An Overview of Career and Research Opportunities at the NCHS

Meena Khare
Office of Research and Methodology
National Center for Health Statistics (NCHS)

www.cdc.gov/nchs

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The findings and conclusions in this paper are those of the authors and do not necessarily represent the views of the National Center for Health Statistics, Centers for Disease Control and Prevention.
Outline

• About NCHS
• NCHS surveys and data systems
• Research and Career opportunities
• Q&A
NCHS on Facebook

Find out about the latest releases, post questions and comments, and join the national health statistics discussion on NCHS’s Facebook page.

Learn More

FEATURING TOPICS

Director’s Corner—The Importance of Privacy
Acting NCHS Director Charles Rothwell discusses the collection and use of health information and the necessity to gain and keep the public’s trust.

NEXT TOPIC

QuickStat of the Week
From 1999 to 2010, age-adjusted death rates from tuberculosis decreased 57.1%, from 0.7 to 0.3 per 100,000 population for the total U.S. population. The rate decreased 67.7% for black males, 72.7% for black females, 57.1% for white males, and 33.3% for white females. Throughout the period, the rates for black males were the highest and at least 5 times higher than the rates for white females, the group with the lowest rates.

New RELEASES

Self-report of Diabetes and Claims-based Identification of Diabetes Among Medicare Beneficiaries
NHSR Number 69, November 2013

FastStats: STATISTICS BY TOPIC
FastStats provides quick access to statistics on topics of public health importance, including: diseases and conditions, injuries, life stages and populations, and health care and insurance.
Monitors the nation’s health by collecting, analyzing, and disseminating health and healthcare data

- Compares estimates across time, populations, health providers, and geographic areas
- Identifies health problems, risk factors, and disease patterns
- Informs actions and policies to improve the health of the American people
NCHS: Four Major Data Systems

• National Vital Statistics System (NVSS)

• National Health Interview Survey (NHIS)

• National Health and Nutrition Examination Survey (NHANES)

• National Health Care Surveys (NHCS + others)
NCHS: Surveys and Data Systems

• Record-based databases
  – NVSS (Mortality, Natality)
  – NDI

• Population-based Surveys
  – NHANES
  – NYFS (Youth Fitness)
  – NHIS
  – NSFG
  – NIS (Child, Teen, Adult, Flu)
  – SLAITS (CSHCN, NSAP, NSCH)

• Establishment Surveys (National Health Care Surveys)
  – National Hospital Care Survey (new)
    • Hospitals inpatient
    • NHDS
    • NHAMCS (2014)
    • DAWN (Drug Abuse warning)
  – NAMCS (EMR, MD, CHC)
  – NSLTCP
    • NNHS
    • NHHCS
    • NSRCF
    • Adult Day Care (New)

http://www.cdc.gov/nchs/data/factsheets/factsheet_summary.htm
Research Opportunities
Surveys and Data Collection Systems

Surveys and Data Collection Systems

Some NCHS data systems and surveys are ongoing annual systems while others are conducted periodically. There are four major data collection programs at NCHS:

The National Health and Nutrition Examination Survey (NHANES) is NCHS' most in-depth and logistically complex survey, operating out of mobile examination centers that travel to randomly selected sites throughout the country to assess the health and nutritional status of Americans. This survey combines personal interviews with standardized physical examinations, diagnostic procedures, and laboratory tests to obtain information about diagnosed and undiagnosed conditions; growth and development, including overweight and obesity; diet and nutrition; risk factors; and environmental exposures.

The National Health Care Surveys provide information about the organizations and providers that supply health care, the services they render, and the patients they serve. Provider sites surveyed include physician offices, community health centers, ambulatory surgery centers, hospital outpatient and emergency departments, inpatient hospital units, residential care facilities, nursing homes, home health care agencies, and hospice organizations. The National Health Care Surveys are used to study resource use, including staffing; quality of care, including patient safety; clinical management of specific conditions; disparities in the use and quality of care; and diffusion of health care technologies, including drugs, surgical procedures, and information technologies.

The National Health Interview Survey (NHIS) provides information on the health status of the U.S. civilian noninstitutionalized population through confidential interviews conducted in households by Census Bureau interviewers. NHIS is the Nation's largest in-person household health survey, providing data on health status, access to and use of health services, health insurance coverage, immunizations, risk factors, and health-related behaviors.

http://www.cdc.gov/nchs/data/factsheets/factsheet_summary.htm
Welcome to the Health Indicators Warehouse (HIW)

Indicators in the HIW are categorized by topic, geography, and initiative.
Select your starting point for exploring indicators in the HIW.

by Topic
Each indicator in the HIW is associated with one or more topic areas, such as disease, condition, age group or sociodemographic characteristics.

Select a topic

by Geography
Most of the indicators in the HIW have national level data. Many indicators also have data available by state, county, and hospital referral regions.

Select a state

by Initiative
The HIW contains indicators derived from and in support of several state and federal health indicator initiatives.

Select an initiative

What's New

30 MAY
Release of Version 1.5.2
In this latest release of the HIW, on May 29, 2012, we have added the ability to download not only all data for each indicator, but indicator data by state. This will reduce download time as well as simplify use of data should a user only require information for a specific geography. In addition, the structure of the Excel and CSV download file metadata has been slightly modified for ease of use. Finally, we have added an Indicator Report in PDF format listing all of the indicators with the level of geography and HIW ID number, which may be especially useful for developers. This report is located at the bottom of the right side bar on the Resources tab. (more)

9 MAR
Release of Version 1.5
In this latest release of the HIW, on March 8, 2012, we have added the ability to filter and display data by specific age, sex, race and ethnic, and other breakdowns. We have added additional years of data and more stratifications by age, race and ethnicity, and sex. The database includes several new indicators (metadata and data). These include HIV prevalence at the national, state and county levels; selected notifiable disease counts at the state and county levels; counts of Medicare certified facilities at the state and hospital referral region levels; Medicare and Medicaid expenditures and managed care participation at the national and state levels, and updates to many Behavioral Risk Factors Surveillance System, mortality and natality indicators. We have made a few changes to the structure of the database and to the web services, including inclusion of more examples and documentation, and new service methods to access tables and foreign keys have been added. (more)
NCHS Research Data Center (RDC)

The National Center for Health Statistics (NCHS) developed the Research Data Centers (RDC) to allow researchers access to restricted data. Today, in addition to providing access to NCHS data, the RDC also hosts restricted data from a variety of groups within the Department of Health and Human Services (DHHS).

The RDC is responsible for protecting the confidentiality of survey respondents, study subjects, or institutions from which data were collected. In order to do this, we request all researchers submit a research proposal outlining the need for this more sensitive data. The proposal provides a framework for us to identify potential disclosure risk. Once approved, we work with you to create a data file specific to your research question. We cannot send you the dataset, but we offer several modes of access.

People interested in using the RDC are typically, university trained researchers who are comfortable using SAS or a similar statistical package to analyze standard datasets. Past researchers have been epidemiologists, economists, demographers and health scientists.

If this is your first time using the RDC we have provided step-by-step instructions to guide you along the process.

**STEP 1**
Restricted Data

**STEP 2**
Access Modes

**STEP 3**
The Proposal Process

**STEP 4**
Confidentiality

**STEP 5**
Approved Projects: Next Steps

**STEP 6**
Publishing Guidelines
What is Q-Bank?

Q-Bank stores evaluated questions from Federal surveys, linking each question to its test findings and the original question evaluation report. It empowers users to determine the quality of questions from the evidence provided.

What’s in Q-Bank?

Q-Bank is continually expanding, and currently has thousands of questions from numerous federal agencies!

Q-Bank Highlights

- **New NHIS Sexual Identity ACASI Report in Q-Bank!**
- **AAPOR May 17-20 Orlando, FL**
  - Come check out our Booth(406)
    - Exhibit Dates and Hours
    - Thursday, May 17, 3:00 p.m. - 5:30 p.m.
    - Friday, May 18, 7:00 a.m. - 4:30 p.m.
    - Saturday, May 19, 7:00 a.m. - 2:30 p.m.

Q-Bank Contributing Agencies

[Logos of CDC, U.S. Department of Labor, National Cancer Institute, National Science Foundation]
Data Collection

• Modes of data collection
  • PAPI, Mail or Face to Face (FTF)
  • CAPI, ACASI: FTF, Household visit
  • CATI: RDD via landline and/or wireless telephone
  • Web: Internet, e-mail address
  • Mail: household or facility address
  • Medical records, physical/medical examinations, health providers, hospitals, or registries
  • Mixed modes: combination of above modes
NHANES Mobile Exam Center
Trends in Survey Nonresponse

Note: NHANES: Asian oversampled in 2011-2012; BRFSS and NIS 2011 and 2012 are NR from LL sample.
Percentages of adults and children living in households with only wireless telephone service or no telephone service: United States, 2003–2012

NOTE: Adults are aged 18 and over; children are under age 18.
SOURCE: CDC/NCHS, National Health Interview Survey.

Ref: Blumberg et al., 2013
Figure 1. Percentage of office-based physicians with EMR/EHR systems: United States, 2001–2010 and preliminary 2011–2012

NOTES: EMR/EHR is electronic medical record/electronic health record. “Any EMR/EHR system” is a medical or health record system that is all or partially electronic (excluding systems solely for billing). Data for 2001–2007 are from in-person National Ambulatory Medical Care Survey (NAMCS) interviews. Data for 2008–2010 are from combined files (in-person NAMCS and mail survey). Data for 2011–2012 are preliminary estimates (dashed lines) based on the mail survey only. Estimates of basic systems prior to 2006 could not be computed because some items were not collected in the survey. Data include nonfederal office-based physicians and exclude radiologists, anesthesiologists, and pathologists. SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey, 2001–2012.
Topic Areas for Research

- **Data mining in large data bases (Big Data)**
  - Implications to sample & questionnaire design
  - Weighting for nonresponse and noncoverage including bias assessment
- **Optimal strategies for survey re-design (multi-frame)**
- **Matrix Sampling; adaptive or respondent driven sampling**
- **Web-based and multi-mode data collection**
- **Bayesian methods for analyzing complex survey data**
- **Modeling**
  To extend usefulness of data beyond the scope of survey design
  - Small-area estimation (including sub-domain estimation)
  - Analyses of rare events
  - Stochastic and Time Series models of mortality/morbidity
  - Model-based vs. design-based analyses of complex survey data
  - Propensity based methods
- **Spatial modeling**
- **Handling missing data**
- **Analytic and weighting methods for Linked Data sets**
- **Combining estimates from multiple surveys**
- **Meta Analysis**
- **Developing indices of health to compare sub-domains or sub-geographic areas**
- **Confidentiality; reduce disclosure risk in micro and tabular data**
- **Designing questionnaires to minimize burden but maximize accuracy**
Career Opportunities
Career Opportunities at the NCHS

• **NCHS recruits and hires**
  – Civil Service Federal Positions (GS)
  – Service Fellowships (US citizen/Non-citizen who holds Permanent Residency status)
  – Postdoctoral Research Fellows
  – Interagency Agreements
  – Contractors

• **Research Positions at NCHS**
  – Mathematical Statisticians
  – Applied Statisticians
  – Epidemiologists
  – Health Scientists
  – Social Scientists
  – Computer Scientists

• **Student Internships and Graduate Research**
  – The Joint Program in Survey Methodology (JPSM), University of MD
  – Pathways Program – internships (indefinite and limited appointments)
  – Presidential Management Fellows Program
  – Hispanic Association of Colleges and Universities (HACU) Nat’l Internship Program
  – Worksite Experience – volunteers
Employment Opportunities

Equal Employment Opportunities (EEO)
CDC/NCHS is an equal opportunity employer. Qualified applicants will receive consideration without regard to race, creed, color, age, sex, national origin, physical or mental disability, or sexual orientation.

Current NCHS Job Openings

General NCHS Employment Information
To view a list of current vacancy announcements, go to the CDC Employment Opportunities page and select the appropriate category under "Career and Training Opportunities". Then select whether you are interested in careers open to US Citizens, Federal Employees, or current CDC employees. NCHS opportunities will be filed under “Hyattsville, MD” or “Research Triangle Park, NC” in the Location column.

- Mathematical Statistician in Statistical Research and Survey Design Office of Research and Methodology

Fellowship Program
The Fellowship Program enables CDC to encourage and promote scientific research, studies, training, and investigations related to public health as it relates to the mission of CDC. Eligible areas of health include basic and applied research in medical, physical, biological, mathematical, social, biometric, epidemiological, behavioral, and computer sciences, and other fields where the scientific research is directly related to the mission of CDC. Individuals eligible for Senior and Associate Service Fellowship programs may be U.S. citizens or noncitizens who are not civil service employees or commissioned corps officers.

- Service Fellowship in Chronic Disease Epidemiology Division of Health and Nutrition Examination Surveys
- Service Fellowship in Qualitative Research and Survey Design Office of Research and Methodology

Postdoctoral Research Program
NCHS offers extraordinary opportunities for the Postdoctoral Research Fellowship Program in specialized research in the areas of mathematical statistics, computer science, and survey methodology, as well as in health statistics, epidemiology, and the social and behavior sciences applicable to large scale sample surveys. Applicants must have held a Ph.D. (or equivalent) in a relevant field for less than 3 years or completed the Ph.D. before the commencement of work as a postdoctoral researcher. The duration of the fellowship is 2 years, but can be extended with...
Resources

- https://www.usajobs.gov/
- http://www.fedstats.gov/
- Individual government, university, and industry Websites
- http://www.amstat.org/meetings/csp/2014/mentoring.cfm (The ASA Conference on Statistical Practice Mentoring Program)
- http://www.amstat.org/about/ethicalguidelines.cfm
- http://www.amstat.org/sections/SRMS/Proceedings/
I Want to be a Statistician Just Like my Mom
Thank You

Meena Khare
mkhare@cdc.gov