnight hospital stays are excluded.

*Doctor or other health professional*--This refers to medical doctors (MDs) and osteopathic physicians (DOs), including general practitioners as well as specialists, psychologists, nurses, physical therapists, and chiropractors.

*Health status*--Respondent-assessed health status is obtained from a question in the survey that asked respondents,



"Would you say your health in general was excellent, very good, good, fair, or poor?" Information was obtained from all respondents, with proxy responses allowed for adults not taking part in the interview and all children under 18 years of age.

*Hospital emergency room (ER) visits*--This includes visits to a hospital emergency room only. Visits for emergency care received at a health maintenance organization (HMO), outpatient clinic, or urgent care center are not included.

*Prescription medicine*--This is medication that can only be obtained with the approval of a licensed health care provider.

*Usual place of health care*--Usual place of health care was based on a question that asked whether respondents had a place that they usually went to when they were sick or needed advice about their health. These places include a walk-in clinic, doctor office, clinic, health center, HMO, hospital emergency room or outpatient clinic, or a military or Veterans' Administration health care facility.