

History of the National Health Interview Survey

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Abstract

The National Health Interview Survey (NHIS), conducted continuously since 1957, is a multi-purpose health survey of the civilian, non-institutionalized household population of the U.S. The NHIS emerged as a result of the 1956 National Health Survey Act Public Law 652. This presentation describes the history of the NHIS, the NHIS today, and challenges it faces.

KEY WORDS: NHIS, Health survey, NCHS

1. The National Health Interview Survey Today

The National Health Interview Survey (NHIS) is the principal source of information on the health of the civilian population of the United States living in households at the time of interview. The NHIS is one of the major data collection programs of the National Center for Health Statistics (NCHS) which is part of the Centers for Disease Control and Prevention (CDC). It has been conducted continuously since 1957. The primary objective of the NHIS is to monitor the health of the United States population through the collection and analysis of data on a broad range of health topics as well as demographic and socioeconomic characteristics of surveyed individuals.

The current NHIS instrument design, implemented in 1997, has Core questions and Supplemental questions. The Core questions remain largely unchanged from year to year and allow for analysis of trends and for data from more than one year to be combined to increase sample size for analytic purposes. The Core NHIS consists of four major components: Household, Family, Sample Adult, and Sample Child. The Household component collects limited demographic information on all of the individuals living in the household. The Family component verifies and collects additional information on all members of each family in the house and collects data on topics such as health status and limitations, injuries, healthcare access and utilization, health insurance, and income and assets. One sample adult and one sample child, if any, from each family are randomly selected for additional questions. The Sample Adult Core and the Sample Child Core collect detailed information on health status, health care services, and health behaviors. Supplements, generally sponsored by outside Agencies or

other programs of CDC, may be used to collect additional detail on a subject already covered in other parts of the NHIS or on a topic not covered elsewhere in the NHIS. Supplements are flexible in content, customized to address the unique data needs of the supplement sponsors. Supplements may be used once or periodically repeated, depending upon need for data.

NHIS data are collected through a personal household interview conducted by interviewers employed by the U.S. Bureau of Census according to procedures specified by the NCHS. Currently data are collected by Computer Assisted Personal Interviewing (CAPI) technology for approximately 30,000 households or about 75,000 persons annually. The 2006 survey design oversampled African Americans, Hispanics and, for the first time, Asians. The total household response rate in 2006, the latest completed year of collection, was approximately 87.3%. Most of the non-interview rate--8.4 percentage points--was the result of respondent refusal and unacceptable partial interviews. The remainder was primarily the result of failure to locate an eligible respondent at home after repeated contact attempts.

NHIS data-- which pertain to health status, access to care and insurance, health services utilization, health behaviors, and other topics--are used widely throughout the Department of Health and Human Services (DHHS) to monitor trends in illness and disability and to track progress toward achieving national health objectives. The data are also used by the public health research community for epidemiologic studies and policy analysis of health disparities, barriers to accessing and using appropriate health care, and effectiveness of federal health programs. Data dissemination and access are provided through public-use products such as microdata files, questionnaires, documentation, analytic reports, and Early Release Program updates. All public use products are available from the NHIS Web site: www.cdc.gov/nchs/nhis.htm. To protect the privacy of survey participants, some data cannot be released on the public-use files. Access to these data is available through the NCHS Research Data Center after approval of a formal proposal for use of non-public-use files.

2. The emergence of the NHIS from the U.S. National Health Survey Program

Prior to the introduction of the NHIS in 1957, the primary focus of U.S. health agencies and providers was the control of infectious diseases; continuous, national statistical data on health were limited to the reporting of mortality rates and notifiable infectious diseases. As infectious diseases decreased in importance for population health in the U.S., emphasis shifted to identification of prevalence and causes of chronic diseases, and new types of health statistics were needed. Quantitative information on prevalence of chronic diseases, disability, health behaviors, and utilization of medical care was necessary to meet expanded needs for health statistics on morbidity and its associated factors. However, developing such measures was challenging: unlike mortality, which is a clearly defined event occurring at a specific point in time, morbidity may be more difficult to define and the dates of onset and cessation difficult to establish. Defining and operationalizing measures of health and illness can be difficult given the many ways in which health events can be counted and classified.

Household surveys in selected communities contributed much to the base of knowledge about morbidity data and its collection. These early studies included: the Costs of Medical Care survey of 9,000 families in 130 communities during 1929-31; the Health and Depression Studies of 11,500 wage earners' families in 8 large cities and 2 groups of coal-mining and cotton-mill villages in 1933; and the 1935-36 National Health Survey of 800,000 families in selected cities and rural areas of 19 states (1).

Of all the early studies, the National Health Survey of 1935-36 (NHS) was closest in nature to the NHIS in several ways: it was conducted under the auspices of the United States Public Health Service with a mandate to assess the state of the nation's health and the underlying social and economic factors associated with health; it was the first study with a sufficient sample size to permit detailed classifications of health conditions; and the in-household interview techniques used were based on those developed from over 20 years of experience with family canvasses. Many of the types of data collected on characteristics of individuals in the 1935-36 NHS would later be used in the NHIS. Designers of the NHS understood the issues surrounding health measurements and concepts of health and morbidity, including impacts of morbidity on usual activity, mobility related conditions and disability, injuries, and chronic conditions. They also understood the need for data on factors associated with morbidity, including sociodemographic factors such as age, sex, marital status, nativity, occupation, employment status and family income, as well as utilization of medical care.

These early U.S. studies as well as survey experiences in other countries—including Great Britain, Canada, Japan and Denmark—contributed to the development of more accurate and useful measures of morbidity data. Advances in survey methodology resulted from work of the U.S. Bureau of Census, which collected the data for several of the early U.S. health surveys, and in 1943 began fielding its own Current Population Survey. The increased experience with data collection, interviewing techniques, and survey methodology coupled with advances in knowledge about population sampling helped set the stage for an ongoing national health survey in the U.S.

The creation of the continuous national health interview survey, ultimately named the National Health Interview Survey, was the result of the 1956 National Health Survey Act Public Law 652, of the 84th Congress. It was signed by President Eisenhower on July 3, 1956. The Act authorized the U.S. National Health Survey Program and called for a sustained, continuing health survey to collect and disseminate information on the health of the population. The need for studying survey methods and techniques in the health statistics field with a goal to improving them was also explicitly mentioned in the Act, as was broad authority for co-operation with other agencies for purposes of sharing information about health statistics, methods, technical advice and other assistance.

The scope of the authorization was broad, but the initial data collection focus of the U.S. National Health Survey Program was to provide a broad range of health information as well as details on specific health problems, for a sample of the general population. The intent of the Survey Program was to serve as a reference point for other health-based studies, supplementing, but not duplicating, special or local health statistics programs. From its inception, the survey was designed to serve a diverse community rather than focusing solely on selected policy or program needs. It was committed to identifying major common health statistics needs, collaborating with the heterogeneous user community to develop data topics, and releasing compiled statistics as expeditiously and widely as possible, consistent with the highest technical and scientific standards. The Survey Program dissemination activities included release of relevant documentation of definitions, descriptions of data collection and processing procedures, discussion of limitations of the data, and other technical information needed to evaluate quality of the data and make it readily accessible to the user community. The Survey Program's publications were to be limited in scope and be consistent with the function of the survey to "...provide objective and accurate facts, but not to interpret these facts so as to indicate any particular course of action or to support any particular health policy or program. The policy

implications of the statistical data are the responsibility of the legislator and the administrator.”

The U.S. National Health Survey Program consisted of three parts: a continuing nation-wide health household interview survey; special surveys to collect health information not obtainable from the household interview method, and methodological studies designed to improve data collection techniques as well as check the validity of data collected. The household interview survey (National Health Interview Survey or NHIS), was the means of providing continuous information on the national population with respect to prevalence and characteristics of illness and disability, medical care utilization and related sociodemographic characteristics that could be collected from reports of the individuals surveyed. The special surveys were intended to collect health information not obtainable from interviews. These included a survey based on physical examinations (the Health Examination Survey or HES) and others based on records of medical practice (Health Care Surveys or HCS). The HES was designed to provide what is referred to as objective measures of health based on standardized physical examinations and laboratory tests where the focus is more on morbidity as a continuum of pathological change. The HCS focused on health care utilization and health providers based on provider records. Combined with the long-standing Vital Statistics system providing information on deaths and births, the three types of surveys instituted by the U.S. National Survey Program are needed to fully describe the health of the nation.

3. Selected Contributions of the NHIS

The NHIS was a trailblazer in advancing methodologies for household surveys focusing on the social dimensions of morbidity. As stated in one of the earliest reports from the Health Household Interview Survey published in 1958, the NHIS focus was upon the social dimensions of health: “...morbidity is measured along an axis for which the scale is in terms of the effect the morbidity has upon the lives of the people concerned. ...Such a scale, may differ in a number of ways from the scale that medical sciences uses which can be broadly described as a continuum of pathological changes.”(3). the questions included in the NHIS were based on what could be reliably learned in an interview setting by self-report: that is, what people know about their health, and what they perceive to be the impact of health conditions on their daily life. The need for measures that tap these aspects of health is probably greater now than when the NHIS was first designed and will continue to be the most challenging aspect of ongoing survey development.

The NHIS has made major contributions to developing morbidity concepts. Health measures include topics such

as limitation of activity, external causes and circumstances of injuries, and receipt of special education or early intervention services among children. Health condition questions covering several domains, as well as mental health indicators are core elements of the NHIS. Questions on physical and mental functioning and the ability to participate in work, school and social activities continue to be part of the core NHIS. It is these types of measures that are used to construct summary measures of health, the earliest of which was developed using NHIS data. NHIS methods and questionnaires have been adopted by other data collectors. For example, the NHIS has served as a source of selected questions used by other surveys such as the Behavioral Risk Factor Surveillance System, and has influenced the development of some questions on other major surveys such as the Current Population Survey and the American Community Survey.

The NHIS staff works closely with partners throughout the Department of Health and Human Services and beyond to provide information to meet their needs. NHIS data are used to identify health issues, determine barriers to accessing health care, evaluate health programs, study health-related disparities, monitor progress toward national health objectives and provide indicators of well-being. Examples of ways the NHIS data have been used by policy makers include the following:

- NHIS data have played an integral role in shaping CDC’s cervical cancer screening policy.
- NHIS data are used to monitor 67 of the Healthy People 2010 objectives.
- NHIS health insurance estimates are used by the Department of Health and Human Services (DHHS), Assistant Secretary for Planning and Evaluation (ASPE) to monitor health insurance coverage of the U.S. civilian noninstitutionalized population.
- NHIS data helped attract attention to arthritis as a public health problem and resulted in the first-ever funding to CDC for an arthritis program.
- NHIS data helped track the impact of influenza vaccine delivery delays on receipt of influenza vaccinations among groups most at risk of influenza complications.

Although the NHIS data are the most visible product, other products are also important. Methodological research and quality control programs that make NHIS one of the most well respected and trusted sources of health statistics benefit not only the NHIS, but all survey research. For example, NHIS is the first household survey to collect information about changes in use of cell phones and the potential impact on health estimates collected by random-digit-dialed telephone surveys. NHIS is known for providing some of the most extensive documentation

in the health survey arena, which enhances data user confidence.

4. Responsiveness of the NHIS to Changes in the Health Statistics Arena

While the NHIS has remained true to the guiding principles set out 50 years ago, it has also changed with time to take advantage of new survey methodologies and to address evolving issues of public health importance. Comparisons of early NHIS questionnaires with later ones demonstrate an evolution of perspectives such as the following:

- A shift from emphasis on detailed medical care use to general access to and use of health care services, health behaviors and perceived health status;
- A change from focusing exclusively on the family unit to inclusion of questions about both family and sample person health characteristics;
- Movement from a paradigm of individual body systems to a more holistic approach to health; and
- Recognition of the need to address health disparities and a shift from collecting information primarily for the total national population to collecting statistically reliable data for as many minority populations as possible within the constraints of the sample size.

Other changes in the NHIS during the past 50 years include changes in wording of questions reflecting societal changes in the understanding of health, and refinements in how to address issues of importance such as proxy responses, recall periods, and definitions of health concepts. In addition to evolution of perspectives and refinement of key measurements, the NHIS has adapted to changing technology, moving from pencil and paper administration of the survey to Computer Assisted Personal Interviewing (CAPI) and use of state of the art data collection and dissemination activities.

5. Future Challenges and Opportunities for the NHIS.

Although the NHIS has had many successes in its first 50 years, the future offers challenges as well as opportunities. The need for health data is increasing. There are immediate needs for information on a wide and growing range of topics, for a greater number of population subgroups including lower levels of geography, specific health conditions, and additional race and ethnic groups than currently covered. The requests for inclusion of questions on the NHIS exceed its capacity in its current form. There is great interest in incorporating administrative data and in developing an on-going longitudinal component for the NHIS. The NHIS has the

capacity for survey integration as demonstrated by its current linkage to the National Death Index, to the Medical Expenditures Survey, as well as new activities such as linkage to geographic environmental data from the Environmental Protection Agency, and evaluations of program enrollment data collected in the NHIS and data from administrative files.

Other challenges include the difficulty of maintaining a survey at the level of excellence traditionally characterizing the NHIS; the constant struggle for resources to pay for fielding the survey; balancing the need to maintain continuity of items to facilitate identification of trends with demands for continually updating methods and content; maintaining the trust of survey participants; and constantly evolving to meet the needs of users and policymakers. The success of the NHIS thus far is the result of the hard work, dedication, skill and professionalism of numerous people at NCHS and at the Census Bureau, which has been the data collection contractor since the beginning of the survey. The support of co-sponsoring agencies and bipartisan support from the Congress and multiple Administrations has also been essential. The contents, mode and other characteristics of the NHIS may change to meet future needs, but the necessity of high quality health data for the U.S. population will continue into the foreseeable future.

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