

# 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**

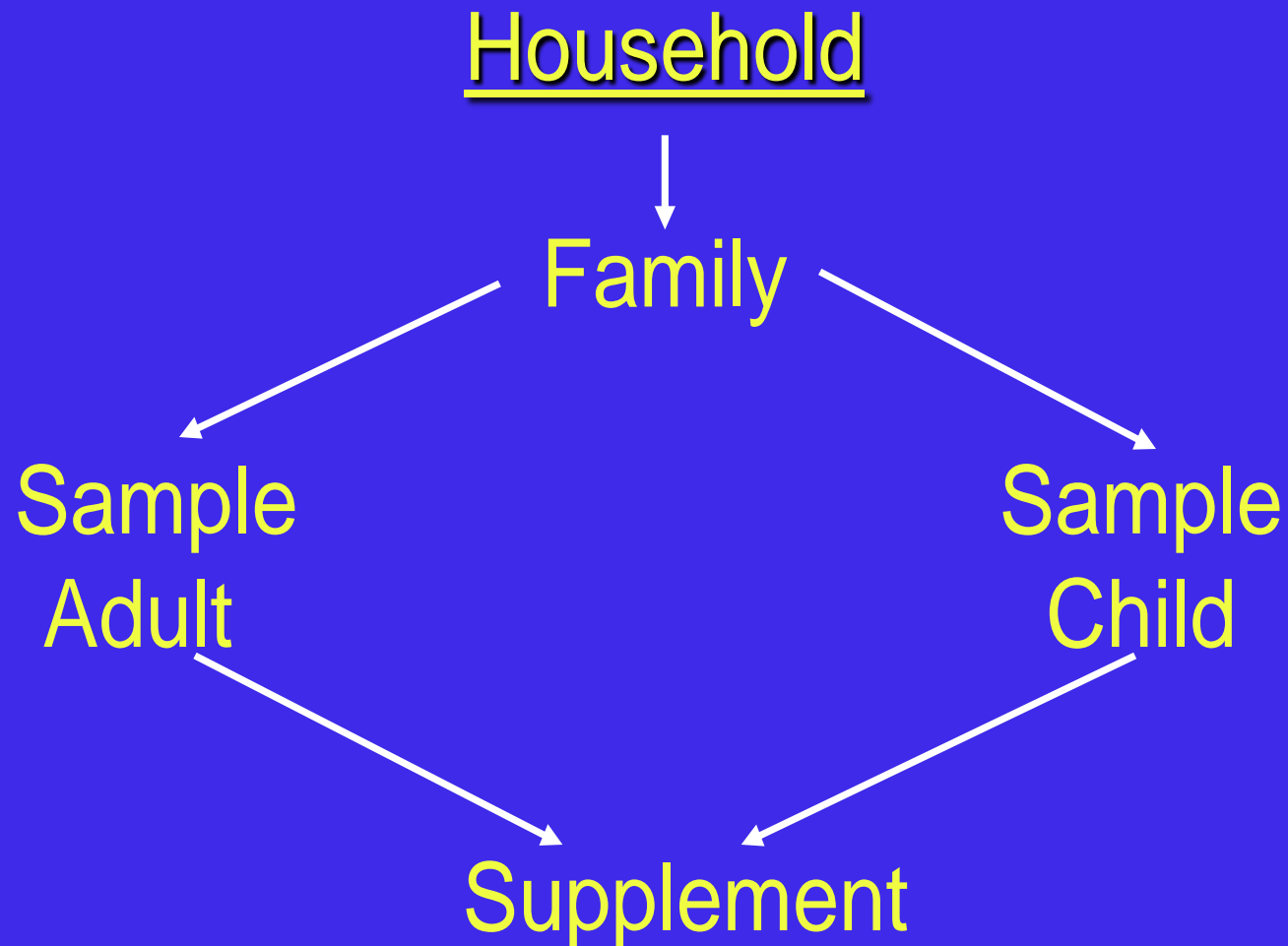
**Smoking**

**Physical activity**

**Alcohol**

**Height/Weight**

# NHIS Data Files



# **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](http://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>**