Taking Advantage of Health Data from 1969 to 2010 via Free Online Dissemination of Harmonized National Health Interview Survey (NHIS) Data

Miriam King and Kathy Rowan
Minnesota Population Center, University of Minnesota

BACKGROUND

With funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), IHIS was created from NHIS data to facilitate time-series analysis of U.S. health status, health behaviors, and health care access and use. Initiated in 1957, NHIS is the principal source of information on the health of the U.S. population, covering general health status, distribution of acute and chronic illness, functional limitations, access to and use of medical services, insurance coverage, and health behaviors.

WHY WAS THE IHIS NEEDED?

Time series analysis of the original NHIS files is discouraged by the large numbers of data files and voluminous documentation, complexity of file structures, and changing sample designs, questionnaires, and variable coding schemes. IHIS was created to overcome challenges such as:

- Original NHIS data are in over 500 hierarchical data files
- Original documentation consists of thousands of pages covering thousands of variables
- Survey questions and universes change over time
- Variable locations, coding schemes, and categories change over time
- A single question may be found in multiple supplements and may be given a different variable name in each
- Changes in survey methods, including sample design changes and use of subsampling, impact analyses
- **RESULT: 70% of published studies based on NHIS used a single year of data, and 90% used no more than 3 years of data**

BENEFITS OF IHIS

- Simplifies access to data across multiple years and data files (core survey and supplements) through free downloadable data
- Facilitates consistent comparisons of indicators over time
- Documents changes in concepts and comparability issues
- Provides simplified weights and survey design variables
- Provides online tabulation for summary statistics of variables
- Reduces costs of research by minimizing initial investments in data preparation

EXAMPLE OF IHIS DATA TO MONITOR HEALTH TRENDS

We examine trends in annual doctor visits for children, barriers to medical and mental health care among adults, and the use of the health system for vaccinations among working age and elderly adults.

Our analysis of barriers to medical care among adults stems from recent work from the National Center for Health Statistics using both NHIS and CPS data, which showed the percent of adults without insurance coverage increased between 1999 and 2007, and the percent of adults with private coverage declined (around 1% per year). For our analysis of how insurance coverage and type affects access to care, we therefore focus on adults age 18 to 64 and exclude those who have military health care coverage. The latter population, though small in the NHIS, may have health care coverage that is distinctly different from non-military families.

Definitions: Public insurance is defined as coverage through Medicaid or other public assistance, including other state sponsored programs. Private insurance is defined as any insurance, other than single service plans, generally obtained through employment or purchased directly, or bought through government or community programs.

The material presented here covers varying time periods, depending on the survey questions and variables included in the NHIS public use files. Much research based on NHIS data has focused on a single year or a small number of years. The material presented in Figures 1 through 4, which is based on IHIS, includes annual data from 1969 forward, 1989 forward, and 1997 forward.

IHIS makes it easy to study issues of health care need, access, and use, not only in recent years, but across multiple decades.

WEIGHTS

The National Health Interview Survey uses a complex sample design. We therefore use sampling weights to obtain correct point estimates, and we used STATA's svy commands to account for the impact of sample design stratification and clustering to obtain appropriate variance estimates. Using the STATA command subpop, we are able to perform our analysis on a subpopulation while retaining the sample design information needed for variance estimates.

The sampling weights in the IHIS represent annual weights, or the number of people that individual survey respondents represent in the total U.S. non-institutionalized civilian population for a given year.

GRAPHICAL RESULTS

Figure 1. Percent of Adults Who Received Pneumonia (ever) and Flu(past year) Vaccine: by working age or retirement eligible

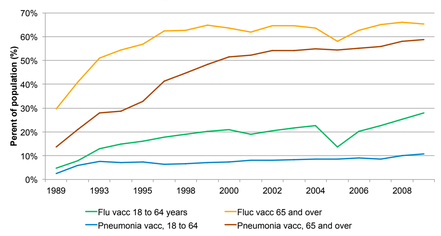


Figure 2. Percent of Children (0 to 17 years) Who Had at Least One Doctor Visit in the Past Year

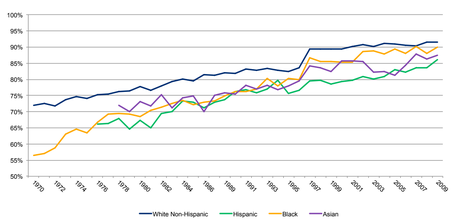


Figure 3. Percent of Adults Who Needed But Could Not Afford Mental Health Care

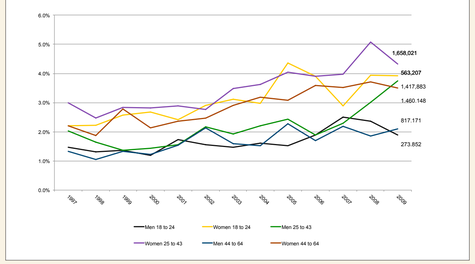
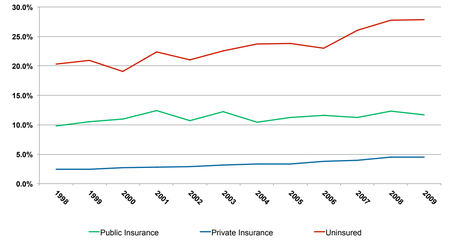


Figure 4. Percent Of Population Who Needed But Could Not Afford Medical Care in the past 12 months, by Insurance Type



CONCLUSIONS

Our analysis of vaccination coverage in Figure 1 provides an example of monitoring target indicators, such as the Healthy People 2010 goals. These trends show general estimates for the working age and elderly population and also show the drop in coverage in 2004 -2005 due to the vaccinate shortage (GAO, 05-984).

While we acknowledge varying reasons for doctor visits, the rise in percent of children who have at least one visit, shown in Figure 2, is consistent with research on the expansion of Medicaid and SCHIP. Our analysis of unmet need for mental health care, shown in Figure 3, is consistent with evidence that women are more likely to express a need for mental health care (Wang et al., 2005). The disparities by age reported here suggest particularly sharp effects from cost barriers to mental health care for women of childbearing age. The increase in unmet mental health care need during the ante and post natal period is a critical concern due to the implications for the well-being of the child (Kim et al., 2009).

Figure 4 displays increasing unmet need for care among adults, as well as marked differentials according to insurance status. The results indicate that around 1 in 20 privately insured, 1 in 9 publicly insured, and 1 in 4 uninsured persons have forgone care due to cost.. In total, 36.7 million people needed but did not receive care in 2009.

ACKNOWLEDGMENTS

Support for this research comes from The Eunice Kennedy Shriver National Institute of Child Health and Human Development and from the Minnesota Population Center at the University of Minnesota.