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Central Plains
Federal Statistical Research Data Center

& FOOD FOR HEALTH RELATED DATA SETS

Terminals Coming Soon

- UNL and consortium partners won NSF funding and US Census Bureau approval to establish the Central Plains Federal Statistical Research Data Center

  - First Federal Data Center in the Great Plains
    - To be located in the Whittier Research Center
    - To specialize in data collections of regional importance

  - Will facilitate and support researchers in social, behavioral, health, and life sciences
    - Provides access to 61 and counting restricted-use datasets

The FSRDC Consortium Network

UNMC	UNL	USD	ISU	UI

CPFSRDC Main Terminal

UNL Campus

Senior RDC Administrator

CPFSRDC Satellite Terminal

ISU Campus

Associate RDC Administrator

What is an FSRDC?

- Special research facility in partnership with the Census Bureau that aims to improve the FSS

- Census Bureau administrator on site

- Restricted-use data is accessed from within the RDC facility

- Purpose: to enhance academic research, infrastructure, and recruitment.

Benefits of an FSRDC

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1. Provide access to restricted access data
2. High-impact publications
3. Partnership opportunities
4. Extramural funding
5. Recruitment
6. Increase and heighten regional policy impact
7. Any Census approved research is UNL IRB approved

Advantages of Restricted-Use Microdata

- Detailed geographic identifiers for small area estimation

- Facilitates nation-wide and historical trend analysis

- Data size increases statistical power

- Enables more accurate estimates

- Ability to data link different datasets

- Full population counts or full samples

- Original variables before they are processed

- AFFORDABLE –free for consortium members
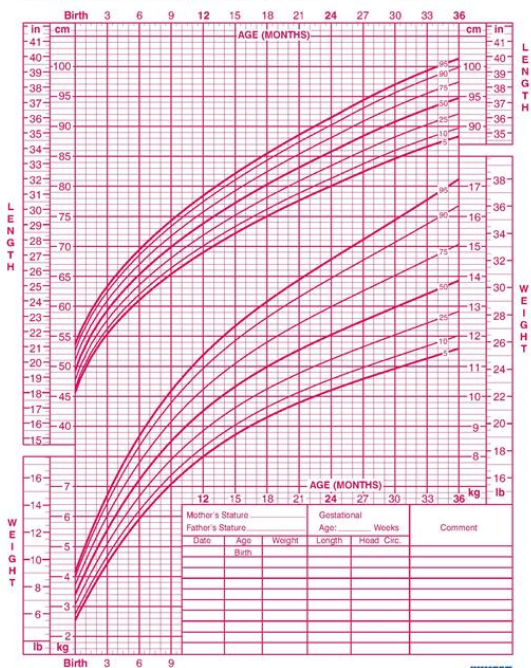 *does not apply to NCHS and AHRQ data files which require a fee

Sample Food and Nutrition Data Sets

1. National Health and Nutrition Examination Survey (NHANES)

2. Current Population Survey Food Security Supplement (CPS – FSS)

3. National Health Interview Study (NHIS)

4. Medical Expenditure Panel Survey (MEPS)

5. Survey of Income and Program Participation (SIPP)

6. Survey of Program Dynamics (SPD)

NHANES

THE NCHS' MOST IN-DEPTH AND COMPLEX SURVEY

NHANES Core Data Set Collection

- The historic series (I-III) focused on different population groups, sizes, and health topics

- The continuous NHANES has adaptable components on a variety of health and nutrition measurements to meet emerging needs

Survey	Dates	Pop
NHES I	1960-62	18-79 yr
NHES II	1963-65	6-11 yr
NHES III	1966-70	12-17 yr
NHANES I	1971-75	1-74 yr
NHANES II	1976-80	.5 to 74 yr
HHANES	1982-84	.5 to 74 yr, Hispanic
NHANES III	1988-94	2 mo+
NHANES	1999+	All

Multiple Objectives

1. To estimate the health and nutritional status of the US civilian non-institutionalized population

2. Explore emerging public health issues

   a. Obesity, diabetes, heart disease

   b. Increase knowledge of older American's health

3. Study the relationship b/w diet and health

4. Maintain a repository of biologic specimens for research

- Frequency :   annual since 1999 +, released in 2 yr intervals

- Sample :   5000 individuals, 15 counties, on average 2 individuals/hh, 1/5 hh selected

- Population: estimates represent US population of all ages, Hispanics, Blacks, 60+, 12-19, pregnant women, low–income hh oversampled

- Health vars: anemia, heart disease, diabetes, eye diseases, hearing loss, kidney disease, obsesity, oral health, osteoporosis, arthritis, STDs, respiratory diseases, reproductive history, fitness, etc.

NHANES 1999+ Overview

- Advantage: richness of information, linked data sets, combines subjective and objective health measures, questionnaires + physical exams, genetic database, plasma and urine samples

- Drawback: data must be accumulated over several years to provide adequate estimates for small groups/less prevalent conditions

What We Eat in America

- Various types of dietary data:
  - Food frequency
  - Dietary behavior and supplement intake
  - Food security
  - 24-hour recall

- Diet intake used to:
  - monitor the nation's usual food and nutrient intake
  - inform and evaluate public policy
  - evaluate compliance with current recommendations for food and nutrient intakes by subgroups
  - examine trends between diet and health using cross-sectional or longitudinal data

Diet Related Survey Components

Section	PU Variables	Setting	RU Variables
Questionnaire	• Blood pressure • Medical conditions (e.g. heart disease, diabetes) • Health status perception • Supplements (5 data files) • Food program participation (WIC, SNAP, etc) • Water, alcohol, salt, shellfish intake • Food security • Special diets	• Household interview • MEC dietary interview D1-2 • Post exam SAQ • Post exam phone interview	• subnational geo units • interview dates • youth alcohol use and sexual behavior • pregnant women food security
Examination	• Dietary recall (food type, form, quantity, time, source, location, nutritional and caloric value, water, salt, shellfish intake, pesticide exposure) • Body composition and measurements • Blood pressure • Physical activity monitor • Cardiovascular fitness	• MEC • Phone interview	• exam dates, • youth mental health • taste and smell test results • pregnant women reproductive health
Laboratory	• Cholesterol serum and lipoproteins • Red blood cell folate • Iron status and hematology • Other nutritional biochemistry data	• MEC	• genetic data and specimens • youth STDs (chlamydia, herpes, hpv) • pregnant women iodine, HPV swabs

National Health Interview Survey

NHIS

- Data collected annually: 1957-2014
- About 43,000 households, 100,000 individuals
- **Key variables:** Adult and child demographics, health conditions/injuries, health care access and utilization, health insurance, income and assets, health behavior, risk factors, AIDS, immunizations, etc.
- **Advantages:** The Family Core component allows the NHIS to serve as a sampling frame for additional integrated surveys as needed, such as the medical expenditure panel survey
- **Uses:** Monitor health trends in America: e.g. disability, mental conditions, illness. Useful for epidemiological analysis and the evaluation of Federal health programs and access to health care

NHIS and Food

- 2011-12 NHIS supplement included 10-item adult 30-day food security module

- **purpose:** to examining the effects of long-term health problems and disability on food insecurity as well as the effects of food insecurity on more immediate health outcomes

- **advantage:** multiple units of analysis across the survey, including hh, family, adult, and child

- **PU vs RU variables:** public-use files recode food security status, restricted files do not

- **Other diet related variables:** special diet practices (vegetarian, macrobiotic, ornish, atkins, zone, etc.), reasons for diet choices, visits to the nutritionist, food allergies

NHIS RU Variables – "in-house files"

1. HUD Geocode Files (1986+) includes the Census block, block group, tract, county, state, latitude, longitude, and other geographic data, along with return codes indicating the reliability of the geographic codes assigned to NHIS addresses
2. Respondent state, metropolitan area, urban/rural
3. Country, State, and Year of Birth
4. Immigration Variables
5. Industry and Occupation Codes
6. Detailed Race and Hispanic Origin
7. Exact Dates
8. Paradata

NHANES + NHIS
Restricted Use Linked Data Sets

1. +Mortality Files –
   - NHANES 1999-10 + NDI death certificate records -2011, NHIS (85-10)
2. +Medicare Utilization and Expenditure Files
   - 1991-2007 CMS Medicare enrollment and claim records and ESRD USRDS end stage renal disease data combined with NHANES 1999-04
3. +Social Security Administration Files
   - 1999-2004 NHANES with ESRD patient data 1974-2008 and USRDS administrative records
4. NHANES I (71-75) Epidemiologic Follow-up Study (NHEFS)
   - Longitudinal survey 1971-75, 82-84, 86, 87, 92, 2000, 06
5. NHANES Quarterly Food-at-Home Price Database 1999-2006
6. NHIS + Medical Expenditure Panel Survey (MEPS) Linkage Files
7. NHIS + National Immunization Provider Records Check Survey (NIPRCS) 1997-99

Current Population Survey – food security supplement

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The Connection

- **CPS:** the monthly labor market survey used for official unemployment statistics
  - **Survey Unit:** Household, respondents 15+
  - **Frequency:** Monthly + rotating supplements
  - **Time Periods:** 1967 +
  - **Observations:** approximately 60,000 HH
  - **Agency:** CB and BLS

- **FSS:** Once a year since 1995, after answering the labor force questions, the same households are asked a series of questions about food security, food expenditures, and use of food and nutrition assistance programs

FSS

- **Purpose:** In addition to assessing the range of severity of food insecurity experienced in US households, the FSS measures hunger, food program participation, food sufficiency, food expenditure, access to food, food quality and food safety and coping mechanisms

- **Frequency:** Annual supplement since 1995+. Dec schedule started in '05

- **Sample**: 54,000 CPS HH: HH <=185% poverty line take the full FSS (respondent = food purchaser/preparer) and HH(>185% poverty line) take a partial FSS

- **Units/pop**: HH, respondent = person who cooks or shops for HH

- **Agency**: FNS, ERS, and USDA involved

- **Schedule:** data released 9 months after the end of collection ~ Sept

CPS – FSS PU & RU Variables

- **CPS Variables:**
  - **Labor:** labor force activity in the week prior to the survey, employment status, occupation, industry.
  - **Demographics:** age, race, sex, marital status, veteran status, hh relationship, education

- **FSS Variable Sections:**
  1. food expenditure
  2. minimum food spending needed
  3. food program participation
  4. food sufficiency concerns
  5. ways of coping with not having enough food

- **RU Variables:** tract, county, city, less top coding on variables such as income and number of food insecure household members

Measuring Food Security

- to produce a scaled and reliable indicator of hh food security, items from the 5 sections of the FSS module are compiled into scores and categorical variables

- 6 categorical food security variables include:
  - food security of <u>households</u>, <u>children</u>, and <u>adults</u> in households during the **12 months** prior to the survey (1 full security-4 very low security)
  - food security of <u>households</u>, <u>children</u>, and <u>adults</u> in households during the **30 days** prior to the survey
  - Ranging from 1 (food secure) - 3 (very low food security)

- each period series includes a categorical food security status variable, a raw score variable, and a scale score variable.

Medical Expenditure Panel Survey

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Medical Expenditure Panel Survey (MEPS)

- Annual AHRQ survey of establishments and local government from 1996-2013

- From the Agency for Healthcare Research and Quality, includes *insurance, household, medical provided, nursing home components*

- **Key variables:** *(for the insurance component)* # and type of health insurance plans, plan benefits, annual premiums, employer/employee contributions, eligibility requirements, employer characteristics, fully specified medical condition identification ICD-9 codes, worker industry codes, and occupation codes, imputed Federal and State marginal tax rates and amounts

- **Advantages:** provides valuable information about household health coverage by surveying employers of household respondents, FIPS codes allow data to be merged with the Area Resource File (7000 county level variable such as resource scarcity, health status, and environmental characteristics) and any state/county level data, Census Tract and Block-Group Codes allow data to be merged with Census datasets

- **Uses:** studying health care delivery system and factors that may impact health status and health care in the U.S.

Survey of Income and Program Participation

SIPP

- SIPP used for various reasons
  - Distribution of income
  - Effectiveness of government assistance programs
  - Examine how economic well-being changes over time
- 3 main components:
  - **Control Card:** records basic social and demographic characteristics for each person in the household
  - **Core Questionnaire:** Labor Force Activity, Income statistics, and Participation status in various programs
  - **Topical Modules:** Work history, health characteristics, child care, program participation history, education, etc.

SIPP Description

- National Panel Survey dating back to 1984
  - Nationally representative sample: civilian, non-institutionalized population living in U.S.
  - Survey Unit: Household
  - Frequency: Monthly (4 month recall period – 3 times per year)
  - Interview Method: personal visit and decentralized telephone
  - Time Periods: 1984-1993, 1996, 2001, 2004, 2008
    - Example: 2008 Panel Wave 16: Covering Interview months of Sept. 2013 – Dec. 2013 (~52,000 households in initial wave)
  - Number of Observations per panel: 14,000 ~ 55,000
  - Sponsor: Census Bureau
  - http://www.census.gov/programs-surveys/sipp/data.html

Data related to Health & Nutrition

- **Participation/Eligibility for public assistance programs**
  - Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
  - Temporary Assistance for Needy Families (TANF)
  - Supplemental Nutrition Assistance Program (SNAP)
  - Reduced-price and free school breakfast and lunch
  - Medicaid/Medicare
- **Public Assistance Movement**
  - Times started and termination of assistance
  - Reasons for movement in and out of programs
- **Diet-Related**
  - Food Security
  - Frequency of Family Meals
- **Physical Activity-Related**
  - Child's participation in sports
  - Neighborhood cohesion and safety (Children and Adults)
  - Television viewing and Family rules about such
- **Restricted-Use**
  - Block and Census-tract level geographical data
  - Less restrictive top-coding

Unique Value of SIPP

- Provides Nationally representative data for evaluating:
  - Movements into and out of government assistance programs (SNAP, TANF, WIC, etc.)
  - Family and social contexts of individuals and households (Every ind. of household)

- Also includes Topical Modules
  - Questions that are not repeated in every wave
  - Designed to gather specific information on a large sample (e.g., health and educational development indicators, food security)
  - Ability to collect data on emerging issues

- Restricted-Use
  - Block and Census-tract level geographical data
  - Less restrictive top-coding

Survey of Program Dynamics

Survey of Program Dynamics

- 10 year longitudinal survey designed to assess the 1996 nationwide welfare reform
- Purpose:
  - Provide data on periods of actual and potential program participation over a 10-year period
  - Examine causes of program participation and long-term effects on well-being of recipients
- Population:
  - SPD data collected for individuals who previously participated in 1992-1993 SIPP (Civilian, non-institutionalized individuals)
  - 1997 "Bridge Survey" interviewed ~30,000 out of ~38,000 households from 1992-1993 SIPP
  - Reduced to ~12,500 HH's (2002) from ~19,000 HH's (1998) due to budget constraints
- Time Frame:
  - 1997-2002 – conducted annually
- Sponsor: Census Bureau

SPD Survey Instruments

- Three different survey instruments used:
  - 1992-1993 SIPP used to collect data for years 1992,1993, & 1994
    - Provided three years of baseline data prior to welfare reform
  - Modified March Current Population Survey used to collect data for the year 1996 ("Bridge Survey")
    - Used to connect SIPP interviews and new SPD survey
  - 1998 SPD Instrument implemented for 1997-2002
    - Covered a wider variety of topics
    - Measured impact of welfare reform on previous program participants vs. the rest of the country
    - Due to budget constraints, low-income households were targeted

SPD Variables Related to Health and Nutrition

- Beginning and End dates for using each type of public assistance
- Types and amounts of public assistance received
  - Supplemental Nutrition Assistance Program (SNAP)
  - Temporary Assistance for Needy Families (TANF)
  - Special Supplemental Program for Women, Infants, and Children (WIC)
  - Reasons for requiring public assistance
- Diet – Related
  - Child received free or reduced-price lunch and/or breakfast
  - Food expenditures other than groceries (e.g., restaurants, fast food, vending machines, etc.)
  - Food Security
  - Grocery Expenditures
  - How often family eats dinner together

Unique Value of SPD

- Welfare reform-specific content
- Provides data covering:
  - Baseline pre-reform period (1992-1994)
  - Implementation period & post reform (1996-2002)
- Permits comparison of food expenditures
  - Ability to compare HH's receiving public assistance with HH's not receiving public assistance over time
- Oversampling of low-income HH's
  - Provides extensive information on families receiving public assistance
- SPD data files are linkable with SIPP data files
  - Linkable through address & person identifier codes
- Restricted-Use
  - Block and Census-tract level geographical data
  - Less restrictive top-coding

How to Get Started

- After formulating a research question, consult **rdc.unl.edu** in order to:
  - Identify the dataset and specific variables you require
  - Choose a quantitative method of analysis (e.g. ANOVA, regression, c-b analysis, etc.)
  - Determine outputs desired (e.g. descriptive stats, regression coefficients, box plots, etc.)

- Contact **Veronica**, the CPRDC Administrator, to get her input on what you come up with and next steps
  - **veronica.l.roth@census.gov**

- The sooner you get started the better because it takes Census up to 90 days to review proposals and up to an additional 90 days to obtain special sworn status

Questions?

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Links

NHANES general documentation

- http://www.cdc.gov/nchs/nhanes.htm
- http://www.cdc.gov/nchs/nhanes/nhanes_questionnaires.htm

Dietary data tutorial (sample code available)

- http://www.cdc.gov/nchs/tutorials/dietary/SurveyOrientation/intro.htm

NHIS general documentation

- http://www.cdc.gov/nchs/nhis.htm

CPS-FSS general documentation

- http://www.census.gov/cps/

Central Plains Research Data Center

- http://cba.unl.edu/outreach/central-plains-federal-statistical-research-data-center/