Workshop on Restricted Health Data Available at the Philadelphia FSRDC

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University of Pennsylvania
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Disclaimer

The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the Agency for Healthcare Research and Quality or the Centers for Disease Control and Prevention.
FSRDC Health Data

Agency for Healthcare Research and Quality

Available Data and Proposal Process for AHRQ Data

The Agency for Healthcare Research and Quality’s (AHRQ) mission is to produce evidence to make health care safer, higher quality, more accessible, equitable, and affordable, and to work with the U.S. Department of Health and Human Services (HHS) and other partners to make sure that the evidence is understood and used.

AHRQ’s priority areas of focus are: (1) Improve health care quality by accelerating implementation of patient-centered outcomes research (PCOR) (2) Make health care safer (3) Increase accessibility to health care (4) Improve health care affordability, efficiency, and cost transparency.

Census Bureau

Available Data and Proposal Process for Census Bureau Data

The Census Bureau’s mission is to serve as the leading source of quality data about the nation’s people and economy. We honor privacy, protect confidentiality, share our expertise globally, and conduct our work openly. We are guided in this mission by scientific objectivity, our strong and capable workforce, our devotion to research-based innovation, and our abiding commitment to our customers. Our researchers explore innovative ways to conduct surveys, increase respondent participation, reduce costs, and improve accuracy.

RDC research is critical to the Census Bureau. One way for the Census Bureau to check the quality of the data it collects, edits, and tabulates is to make its microdata records available in a controlled, secure environment to sophisticated users who, by employing the micro records in the course of rigorous analysis, will uncover the strengths and weaknesses of the microdata records. Each set of observations is the result of many decision rules covering definitions, classifications, coding procedures, processing rules, editing rules, disclosure rules, and so on. The validity and consequences of all these decision rules only become evident when the Census Bureau’s micro databases are tested in the course of analysis. These analyses can also help address important policy questions without the need for additional, expensive and time-consuming data collections.

National Center for Health Statistics

Available Data and Proposal Process for NCHS Data

The mission of the National Center for Health Statistics (NCHS) is to provide statistical information that will guide actions to improve the health of the American people. For the NCHS, data collection is the means by which the mission is accomplished.
Plan for Presentation

- Description of AHRQ data (MEPS)
- Description of NCHS datasets
- Description of restricted data
  -- Geocodes
  -- Other restricted variables
  -- Early release data (NHIS)
  -- Linked administrative records
- Examples of use of restricted data
- Some proposal tips
Medical Expenditure Panel Survey (MEPS)

History

- 1977 National Medical Care Expenditure Survey (NMCES)
- 1987 National Medical Expenditure Survey (NMES)
- 1996 Medical Expenditure Panel Survey (MEPS)
The Medical Expenditure Panel Survey (MEPS) is a set of large-scale surveys of families and individuals, their medical providers, and employers across the United States. MEPS is the most complete source of data on the cost and use of health care and health insurance coverage. Learn more about MEPS.

The MEPS website will be unavailable due to maintenance activities on Saturday June 12 between 8:00 am and 6:00 pm.

Click here for full topic list...

What's New Highlights

New Publications

In Medicaid expansion states, uninsured rates were higher in 2013 for non-elderly adults in fair or poor health than for those in good to excellent health, but in 2014 there was no significant difference in the rate of uninsurance by health status. — From Statistical Brief 490: Uninsurance and Insurance Transitions Before and After 2014: Estimates for U.S. Non-elderly Adults by Health Status, Presence of Chronic Conditions and State Medicaid Expansion Status

From 2012:2013 to 2013:2014, there was an increased likelihood of gaining any coverage and of gaining Medicaid coverage, along with some enrollment in newly available Marketplace coverage, that was observed across a broad array of demographic groups defined by age, race/ethnicity, and educational attainment. — From Statistical Brief 489: Transitions in Health Insurance Coverage for Non-elderly Adults in the U.S. Civilian Noninstitutionalized Population: 2013-2014 and Selected Preceding Two-Year Periods

The percentage of non-elderly adults ages 18-64, uninsured for the entire calendar year, declined from 18.8 percent (35.6 million adults) to 14.4 percent (27.4 million adults) between 2013 and 2014. — From Statistical Brief 488: The Uninsured in America: Estimates of the Percentage of Non-elderly Adults Uninsured throughout Each Calendar Year, by Selected Population Subgroups and State Medicaid Expansion Status: 2013 and 2014
MEPS Survey Components

- **MEPS-HC: Household Component**
- **MEPS-MPC: Medical Provider Component**
  - Follow-back survey of medical providers linked to respondents of the MEPS-HC
  - 2016 MEPS Medical Organization Survey (MOS)
- **MEPS-IC: Insurance Component**
  - Independent survey of employers and unions not linked to the MEPS-HC
MEPS-HC

- Annual Survey of 14,000 households
  - Provides national estimates of health care use, expenditures, insurance coverage, sources of payment, access to care and health care quality

- Uses of the MEPS
  - Trends in annual health care use, expenditures and insurance coverage
  - Expenditures for specific conditions
  - Policy-related and behavioral research on the determinants of health care use, spending, and insurance coverage
  - Microsimulation models to analyze alternative health care delivery proposals
MEPS-HC Survey Design

- Sub-sample of respondents from the previous year’s National Health Interview Survey (NHIS), sponsored by NCHS
- Representative of the civilian non-institutionalized population of the US
- Collects 2 years of healthcare use in each panel
- 5 in-person interviews over 2 ½ year period using CAPI
- One respondent per household
- Person and family level data collected
- Interviews average 90 minutes with a range of one to four hours
MEPS-Medical Provider Component (MPC)

- Survey of medical providers linked to respondents of the MEPS-HC.
- Collects data that household respondents cannot accurately provide, such as dates of visit, diagnosis and procedure codes, charges and payments.
- The Pharmacy Component (PC), a subcomponent of the MPC, collects drug detail information, including National Drug Code (NDC) and medicine name, date filled and sources and amounts of payment.
- The MPC is not designed to yield national estimates. It is primarily used as an imputation source to supplement household reported expenditure information.
MEPS-IC

- Nationwide, annual survey of both private and public sector employers
- An independent survey of employers and unions not linked to the household survey
- Collected for AHRQ by the Census Bureau annually since 1996 (no data for 2007)
- The sample contains information from about 40,000 establishments and supports national and state-level estimates for all 50 states.
- Employer-sponsored health insurance measures:
  - Availability
  - Enrollment
  - Benefit and payment provisions
  - Cost
Offer rate: Percentage of private-sector employees in establishments that offer health insurance, overall and by firm size, 2008–2015

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Small (&lt; 50 employees)</th>
<th>Medium (50-99 employees)</th>
<th>Large (100+ employees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>87.7%</td>
<td>61.6%</td>
<td>90.7%</td>
<td>98.2%</td>
</tr>
<tr>
<td>2009</td>
<td>87.6%</td>
<td>59.6%</td>
<td>89.6%</td>
<td>98.8%</td>
</tr>
<tr>
<td>2010</td>
<td>86.5%</td>
<td>57.8%</td>
<td>87.3%</td>
<td>98.5%</td>
</tr>
<tr>
<td>2011</td>
<td>85.3%</td>
<td>54.7%</td>
<td>85.6%</td>
<td>98.1%</td>
</tr>
<tr>
<td>2012</td>
<td>84.7%</td>
<td>52.9%</td>
<td>84.1%</td>
<td>98.2%</td>
</tr>
<tr>
<td>2013</td>
<td>84.9%</td>
<td>53.1%</td>
<td>87.0%</td>
<td>98.0%</td>
</tr>
<tr>
<td>2014</td>
<td>83.2%</td>
<td>49.8%</td>
<td>83.0%</td>
<td>97.3%</td>
</tr>
<tr>
<td>2015</td>
<td>83.8%</td>
<td>47.6%</td>
<td>85.3%</td>
<td>98.8%</td>
</tr>
</tbody>
</table>

Percentage change in total premiums per enrolled private-sector employee for single, employee-plus-one, and family coverage, 2008–2015

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>6.5%</td>
<td>5.8%</td>
<td>5.7%</td>
<td>3.1%</td>
<td>3.5%</td>
<td>4.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Employee-plus-one</td>
<td>6.1%</td>
<td>6.7%</td>
<td>6.9%</td>
<td>2.8%</td>
<td>3.5%</td>
<td>4.7%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Family</td>
<td>5.9%</td>
<td>6.5%</td>
<td>8.3%</td>
<td>3.0%</td>
<td>3.6%</td>
<td>3.9%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

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Information about all datasets can be found on the NCHS website: http://www.cdc.gov/nchs/
Four Major NCHS Data Systems

• National Vital Statistics System and surveys
• National Health Interview Survey
• National Health and Nutrition Examination Survey
• National Health Care Surveys
National Vital Statistics System

• Birth and death records

► National Vital Statistics System Cooperative Program—partnership with registration areas (State and Territories)

► Information at the State and local level
Data source and sample
► In-person interviews in the home
► Annual sample of 7,600 women and 5,000 men, representative of the civilian US population, ages 15-44

Findings
► Reproductive health
  o Fertility/infertility
  o Contraception
  o Pregnancy
  o Sexual activity
► Family formation
  o Marriage, divorce, cohabitation
• Data source

  ► Representative in person, in home survey of 87,500 respondents

• Data applications

  ► Health status and disability
  ► Insurance coverage
  ► Access to and use of health services
  ► Extent of illness and disability
  ► Immunization
  ► Health behaviors
National Health and Nutrition Examination Survey (NHANES) Mobile Exam Center
National Health and Nutrition Examination Survey (NHANES)

• Data source
  - Standardized physical examinations, laboratory tests, personal interviews with annual sample of 5,000

• Data applications
  - Disease or condition prevalence
  - Risk factors
  - Nutrition monitoring
  - Anthropometry
  - Growth and development
  - Disease monitoring
Average total cholesterol among Men and Women
20-74 years of age—1959-1962 to 2007-2008

<table>
<thead>
<tr>
<th>Survey period</th>
<th>Mean total cholesterol (mg/dL)</th>
</tr>
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<tbody>
<tr>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>1959-1962</td>
<td>220</td>
</tr>
<tr>
<td>1971-1974</td>
<td>210</td>
</tr>
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<td>1976-1980</td>
<td>200</td>
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<tr>
<td>1988-1994</td>
<td>190</td>
</tr>
<tr>
<td>1999-2000</td>
<td>180</td>
</tr>
<tr>
<td>2007-2008</td>
<td>170</td>
</tr>
</tbody>
</table>

National Health Care Surveys

- Hospital Discharge Survey (NHDS)
- Ambulatory Medical Care Survey (NAMCS)
- Hospital Ambulatory Medical Care Survey (NHAMCS)
- Survey of Ambulatory Survey
- Nursing Home Survey (NHHS)
- Home and Hospice Care Survey (NHHCS)
- Residential Care Survey
Median Waiting Times
Emergency Departments, United States, 2005-2007

- Non-Hispanic white: 29 minutes
- Non-Hispanic black: 39 minutes
- Hispanic: 38 minutes

- Year
- Note: Dashes indicate preliminary data
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Research Data Center

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 (HHS).

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.

1. Preparing for Proposal Submission
2. Access Modes
3. The Proposal Process
4. Accessing Restricted Data
5. Confidentiality
Researchers use geography in two different ways:

1. To merge variables from external sources of data to add context or policy. Typically, following the merge, these geographic variables are removed. However, if you need to keep these variables for analysis purposes as well, please explain so in your proposal.
   Example: Neighborhood characteristics from Census can be added to examine their relationship to obesity.

2. To answer a research question for a smaller geographical area, such as region.
   Example: To examine regional differences in the prevalence of asthma.

It is important to note that although smaller levels of geography are available for NCHS surveys, the majority of surveys (excluding SLAITS, Natality, and Mortality) are only representative at the regional and national level. It is inappropriate to make estimates based on NCHS data for areas smaller than the area for which the sample frame was designed. These smaller levels of data only exist for the purpose of adding contextual information from external sources of data.

Geocodes by NCHS Survey

- National Health and Nutrition Examination Survey (NHANES)
- National Health Care Surveys (NHCS)
- National Health Interview Survey (NHIS)
- National Immunization Survey (NIS)
For example, National Health and Nutrition Examination Survey (NHANES)

<table>
<thead>
<tr>
<th>Restricted Variable Name</th>
<th>Restricted Variable Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous NHANES</td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td></td>
</tr>
<tr>
<td>REGION</td>
<td>4 Census Regions created from STATE2K</td>
</tr>
<tr>
<td>STD_5Zip</td>
<td>Zipcode</td>
</tr>
<tr>
<td>RC2K</td>
<td>Census 2000 Geocodes General Return Code</td>
</tr>
<tr>
<td>LVC2K</td>
<td>Census 2000 LAT/LON Geocoding Level</td>
</tr>
<tr>
<td>LAT</td>
<td>Latitude in decimal format with up to 6 decimal precision</td>
</tr>
<tr>
<td>LON</td>
<td>Longitude in decimal format with up to 6 decimal precision</td>
</tr>
</tbody>
</table>
National Ambulatory Medical Care Survey (cont.)

Physician practice variables

MULTI - Single or multi-specialty practice (2001-current)
NUMPHYR – Number of physicians in this practice (2001-current)
FGRAD – Did physician graduate from foreign medical school? (2001-current)
PYOB – Physician year of birth
PHYSEX – Physician sex
PHYRACE – Physician race (added to the restricted file starting in 2001, but not available 2008-2009 except for community health center physicians; collected for all physicians 2010-current)
SPEC – Physician’s 3-digit alphanumeric specialty code (only available on the restricted file starting with the 2008 survey year; in previous years this variable was available on the public use file)
The following 12 variables were added to the restricted file starting with 2006 data but were not collected after 2008:
CTSCAN - Does practice have ability to perform CT scans on site?
CHEMO - Does practice have ability to perform chemotherapy on site?
COLONSC - Does practice have ability to perform colonoscopy on site?
EKGECG- Does practice have ability to perform EKG/ECG on site?
MAMMOPII - Does practice have ability to perform mammography on site?
MRIPII - Does practice have ability to perform MRI on site?
PETSCAN - Does practice have ability to perform PET scans on site?
RADITHR - Does practice have ability to perform radiation therapy on site?
SIGMOID - Does practice have ability to perform sigmoidoscopy on site?
SPIROM - Does practice have ability to perform spirometry on site?
ULTRSN - Does practice have ability to perform ultrasound on site?
National Health Interview Survey (NHIS) Restricted Variables

If researchers interested in using NHIS data find that something asked on the questionnaires does not have a corresponding variable in the public use data set, that variable may be restricted. The following list is not exhaustive, but it provides examples of NHIS variables that are restricted.

Geography

Geography is most often used to add contextual data to NHIS data. The geocodes page lists what geographic codes are available for 1990-current NHIS.

Examples of Restricted Variables Used by Other Researchers

- Country of Birth and Related Immigration Variables (Person File)
- State and Year of Birth (Person File)
- Industry and Occupation Codes (Person File before 1997, Sample Adult 1997-present)
- Detailed Race and Hispanic Origin (Person File)
- Exact Dates (e.g., date of birth in Person File)

Restricted and Public Use Variable Lists *

- 1997-2003 NHIS Variables Sorted By Question With IncomeVars [PDF - 455 KB]
- 2004-2008 NHIS Variables Sorted by Question [PDF - 564 KB]
- 2009-2013 NHIS Variables Sorted by Question [PDF - 252 KB]
NHIS and NHIS Early Release Program

- **Annual puf** released in late June of the following year. E.g., NHIS 2015 released in September 2016
  
  - Restricted data with state IDs usually available about one week later
  
  - Income imputations for that year usually available in August-September

- **Quarterly files**

  - Only select variables (see website)

  -- Q1 available September of same year, Q2 available November of same year, Q3 available February of following year, Q4 available May of following year

  -- For example, 2014 Q1 data available September 2014…full-year 2014 data available June 2015…
NCHS Data Linkage Activities

NCHS has developed a record linkage program designed to maximize the scientific value of the Center's population-based surveys. Linked data files enable researchers to examine the factors that influence disability, chronic disease, health care utilization, morbidity, and mortality.

NCHS is currently linking various NCHS surveys with administrative data from the following:

- National Death Index (NDI)
- Centers for Medicare and Medicaid Services (CMS)
  - Medicare
  - Medicaid/CHIP
- United States Renal Data System (USRDS)
- Social Security Administration (SSA)
- Department of Housing and Urban Development (HUD)
NCHS has linked various surveys with death certificate records from the National Death Index (NDI). Linkage of the NCHS survey participants with the NDI mortality data provides the opportunity to conduct a vast array of outcome studies designed to investigate the association of a wide variety of health factors with mortality.

Restricted-use and Public-use Linked Mortality Files (LMF) have been updated with mortality follow-up data through December 31, 2011.

**NCHS Surveys Linked to NDI Mortality Data**

- National Health Interview Survey (NHIS) 1985 – 2009
- National Health and Nutrition Examination Surveys (NHANES) 1999-2010
- Third National Health and Nutrition Examination Survey (NHANES III)
- Second National Health and Nutrition Examination Survey (NHANES II)
- NHANES I Epidemiologic Follow-up Study (NHEFS)
- National Nursing Home Surveys (NNHS)
- National Home and Hospice Care Survey (NHHCS) 2007
- Supplement on Aging (SOA)
- The Second Longitudinal Study of Aging (LSOA II)
NCHS Data Linked to CMS Medicare Enrollment and Claims Files

NCHS has linked various surveys with Medicare enrollment and claims records collected from the Centers for Medicare and Medicaid Services (CMS). Linkage of the NCHS survey participants with the CMS Medicare data provides the opportunity to study changes in health status, health care utilization, and expenditures in the elderly and disabled U.S. population.

Medicare enrollment and claims data are available for those NCHS respondents who agreed to provide personal identification data to NCHS and for whom NCHS was able to match with Medicare administrative records. CMS provided NCHS with Medicare benefit claims data for 1999 through 2013 for all successfully matched NCHS survey participants. For certain NCHS surveys, the Medicare administrative files include data from before and after the survey year of interview. CMS also provided to NCHS Medicare Part D data for 2006-2013.

NCHS Surveys Linked to 1999-2013* CMS Medicare Data

- 1994-2013 National Health Interview Survey (NHIS)
- 1999-2012 National Health and Nutrition Examination Survey (NHANES)
- NHANES I Epidemiologic Follow-up Study (NHEFS)
- Third National Health and Nutrition Examination Survey (NHANES III)
- The Second Longitudinal Study of Aging (LSOA II)
- 2004 National Nursing Home Survey (NNHS)
- 2007 National Home and Hospice Care Survey (NHHCS)

* 1991-1998 linked NCHS-CMS Medicare data are available from a previous linkage for some of the surveys listed. Please contact the NCHS Data Linkage Team for more information.
Medicare Variables

Restricted Use Data Dictionaries:

- Medicare Enrollment and Claims Files
  - Master Beneficiary Summary Files
    - Part A/B segment
    - Part D segment
    - Chronic Conditions segment
    - Cost and Utilization segment
  - Carrier
    - Base claims
    - Line items
  - Durable Medical Equipment (DME)
    - Base claims
    - Line items
  - Home Health Agency (HHA)
    - Base claim file
    - Condition code file
    - Occurrence code file
    - Span code file
    - Value code file
    - Revenue Center file
  - Hospice
    - Base claim file
    - Condition code file
    - Occurrence code file
    - Span code file
Feasibility files

NCHS Data Linkage

Public-Use NCHS-CMS Medicare Feasibility Files

To maximize the use of the restricted-use linked NCHS-CMS Medicare files, NCHS has created publicly available NCHS-CMS Medicare Feasibility Study data files that can be downloaded directly from this website.

The feasibility files provide a limited set of variables that can be used to determine the maximum available sample size for each linked file. These files are especially useful to researchers considering whether to initiate a RDC proposal to analyze the restricted-use linked NCHS-CMS Medicare files.

Each feasibility file is NCHS survey and survey-year specific. The following information is included on each feasibility study file:

- NCHS survey public-use identifier
- Survey participant eligibility status for CMS Medicare linkage
- Final match status
- Other variables indicating which specific CMS Medicare data files are available for each successfully linked survey participant

It is important to note that the feasibility study files do not contain any specific information about CMS Medicare benefits. Consequently, data users will need to consider external sources to approximate the number of respondents with a specific condition.

For more information about accessing the Medicare restricted-use data, please consult the Restricted Use NCHS-CMS...
Medicaid Link

NCHS Data Linkage

NCHS Data Linked to CMS Medicaid Enrollment and Claims Files

NCHS has linked various surveys with Medicaid enrollment and claims records collected from the Centers for Medicare and Medicaid Services (CMS). Linkage of the NCHS survey participants with the CMS Medicaid data provides the opportunity to study changes in health status, health care utilization and expenditures in low income families with children, the elderly and disabled U.S. populations.

Medicaid enrollment and claims data are available for those NCHS respondents who agreed to provide personal identification data to NCHS and for whom NCHS was able to match with Medicaid administrative records. CMS provided NCHS with Medicaid benefit claims data for 1999 through 2009 for all successfully matched NCHS survey participants.

NCHS Surveys Linked to CMS Medicaid Data

- 1994-2005 National Health Interview Survey (NHIS)
- 1999-2004 National Health and Nutrition Examination Survey (NHANES)
- 2004 National Nursing Home Survey (NNHS)
- NHANES I Epidemiologic Follow-up Study (NHEFS)
- Third National Health and Nutrition Examination Survey (NHANES III)
- The Second Longitudinal Study of Aging (LSOA II)
NCHS Data Linked to HUD Housing Assistance Program Files

NCHS has linked 1999-2012 National Health Interview Survey (NHIS) and 1999-2012 National Health and Nutrition Examination Survey (NHANES) to administrative data through 2014 for the Department of Housing and Urban Development’s (HUD) largest housing assistance programs: the Housing Choice Voucher program, public housing, and privately owned, subsidized multifamily housing. Linkage of NCHS survey participants with HUD administrative records provides the opportunity to examine relationships between housing and health.

NCHS Surveys Linked to HUD Administrative Data

- 1999-2012 National Health Interview Survey (NHIS)
- 1999-2012 National Health and Nutrition Examination Survey (NHANES)

Questions

The details of the linked data, linkage methods, and analysis considerations are available from the links on the navigation menu.

For questions about HUD programs and/or data, contact the HUD Office of Policy Development and Research at NCHS_HUD_DataLinkage@hud.gov or visit the HUD User website.

For any additional questions about the NCHS-HUD linked files, contact the NCHS Data Linkage Team:

Data Linkage Team
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Example of use of NHIS and NHANES restricted data

Do Medicaid benefit expansions have teeth? The effect of Medicaid adult dental coverage on the use of dental services and oral health

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111, 113, 118Medicaid
Health insurance expansions
Oral health

ABSTRACT

This article examines the effect of Medicaid adult dental coverage on use of dental care and dental health outcomes using state-level variation in dental coverage during 2000–2012. Our findings imply that dental coverage is associated with an increase in the likelihood of a recent dental visit, with the size of the effect increasing with Medicaid payment rates to dentists, and a reduction in the likelihood of untreated dental caries. We are among the first to detect an effect of Medicaid coverage on a clinical health outcome other than mortality. These findings may have implications for states expanding Medicaid coverage to adults with incomes of up to 138% of the federal poverty threshold under the Affordable Care Act as most of these states offer an adult dental benefit.

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Background and Objective

- Medicaid coverage of dental services for adults is optional

- Most states cover emergency services, but only 26 states provided preventive and/or restorative services in 2012

- Dental health is associated with systemic health: cardiovascular disease (e.g., Oliveira et al. 2010), respiratory infections (Sjogren et al. 2008), metabolic control for diabetes patients (Simpson et al. 2010)

The objective of this paper is to assess the relationship between optional coverage of adult dental services and the use of dental care and oral health outcomes for adults on Medicaid
Our contribution

• One published national study estimates the effect of Medicaid dental coverage on the likelihood of having a dental visit (Choi, 2011)

• We expand this analysis by using changes within states over time to identify the effect of dental coverage on dental utilization

• In addition, we are the first to:
  - Analyze the effect of payment rates to dentists on dental utilization outcomes
  - Analyze the effect of coverage on dental health outcomes
Percentage of Medicaid beneficiaries with dental coverage, NHIS, 2000-2012

Dental coverage

U.S. recessions

Percentage of Medicaid beneficiaries with dental coverage, NHIS, 2000-2012
Data and Outcome Measures

- **NHIS (2000-2012)**
  - Main analysis includes 14,673 Medicaid beneficiaries aged 22-64 and 89,496 low income adults aged 22-64 not on Medicaid as a control group

  - Main analysis includes 756 Medicaid beneficiaries aged 22-64 and 6,580 low income adults not on Medicaid as a control group

- Medicaid coverage of adult dental 2000-2012

- Medicaid reimbursement of adult prophylaxis
Data and Outcome Measures

- **Dental utilization**
  - **NHIS 2000-2012**: Seen dentist past 6 mos., seen dentist past year, needing but not receiving dental care due to cost
  - **NHANES 2000-2004, 2011-2012**: Seen dentist past 6 mos., seen dentist past year

- **Dental Health**
  - **NHIS 2008**: broken/missing teeth, stained teeth, loose teeth, broken/missing fillings
Methodology – Effect of Dental Coverage on Outcomes

\[ Y_{ist} = \beta_1 \text{Dental}_{st} + \beta_2 \text{Medicaid}_{it} + \beta_3 \text{Dental}_{st} \times \text{Medicaid}_{it} + \beta_4 X_{ist} + \gamma_0 s + \gamma_1 s t + \tau_t + \epsilon_{ist} \]

- \( \beta_1 \) estimates the effect of dental coverage for the control group
- \( \beta_2 \) estimates the effect of having Medicaid coverage in states without dental coverage
- \( \beta_3 \) is the DDD estimate
- \( X_{ist} \) is a vector of controls including age, age squared, race, sex, education, marital status, health status, ratio of family income to the poverty level, an urban area indicator, local supply of dentists per 1,000 population, and the annual local unemployment rate
Regression estimates of the effect of Medicaid coverage of adult dental services on dental utilization outcomes, NHIS and NHANES (2000-2012)

<table>
<thead>
<tr>
<th></th>
<th>Medicaid beneficiaries, outcome means</th>
<th>Regression estimates, percentage point difference, dental coverage vs. no dental coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dental coverage</td>
<td>No dental coverage</td>
</tr>
<tr>
<td><strong>NHIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seen dentist past year</td>
<td>56.48</td>
<td>38.01</td>
</tr>
<tr>
<td></td>
<td>(0.745)</td>
<td>(0.838)</td>
</tr>
<tr>
<td>Seen dentist, past 6 months</td>
<td>35.49</td>
<td>21.53</td>
</tr>
<tr>
<td></td>
<td>(0.688)</td>
<td>(0.615)</td>
</tr>
<tr>
<td>Did not get dental care because of cost</td>
<td>12.77</td>
<td>27.06</td>
</tr>
<tr>
<td></td>
<td>(0.563)</td>
<td>(0.837)</td>
</tr>
<tr>
<td><strong>NHANES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seen dentist past year</td>
<td>52.06</td>
<td>36.08</td>
</tr>
<tr>
<td></td>
<td>(3.480)</td>
<td>(3.744)</td>
</tr>
<tr>
<td>Seen dentist, past 6 months</td>
<td>34.68</td>
<td>18.74</td>
</tr>
</tbody>
</table>
Regression estimates of the effect of Medicaid coverage of adult dental services on dental health outcomes, NHIS (2008) and NHANES (2000-2012)

<table>
<thead>
<tr>
<th>Medicaid beneficiaries, outcome means</th>
<th>Regression estimates, Percentage point difference, dental coverage vs. no dental coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low income adults</td>
</tr>
<tr>
<td><strong>NHIS (2008)</strong></td>
<td></td>
</tr>
<tr>
<td>Broken or missing teeth, past year</td>
<td>Dental coverage</td>
</tr>
<tr>
<td></td>
<td>(2.353)</td>
</tr>
<tr>
<td>Stained teeth, past year</td>
<td>Dental coverage</td>
</tr>
<tr>
<td></td>
<td>(2.953)</td>
</tr>
<tr>
<td>Loose teeth, past year</td>
<td>Dental coverage</td>
</tr>
<tr>
<td></td>
<td>(2.062)</td>
</tr>
<tr>
<td>Broken/missing fillings, past year</td>
<td>Dental coverage</td>
</tr>
<tr>
<td><strong>NHANES</strong></td>
<td></td>
</tr>
<tr>
<td>Any untreated caries</td>
<td>Dental coverage</td>
</tr>
<tr>
<td></td>
<td>(2.890)</td>
</tr>
<tr>
<td>Any missing teeth, not replaced</td>
<td>Dental coverage</td>
</tr>
<tr>
<td>Any missing teeth due to dental</td>
<td>Dental coverage</td>
</tr>
</tbody>
</table>
Conclusions

• Our study found that Medicaid coverage of adult dental was associated with increased utilization of dental services and reduced the likelihood of negative oral health outcomes.
• Further, payment rates to dentists were associated with the size of the effect of dental coverage.
• Effective January 2014, 26 states expanded Medicaid eligibility, and 20 of these states offer at least limited dental services.
• The positive association between coverage and utilization of dental services will increase Medicaid spending in the short run, while the reduction in oral health problems may reduce spending in the long run.
  ▶ This work may aid in determining the magnitude of these opposing effects
Example of use of NHIS linked to Medicare claims

HEALTH ECONOMICS

Health Econ. 21: 1155–1168 (2012)

Published online 24 August 2011 in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/hec.1780

HEALTH SERVICE USE AMONG THE PREVIOUSLY UNINSURED: IS SUBSIDIZED HEALTH INSURANCE ENOUGH?

SANDRA L. DECKER⁎*, JALPA A. DOSHI⁎, AMY E. KNAUF⁎ and DANIEL POLSKY⁎

⁎National Center for Health Statistics, Hyattsville, MD, USA
⁎University of Pennsylvania, Philadelphia, PA, USA
⁎University of Maryland, College Park, MD, USA

SUMMARY

Although it has been shown that gaining Medicare coverage at age 65 years increases health service use among the uninsured, difficulty in changing habits or differences in the characteristics of previously uninsured compared with insured individuals may mean that the previously uninsured continue to use the healthcare system differently from others. This study uses Medicare claims data linked to two different surveys—the National Health Interview Survey and the Health and Retirement Study—to describe the relationship between insurance status before age 65 years and the use of Medicare-covered services beginning at age 65 years. Although we do not find statistically significant differences in Medicare expenditures or in the number of hospitalizations by previous insurance status, we do find that individuals who were uninsured before age 65 years continue to use the healthcare system differently from those who were privately insured. Specifically, they have 16% fewer visits to office-based physicians but make 18% and 43% more visits to hospital emergency and outpatient departments, respectively. A key question for the future may be why the previously uninsured seem to continue to use the healthcare system differently from the previously insured. This question may be important to consider as health coverage expansions are implemented. Copyright © 2011 John Wiley & Sons, Ltd.
Is Medicare spending after age 65 higher for those who were uninsured prior to age 65?

If so, then maybe Medicare spending for these individuals beginning at age 65 would be lower if they had been insured before the age of 65.
Policy Considerations

- Medicare eligibility that begins at age 65 does imply that some of the uninsured before the age of 65 go untreated for certain conditions until they become Medicare eligible.

- This problem would be exacerbated if the age of Medicare eligibility were raised.

- This problem would be alleviated if the age of Medicare eligibility were lowered.
### Table I. Percent characteristics of HRS and NHIS records that match to Medicare records by insurance status before age 65

<table>
<thead>
<tr>
<th>Attributes before age 65</th>
<th>NHIS-Medicare</th>
<th></th>
<th>HRS-Medicare</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Uninsured</td>
<td>Publicly insured</td>
<td>Privately insured</td>
<td>Uninsured</td>
</tr>
<tr>
<td>Female</td>
<td>59.9</td>
<td>53.0</td>
<td>52.7</td>
<td>57.4</td>
</tr>
<tr>
<td>Married</td>
<td>55.4</td>
<td>63.3</td>
<td>79.6</td>
<td>60.8</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>13.3</td>
<td>14.3</td>
<td>5.7</td>
<td>21.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>16.1</td>
<td>8.7</td>
<td>3.7</td>
<td>19.0</td>
</tr>
<tr>
<td>Non-Hispanic and Non-Black or non-White</td>
<td>6.4</td>
<td>4.2</td>
<td>1.9</td>
<td>3.0</td>
</tr>
<tr>
<td>Less than high school</td>
<td>48.2</td>
<td>36.6</td>
<td>16.3</td>
<td>48.8</td>
</tr>
<tr>
<td>High school degree</td>
<td>29.8</td>
<td>32.1</td>
<td>38.5</td>
<td>33.2</td>
</tr>
<tr>
<td>Some college</td>
<td>13.0</td>
<td>20.0</td>
<td>24.0</td>
<td>10.4</td>
</tr>
<tr>
<td>Income &lt; $20,000</td>
<td>69.1</td>
<td>68.9</td>
<td>46.6</td>
<td>51.6</td>
</tr>
<tr>
<td>Income ≥ $20,000, &lt;$45,000</td>
<td>28.3</td>
<td>31.3</td>
<td>42.2</td>
<td>29.6</td>
</tr>
<tr>
<td>Health - very good</td>
<td>21.0</td>
<td>17.8</td>
<td>34.3</td>
<td>19.2</td>
</tr>
<tr>
<td>Health - good</td>
<td>32.5</td>
<td>29.2</td>
<td>30.0</td>
<td>31.0</td>
</tr>
<tr>
<td>Health - fair</td>
<td>21.4</td>
<td>25.1</td>
<td>8.8</td>
<td>28.0</td>
</tr>
<tr>
<td>Health - poor</td>
<td>6.2</td>
<td>16.6</td>
<td>1.6</td>
<td>10.8</td>
</tr>
</tbody>
</table>
Table II. Use of Medicare services beginning at age 65 according to insurance status before age 65

<table>
<thead>
<tr>
<th></th>
<th>Difference relative to privately insured</th>
<th></th>
<th>Adjusted including supplemental insurance and extra health controls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean for privately insured</td>
<td>Unadjusted</td>
<td>Adjusted</td>
<td>Adjusted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uninsured</td>
<td></td>
<td>Uninsured</td>
</tr>
<tr>
<td>NHIS–Medicare Expenditures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenditures</td>
<td>4930.84 (570.70)</td>
<td>416.49</td>
<td>2349.22***</td>
<td>−609.40</td>
</tr>
<tr>
<td>Inpatient stays</td>
<td>0.20 (0.04)</td>
<td>0.08*</td>
<td>0.13***</td>
<td>0.02</td>
</tr>
<tr>
<td>Physician visits</td>
<td>7.29 (0.47)</td>
<td>−1.64***</td>
<td>0.94**</td>
<td>−2.02***</td>
</tr>
<tr>
<td>HRS–Medicare Expenditures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenditures</td>
<td>4148.46 (365.60)</td>
<td>330.29</td>
<td>3274.15***</td>
<td>−88.50</td>
</tr>
<tr>
<td>Inpatient stays</td>
<td>0.18 (0.02)</td>
<td>0.07***</td>
<td>0.19***</td>
<td>0.04*</td>
</tr>
<tr>
<td>Physician visits</td>
<td>6.50 (0.38)</td>
<td>−0.38</td>
<td>2.57***</td>
<td>−1.07***</td>
</tr>
</tbody>
</table>
### Table III. Use of physician services beginning at age 65 according to insurance status before age 65

<table>
<thead>
<tr>
<th>Service</th>
<th>Mean for privately insured</th>
<th>Difference (uninsured − privately insured)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unadjusted</td>
<td>Adjusted</td>
</tr>
<tr>
<td>NHIS–Medicare</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician visits</td>
<td>7.29</td>
<td>−1.64***</td>
<td>−2.02***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.47)</td>
<td>(0.44)</td>
</tr>
<tr>
<td>Office based</td>
<td>6.67</td>
<td>−2.42***</td>
<td>−2.37***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.42)</td>
<td>(0.39)</td>
</tr>
<tr>
<td>General</td>
<td>3.07</td>
<td>−0.34</td>
<td>−0.64***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.24)</td>
<td>(0.19)</td>
</tr>
<tr>
<td>Specialist</td>
<td>3.10</td>
<td>−0.62</td>
<td>−1.39***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.09)</td>
<td>(0.27)</td>
</tr>
<tr>
<td>Other and nonphysician</td>
<td>0.50</td>
<td>−0.20**</td>
<td>−0.13**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.09)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Hospital outpatient department</td>
<td>0.33</td>
<td>0.39***</td>
<td>0.17**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.09)</td>
<td>(0.08)</td>
</tr>
<tr>
<td>Emergency room</td>
<td>0.29</td>
<td>0.20***</td>
<td>0.08*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.05)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>HRIS–Medicare</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician visits</td>
<td>6.50</td>
<td>−0.38</td>
<td>−1.07***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.38)</td>
<td>(0.34)</td>
</tr>
<tr>
<td>Office based</td>
<td>6.03</td>
<td>−1.10***</td>
<td>−1.39***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.35)</td>
<td>(0.31)</td>
</tr>
<tr>
<td>General</td>
<td>2.69</td>
<td>−0.35*</td>
<td>−0.70***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.19)</td>
<td>(0.18)</td>
</tr>
<tr>
<td>Specialist</td>
<td>2.87</td>
<td>−0.58**</td>
<td>−0.42*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.28)</td>
<td>(0.26)</td>
</tr>
<tr>
<td>Other and nonphysician</td>
<td>0.48</td>
<td>−0.18**</td>
<td>−0.21***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.07)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Hospital outpatient department</td>
<td>0.30</td>
<td>0.41***</td>
<td>0.15**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.07)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Emergency room</td>
<td>0.17</td>
<td>0.10***</td>
<td>0.03**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
</tbody>
</table>
Example of use of MEPS restricted data

INSTITUTIONAL COVERAGE & THE ACA

By Jessica P. Vistnes and Joel W. Cohen

DATAWATCH

Gaining Coverage In 2014: New Estimates Of Marketplace And Medicaid Transitions

We used data from the Medical Expenditure Panel Survey–Household Component to examine coverage transitions for nonelderly US adults. We found that 71.5 percent of Marketplace enrollees in 2014 had some period of uninsurance before enrollment. In Medicaid expansion states, 17.4 percent of adults who were uninsured throughout 2013 gained Medicaid coverage in 2014, compared with only 5.6 percent in those states between 2012 and 2013.

There is growing evidence that implementation of major coverage provisions of the Affordable Care Act (ACA) in 2014, such as the expansion of eligibility for Medicaid and the introduction of the federal and state-based Marketplaces, has reduced the number of uninsured people in the United States. However, little is known about insurance transitions associated with the ACA’s coverage provisions. This analysis uses newly available nationally rep-
Continuously uninsured adults who gained coverage in 2013 or 2014, by type of coverage gained and state Medicaid expansion status

- **Marketplace**
- **Medicaid**
- **Other**

<table>
<thead>
<tr>
<th>Type of Coverage</th>
<th>All States 2013</th>
<th>All States 2014</th>
<th>Expansion States 2013</th>
<th>Expansion States 2014</th>
<th>Nonexpansion States 2013</th>
<th>Nonexpansion States 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketplace</td>
<td>18.6%</td>
<td>10.2%**</td>
<td>19.4%</td>
<td>17.4%**</td>
<td>17.9%</td>
<td>6.4%**</td>
</tr>
<tr>
<td>Medicaid</td>
<td>14.0%</td>
<td>16.6%</td>
<td>5.6%</td>
<td>17.4%</td>
<td>3.7%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Other</td>
<td>4.6%</td>
<td>5.7%**</td>
<td>13.8%</td>
<td></td>
<td>14.3%</td>
<td>15.9%</td>
</tr>
</tbody>
</table>
Example of use of restricted data - NAMCS

MEDICAID EXPANSION

By Sandra L. Decker

In 2011 Nearly One-Third Of Physicians Said They Would Not Accept New Medicaid Patients, But Rising Fees May Help

ABSTRACT When fully implemented, the Affordable Care Act will expand the number of people with health insurance. This raises questions about the capacity of the health care workforce to meet increased demand. I used data on office-based physicians from the 2011 National Ambulatory Medical Care Survey Electronic Medical Records Supplement to summarize the percentage of physicians currently accepting any new patients. Although 96 percent of physicians accepted new patients in 2011, rates varied by payment source: 31 percent of physicians were unwilling to accept any new Medicaid patients; 17 percent would not accept new Medicare patients; and 18 percent of physicians would not accept new privately insured patients. Physicians in smaller practices and those in metropolitan areas were less likely than others to accept new Medicaid patients. Higher state Medicaid-to-Medicare fee ratios were
EXHIBIT 4

Percentage of US Office-Based Physicians Accepting New Medicaid Patients in 2011 and the Medicaid-To-Medicare Fee Ratio

![Graph showing the percentage of US office-based physicians accepting new Medicaid patients in 2011 and the Medicaid-to-Medicare fee ratio.](image-url)
Plan for Presentation

- Description of AHRQ data (MEPS)
- Description of NCHS datasets
- Description of restricted data
  - Geocodes
  - Other restricted variables
  - Early release data (NHIS)
  - Linked administrative records
- Examples of use of restricted data
- Some proposal tips
NCHS RDC Analyst

- Facilitates review of your proposal
- Creates your analytic data set
- Accepts NCHS payment
- Accepts your NCHS Confidentiality requirements
- Transfers your dataset to Census
- Reviews your output for disclosure risk
- At any time, if you have questions, please contact your NCHS RDC Analyst.

Census RDC Administrators

- Answer logistical questions about the FSRDC such as, statistical software availability, and Census Fees
- Ensure you have completed all the Census Bureau Security requirements
- Accepts Census payments
- Census transfers your output to NCHS for a review

Before Submitting a Proposal

Researchers interested in accessing NCHS data through a Federal Statistical RDC must submit their proposals directly to NCHS. You will not have to submit a separate proposal to the FSRDC but, in addition to the NCHS requirements, will be required to follow all requirements that the Census Bureau imposes to protect the security and confidentiality of the data. If you are considering using an FSRDC, contact your FSRDC Administrator to discuss access requirements, how to obtain Special Sworn Status (SSS), and fees for using the FSRDC as well as any other logistical concerns. Please note NCHS and Census fees are independent of each other.

Before Your Visit

In addition to the NCHS requirements outlined by your RDC Analyst, the following steps should occur after you receive an approval email from your RDC Analyst:
Providing the Public Use Data

Researchers are responsible for providing the NCHS public dataset as well as any non-NCHS data. Compiling the public use dataset provides you the opportunity to become familiar with the data and expedite the data creation process.

- Exception: For NHDS, NAMCS, NHAMCS, and other DHHS data hosted by the RDC, you do not need to provide a public dataset. Your RDC Analyst will provide an extract from the restricted files that includes all of the variables specified in your proposal.
- Non-NCHS Data includes any data collected by the researcher, another government agency, or a private individual that the researcher wishes to merge with NCHS data, often using geographic codes. Examples for policy research have included air pollution data, proximity of fast food restaurants, or location of health care providers.

Instructions:

1. Create a public data set that includes only the variables specified in your proposal.
2. Original NCHS variables must retain the name they are given in the public data set. If you would like to rename variables, include the original variable name in the variable description.
3. If you choose to create derived variables prior to working with the data onsite or via remote access, make sure variables are clearly defined. The variable description should include the original variable name(s) from which the derived variable was created and any arithmetic manipulation must be explained. Please save the code you used to create these variables as your RDC Analyst may request it.
4. If you are also sending another source of data, for example Census data, this data set should only include the variables specified in your proposal.
5. Discuss with your RDC Analyst the preferred format for any merge variables. This is especially important for merges that involve multiple data sets and multiple merge variables. Create the variables as your RDC Analyst specified in your proposal.

Related Sites

- National Center for Health Statistics
- U.S. Census Bureau, Center for Economic
A. Abstract: Please limit the abstract to 300 words.

B. Research Question: Include study purpose, hypotheses, goals, or research questions.

C. Background: Include a short literature review, no more than 2 pages, focusing on papers that discuss your topic or address the methodology that you plan to use. Please limit your reference list to 10 items or less.

D. Public Health Benefit: In one paragraph, how does your research benefit public health?

E. Data Requirements:
Remember to provide an explanation to “yes/checked” responses from the Data Requirements Summary.

1. Survey, Years, Files:

2. Restricted Data:
   List and describe the restricted variables that you will need. These variables must be listed in the Data Dictionary section as well. Explain why each variable is needed and how you will include them in your analysis. Specify how geographic variables, if applicable, will be used to merge files, analyze the data and/or presented in output.

3. Non-NCHS Data:
   Will you provide data from another source (such as Census or EPA)? If yes, describe the source, list the files, and provide a general description of the data. These variables must be listed in the Data Dictionary section.
F. Methodology:
We highly recommend you familiarize yourself with the analytic guidelines of the data you intend to use. Any deviations from the methodology suggested in the guidelines will require explanation as it may pose a disclosure risk.

1. Unit or Level of Analysis and Subpopulation(s):
There can be many levels of analysis: be as detailed as possible. A common example for an analysis of NHANES is where the unit of analysis is the person while the subpopulation is adults ages 18-64. A common example involving geography is when you aggregate persons to the state level so you can compare states with policy A to states with policy B.

2. Analysis Plan: Provide an overall analysis plan that specifies what analytic procedures or models you will use, such as prevalence estimates, logistic regression, or log-linear modeling, or list specific statistical package procedures.

3. Complex Survey Design: Indicate how you will address sample weights, design variables, and other adjustments for the use of complex survey data, if applicable, using the statistical software listed in the General Information area. A detailed description per weight, design variables, and other adjustments are required and central to understanding the limitation of the data. This is a critical element during the proposal review process.
H. Data Dictionary:
Include a data dictionary for each data source. Provide a public and restricted data dictionary for NCHS data. This should simply be a listing of variables you would like in your dataset. See instructions and examples for creating the data dictionary. When asking for multiple years of data, make sure to reflect the public use data layout for each year as variable names can change over years. Include all explanations in Section E. Data Requirements.

1. NHDS, NAMCS/NHAMCS, Mortality, Natality, and DHHS Hosted Data Users: Provide a single data dictionary that includes all the variables (public and restricted) you would like extracted for your data set.

I. References: Please limit the list to 10 items or less.

J. Resumes/C.V.: Please include a 2-page C.V. for each member of the research team listed in the initial proposal (not as attachments).
Workshop on Restricted Health Data available at the Philadelphia FSRDC

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