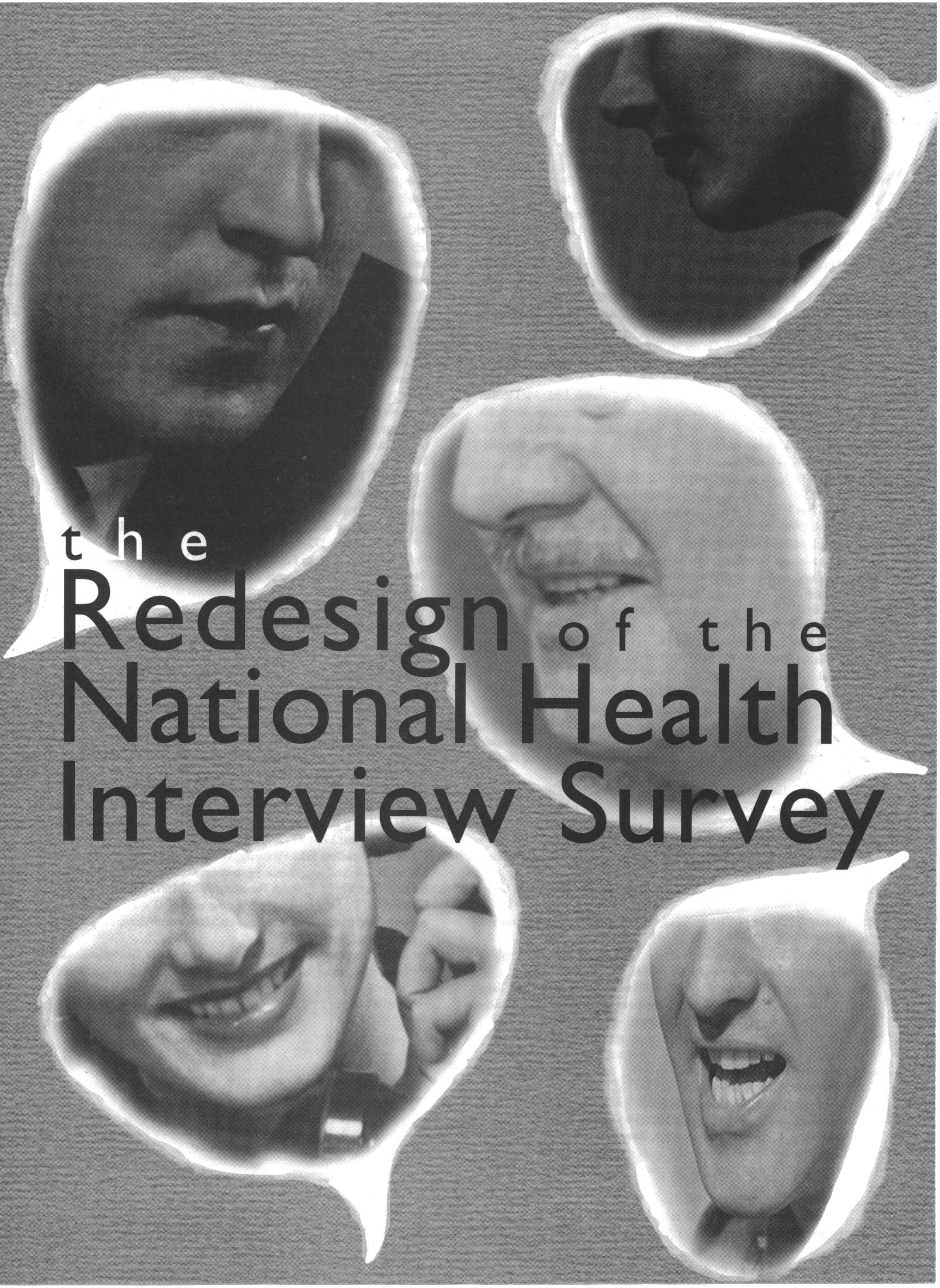


the Redesign of the National Health Interview Survey

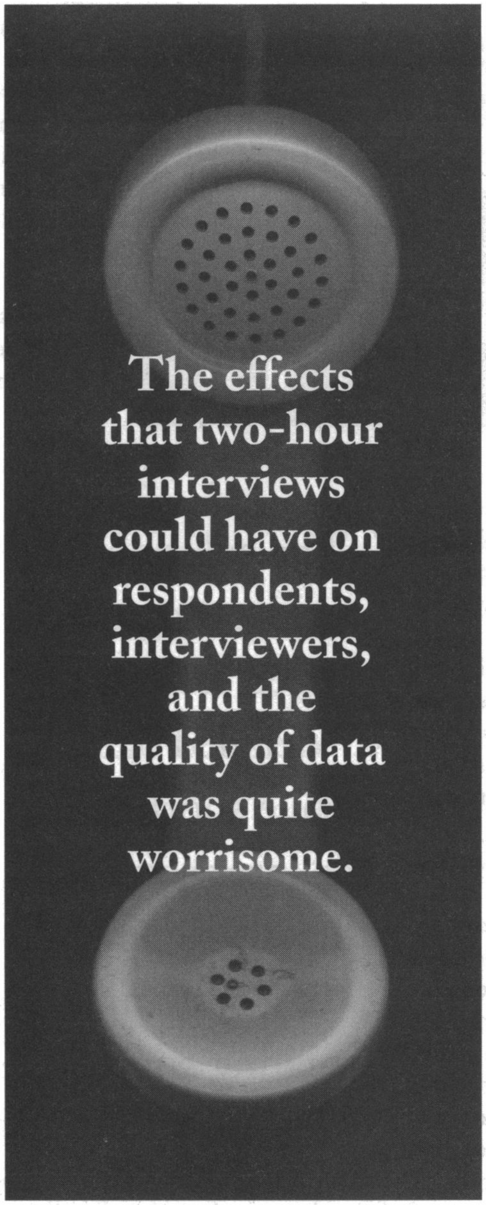
Floyd J. Fowler, Jr., PhD

SYNOPSIS

STARTING IN 1997, on its 40th anniversary, the National Health Interview Survey (NHIS) will begin collecting data in a radically redesigned form. The redesign was undertaken because interviews were too long; new or different kinds of information were needed, including better measures of health status and chronic conditions; and the ability to analyze family-level data was limited.

A shortened annual core survey will be supplemented with a rotating set of questions designed to provide more detail than the current NHIS with respect to health status, utilization of health care services, and health promotion and disease prevention. One adult from each family will be objectively selected to be the respondent, and a significant portion of the data will be collected by self-report. For several of the most common chronic conditions, additional information will be routinely collected that will improve the clinical relevance and quality of data about those conditions. While there will be some costs associated with these changes, their net result will be to enhance the value of NHIS data in addressing current health policy issues.

Since the inception of the National Health Interview Survey (NHIS) in 1957, policy makers, researchers, businesspeople, and students have come to rely and depend on the Survey. Modifications made each decade[1,2,3] may have been important to the quality of the data and to achieving certain analytic goals, yet the basic conception of the survey has remained relatively unchanged for 40 years. Considering the magnitude of changes in our health delivery system during this same period, it is easy to see why a major rethinking was needed. Starting in 1997, a radically redesigned NHIS will be in place.



The significance of the NHIS as a source of data and the important effects the redesigned survey will have on the availability of health data in the United States make an understanding of the problems of the old NHIS and the solutions found in the new one important.

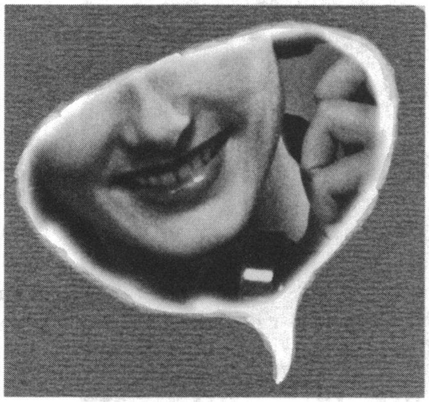
I was part of the group that planned the redesign of the NHIS and also provided technical assistance during its implementation. Although I am therefore an informed person, I am not unbiased about the value of the revised Survey. However, I have tried to present this overview objectively.

Origins of the Redesign

The survey was launched by an act of Congress in 1956 "to produce statistics on disease, injury, impairment, disability, and related topics on a uniform basis for the Nation."[4] It has been collecting data on a continuous basis for the past 40 years. The defining characteristics of the survey, which have remained remarkably constant, include the following: (*a*) About 40,000 households are interviewed each year. (*b*) Interviews are conducted with a responsible adult about his or her own health and the health of his or her children living in the home. All adults who are at home participate in the interview, but respondents report information for other family members who are not present at the time of the interview. (*c*) A core instrument is used to collect data about all family members, adults and children, covering four main areas: hospitalizations; use of services provided by, or under the supervision of, physicians; the effects of health on functioning, such as in limiting work or limiting activities; and the presence of chronic conditions. (*d*) This core set of questions about family members is asked each year. In addition, in any given year, supplemental series of questions may be added to collect timely data on topics not covered in the core instrument.

The original impetus for reviewing the design of the NHIS was practical. By the mid-1980s, because of the pressure to collect data not covered in the core survey, the average interview extended beyond two hours. The effects that two-hour interviews could have on respondents, interviewers, and the quality of data were quite worrisome. NCHS staff and a small group of consultants began to work together to think through ways of streamlining the NHIS. As the core content of the Survey was reviewed, it became apparent that in each area there were good reasons to expand, not reduce, the amount of data that were being collected. In that process, five areas were identified as needing particular attention.

First, medical practice had changed markedly since the original survey was designed in the late 1950s. In particular, two underlying premises of the early survey were no longer valid. NHIS was built on the premise that most surgery was associated with admission to hospitals. Today, a high percentage of surgery is done on a day or outpatient basis. The current NHIS is not set up to capture information on these procedures. More profoundly, the NHIS was built around the notion that physicians deliver medical care, primarily during patient visits to their offices. Many non-physicians now deliver important medical services; physical therapists, visiting nurses, optometrists, and psychologists are only the most obvious examples. The current NHIS does not do a good job of capturing services delivered by providers other than physicians, nor is it set up to easily capture services delivered in places other than doctors' offices.



Second, the core instrument essentially ignores mental health services. Psychological distress is not measured; services to treat mental conditions are only recorded if they show up as physician visits.

Third, while the NHIS has been an innovative developer of one approach to measuring health status, the way health conditions affect lives by limiting activities, there has been considerable development in the measurement of health status over the past 40 years,[5,6] and most of those advances are not well reflected in the current NHIS.

Fourth, the NHIS has relied for years on lists of conditions. Methodological studies have clearly demonstrated a poor correspondence between respondent reports of medical conditions and comparable information available from medical records.[7–10] In recent years, there has been considerable growth in knowledge about how to measure the presence and severity of conditions through self-report. The clinically important aspects of many conditions, for example, are better captured through reporting of symptoms than through simply naming a condition.[11] These advances were not reflected in the NHIS.

The solution to addressing the need for more detailed data while shortening the interviews was the development of a system of rotating content.

Finally, the current NHIS was set up to characterize individuals. Data were coded person by person; although data were collected for all family members, they were not tabulated and organized by family. Yet, for many analytic purposes, having family-level data is of the utmost importance.

Features of the Redesign

The key features of the redesigned NHIS include: *(a)* use of rotating content, *(b)* an emphasis on self-reports, *(c)* improvements in the measurement of health status and chronic conditions, and *(d)* the capacity to analyze family-level data.

The solution to addressing the need for more detailed data while shortening the interviews was the development of a system of rotating content. A common set of questions will be asked each year; in addition, more detailed questions in a particular area will be featured each year. The tentative list of areas includes utilization of medical services, health status, and disease prevention and health promotion. The idea is that annual estimates are not needed for all the many variables collected in the Survey. Those for which annual data are needed are included in the core set of questions. However, by having a rotating set of emphases, the NHIS will cover a broader array of issues thoroughly on approximately a triennial basis.

Much greater emphasis will be put on self-reporting in the revised NHIS. Instead of having an available, knowledgeable adult report for all family members, adults in a household will be routinely sampled using an objective random selection procedure through which a designated respondent will be chosen. Although some data about the family will still be collected from any knowledgeable adult, much of the data will be collected specifically about the designated respondent through self-report. The selection procedure will allow these respondents, taken together, to constitute a probability sample of U.S. adults. Thus, for the first time the NHIS will routinely collect data by self-report from a representative sample of adults.

This change makes three major contributions. First, the NCHS has sponsored many methodological studies that have shown that self-reporting is superior to proxy reporting on most topics. Hence, reducing the amount of proxy information provided and relying primarily on self-reporting will improve the quality of data.[10,12,13] Second, while proxy reporting may be appropriate for collecting information about the effects of health conditions, such as disabilities and loss of work, most measures of health status require self-report. Functional limitation, pain, fatigue, and psychological distress are examples of data that no one would want to collect by proxy. The increased reliance on self-reporting opens those areas up to routine measurement and enables the NHIS to expand its array of health status measures in important ways. Measures related to mental health will particularly benefit from this change. Third, having a single person as the main focus streamlines the data collection. The NHIS has been extraordinarily cumbersome because it has allowed for collecting parallel data for all family members. By having a good portion of the interview devoted to one person, the self-respondent, the interview is considerably streamlined, making it easier for respondents and interviewers. It also means that the interview can be shortened for any given set of survey objectives, since collecting data for or about one person takes less time than collecting it for several. Finally, by focusing on a single individual, with all data in the interview collected about that individual, analyses become possible that were quite difficult before. Basically, by having more information about one individual, rather than less information about several, the analytic power of the NHIS is considerably increased.

In the new Survey, the approach to the measurement of chronic conditions will be revised. The NHIS will rely less on lists of conditions, with the unreliability they have been demonstrated to produce. In addition to a shortened condition list, half a dozen of the most prevalent and important conditions will be measured in a way that is more sophisticated and much more clinically relevant than simple lists allow. Thus, the value of the chronic condition data that are collected should be greatly enhanced.

Finally, even though there will be increased focus on a single self-respondent, the way data are collected about the family will permit family-level analyses, particularly with respect to access to care, unmet needs, and insurance status, in a way that was virtually impossible with the old NHIS.

Conclusion

The content of the NHIS is set on an annual basis. During 1996, two early versions of the redesigned form of the NHIS underwent extensive testing, one version in the first half of the year and a second version, much closer to the future NHIS, during the last half of 1996. The data that were collected and that will be published from the 1996 NHIS will follow the old format. However, starting in January 1997, the NHIS will be collecting and publishing data using the redesigned questions and protocol.

Of course, some of these changes come at a price. The price for collecting a wider array of data through the rotating topic approach means that some estimates that used to be available annually will now be available only every three or four years. The change to increased reliance on self-respondents may have a slightly negative effect on response rates. When interviewers are free to interview any knowledgeable person in the household, data may be collected about reluctant or difficult to find respondents who, with the self-respondent rule, might not provide data at all. Collecting the data about only one adult also means that the number of cases available for analysis will be reduced. While for some purposes, collecting data about each adult in a family provides highly redundant information, having only one respondent also has a down side: fewer observations for analysis. Finally, annual data will be available about fewer chronic conditions. Some of the rarer conditions that were picked up in the lengthy condition lists of the past will be measured only when health status is the topic of emphasis for a given year.

Although some of these costs are quite real and will affect some of the uses to which the NHIS data will be put, overall the changes will strengthen the NHIS. The new Survey will be shorter in any given year, yet the relevance of the data and the variety of timely issues that can be addressed will be greatly enhanced. Thus, while some users of NHIS data may experience moments of frustration when features of the old NHIS on which they have come to rely are no longer available, the newly revised NHIS will give most users more and better data than ever before.

Dr. Fowler is a Senior Research Fellow at the Center for Survey Research, University of Massachusetts-Boston.

Address correspondence to Dr. Fowler, Center for Survey Research, University of Massachusetts-Boston, 100 Morrissey Boulevard, Boston, MA 02125-3393, tel. 617-287-7200; fax 617-287-7210; e-mail <csr@umbsky.cc.umb.edu>.

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