VETERANS HEALTH ADMINISTRATION

Office of Health Equity

Lauren Korshak, DHealth(c), MS, ACSM-CEP
Translation Lead
Office of Health Equity

Lauren.Korshak@va.gov

Created in 2012

Vision: To ensure that VHA provides appropriate individualized health care to each Veteran in a way that-

- Eliminates disparate health outcomes and
- Assures health equity

OFFICE OF HEALTH EQUITY GOALS

1. **Leadership:** Strengthen VA leadership to address health inequalities and reduce health disparities.

2. **Awareness:** Increase awareness of health inequalities and disparities.

3. **Health Outcomes:** Improve outcomes for Veterans experiencing health disparities.

4. **Workforce Diversity:** Improve cultural and linguistic competency and diversity of the VHA workforce.

5. **Data, Research and Evaluation:** Improve data and diffusion of research to achieve health equity.

Veterans who experience greater obstacles to health related to:

- Race or ethnicity
- Gender
- Age
- Geographic location
- Religion
- Socio-economic status
- Sexual orientation
- Mental health
- Military era
- Cognitive /sensory / physical disability

OFFICE OF HEALTH EQUITY WEBSITE

https://www.va.gov/healthequity

Highlights from the National Center for Health Statistics (NCHS) Data Linkage Program: A New Resource to Assess Veterans' Health

Carla Zelaya PhD, MSc
Health Statistician
Data Linkage Program, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS)
Email: vdn3@cdc.gov

Denise M. Hynes, PhD, MPH, BSN,
Research Career Scientist VA Portland Health Care System
Portland, OR
Email: Denise.Hynes@va.gov

Highlights from the NCHS Data Linkage Program: A new resource to assess Veterans' health

Carla E. Zelaya, Health Statistician, Data Linkage Program

Data Linkage Methodology and Analysis Branch

Division of Analysis and Epidemiology

VA Cyberseminar
September 14, 2022

National Center for Health Statistics (NCHS)

- Nation's principal health statistics agency

- One of 13 principal federal statistical agencies

- **Mission:** To provide timely, relevant statistical information that can be used to guide actions and policies to improve the health of the American people

NCHS Data Linkage Program: Overview

- Create linked data files that support high quality research and program evaluation

- Utilize state of the art linkage methodologies and provide documentation and support for analyzing linked data files

- Explore innovative methods for maintaining researcher access to linked data

Why we link

Linking data is a powerful and efficient mechanism for producing policy-relevant information

- *Brings together additional information about one person or entity to create a new, richer dataset*

- *Allows for the construction of longitudinal events in previously cross-sectional datasets.*

3
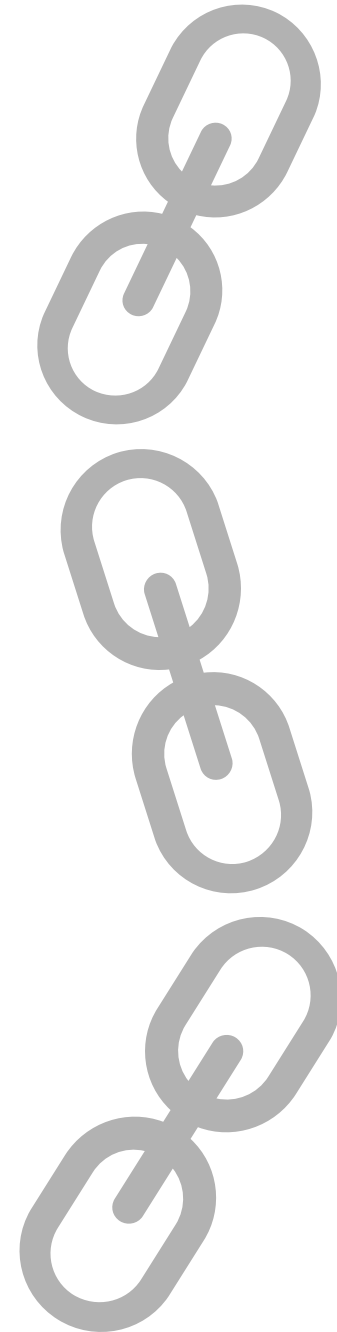
What surveys we link

National Health Interview Survey (NHIS)

A nationally representative, cross-sectional sample of the US civilian noninstitutionalized population, which includes a household interview that serves as an important source of information on the nation's health

National Health and Nutrition Examination Survey (NHANES)

A nationally representative, cross-sectional sample of the US civilian noninstitutionalized population, which includes a household interview followed by an examination in a mobile examination center (MEC) that serves as an important source of information on the health and nutritional status of adults and children

National Hospital Care Survey (NHCS)
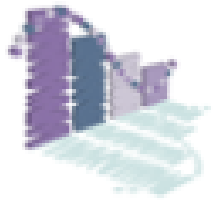
NHCS collects data on patient care in hospital-based settings (inpatient, emergency, and outpatient departments) to describe patterns of health care delivery and utilization in the US

4

What we link (continued)

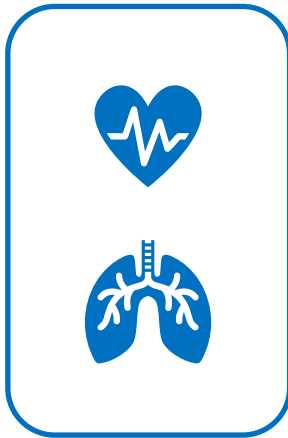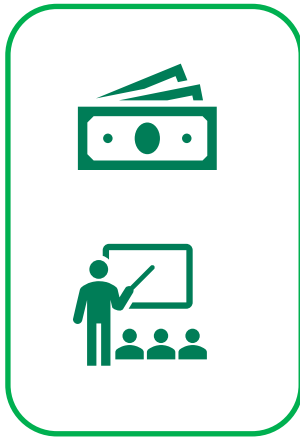## Survey Data
Sampling frame
Known inference

Health behaviors

Health conditions

Socioeconomic status

Health care access and utilization

Administrative Data
Program participation/vital status
Not designed for research purposes

Housing and Urban Development
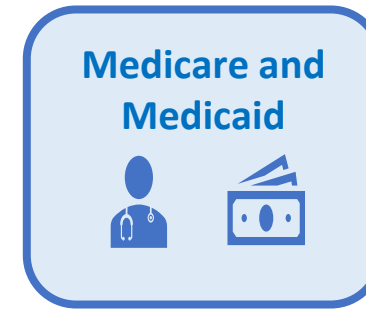
Medicare and Medicaid

Mortality

Geocoded Addresses
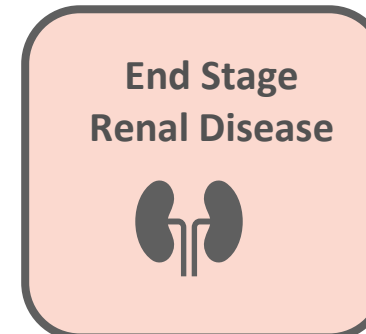
End Stage Renal Disease

Department of Veterans Affairs

How we link

- Linkage conducted in two passes:
    1. Deterministic match using Social Security Number (SSN) collected in the survey
        - Identifier fields such as name, state of residence, and date of birth are compared to validate
        - This dataset becomes the "truth deck"
    2. Probabilistic matching techniques used to identify likely pairs using other identifiers (not SSN)
        - Pair scores are calculated on the agreement status of the identifiers such as name, state of residence, and date of birth
        - SSN is not used to score pairs instead, it is used to measure linkage accuracy (when available)

6

Years of follow-up with NCHS linked data

Linked mortality up to 33 years

Linked Medicaid up to 25 years

Linked Medicare up to 24 years

Linked HUD* up to 20 years

Linked VA** up to 16 years

(x-axis: 0, 5, 10, 15, 20, 25, 30, 35)
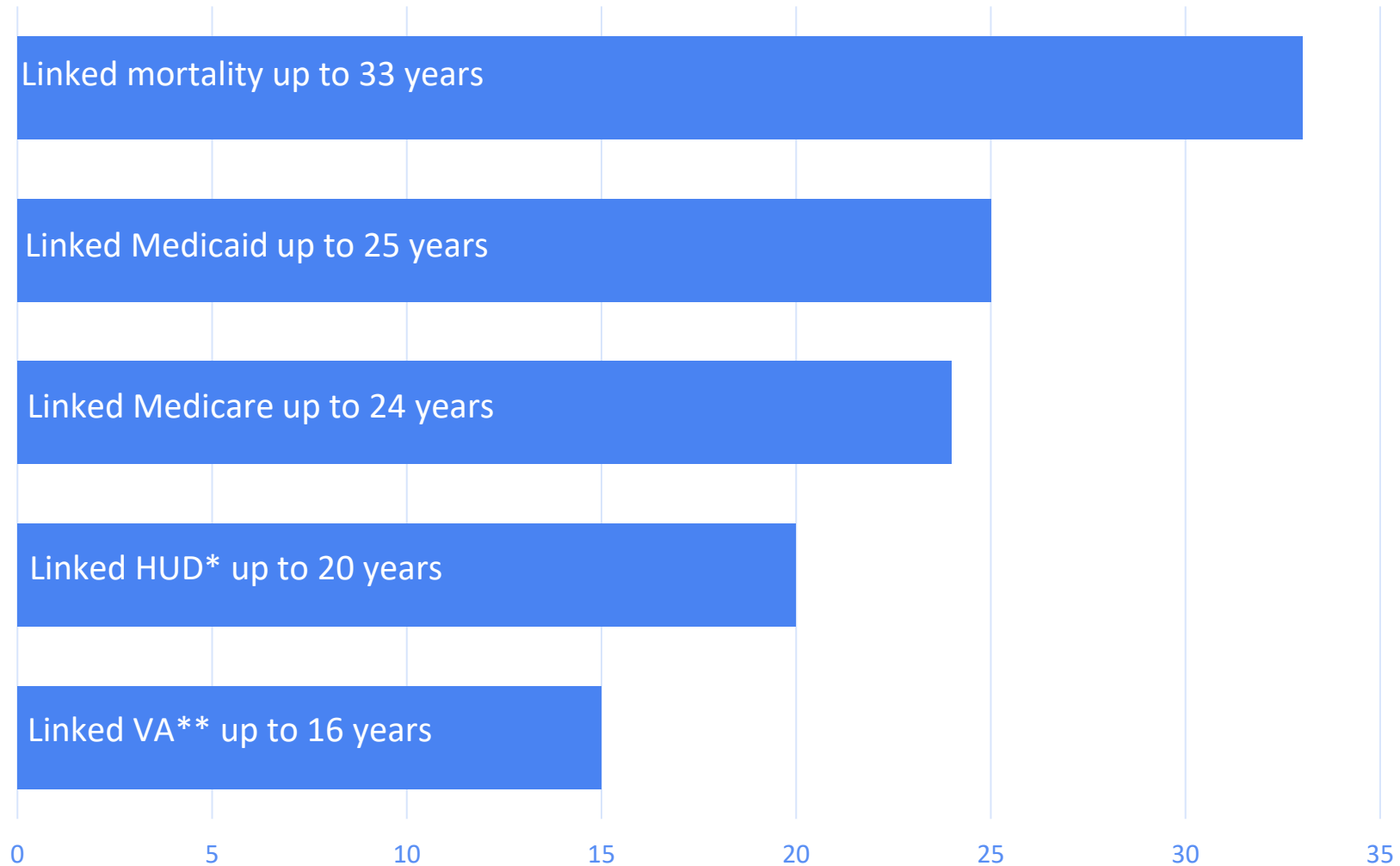
*HUD, Department of Housing and Urban Development; **VA, Department of Veteran Affairs

First linkage of NCHS survey data with Department of Veterans Affairs (VA) administrative data

Linking NCHS and VA data

- Conducted through a collaborative agreement between the NCHS Data Linkage Program and the VA

- VA administrative data
  - United States Veterans Eligibility Trends and Statistics (USVETS) database, prepared by the Office of Data Governance and Analytics within the Office of Enterprise Integration at the VA

- Linked NCHS data
  - 2005-2018 NHIS (sample adults) and 2005-2018 NHANES (adults 18 and over)
  - 2016 NHCS restricted data files available in fall 2022

- Supported in part with funding from the CDC Data Modernization Initiative

NCHS-VA Linked Data Files to support research objectives

Survey data

- Sex
- Race and ethnicity
- Urban/rural
- Health care access
- Preventative care
- Chronic conditions
- Health behaviors

VA administrative data

- Service-connected disability
- VA health care enrollment
- VA benefit program utilization

Research topic areas

- Veterans compared to nonveterans
- Health equity/social determinants of health
- Inform VA policy

NHIS and NHANES Linked VA Data Files: Survey and administrative years
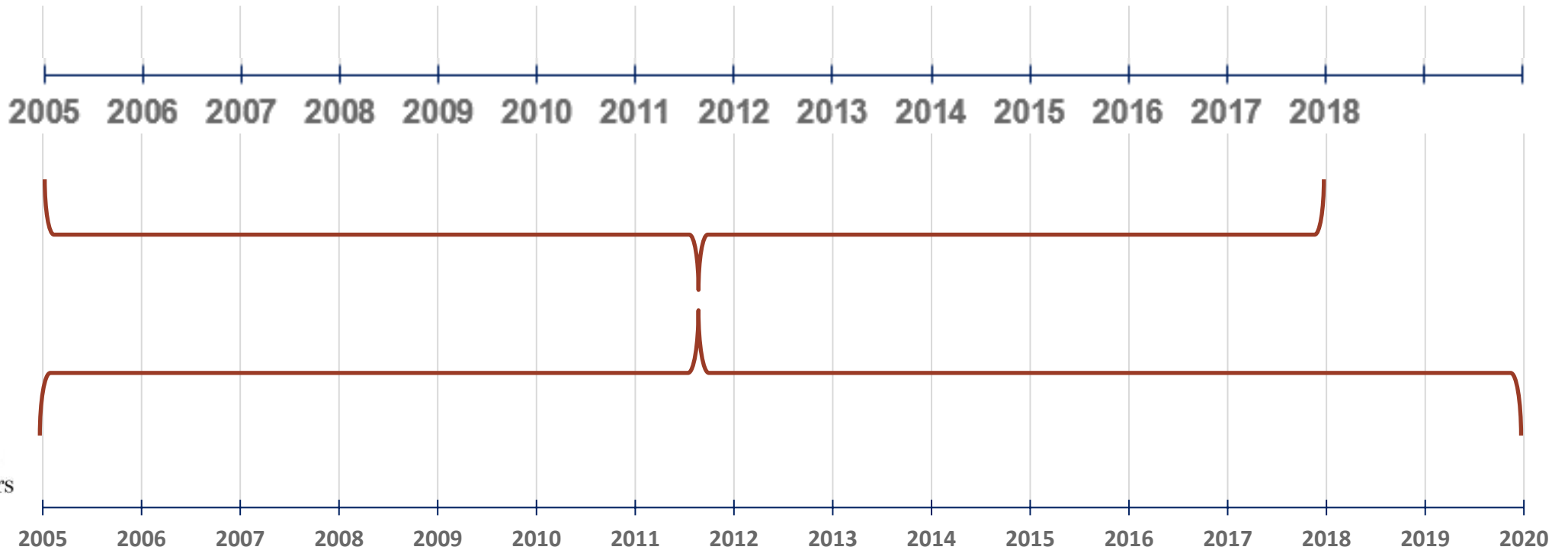
Note: Linkage of the 2014 and 2016 NHCS to VA data is forthcoming

11

Match rates: NHIS

2005-2018 Sample Adult NHIS participants		
	Percent eligible for linkage	**Percent of eligible that linked to VA**
Total	**81.0**	**8.8**
18-64	80.8	6.9
65 and over	81.6	15.3
Male	81.4	17.5
Female	80.6	1.7

Match rates: NHANES

2005-2018 NHANES participants aged 18 and over		
	Percent eligible for linkage	**Percent of eligible that linked to VA**
Total	**89.2**	**9.4**
18-64	89.0	6.7
65 and over	90.1	18.3
Male	89.6	17.7
Female	88.8	1.5

NCHS-VA Linked Match Status File

- Identifies which survey participants were eligible for linkage and linked to VA administrative records (Match status variable)

- Contains one record for each 2005-2018 NHIS sample adult and each 2005-2018 NHANES participant aged 18 and older

Other variables include:

- Linkage eligibility-adjusted sample weights
- Match probability

NCHS-VA Linked Service Record File

- Includes information detailing military service in the US uniformed services
- Contains a record for each linked participant (Veteran)

Variables include:

- Branch of service
- Character of service at discharge
- Era of service
- Race and ethnicity information from VA administrative records

NCHS-VA Linked VA Utilization File

- Includes VA administrative information

- One record for each linked participant (Veteran)

- Variables provided for each Fiscal Year (FY) 2005-2020

Variables include:

- Healthcare enrollment priority status

- Number of service-connected disabilities

- VA health care enrollment

- Benefit program utilization: VA health care, Service-connected disability compensation, Pension, VA guaranteed home loan, Life insurance, Education, training, veteran readiness (vocational rehabilitation) and employment
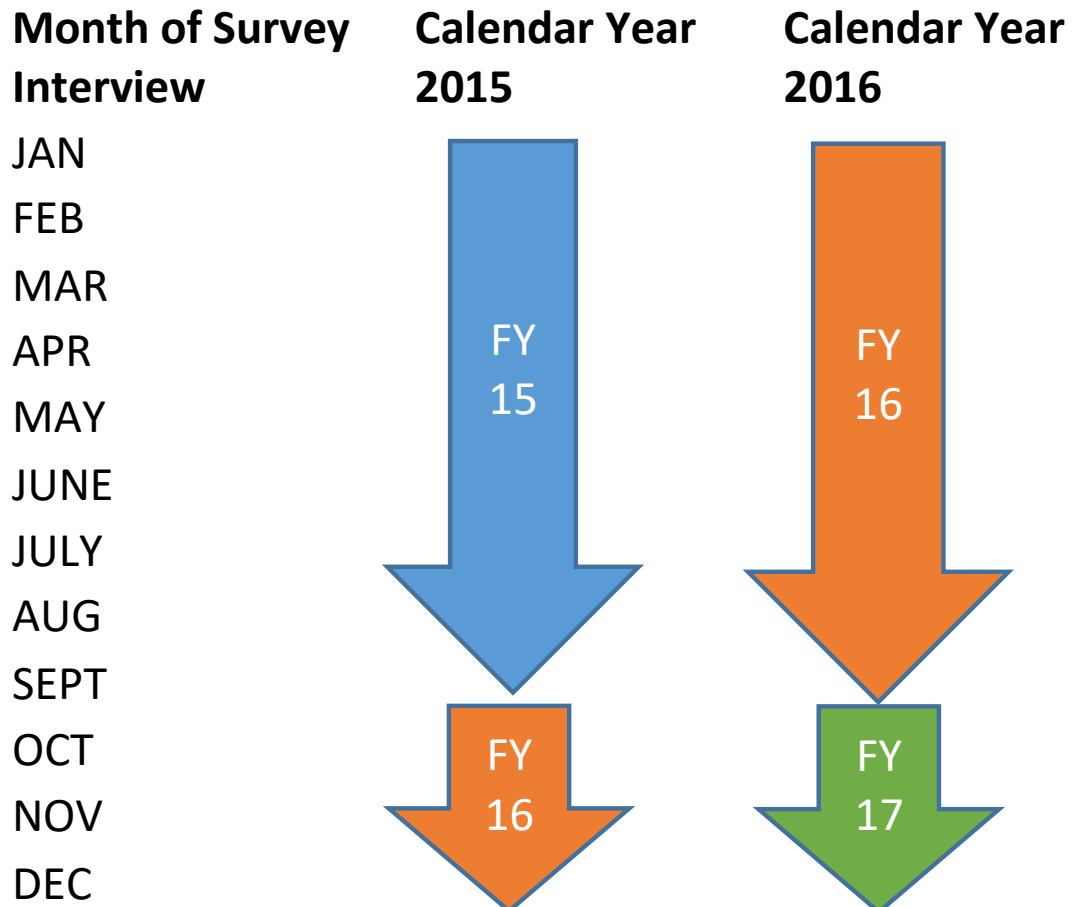
NCHS-VA Linked VA Utilization File (continued)

Timing of benefit program utilization in relation to NCHS survey:

- NCHS survey data linked to multiple years of VA administrative data through fiscal year 2020

- VA benefit program utilization data may be available for survey participants concurrent to, before, or after the survey interview (or exam for NHANES) date

NCHS-VA Linked VA Utilization File (continued)

Figure 1. Relationship of Calendar Year and Fiscal Year (FY)

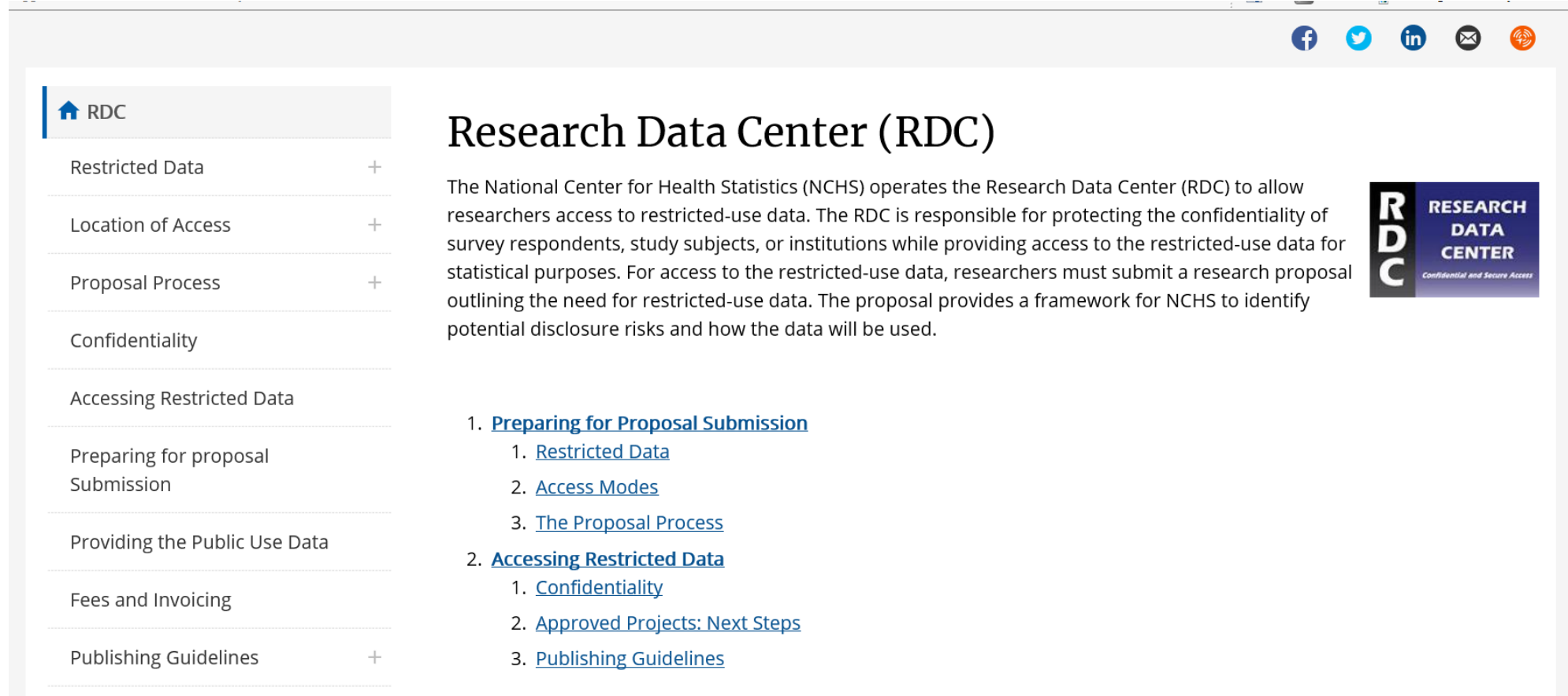| Month of Survey Interview	Calendar Year 2015	Calendar Year 2016
JAN		
FEB		
MAR		
APR	FY 15	FY 16
MAY		
JUNE		
JULY		
AUG		
SEPT		
OCT	FY 16	FY 17
NOV		
DEC		

Alignment of FY and Survey Year(s):

- Surveys are conducted on calendar year basis.

- VA administrative data are organized by FY (Oct 1 to Sep 30)

- Example of NHIS alignment (yearly)
  - To analyze concurrent VA utilization information for NHIS 2015 – use FY 2015 and FY 2016 variables
  - If interview occurred in Q4 2015, then the corresponding VA data FY would be 2016

Restricted-use NCHS-VA Linked Data Files

- NCHS-VA Linked Data Files will be available through the NCHS Research Data Center (RDC) and Federal Statistical RDCs managed by Census

https://www.cdc.gov/rdc/index.htm   Email: rdca@cdc.gov

Key survey variables to consider for research proposals

The following NCHS variables are suggested for RDC proposals:

- Sample weights and design variables are needed to account for the complex design of the NCHS surveys
- Demographic information such as sex, age, race and ethnicity
- Socio-economic information such as income and education
- Date of survey:
  - NHANES month and year of examination and interview (restricted-use variables)
  - NHIS calendar quarter and year of interview

Additional linked data

End Stage Renal Disease

Examine factors associated with ESRD

Department of Veterans Affairs

Service records and benefit utilization

Geocoded Addresses

Add contextual information to standard Census geocoded areas

NCHS Survey Data

Population-based household surveys

National healthcare surveys

Mortality

Cause of death from National Death Index

Housing and Urban Development

Receipt/type of housing assistance

Medicare and Medicaid

Healthcare utilization and expenditures

21

Summary

Key summary points

- The NCHS Data Linkage Program continually updates and maintains linkages between NCHS survey data and administrative data

- 2005-2018 NHIS and 2005-2018 NHANES have been linked to VA administrative data through fiscal year 2020, and data files are now available through the RDC

- NCHS-VA Linked Data Files provide a new policy relevant resource that combines information on health characteristics and access to care with veteran status, service history, and VA benefit program utilization

NCHS Data Linkage Program

Contact: datalinkage@cdc.gov; www.cdc.gov/nchs/data-linkage

Subscribe to the NCHS Data Linkage Program LISTSERV to receive updates! Email a message to list@cdc.gov.   Leave the subject line blank.   In the body of the message, type or paste:

SUBSCRIBE NCHS-DATA-LINKAGE-PROGRAM lastname, firstname

where 'lastname, firstname' is your last and first name.

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348   www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Questions

Discussant

Dr. Denise Hynes

Thank you!