



## Database & Methods Cyberseminar Series

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### *Session #7: Assessing Race and Ethnicity in VA Data*

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*By the end of this session, attendees will be able to:*

- Locate race and ethnicity in VA and Medicare data
- Assess the quality of VA race and ethnicity data
- Create SQL code to use race and ethnicity data

# Session Outline

- Introduction
- Locating race and ethnicity in VA data
- Locating race and ethnicity in Medicare/Medicaid
- Quality of VA race and ethnicity data
- Recommendations to address data quality issues
- Examples
- Where to go for more help

# Poll #1: Your role as a data user

## What is your role in research and/or quality improvement?

- Investigator, PI, Co-I
- Data manager, analyst, or programmer
- Project coordinator
- Other – please describe via the Q&A function



## Poll #2: Your experience with VA data

How many years of experience do you have working with VA data?

- One year or less
- More than 1, less than 3 years
- At least 3, less than 7 years
- At least 7, less than 10 years
- 10 years or more



# Poll #3: Experience with VA Race/Ethnicity Data

**Have you ever used VA Race/Ethnicity Data?**

- Yes
- No



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# Racial and ethnic disparities in health and health care persistent in US and in VHA

## In US

- Access and quality have improved overall from 2000 to 2016/2017
- Asians receive worse care than Whites on 27% of measures compared to 35-40% of measures for Blacks, and other minorities, **very few measures show any improvement in disparities for other minority groups** (AHRQ 2019)

## In VHA

- Racial and ethnic disparities persist even though financial barriers to receiving care are minimized
- Although quality has improved, **significant within-facility disparities observed in clinical outcomes** (Trivedi 2011)

**More research to detect, understand, and address disparities in health and health care is needed**

# Problems with Race and Ethnicity Data in VA

Accurate race and ethnicity data are essential to disparities research and research on clinical factors associated with race and ethnicity.

Problems with race and ethnicity data in the VA:

- **Incomplete**
- **Inaccuracies**
- **Inconsistent over time**
- **Inconsistent between sites**

# Racial/Ethnic Distribution of Veterans

77% White

11.8% Black

7.0% Hispanic

1.7% Asian

1.5% Two or  
more races

0.7% American  
Indian/Alaska Native

## Use of VA health care differs by race and service connection

Asian Veterans less likely to use regardless of service connection

Black and AI/AN races more likely to use VHA services

# VA Race and Ethnicity Categories

*VHA Handbook 1601A.01 (2009)*

<b>Ethnicity</b>	Spanish Hispanic Latino
<b>Race</b> <i>(&gt;1 may be selected)</i>	American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White Unknown by Patient
<b>Current reporting method</b>	2 question format: ethnicity, race Self-reported

# Acquisition of Race and Ethnicity Data in VHA

<b>How are these data acquired?</b>	Patient (self-report) Proxy VHA Enrollment Coordinator or Clerk
<b>When are these data acquired?</b>	VA Form 10-10EZ Application for Health Benefits (on-line, paper, interview) Inpatient or outpatient visit to VHA facility

**Data are entered directly into CPRS**

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## Poll Question #4

**What sources of VA race and ethnicity data have you used? (check all that apply)**

- CDW
- OMOP
- MedSAS files
- DOD (VADIR, DaVINCI)
- Other VA data sources

# Race and Ethnicity Variables in MedSAS

## **Prior to FY2003 (old data collection methods)**

- Race and ethnicity captured jointly in the variable RACE
- Single value allowed for race/ethnicity

## **After FY2003 (new data collection methods)**

- Multiple races captured in RACE1-RACE7
- Single value for ethnicity captured in ETHNIC
- RACE1-RACE7 and ETHNIC have a length of 2 characters
  - First character has race or ethnicity
  - Second character has method of data collection

## **Location**

- Inpatient: Main (PM) file, 1976-present
- Outpatient: Visit (SF) and Event (SE) files, 1997/1998- present

## Medical SAS Datasets: Race/Ethnicity Values (Pre-2003)

*RACE: Single value for race and ethnicity*

<b>Value</b>	<b>Description</b>
<b>1</b>	Hispanic, white
<b>2</b>	Hispanic, black
<b>3</b>	American Indian
<b>4</b>	Black
<b>5</b>	Asian
<b>6</b>	White
<b>7 or missing</b>	Unknown

## Medical SAS Datasets: Race Values (Post-2003)

*RACE1-RACE7: Race and method of data collection  
First character specifies race*

<b>1<sup>st</sup> Character</b>	<b>Description</b>
<b>3</b>	American Indian Or Alaska Native
<b>8</b>	Asian
<b>9</b>	Black or African American
<b>A</b>	Native Hawaiian or Other Pacific Islander
<b>B</b>	White
<b>C</b>	Declined to Answer
<b>D</b>	Unknown
<b>(blank)</b>	Missing

## Medical SAS Datasets: Ethnicity Values (Post-2003)

*ETHNIC: Ethnicity and method of data collection*  
*The first character captures ethnicity*

<b>1<sup>st</sup> Character</b>	<b>Description</b>
<b>D</b>	Declined To Answer
<b>H</b>	Hispanic or Latino
<b>N</b>	Not Hispanic or Latino
<b>U</b>	Unknown
<b>(blank)</b>	Missing

## Medical SAS Datasets: Race and Ethnicity Source (Post-2003)

*RACE1-RACE7, ETHNIC*

*The second character specifies method of data collection*

<b>2<sup>nd</sup> Character</b>	<b>Description</b>
<b>(blank)</b>	Missing
<b>O</b>	Observer
<b>P</b>	Proxy
<b>S</b>	Self-identification
<b>U</b>	Unknown By Patient

# Corporate Data Warehouse (CDW)

- National repository of data from VistA Patient File with race and ethnicity data from October 1999 to present
- Contains 1 demographic record for each VA station a Veteran has visited
- Contains standard and nonstandard race values
- Racial data available PatSub.PatientRace
  - Race (newer collection standards)
  - LegacyRace (older collection standards)
  - **Use both variables to obtain all available race data, but LegacyRace may be of limited utility**

Patient 3.0 Release Documentation: <https://vaww.virec.research.va.gov/CDW/Factbook/FB-CDW-Patient-Domain.pdf> (VA Intranet only)

# CDW Race Table Changes

The structure of CDW data is subject to periodic changes.

Changes in business rules for extraction have led to differences in the underlying race data stored in CDW.

VIReC's Patient 3.0 Domain Factbook **documents the current** data structure of race data in CDW.

***CDW documentation may refer to race from older collection methods as being located in other CDW tables.***

<b>Patient.Patient or SPatient.SPatient tables</b>	Currently LegacyRace and LegacyRaceSID in Patsub.PatientRace Previously contained RaceSID for linking to CDWork.Dim.Race
<b>Patsub.PatientRace</b>	Currently contains the fields LegacyRace and LegacyRaceSID Previously, all race values were stored in the variable Race but those from older collection methods had a value of Null for CollectionMethod

*Best Practices Guide: Race Data* (Data Quality Report):

[https://vaww.vhadatportal.med.va.gov/Portals/0/DataQualityProgram/Reports/Best Practices Guide Race Data.pdf](https://vaww.vhadatportal.med.va.gov/Portals/0/DataQualityProgram/Reports/Best_Practices_Guide_Race_Data.pdf)

(VA Intranet only)

# Race Tables in CDW

All race data are contained in PatSub.PatientRace

Data are at the Patient/STA3N level with the most recent data available for the patient

<b>Race</b>	Contains patient race from newer collection methods. Multiple records if more than one race identified.
<b>CollectionMethod</b>	Contains method of data collection for Race
<b>LegacyRace</b>	<p>Contains patient race from the older collection methods</p> <ul style="list-style-type: none"> <li>- Does not allow for multiple races</li> <li>- The same value of LegacyRace will be contained on all records for a single PatientSID if that patient has multiple values of Race recorded.</li> <li>- Most patients have values of “*Missing*”, indicating the presence of no data on LegacyRace.</li> </ul>

# Non-standard Race Values in CDW

26 of 31 non-standard races can be mapped to 4 standard races

## Examples

Non-standard Race	Standard Race
Amer Indian or Alaskan Native, American Indian, American Indian/ Alaskan Native	<b>American Indian or Alaska Native</b>
Black; Black Not of Hisp orig; Black, Non Hispanic; Hispanic Black	<b>Black or African American</b>
White Not of Hisp orig; White, Not Hispanic; Hispanic White; Caucasian;	<b>White</b>
Pacific Islander	<b>Native Hawaiian or Other Pacific Islander</b>

**Non-standard values rarely used in Race (<1%)**

**Current standard values rarely used in LegacyRace (<1%)**

# Non-mapped Values in CDW

5 values are not mapped to standard values

4.6% of data fall into 1 of these 5 categories (2012)

## Non-mapped values

Asian or Pacific Islander  
Asian Pacific Islander  
Asian/Pacific Islander  
Mexican American  
Unknown

## As of March 2019

- 17.6% of non-missing LegacyRace fall into 1 of these categories
- 96.7% of these non-mapped values are Unknown
- 3.0% of non-mapped values indicate Asian or Pacific Islander

# Multiple Race Values in CDW

- Approximately 1.7% of patients linked to a standard race have **more than 1 standard race** (2013)
- Not possible to identify most recent record for a patient
- Recommendation for multiple values
  - Use only self-identified races (if recorded)
  - Use all recorded races for patients without self-identified race

*CDW Race Data and Multiple Races* (Data Quality Report):

[http://vaww.vhadataportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW\\_Race\\_Data\\_and\\_Multiple\\_Races.pdf](http://vaww.vhadataportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW_Race_Data_and_Multiple_Races.pdf) (VA Intranet only)

# Ethnicity in CDW

Ethnicity data found in 2 CDW tables

**PatSub.PatientEthnicity** - *new method*

'HISPANIC OR LATINO' / 'NOT HISPANIC OR LATINO'

**PatSub.PatientRace** (LegacyRace or rarely Race) - *old method*

Hispanic race/ethnicity (e.g., HISPANIC, WHITE; HISPANIC, BLACK)

Non Hispanic race/ethnicity (e.g., WHITE NOT OF HISP ORIG; BLACK NOT OF HISP ORIG)

Not all race/ethnicity values indicate ethnicity (e.g., ASIAN, BLACK)

*CDW Ethnicity Data* (Data Quality Report)

[https://vaww.vhadataportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW\\_Ethnicity\\_Data.pdf](https://vaww.vhadataportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW_Ethnicity_Data.pdf) (VA Intranet only)

# VINCI OMOP Version 5

- VINCI Observational Medical Outcomes Partnership (OMOP) seeks to use a Common Data Model (CDM) to map and standardize data
- Data on Race and Ethnicity are contained in the **OMOPV5.Person table**
- Contains one standard value for Race and Ethnicity for each PERSON\_ID
  - OMOPV5MAP.PERSON\_SPatient\_Spatient will link PERSON\_ID to other CDW identifiers
  - See documentation regarding those without PatientICN or other potential linkage issues with patient identifiers
  - Excludes non-veterans, test patients, and possible test patients

VINCI\_V5\_OMOP\_DATABASE\_DATA\_SPECIFICATIONS\_01152018:  
<https://www.vapulse.net/docs/DOC-60310>

# Race in OMOP

OMOP CDM follows VA Data Quality Program's "Race Data and Multiple Races Report" and VIREC's Researcher's Notebook "Using SQL to "Sort Out" Race in CDW"

<b>Source data</b>	Source.SPatient_SPatient (now LegacyRace in Patsub.PatientRace) Source.Patsub_PatientRace
<b>Six categories for race</b>	White Black or African American Asian American Indian or Alaska Native Native Hawaiian or other Pacific Islander Unknown

"CDW Race Data and Multiple Races:"

[https://vaww.vhadatportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW\\_Race\\_Data\\_and\\_Multiple\\_Races.pdf](https://vaww.vhadatportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW_Race_Data_and_Multiple_Races.pdf)

"VIREC Researcher's Notebook: Using SQL to "Sort Out" Race in CDW":

<https://vaww.virec.research.va.gov/Notebook/RNB/RNB6-CDW-SQL-to-Sort-Out-Race-CY16.pdf>

# Race Logic in OMOP

1. Identify records as self-report or non-self-report and count distinct values.
2. Select the most frequently occurring self-reported race value.
3. If no self-reported race or counts of self-reported race (not including unknown or null) are equal, then select the most frequent non-self-reported race.
4. If there isn't a most frequent value, then select the race value found on record at the patient's preferred institution.
5. If that is null, then select the value edited most recently as determined by ETLBatchID in the SPatient file.
6. If no most frequent or recent non-null value is available, then the value is "UNKNOWN"

# Ethnicity in OMOP

OMOP CDM follows the “OMB Standards for Data on Race and Ethnicity” and the VA Data Quality Program’s “CDW Ethnicity Data Report.”

<b>3 categories for ethnicity</b>	Hispanic or Latino Not Hispanic or Latino Unknown
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## OMOP CDM Logic for Ethnicity

OMOP uses only the self-reported information provided under the new collection method, when available

Otherwise Ethnicity is captured from non-self-reported data provided by the new collection method

Ethnicity captured under the old collection methods is used when no data are available from the new recording method

# Race in DaVINCI (Joint DoD and VA data)

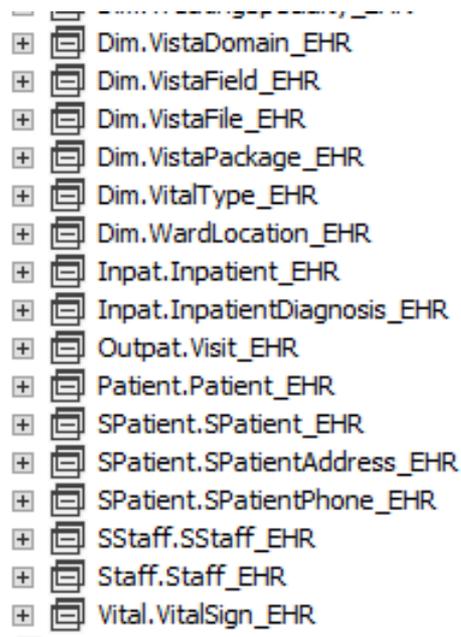
<b>race_cd</b>	C=White
	M=Asian or Pacific Islander
	N=Black
	R=American Indian or Alaskan native
	X=Other
	Z=Unknown
<b>race_ethnic_cd</b>	A=American Indian/Alaskan Native
	B=Asian or Pacific Islander
	C=Black, not Hispanic
	D=white, not Hispanic
	E=Hispanic
	X=Other
	Z=Unknown

<https://vaww.vinci.med.va.gov/VinciCentral/DataSources/Index>

[https://www.hsrd.research.va.gov/for\\_researchers/cyber\\_seminars/archives/video\\_archive.cfm?SessionID=244](https://www.hsrd.research.va.gov/for_researchers/cyber_seminars/archives/video_archive.cfm?SessionID=244)

# Sneak Peek: Cerner

- CDWORK3 contains standardized views with combined data from CDWORK and the Cerner EHR (currently only sample data)
- Views have the same names as CDW with the suffix `_EHR`
- Using sample data, many elements have been mapped for some views.



The screenshot shows a list of database views in CDWORK3, each with a plus sign icon to its left and a document icon to its right. The views are listed as follows:

- Dim.VistaDomain\_EHR
- Dim.VistaField\_EHR
- Dim.VistaFile\_EHR
- Dim.VistaPackage\_EHR
- Dim.VitalType\_EHR
- Dim.WardLocation\_EHR
- Inpat.Inpatient\_EHR
- Inpat.InpatientDiagnosis\_EHR
- Outpat.Visit\_EHR
- Patient.Patient\_EHR
- SPatient.SPatient\_EHR
- SPatient.SPatientAddress\_EHR
- SPatient.SPatientPhone\_EHR
- SStaff.SStaff\_EHR
- Staff.Staff\_EHR
- Vital.VitalSign\_EHR

# Sneak Peek: CDWORK3.Dim.Race

- CDWORK3.Dim.Race contains the combined DIM tables with the Cerner and CDW values
- Sta3n = 200 for the data extracted from Cerner
- In Cerner, race will be common across all stations

	RaceSID	RaceIEN	Sta3n	Race	RaceAbbrev
1	1600000617685	309318	200	American Indian or Alaska Native	3
2	1600000617683	309316	200	White	W
3	1600000617684	309317	200	Asian	A
4	1600000792354	4189861	200	Native Hawaiian or Pacific Islander	H
5	1600000792355	4189862	200	Other Race	NULL
6	1600000617682	309315	200	Black or African American	B
7	-1	-1	-1	*Missing*	*M*
8	0	0	0	*Unknown at this time*	*U*
9	1	13	528	WHITE	W
10	2	12	528	UNKNOWN BY PATIENT	U
11	3	11	528	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	H

Race values in Cerner

Site-specific race values from CDW

- For more information about the EHRM data integration <https://vaww.cdw.va.gov/sites/EHRMDataIntegration/DIRAKnowledgeShare/Pages/DIRAKnowledgeShareHome.aspx> (VA Intranet only)

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# Sources of Medicare/Medicaid Race in VA

## VA Vital Status File

- **CMS\_RACE** (Master File only)
- Master File contains one record for each SSN-date of birth (DOB)-gender combination found in VA data
- Some SSNs have more than one record

## VA Medicare Data

- Denominator file from Medicare
- **RACE** (same as **CMS\_RACE**)
- **RTI\_RACE**

## VA Medicaid Data

- Medicaid Personal Summary (Enrollment)
- **EL\_RACE\_ETHNCY\_CD**

# Medicare Race/Ethnicity Data

Potentially useful source of data for Veterans enrolled in Medicare, which generally means they are:

- Age 65 and older (>95% of VA elderly)
- Disabled (~20% of VA patients <65 years)
- Diagnosed with end stage renal disease

Derived primarily from Social Security Administration (SSA)

- Obtained at the time of application for SSN and/or replacement card
- Reporting sources: Usually self or family

Distinctions from current VA race and ethnicity data

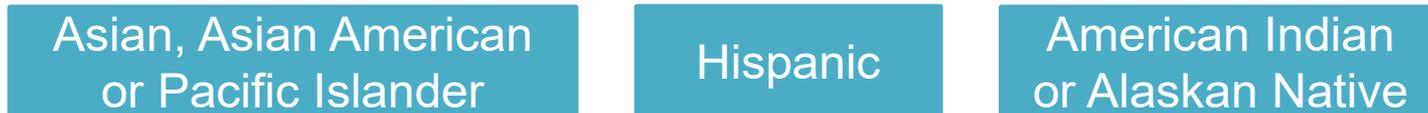
- 'Hispanic' is a race category
- No multiple race reporting

# Medicare Race/Ethnicity Data from SSA

Until 1980, only 4 categories collected:



In 1980, 'Other' replaced by:



# RTI Race in Medicare

*Research Triangle Institute (RTI) created and implemented an algorithm to increase accuracy of race variable, especially for Hispanic and Asian individuals.*

- **RTI\_RACE** available in Medicare Denominator File
- Algorithm uses first name, last name, preferred language, place of residence
- Improvement in sensitivity of racial codes
  - Increased from 30% to 77% for Hispanic
  - Increased from 55% to 80% for Asian/Pacific Islander

# Medicare Race/Ethnicity Data Summary

## Data quality issues

- Information on most enrollees (those who obtained SSN prior to 1980) limited to original 4 categories
- SSN application form – single question format and no multiple race reporting

## Initiatives to improve data quality

- Periodic updates on American Indians and Alaskan Natives from Indian Health Service
- 1997 survey of enrollees classified as ‘Other’, ‘Unknown’, or with Spanish surname, requesting race/ethnicity self-report
- RTI Race Algorithm

# Medicaid Race/Ethnicity

EL\_RACE\_ETHNCY\_CD

Value	Description
1	White
2	Black or African American
3	American Indian or Alaskan Native
4	Asian
5	Hispanic or Latino – No race information available
6	Native Hawaiian or Other Pacific Islander
7	Hispanic or Latino and one or more races
8	More than one race
9	Unknown

# Medicaid Race/Ethnicity Variables Summary

Summary variable

**EL\_RACE\_ETHNCY\_CD**

Individual variables

**ETHNICITY\_CODE**

**RACE\_CODE\_1 – RACE\_CODE\_5**

*Can identify multiple races and/or race and ethnicity*

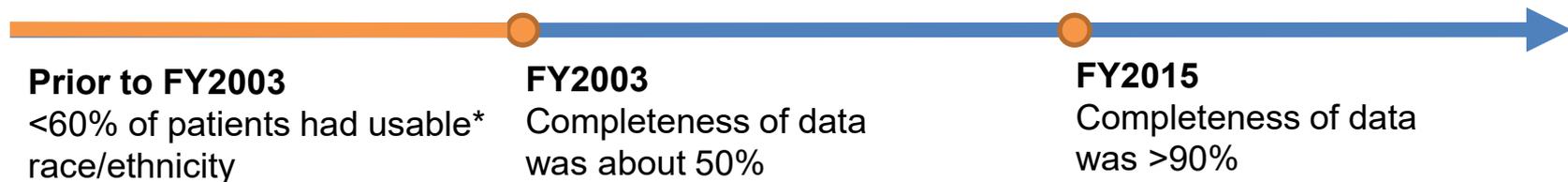
# Medicaid Race/Ethnicity Data Issues

- Availability lags behind both VA and Medicare
- Fewer enrollees than Medicare (~10%)
- Data collection changes over time
  - October 1998 many changes/additions

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# Medical SAS Datasets: Completeness of Race and Ethnicity Data



Completeness varies between inpatient and outpatient files.

**Always use both the inpatient and outpatient data to capture race and ethnicity in the MedSAS files.**

*\* A usable race value is any value that is not 'missing' or 'unknown' or 'declined'*

## CDW Completeness of Race Data

Percent of patients with a standard race in the CDW varies by year of most recent healthcare activity

FY	Standard Race, %
1999*	39.0
2000	42.6
2001	43.5
2002	44.1
2003	48.2
2004	53.8
2005	58.7

FY	Standard Race, %
2006	63.0
2007	65.9
2008	66.6
2009	67.2
2010	68.5
2011	70.2
2012	84.6

\*No activity after FY1999

*CDW Race Data and Multiple Races* (Data Quality Report):

[https://vaww.vhadataportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW\\_Race\\_Data\\_and\\_Multiple\\_Races.pdf](https://vaww.vhadataportal.med.va.gov/Portals/0/DataQualityProgram/Reports/CDW_Race_Data_and_Multiple_Races.pdf) (VA Intranet only)

# CDW Completeness of Race Data FY2018

## New collection methods

**92%** of Veterans have standard usable race data available from these new methods

Almost **1%** with new data are coded as multiracial

**0.3%** have conflicting values

## Old collection methods

**<1%** of Veterans only have older race data

**1.3%** of those have conflicting values

*Unique Veterans with  $\geq 1$  outpatient visit (NoncountClinicFlag = 'N') in FY2018*

# CDW Completeness of Ethnicity Data

**61%** of all patients have ethnicity recorded

**88%** with healthcare activity in FY 2012

**78%** with one standard category are self-identified

**1%** have conflicting ethnicity categories

# Comparison to Non-VA Data Sources

## Aims

1. To estimate the extent to which missing “usable” race data in VA MedSAS files can be reduced by using non-VA data sources (Medicare and DoD)
2. To evaluate the agreement between VA self-reported race data in MedSAS files and Medicare and DoD race data

## Cohort

10% representative sample of VA patients obtaining services during FY2004-2005 (N=570,018)

# Reduction in Missing Data

52% were missing usable race from VA data sources

Age $\geq$ 65	Age < 65
<p><b>53% missing usable VA race data</b></p> <p><i>Of those...</i></p> <p><b>95%</b> had usable Medicare data</p>	<p><b>51% missing usable VA race data</b></p> <p><i>Of those...</i></p> <p><b>18%</b> had usable Medicare data</p> <p><b>37%</b> had usable DoD data</p> <p><b>52%</b> had usable data from Medicare and/or DoD data</p>

# Concordance with Non-VA Data Sources

*Table compares non-VA data sources to self-reported VA race and ethnicity*

Race/Ethnicity	--
<b>White and African Americans</b>	Agreement was good (93-99%) for both non-VA data Sources
<b>Non-African American Minorities</b>	Agreement was poor (27-55%) for both Medicare and DoD
<b>Hispanics</b>	Classified as White (64%) rather than Hispanic (25%) in the Medicare data
<b>Asian, Pacific Islanders, and Other Minorities</b>	Had to be collapsed into one category for comparisons

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# Recommendations: VA Data

## When multiple sources of race and ethnicity exist...

- Use data from newer collection methods, if available
- Only consider data from old collection methods (< FY 2003), if newer data are not available\*
  - **LegacyRace** contains race and ethnicity in CDW
  - **RACE** contains race and ethnicity in MedSAS

## If conflicting values are still present...

- Prioritize values from specific sites, if relevant for the project
- Consider using all recorded values

## When using MedSAS...

- Obtain race and ethnicity from both inpatient and outpatient files

*\* Unless the cohort has a long history of prior utilization, LegacyRace may not be helpful*

## Recommendations: Non-VA Data

- Use of non-VA race data can reduce missing data
- Carefully consider any potential bias (e.g., age or disability) in the outside data source
- Classifying non-Black minorities as “Other” results in better agreement with other data sources
- Potential supplementary data sources

Medicare

Department of Defense

Medicaid

Special Surveys

# Recommendations: Medicare

## When using VA VSF...

- Match on date of birth and gender, in addition to (scrambled) SSN
- Researchers most likely to identify the right individuals if they use all 3 elements when conducting their VSF-study cohort record match

## Note that...

- Medicare data cannot be used to identify Hispanics with any degree of accuracy or completeness, but
- **RTI\_RACE** in the Medicare Denominator file can increase the identification of Hispanics and Asians

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# SQL Examples in CDW

## Getting Started with Using CDW

Resources	Released
CDW: A Conceptual Overview 2017	2017/03/29
CDW: Locating Its Documentation 2017	2017/04/05
Getting the Information You Need From CDW: SQL Starter Language	2015/01/26
Building Your Dataset in CDW: Joining Tables within a Domain	2015/07/27
Getting CDW Back Together: Joining CDW Tables (Continued)	2016/10/24
Data Management in SQL: Selected Intermediate SQL Skills	2016/10/31

## Getting Started with Using CDW

*Includes several seminars on using SQL to join and manipulate CDW data*

<https://vaww.virec.research.va.gov/CDW/Documentation.htm> (VA Intranet only)



## Race Data Best Practices Guide

*Several SQL examples for multiple tasks utilizing race and ethnicity data*

[https://vaww.vhadatportal.med.va.gov/Portals/0/DataQualityProgram/Reports/Best\\_Practices\\_Guide\\_Race\\_Data.pdf](https://vaww.vhadatportal.med.va.gov/Portals/0/DataQualityProgram/Reports/Best_Practices_Guide_Race_Data.pdf) (VA Intranet only)

## The Researcher's Notebook

### Using SQL to "Sort Out" Race in CDW

*A method for cleaning multiple values of race.*

Introduction

## Researcher's Notebook: Using SQL to "Sort Out" Race in CDW

<https://vaww.virec.research.va.gov/Notebook/RNB/RNB6-CDW-SQL-to-Sort-Out-Race-CY16.pdf> (VA intranet only)

Connected to server *vhadwa01.vha.med.va.gov*

Please note that the location of race data is now different from what is in these guides.

# Example: Patsub.PatientRace

```

SELECT Race, FORMAT(COUNT(Race), 'N0') as Freq
FROM CDWork.Patsub.PatientRace
GROUP BY Race
ORDER BY COUNT(Race)

```

Format to show commas

	Race	Freq
1	*Unknown at this time*	2
2	*Missing*	4
3	WHITE NOT OF HISP ORIG	74,231
4	ASIAN	269,125
5	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	273,076
6	AMERICAN INDIAN OR ALASKA NATIVE	281,759
7	UNKNOWN BY PATIENT	695,252
8	DECLINED TO ANSWER	871,746
9	BLACK OR AFRICAN AMERICAN	3,938,842
10	WHITE	18,054,251

## Example: Mapping to Standard Race Values

- Create a table that maps between non-standard and standard values
  - Code is on p.10 of “Race Data Best Practices Guide”
- Map these additional entries to “Unable to Map:”
  - “\*Unknown at this time\*”
  - “\*Missing\*”
  - “Asian/Pacific Islander”
- Change mapped categories to match project needs

*See Researcher’s Notebook: Using SQL to “Sort Out” Race in CDW for alternate method for programming standard race values*

<https://vaww.virec.research.va.gov/Notebook/RNB/RNB6-CDW-SQL-to-Sort-Out-Race-CY16.pdf> (VA intranet only)

# Example: Race Translation Table

```

drop table if exists #RaceTranslationTable
create table #RaceTranslationTable
(InboundRace varchar(50),
StandardRace varchar(50));
insert into #RaceTranslationTable
values('NULL','Unable to Map')
insert into #RaceTranslationTable
values('AMER INDIAN OR ALASKAN NATIVE ','AMERICAN INDIAN OR ALASKA NATIVE')
insert into #RaceTranslationTable
values('AMERICAN INDIAN','AMERICAN INDIAN OR ALASKA NATIVE')

```

Delete table if it already exists  
 Use # to create temporary tables  
 Text 'NULL' ≠ null value

	InboundRace	StandardRace
1	NULL	Unable to Map
2	AMER INDIAN OR ALASKAN NATIVE	AMERICAN INDIAN OR ALASKA NATIVE
3	AMERICAN INDIAN	AMERICAN INDIAN OR ALASKA NATIVE
4	AMERICAN INDIAN / ALASKAN NATIVE	AMERICAN INDIAN OR ALASKA NATIVE
5	AMERICAN INDIAN OR ALASKA NATIVE	AMERICAN INDIAN OR ALASKA NATIVE

First 5 entries from the table

\*See page 10 of Race Data Best Practices Guide for the remaining code

# Example: Convert to Standard Values

```
SELECT b.StandardRace, FORMAT(COUNT(b.StandardRace), 'N0') as Freq
FROM CDWork.PatSub.PatientRace as a LEFT JOIN #RaceTranslationTable as b
ON a.Race = b.InboundRace
GROUP BY b.StandardRace
ORDER BY COUNT(b.StandardRace)
```

100 % &lt;

Results

Messages

	StandardRace	Freq
1	Unable to Map	6
2	ASIAN	269,125
3	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	273,076
4	AMERICAN INDIAN OR ALASKA NATIVE	281,759
5	UNKNOWN BY PATIENT	695,252
6	DECLINED TO ANSWER	871,746
7	BLACK OR AFRICAN AMERICAN	3,938,842
8	WHITE	18,128,482

# Example: PatSub.PatientEthnicity

```
SELECT Ethnicity, FORMAT(COUNT(Ethnicity), 'N0') as Freq
FROM CDWork.PatSub.PatientEthnicity as a
GROUP BY Ethnicity
ORDER BY COUNT(Ethnicity)
```

100 % <

Results Messages

	Ethnicity	Freq
1	*Missing*	1
2	*Unknown at this time*	1
3	DECLINED TO ANSWER	473,961
4	UNKNOWN BY PATIENT	989,292
5	HISPANIC OR LATINO	1,408,195
6	NOT HISPANIC OR LATINO	21,794,870

# Example: Collection Method

```
SELECT CollectionMethod, FORMAT(COUNT(CollectionMethod), 'N0') as Freq
FROM CDWork.PatSub.PatientRace
GROUP BY CollectionMethod
ORDER BY COUNT(CollectionMethod)
```

100 % &lt;

Results

Messages

	CollectionMethod	Freq
1	*Unknown at this time*	1
2	*Missing*	3
3	PROXY	444
4	OBSERVER	1,832
5	UNKNOWN	218,142
6	SELF IDENTIFICATION	24,237,866

← Default Value, rarely changed

# Example: LegacyRace

```
SELECT a.LegacyRace, FORMAT(COUNT(1), 'N0') as Freq
FROM (SELECT DISTINCT PatientSID, LegacyRace from PatSub.PatientRace) as a
GROUP BY a.LegacyRace
ORDER BY COUNT(1) DESC;
```

Need to remove duplicates

100 % &lt;

Results Messages

	LegacyRace	Freq
1	*Missing*	20,170,636
2	WHITE, NOT OF HISPANIC ORIGIN	2,059,432
3	UNKNOWN	644,741
4	BLACK, NOT OF HISPANIC ORIGIN	496,330
5	HISPANIC, WHITE	171,881
6	WHITE, NOT OF HISPANIC ORIGIN	109,097
7	CAUCASIAN	67,308
8	BLACK	51,483

## Example: LegacyRace (Standard Values)

```

SELECT b.StandardRace, FORMAT(COUNT(b.StandardRace), 'N0') as Freq
FROM (SELECT DISTINCT PatientSID, LegacyRace from PatSub.PatientRace) as a
LEFT JOIN #RaceTranslationTable as b
      ON a.LegacyRace=b.InboundRace|
GROUP BY b.StandardRace
ORDER BY COUNT(b.StandardRace) DESC;

```

100 % &lt;

Results Messages

	StandardRace	Freq
1	Unable to Map	20,837,492
2	WHITE	2,481,836
3	BLACK OR AFRICAN AMERICAN	622,239
4	AMERICAN INDIAN OR ALASKA NATIVE	15,106
5	UNKNOWN BY PATIENT	329
6	DECLINED TO ANSWER	112
7	ASIAN	10
8	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	6

# Example: Multiple Sources (Long Format)

```
DROP TABLE IF EXISTS #SampleCohort
SELECT TOP 100 PatientSID, Sta3N
  INTO #SampleCohort
  FROM CDWork.Patient.Patient;
```

→ Create a sample cohort

```
SELECT a.PatientSID, a.Sta3N, b.Race, b.CollectionMethod
FROM #SampleCohort as a LEFT JOIN cdwork.PatSub.PatientRace AS b
ON a.PatientSID = b.PatientSID
```

Names don't need to match  
as long as data type and  
column order are the same

```
UNION ALL
```

```
SELECT c.PatientSID, c.Sta3N, d.LegacyRace, NULL as CollectionMethod
FROM #SampleCohort AS c
LEFT JOIN (SELECT DISTINCT PatientSID, LegacyRace from PatSub.PatientRace) as d
ON c.PatientSID = d.PatientSID
```

Can select different value  
for CollectionMethod but  
must have the same # of  
columns for each table

```
ORDER BY 1;
```

Sorts by the 1<sup>st</sup> column

# Session Outline

- Introduction
- Locating race and ethnicity in VA data
- Locating race and ethnicity in Medicare/Medicaid
- Quality of VA race and ethnicity data
- Recommendations to address data quality issues
- Examples
- **Where to go for more help**

# Additional Resources

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The screenshot shows the VIREc INTRANET website. At the top left is the VIREc logo, and at the top right is a search bar with the text 'Search All VA Web Pages' and a 'Search' button. Below the search bar is a link to 'Open Advanced Search'. The main header reads 'VA INFORMATION RESOURCE CENTER (VIREc)'. On the left side, there is a navigation menu with links: 'VIREc Home', 'VA/CMS Home', 'About Us', 'New Users of VA Data', 'FAQs', 'Acronyms', and 'HelpDesk'. The main content area is titled 'Race & Ethnicity' and has a sub-section 'Overview'. The overview text states: 'Researchers often use race and ethnicity data in health services research. These data are available from multiple sources within the VA. Researchers should be aware of the quality and completeness of race and ethnicity data elements in each source.' It then lists five minimum categories for federal data on race: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White. It also mentions that federal data on ethnicity has two categories: Hispanic or Latino and Not Hispanic or Latino. Additional information is available from [Statistical Policy Directive No. 15](#) (Office of Business Management and Budget, 2003). Below this is a section titled 'Medical SAS Datasets' which describes variables in the [VHA Medical SAS Inpatient and Outpatient](#) datasets. A bulleted list includes: RACE - Captures race and ethnicity data prior to FY 2003; RACE1-RACE7 - Captures multiple races from FY2003 to present; and ETHNIC - Captures a single value for ethnicity from FY2003 to present. A paragraph follows stating that a substantial portion of Veterans do not have a 'usable' race value in the Medical SAS Inpatient and Outpatient Datasets, citing VIREc's [Technical Report: VA Race Data Quality](#) (September 2011). The final section is 'Corporate Data Warehouse (CDW)', which states that the [VHA Corporate Data Warehouse \(CDW\)](#) is a national data repository and lists tables in the Patient Domain containing race and ethnicity data: Dim.CollectionMethod, Dim.Race, and Dim.Ethnicity. On the right side of the page, there is a 'General Resources' sidebar with a list of links: Data Access, Data Sources, Data Tools, Data Topics, Products & Services, and Special Projects.

Race and Ethnicity overview:

<https://vaww.virec.research.va.gov/RaceAndEthnicity/Overview.htm>

(Intranet only)

## Quick links for VA data resources

*Quick Guide: Resources for Using VA Data*

<https://vaww.virec.research.va.gov/Toolkit/QG-Resources-for-Using-VA-Data.pdf> (VA Intranet)

VIREC: <https://vaww.virec.research.va.gov/Index.htm> (VA Intranet)

VIREC Cyberseminars: <https://www.virec.research.va.gov/Resources/Cyberseminars.asp>

VHA Data Portal: <https://vaww.vhadataportal.med.va.gov/Home.aspx> (VA Intranet)

VINCI: <https://vaww.vinci.med.va.gov/vincicentral/> (VA Intranet)

Health Economics Resource Center (HERC): <https://vaww.herc.research.va.gov/> (VA Intranet)

CDW: <https://vaww.cdw.va.gov/Pages/CDWHome.aspx> (VA Intranet)

Archived cyberseminar: What can the HSR&D Resource Centers do for you?

[https://www.hsrdr.research.va.gov/for\\_researchers/cyber\\_seminars/archives/video\\_archive.cfm?SessionID=1014](https://www.hsrdr.research.va.gov/for_researchers/cyber_seminars/archives/video_archive.cfm?SessionID=1014)

# VIReC Options for Specific Questions

- Community knowledge sharing
- ~1,400 VA data users
- Researchers, operations, data stewards, managers
- Subscribe by visiting <https://vaww.virec.research.va.gov/Support/HSRData-L.htm> (VA Intranet)



Individualized support



[virec@va.gov](mailto:virec@va.gov)

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# Contact information

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Next session:  
July 13, 2020 at 1 pm Eastern



## Database & Methods Cyberseminar Series

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**Session #8:** [Using Joint Legacy Viewer for Research:  
Chart Review for VA, DoD and Community Records](#)

Reese Omizo, VA Pacific Islands Health Care System  
Amber Lane, VA Puget Sound Health Care System

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