

The Health AND Nutrition Examination Survey

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A major new health survey, the Health and Nutrition Examination Survey—sometimes called the HANES program—was started in April. This national survey is of considerable interest not only because of the importance of its goals but also because of its nature. Over a 2-year period, one of three identically staffed and equipped field teams will visit each of the “64 primary sampling units” across the nation. From these units a representative sample of the total U.S. population will be drawn.

Using specially constructed mobile examination centers—one of the steps to insure standardized examinations—teams of examiners will obtain baseline data on nutritional status along with

other health data to relate to nutrition and to measure the unmet health needs of the population.

Background

The background of the development of the new survey program is relevant to understanding its purpose and nature. Major programs to combat domestic hunger and nutrition problems are being carried out by a number of Federal agencies. The extent of these problems and the overall success of programs to reduce or eliminate them must be evaluated. To do this, the Department of Health, Education, and Welfare directed the Health Services and Mental Health Administration to develop and institute a program to measure the nutritional status of the U.S. population and to monitor changes over time, under the authority of the National Health Survey Act of 1956.

As developed by the National Center for Health Statistics, which conducts the National Health Survey, the nutrition sur-

veillance is an integral part of the on-going Health Examination Survey (HES). The decision to combine the new program with this particular existing one came logically from the nature of the HES.

The mission of the HES is to make studies of health by direct physical examinations, clinical and laboratory tests, and other procedures. Such studies aim at providing two kinds of information: (a) prevalence data for specifically defined diseases or conditions of ill health and (b) normative measurement data which show the distribution of the total population with respect to particular parameters such as blood pressure, skinfold thickness, visual acuity, or serum cholesterol, to name a few of the many physical or physiological measurements obtained.

Since 1960 three separate examination programs have been carried out. These included adults, children, and youth and were concerned with a variety of diseases and conditions as well as growth and development. Because of the nature of the HES mission, its personnel come from a number of different disciplines. In addition to survey and analytical statisticians, the HES staff includes physicians, dentists, psychologists, and nutritionists as well as persons skilled in survey management.

Planning for HANES

In planning for the Health and Nutrition Examination Survey, the HES staff consulted with many experts in and out of government. The sampling design was developed jointly by statisticians at the Bureau of the Census and the National Center for Health Statistics. Census personnel participated in the first stage

of the fieldwork in each area, and the final sample selection is based on data they collect in household interviews.

For the content of the nutrition component, the experts consulted included persons at several Institutes of the National Institutes of Health and at the Health Services and Mental Health Administration's Center for Disease Control. The Center is performing most of the laboratory work for HANES, and it is also conducting a nutrition program. (The CDC program involves demonstration projects in nutrition education and combating malnutrition, special studies of selected groups such as migrant workers, and other such activities.)

Also consulted for the nutrition component were a score of specialists at schools of public

health and medical schools and centers throughout the nation, the Department of Agriculture, the Office of Education, HSMHA's Maternal and Child Health Service, and many others.

The experience of the "Ten-State Nutrition Survey" was examined in an effort to profit from the lessons learned in that program and to avoid some of the problems that had been encountered. That survey of certain poorer areas was undertaken to establish the existence of a nutrition problem in the United States. Both present and former staff members of the CDC nutrition program who had worked in that survey were very helpful with the nutrition component of HANES.

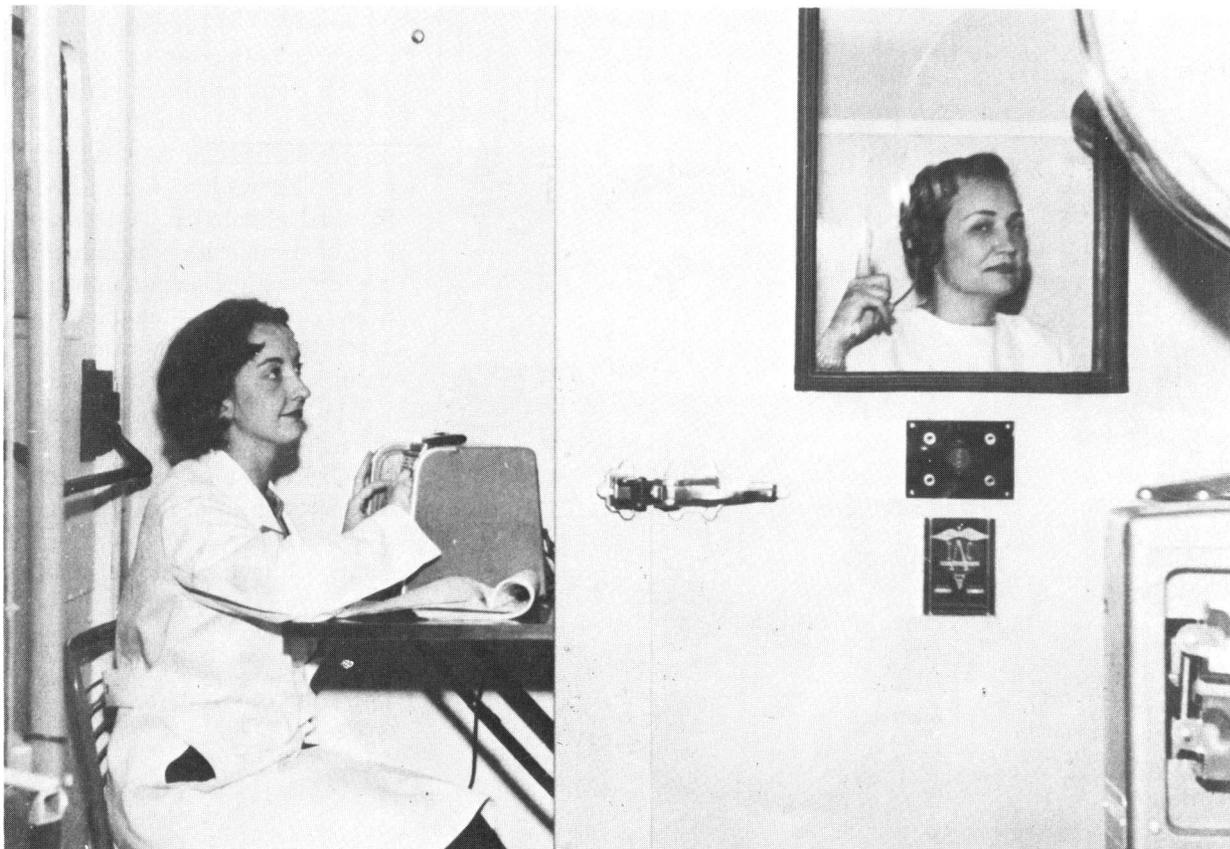
For the content of the detailed examination component of the HANES, the experts consulted

included more than 100 persons in and out of government. A number of groups also are actively assisting in the survey—the National Eye Institute, the National Institute of Neurological Diseases and Stroke, the National Institute of Arthritis and Metabolic Diseases, the National Institute for Dental Research, and a special task force established by the American Academy of Dermatology.

Purposes

The overall plan of operation of the Health and Nutrition Examination Survey has two purposes. The first purpose is to measure and monitor nutritional status, and the second is to collect other data needed on the health of the adult population. The long-range plan is for a continu-

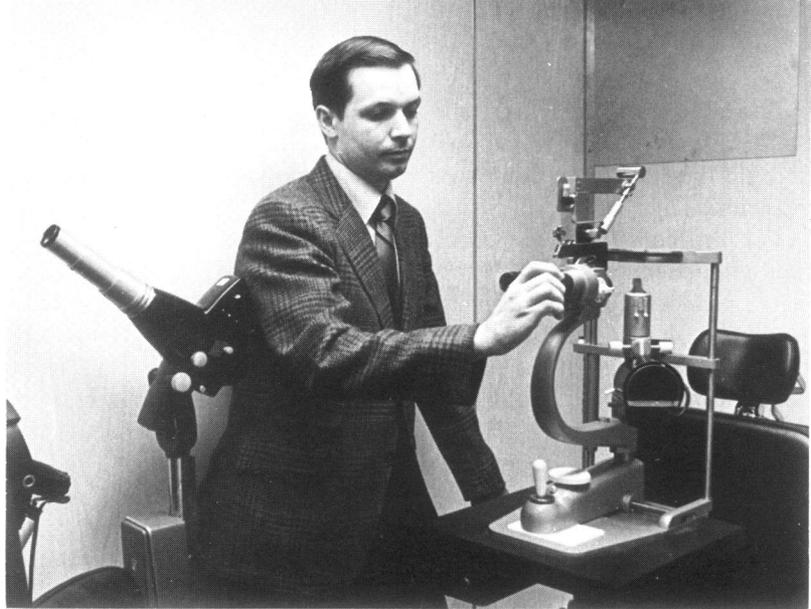
The detailed examinations include tests of hearing performed in a soundproof room



ing succession of surveys, operating on a 2-year cycle.

Each 2-year program will examine a national probability sample of the civilian, noninstitutional population 1 through 74 years old. Groups at high risk of nutritional deficiency, including the poor, preschool-age children, childbearing-age women, and the aged, will be oversampled at known rates so that they may be studied in greater detail. For example, a group, which on the basis of its numbers alone might be expected to make up only one-sixth of the sample, might be selected at higher sampling rates so it would actually constitute one-third of the sample. The sampling weights assigned will insure that the total sample represents the total population.

Data are collected by interview and questionnaire, direct physical examination, physical measurements, various other tests and



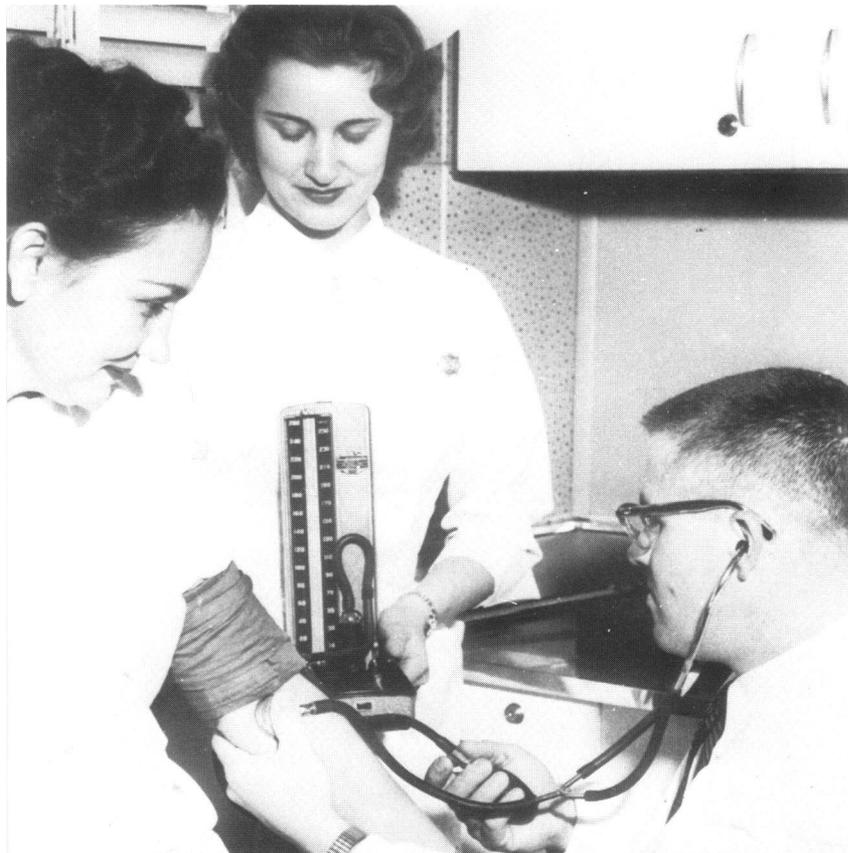
An ophthalmologist prepares to examine for eye defects or signs of malnutrition

procedures, and analysis of blood and urine specimens. Data collection is done by specially trained teams of interviewers and examiners, including physicians, nurses, dentists, dietitian interviewers, and medical, laboratory, and X-ray technicians. The ex-

aminations take place in the survey's mobile examination centers. The three teams operate simultaneously in different parts of the United States.

Both the nutrition and the detailed health examinations will vary somewhat in successive 2-year programs, as will the specific age groups receiving the detailed examinations. This variation will permit collection of varied kinds of health data and study of interrelationships of nutrition and specific health examination findings in various parts of the total population. A core portion of the nutrition examination content will be kept unchanged from one survey to another, however, to permit assessment of change in the nutritional status.

About 30,000 persons aged 1 through 74 years will form the population sample for the nutrition component of the first 2-year study. Measures of nutritional status will include clinical evalua-



Blood pressures of each person in the sample are measured in a standard manner by a physician and a nurse in the mobile examination centers



A laboratory technician performs certain biochemical tests on blood samples

tions, with special attention to conditions indicative of nutritional problems, and with special skin, eye, and dental examinations. The measures will also include anthropometric measurements, biochemical determinations, and individual dietary intake information, which will cover food patterns and a 24-hour recall of food consumed.

From the total sample, about 6,000 people aged 25 through 74 years will also receive the detailed health examination. The central purpose is to obtain data on current and unmet health needs in this adult population. Persons will be questioned about their health care needs as they see them and about the medical care they have sought and obtained for these needs. The examination will provide information on health problems found and some indications of health care needed. These data will be interrelated to obtain assessments

A physician examines the ears for abnormalities possibly associated with hearing loss among adults receiving the detailed health examination

of how well the medical care system is working.

Since the detailed examination cannot cover all aspects of health, it will emphasize a number of index conditions, that is, the specific conditions for which the survey will provide preva-

lence data. The index conditions include heart disease, chronic pulmonary disease (including emphysema), chronic disabling arthritis of the hip or knee, specific dermatological diseases, dental conditions, and vision, hearing, and psychological problems.

An important aspect of the new survey program is, of course, its carefully developed probability sample design. It also has two other important features: (a) the effort to maximize response, that is, to obtain the cooperation of the highest possible fraction of the selected sample in order to minimize the bias from nonresponse, and (b) the emphasis on quality control, which is equally important since measurement error could completely overwhelm the niceties of any sample design, however low the rate of nonresponse. The new program will be constantly concerned with these problems.

