

## **Early Release of Selected Estimates from the National Health Interview Survey (NHIS)**

NCHS is pleased to introduce a new data dissemination mechanism to release timely data from the National Health Interview Survey (NHIS). Through this new mechanism, NCHS will provide estimates for a selected group of health measures based on a sub-sample of data. As described in more detail below, these estimates are being released prior to final data editing and weighting to provide improved access to the most recent information from the NHIS.

### **Background**

The National Health Interview Survey (NHIS) has been a long-standing source of information on the health status and health care utilization of the household population of the United States. In 1997, the content of the NHIS was redesigned to better meet current data needs and to improve data quality. The redesigned NHIS now includes many key measures of health currently needed by public health and health policy professionals.

A shortcoming of the NHIS in the past has been the lack of an expedient data release system. Concurrent with the 1997 redesign of the NHIS, the mode of data collection was modified to utilize a computer assisted personal interviewing (CAPI) system. The CAPI system has reduced the need for certain types of data editing and provides raw data within about 6 weeks of data collection. Because of the complexity of the NHIS, however, the final release of annual weighted data files and documentation from the NHIS occurs about 12-18 months after data collection. Efforts are underway to utilize new information management technology to shorten this lag time. However, until that system is in place, an alternative mechanism for faster release of essential information is needed.

The design of the NHIS yields a nationally representative sample of the U.S. population each week. On occasion, this has enabled the NCHS to reduce the sample during the year for financial or operational reasons without impacting the ability to make national estimates. It has also allowed NCHS to analyze data for less than annual time periods. For example, initial results from the 1987-1991 AIDS Knowledge and Attitude Supplements were released on a monthly or quarterly basis. However, such releases required separate processing and estimation systems so were infrequently done and were limited to one topic.

With the successful implementation of the redesigned NHIS and the new CAPI system, a plan was developed to evaluate the feasibility of the early release of a subset of key health measures using several months of data. Funding was received through CDC's 1% Evaluation Program to conduct this evaluation study. The first step was to identify a list of candidate measures based on previous work in this area such as the Healthy People 2010 Leading Health Indicators. The list of candidate measures was then reviewed and further developed in a workshop attended by

experts from within NCHS, from other agencies in the Department of Health and Human Services, and from non-federal public health, academic and health policy organizations. Proposed measures were evaluated based on their need for substantial post-data-collection editing and their statistical properties. Initial results from this evaluation study indicate that earlier release of certain health measures on a quarterly or semi-annual basis is operationally and statistically feasible.

## **About This Release**

Objectives: This release is intended to provide recent national estimates of selected health measures from the NHIS and to produce trend data for these measures by year beginning in 1997. For each selected health measure, the presentation starts with a graph showing the trend over time for the total population, followed by graphs or tables showing the estimate by sex, age group, and race/ethnicity. Key findings are highlighted with bulleted text. Because the most recent estimates are preliminary and are based on a small sample, caution should be used when interpreting the data, particularly regarding changes over time.

The measures included are: influenza vaccination, regular source of health care, unmet need for health care due to cost, smoking, alcohol use, HIV testing, and self-assessed health status. Several of these are among those included in the Healthy People 2010 Leading Health Indicators while others are targeted as key areas for the elimination of racial disparities in health.

Data Source: This first early release of selected estimates from the NHIS is based on data collected between January and June of 2000. The data are derived from three components of the NHIS: the Family Core questionnaire that collects information on all family members (N=48,654 for Jan-June 2000); the Sample Adult Core that collects information from one randomly selected adult (18 years or older) in each family in the NHIS (N= 15,753, for Jan-June 2000); and the Sample Child Core that collects information about one randomly selected child in each family included in the NHIS (N=6,368 for Jan-June 2000). Please visit the NHIS web site ([www.cdc.gov/nchs/nhis.htm](http://www.cdc.gov/nchs/nhis.htm)) for more detailed information on the structure and content of the NHIS questionnaire.

Estimation procedures: Using population totals provided by the U.S. Bureau of the Census, sample weights were calculated to provide national population estimates and to adjust for non-response. NCHS creates weights for each calendar quarter of the NHIS sample. For this release, which was based on 6 months of data, quarterly weights were divided by 2 to create annual weights for making national estimates. The NHIS data weighting procedure has been described in more detail elsewhere ([www.cdc.gov/nchs/data/series/sr\\_02/sr2\\_130.pdf](http://www.cdc.gov/nchs/data/series/sr_02/sr2_130.pdf)). As the estimates for 2000 are based on a half year of data and are being released prior to final data editing and weighting, they should be considered preliminary and may differ slightly from estimates that will be made later using the final 2000 data file. The smaller sample size also limits the amount of detail that can be shown; most of the estimates are shown for the total population, and for

subgroups by age, gender, and race/ethnicity. Data from the 1997-99 NHIS that are shown were derived from the final data files for those years.

Point and variance estimates were calculated using the SUDAAN software package to incorporate the complex sample design of the NHIS. The Taylor series linearization method was chosen for variance estimation with SUDAAN. All estimates shown meet the NCHS standard of less than 30% relative standard error. Point estimates in the figures are shown with 95% confidence intervals (brackets). Differences between percentages or rates were evaluated using a two-sided Chi-square test at the .05 level, and if statistically significant, were noted in bulleted text. When necessary for the purpose of comparison, direct standardization was used to estimate age-sex-adjusted percentages using the year 2000 projected population as the standard population. The age groups used varied depending upon the impact of age on specific measures.

### **Future Plans for Early Release of NHIS Estimates**

As noted above, additional early releases of NHIS estimates are planned. New measures will be added as work continues and in response to changing data needs. Future releases may include other measures such as lack of comprehensive health insurance, physical activity, obesity, motor vehicle injuries, and the prevalence of major chronic conditions such as asthma, diabetes, and hypertension. Feedback on this new data release mechanism and on the estimates is welcome.