Aspects of the National Health Interview Survey (NHIS)

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Presentation outline

NHIS questionnaire content

NHIS data files, variables, products

NHIS sample design overview

NHIS weights, variance estimation
The purpose of NHIS

To collect data on the health status and health services utilization of the U.S. civilian non-institutionalized population

To collect data on specific topics of current public health concern

To provide official national health data to the public
NHIS questionnaire
modules

Basic Module or Core
Fielded each year

Supplemental Modules
New topics or more detail on Core topics
Different each year
Core Data from NHIS Facilitates Trend Analysis

Monitoring health objectives

Evaluating impact of policies

Monitoring impact of supply on utilization
NHIS supplements: examples from 2000-7

2000: Cancer Control
2001: Healthy People 2010, Children's mental health
2002: Complementary and Alternative Medicine
2004: Adult immunization
2005: Cancer control
2006: Adult chronic conditions (Stroke, diabetes, arthritis)
2007: Hearing
NHIS questionnaire content
Health conditions

Chronic disease
Hearing and vision impairment
Health status compared to year ago
Injuries/poisonings
Functional limitation and associated conditions
Mental health questions (vary by age)
Utilization and access to care

Hospitalizations
Medical care contacts by provider
Surgical procedures
Time since last saw a dentist
Immunizations
Usual place of care
Delayed care and why
Unmet need by type
Health behaviors and risk factors

Smoking

Physical activity

Alcohol

Height/Weight
NHIS Data Files

- Household
- Family
- Sample Adult
- Sample Child
- Supplement
NHIS data file variables
Socio-demographic variables

Hispanic ethnicity
Race
Sex, age
Family type/structure
Birthplace and citizenship
Country of birth (only on in-house files) U.S./not U.S. (on public use files)
Economic variables

Number of working adults in family
Education/family income
Health Insurance
  Type of coverage
  Cost/policy holder/source
  Reason for no coverage
Work loss/sick days
NHIS products

Annual microdata files
Annual reports
  Population
  Children
  Adults
Reports on specific topics
FastStats
Early Release
Healthy E-Stats
Survey Integration/Linkage with the NHIS

National Death Index

Environmental Protection Agency exposure files

Medical Expenditure Panel Survey
NHIS sample design
NHIS target population

Persons living in the 50 States and D.C. (not Puerto Rico, etc.)

Civilians (not active military)

Persons who live in households or non-institutional group quarters such as college dormitories (not persons living in institutional group quarters such as prisons)
NHIS interview protocol

Personal visit interviewing at sample addresses, using electronic questionnaire

All eligible persons at sampled address included in the interview

One adult and one child (if children present) selected per family for more extensive questions
NHIS sample features

If full funding available, ~35,000 interviewed households, ~87,500 interviewed persons

Sample addresses selected from all 50 States and D.C., using a "complex" sample design - sample is drawn from selected geographic areas (counties or groups of adjacent counties) to control costs of personal interviewing
NHIS sample design implemented in 2006 - based on Census 2000

Similar but not identical to previous sample design (1995-2005, based on 1990 Census)

Black, Hispanic, and Asian persons are "oversampled" in the NHIS - Asian oversample a new feature of current sample design
Analysis of NHIS data

Account for NHIS sample design - weights, variance estimation

1995-2005 NHIS sample design – Series 2 report #130 – available online at www.cdc.gov/nchs/about/major/nhis/methods.htm

2006- NHIS sample design Series 2 report forthcoming
Estimates from NHIS data

NHIS has a complex sample design, including higher sampling rates of certain groups (black, Hispanic, Asian persons) - sampling weights should be used to make estimates from NHIS data

Variance estimation procedure must take account of complex sample design in order to be valid
Variance estimation guidance at NHIS methods page - 1963 to 2009

SUDAAN, Stata, R survey, SAS survey procedures, SPSS, VPLX: Sample code provided for use with NHIS data

SAS, SPSS: Guidance provided to avoid problems with missing DOMAIN/SUBPOP variables in analyses of NHIS data
Supplementary variance estimation resources for selected files

SAS, SPSS variance estimates from 2003, 2005, 2007 sample child files and 2007 child alternative medicine file are slightly smaller than they should be.

Resources (guidance, files) available for data users to get correct variance estimates.
Summary

NHIS: a general purpose health survey covering most of the U.S. population

NHIS data files: household, family, person, sample adult, sample child, supplement(s)

Analysis of NHIS data requires the use of weights and appropriate methods for variance estimation
NHIS Strengths

Large, representative sample
In-person survey
Broad range of information
Demographic detail
Ongoing annual survey
Topical supplementary information
Relatively high response rates
Links to other data sets
Timely data releases
NHIS home page:
http://www.cdc.gov/nchs/nhis.htm