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National Health and Nutrition Examination Survey, 2005-2006

Overview

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

Introduction

The National Health and Nutrition Examination Survey (NHANES) is a program of studies designed to assess the health and nutritional status of adults and children in the United States. The survey is unique in that it combines interviews and physical examinations. NHANES is a major program of the National Center for Health Statistics (NCHS). NCHS is part of the Centers for Disease Control and Prevention (CDC), U.S. Public Health Service, and has the responsibility for producing vital and health statistics for the Nation.

The NHANES program began in the early 1960's and has been conducted as a series of surveys focusing on different population groups or health topics. In 1999, the survey became a continuous program that will have a changing focus on a variety of health and nutrition measurements to meet emerging needs. The survey examines a nationally representative sample of about 5,000 persons each year. These persons are located in counties across the country, 15 of which are visited each year.

The NHANES detailed interview includes demographic, socioeconomic, dietary, and health-related questions. The examination component consists of medical and dental examinations, physiological measurements, and laboratory tests administered by highly trained medical personnel.

Findings from this survey will be used to determine the prevalence of major diseases and risk factors for diseases. Information will be used to assess nutritional status and its association with health promotion and disease prevention. NHANES findings are also the basis for national standards for such measurements as height, weight, and blood pressure. Data from this survey will be used in epidemiological studies and health sciences research, which help develop sound public health policy, direct and design health programs and services, and expand the health knowledge for the Nation.

Survey Content

As in past health examination surveys, data will be collected on the prevalence of chronic conditions in the population. Estimates for previously undiagnosed conditions, as well as those known to and reported by survey respondents, are produced through the survey. Such information is a particular strength of the NHANES program.

Risk factors, those aspects of a person's lifestyle, constitution, heredity, or environment that may increase the chances of developing a certain disease or condition, will be examined. Smoking, alcohol consumption, sexual practices, drug use, physical fitness and activity, weight, and dietary intake will be studied. Data on certain aspects of reproductive health, such as use of oral contraceptives and breastfeeding practices, also will be collected.

The diseases, medical conditions, and health indicators to be studied include:

- Anemia
- Cardiovascular disease
- Diabetes
- Environmental exposures
- Hearing loss
- Infectious diseases
- Kidney disease
- Mental health and cognitive functioning
- Nutrition
- Obesity
- Oral health

- Osteoporosis
- Physical fitness and physical functioning
- Reproductive history and sexual behavior
- Respiratory disease (asthma, chronic bronchitis, emphysema)
- Sexually transmitted diseases
- Vision

The sample for the survey is selected to represent the U.S. population of all ages. Special emphasis in the current NHANES will be on adolescent health and the health of older Americans. To produce reliable statistics for these groups, adolescents 15–19 and persons 60 and older are over-sampled for the survey. African Americans and Mexican Americans are also over-sampled to enable accurate estimates for these groups.

Several important areas in adolescent health, including nutrition and fitness and other aspects of growth and development, will be addressed. Since the United States has experienced dramatic growth in the number of older people during this century, the aging population has major implications for health care needs, public policy, and research priorities. NCHS is working with public health agencies to increase the knowledge of the health status of older Americans. NHANES has a primary role in this endeavor.

In the examination, all participants visit the physician who will do selected examinations. Dietary interviews and body measurements are included for everyone. All but the very young have a blood sample taken and will have a dental screening. Depending upon the age of the participant, the rest of the examination includes tests and procedures to assess the various aspects of health listed above. Usually, the older the individual, the more extensive the examination.

Survey Operations

Health interviews are conducted in respondents' homes. Examinations are performed in specially-designed and equipped mobile examination centers, which travel to survey locations throughout the country. The survey team consists of a physician, medical and health technicians, dietary and health interviewers. A large staff of trained bilingual interviewers conducts the household interviews.

An advanced computer system using high-end servers, desktop PCs, and wide-area networking collects and processes all of the NHANES data, nearly eliminating the need for paper forms and manual coding operations. This system allows interviewers to use notebook computers with electronic pens. The staff at the mobile exam center can automatically transmit data into data bases through such devices as digital scales and stadiometers. Touch-sensitive computer screens let respondents enter their own responses to certain sensitive questions in complete privacy. Survey information is available to NCHS staff within 24 hours of collection, which will enhance the capability of collecting quality data and will increase the speed with which results are released to the public.

In each location, local health and government officials are notified of the upcoming survey. Households in the survey receive a letter from the NCHS Director to introduce the survey. Local media may feature stories about the survey.

NHANES is designed to facilitate and encourage participation. Transportation is provided to and from the examination center and participants receive compensation. A report of medical findings is given to each participant. All information collected in the survey is kept strictly confidential. Privacy is protected by public laws.

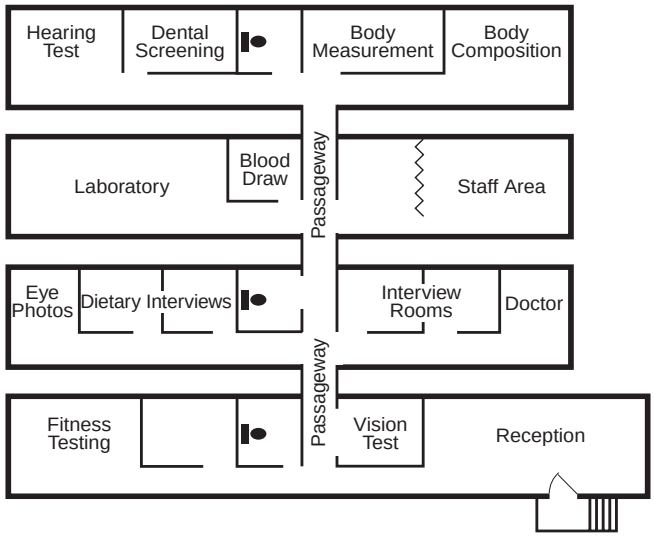
Uses of the Data

Information from NHANES is made available through an extensive series of publications and articles in scientific and technical journals. For data users and researchers throughout the world, survey data are available on easy-to-use CD-ROMS and personal computer diskettes. In the future, data will be widely distributed on the World Wide Web.

Research organizations, universities, health care providers, and educators will benefit from survey information. Primary data users are the U.S. Public Health Service agencies that collaborated in the design and development of the survey. The National Institutes of Health, the Food and Drug Administration, and CDC are among the agencies that rely upon NHANES to provide data essential for the implementation and evaluation of program activities. The U.S. Department of Agriculture and NCHS cooperate in planning and reporting dietary and nutrition information from the survey.

NHANES' partnership with the U.S. Environmental Protection Agency allows continued study of the many important environmental influences on our health.

Mobile Examination Center (MEC) Diagram



NHANES' record of important accomplishments is made possible by the thousands of Americans who have participated.

- Past surveys have provided data to create the growth charts used nationally by pediatricians to evaluate children's growth. The charts have been adapted and adopted worldwide as a reference standard—and have recently been updated using the latest NHANES figures.

- Blood lead data were instrumental in developing policy to eliminate lead from gasoline and solder in food and soft drink cans. Recent survey data indicate the policy has been even more effective than originally envisioned, with a decline in elevated blood lead levels of more than 70% since the 1970's.

- Overweight prevalence figures have led to the proliferation of programs emphasizing diet and exercise, stimulated additional research, and provided a means to track trends in obesity.

- Data have continued to indicate that undiagnosed diabetes is a significant problem in the United States. Efforts by Government and private agencies to increase public awareness, especially among minority populations, have been intensified.

These are just a few examples of what survey findings have meant. The current program promises continuing contributions and some new initiatives.

- Information collected in this survey will help the Food and Drug Administration decide if there is a need to change vitamin and mineral fortification regulations for the Nation's food supply.

- The national programs to reduce hypertension and cholesterol levels continue to depend on NHANES data to steer education and prevention programs toward those at risk and to measure success in curtailing risk factors associated with heart disease, the Nation's number one cause of death.

- New measures of physical fitness will further our understanding of its role in health and enhance the analysis of relationships between exercise and obesity and disease.

Because NHANES is now an ongoing program, the information collected will contribute to annual estimates in some topic areas included in the survey. For small population groups and less prevalent conditions and diseases, data must be accumulated over several years to provide adequate estimates. The new continuous design also allows increased flexibility in survey content.

Results of NHANES will benefit people in the United States in important ways. Facts about the distribution of health problems and risk factors in the population give researchers important clues to the causes of disease. Information collected from the current survey will be compared with information collected in previous surveys. This will allow health planners to detect the extent various health problems and risk factors have changed in the U.S. population over time. By identifying the health care needs of the population, government agencies and private sector organizations can establish policies and plan research, education, and health promotion programs that will help improve present health status and prevent future health problems.

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