VIReC Database & Methods Cyberseminar Series

Assessing Race and Ethnicity

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VA Pittsburgh Healthcare System

Session Outline

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

Audience Poll

- Have you ever used VA Race/Ethnicity Data?
  - Yes
  - No

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Introduction

- Racial/ethnic disparities in health and health care are well-documented and persistent in the US
  - Root causes and solutions are not well understood
  - While overall quality is improving, access is getting worse and disparities are not changing (AHRQ 2012)
- Racial/ethnic disparities also exist in VHA, where 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

Introduction

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

- Problems with race/ethnicity data in the VA
  - Incomplete
  - Inaccuracies
  - Inconsistent over time

Racial/Ethnic Distribution of Veterans

- Approximately 79% of all Veterans are White
  - 0.7% American Indian or Alaska Native
  - 1.4% Asian
  - 11.1% Black
  - 6.2% Hispanic
  - 1.4% Two or more races
- Use of VA health care differs by race
  - Asian Veterans less likely to use (23.3 %)
  - Black, AIAN, 2+ races more likely to use (>30%)
- http://www.va.gov/vetdata/docs/SpecialReports/Minority_Veterans_2012.pdf

VA Race and Ethnicity Categories VHA Handbook 1601A.01 (2009)

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

Acquisition of Race/Ethnicity Data in VHA

WHO:	WHAT:	WHEN:	WHERE:	HOW:
Information Source: • Patient (self-report) • Proxy	• VA Form 10-10EZ, Application for Health Benefits (online, paper, or by interview)	• Enrollment • Hospital admission • Outpatient visit or pre-registration	• Online • Telephone call from local VHA facility • In-person visit to local VHA facility	• VHA Facility Enrollment Coordinator or designee (e.g., Admission Interview Clerk, Enrollment Specialist) or • Outpatient clinic personnel • Collects the information and enters into VistA

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Audience Poll

- What sources of VA race/ethnicity data have you used (check all that apply)?
  - 1 Never Used
  - 2 MedSAS files
  - 3 CDW
  - 4 VistA or regional warehouse
  - 5 Other VA data sources

Sources of Race and Ethnicity Data in VA

Medical SAS Datasets

Variable Name	MedSAS Dataset	Description
RACE	Inpatient (PTF Main File)	FY 1970 - present
	Outpatient (Visit File)	FY 1997 - present
	Outpatient (Event File)	FY 1998 - present
RACE1-RACE6	Inpatient (PTF Main)	FY 2003 - present
RACE1-RACE7	Outpatient (Visit, Event)	FY 2004 - present
ETHNIC	Inpatient (PTF Main)	FY 2003 - present
	Outpatient (Visit, Event)	FY 2004 - present

Race/Ethnicity Variables in MedSAS

- Prior to FY 2003
  - Race and ethnicity captured jointly in the variable RACE
  - Single value allowed for race/ethnicity
- After FY 2003
  - 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
    - Common format used for method of data collection

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

- RACE: Single value for race and ethnicity

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

Medical SAS Datasets:Race Values (Post 2003)

- RACE1-RACE7 : Race and method of data collection
- The first character specifies race

1st Character	Description
3	American Indian Or Alaska Native
8	Asian
9	Black or African American
A	Native Hawaiian or Other Pacific Islander
B	White
C	Declined to Answer
D	Unknown
Other	Missing

Medical SAS Datasets: Ethnicity Values (Post 2003)

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

1st Character	Description
D	Declined To Answer
H	Hispanic or Latino
N	Not Hispanic or Latino
U	Unknown
Other	Missing

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

- RACE1-RACE7, ETHNIC
- The second character specifies method of data collection

2nd Character	Description
	Missing
O	Observer
P	Proxy
S	Self-identification
U	Unknown By Patient

Corporate Data Warehouse (CDW)

- National repository of data from VistA Patient File with race and ethnicity data from October 1999 -
- Contains 1 demographic record for each VA station a Veteran has visited
- Contains standard and nonstandard race values
- Stored in a view called PatSub.PatientRace
- Documentation: Best Practices Guide Race Data
  - https://vaww.vha.vaco.portal.va.gov/sites/HDI/DQ/WebDQPublicFolder/DataQualityAnalysis/Race%20Guidebook_Final.pdf (VA Intranet only)

Nonstandard Race Values in CDW

- 26 of 31 nonstandard race values can be mapped to 4 standard races

Examples

Nonstandard Race	Standard
AMER INDIAN OR ALASKAN NATIVE, AMERICAN INDIAN, AMERICAN INDIAN / ALASKAN NATIVE	AMERICAN INDIAN OR ALASKA NATIVE
BLACK; BLACK NOT OF HISP ORIG; BLACK, NON HISPANIC; HISPANIC BLACK	BLACK OR AFRICAN AMERICAN
WHITE NOT OF HISP ORIG; WHITE, NOT HISPANIC; HISPANIC WHITE; CAUCASIAN;	WHITE
PACIFIC ISLANDER	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER

Non-Mapped Values (CDW)

- 5 values are not mapped to standard values
  - Asian or Pacific Islander
  - Asian Pacific Islander
  - Asian/Pacific Islander
  - Mexican American
  - Unknown
- 4.6% of data values fall into 1 of these 5 categories

Multiple Race Values (CDW)

- Approximately 1.7% of patients linked to a standard race have more than 1 standard race
- Not possible to identify the most recent record for a patient
- Recommendation for multiple values
  - Use only self-identified races, if any are recorded
  - Use all recorded races for patients without self-identified race
- Documentation: CDW Race Data and Multiple Races https://vaww.vha.vaco.portal.va.gov/sites/HDI/DQ/WebDQPublicFolder/DataQualityAnalysis/CDW%20Race%20Data%20and%20Multiple%20Races.pdf (VA Intranet only)

Ethnicity (CDW)

- Ethnicity found in two CDW tables
  - PatSub.PatientEthnicity – new method
    - 'HISPANIC OR LATINO'
    - 'NOT HISPANIC OR LATINO'
  - PatSub.PatientRace – old method (Appendix A)
    - HISPANIC, WHITE
    - WHITE NOT OF HISP ORIG
    - HISPANIC, BLACK
    - BLACK NOT OF HISP ORIG
- Documentation: CDW Ethnicity Data https://vaww.vha.vaco.portal.va.gov/sites/HDI/DQ/WebDQPublicFolder/DataQualityAnalysis/CDW_Ethnicity_Data_Analysis_V5.pdf (VA Intranet only)

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Sources of Medicare Race Data in VA

- VA Vital Status File
- CMS_RACE
- Race is in 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
- Denominator file from Medicare
- RACE (same as CMS_RACE)
- RTI_RACE

Medicare Race/Ethnicity Data

- Potentially useful source for Veterans in Medicare
  - Age 65 and older (>95% of VA elderly)
  - Disabled (~20% of VA patients <65 years)
  - End stage renal disease
- Derived primarily from Social Security Administration
  - Obtained at the time of application for SSN and/or replacement card
  - Reporting sources: Usually self or family
- Distinctions from current VA race/ethnicity data
  - 'Hispanic' is a race category
  - No multiple race reporting

Medicare Race Data from SSA

- Until 1980, 4 categories only
  - White
  - Black
  - Other
  - Unknown
- In 1980, 'Other' replaced by
  - Asian, Asian American or Pacific Islander
  - Hispanic
  - American Indian or Alaskan Native

RTI Race in Medicare

- Research Triangle Institute 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 Data Summary

- Medicare race 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 quality of race/ethnicity data
  - 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

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Medical SAS Datasets: Completeness of Race Data

- A substantial portion of patients do not have a "usable" race value* in the VA Medical SAS Inpatient and Outpatient Datasets

FY	Usable Race, %
1997	57
1998	57
1999	58
2000	58
2001	56
2002	55
2003	49
2004	62

FY	Usable Race, %
2005	67
2006	72
2007	75
2008	76
2009	78
2010	80
2011	83
2012	85

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

Medical SAS Datasets: Completeness by Source

- Visit-level data usability*

	Inpatient		Outpatient	
FY	Race, %	Ethnicity, %	Race, %	Ethnicity,%
2007	67.9	46.3	72.0	75.7
2008	51.3	37.3	75.3	80.3
2009	43.6	32.1	78.0	83.6
2010	40.7	31.4	80.1	86.2
2011	40.8	31.8	82.3	88.5
2012	41.7	31.8	84.9	90.9
2013	41.2	32.2	86.2	92.1
2014	60.7	46.7	88.5	93.6

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

VIReC RESEARCHERS' GUIDE TO VA DATA

Medical SAS Datasets: Completeness of Ethnicity Data

- 90% of visits in FY 2012 have a "usable" ethnicity value* in the VA Medical SAS Inpatient and Outpatient Datasets
- Completeness of ethnicity in the VA Medical SAS Inpatient Datasets is low (32% for FY 2012)
  - Half of inpatient facilities have blank ethnicity data for at least 98% of inpatient records
  - 36% of facilities have blank ethnicity data for all inpatient records
  - Improvements in FY 2014, half of inpatient facilities have usable ethnicity for >40% of patients
    - * A usable ethnicity 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 FY 1999

CDW Completeness of Ethnicity Data

- Results
  - 61% of all patients have ethnicity recorded
  - 88% of those with healthcare activity in FY 2012
  - 78% with one standard category are self-identified
  - 1% have conflicting ethnicity categories
- Recommendations
  - Only use ethnicity captured through self-identification, if available
  - Otherwise, use ethnicity captured through new recording method (Patsub.PatientEthnicity)
  - Use older collection methods (Patsub.PatientRace) when no other data are available

CDW Summary

- 8.3 million unique patient records with standard race values
- 2.3 million patient records with nonstandard race values that can be mapped to standard values
- Can contain multiple records per patient if patient visited more than 1 facility
- Sample queries for CDW data contained in Best Practices Guide: Race Data (link provided on slide 18)
- When multiple values are present
  - Use self-identified race and ethnicity
  - Otherwise use new collection methods (not self-identified)
  - Only use older collection methods if no other data

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Use of Medicare and DoD Data for Improving VA Race Data Quality
Stroupe, et al. (2010) *Journal of Rehabilitation Research & Development*

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
   a. Medicare
   b. DoD
2. To evaluate the agreement between VA self-reported race data in MedSAS files and
   a. Medicare race data
   b. DoD race data

Use of Medicare and DoD Data for Improving VA Race Data Quality
Stroupe, et al. (2010) *Journal of Rehabilitation Research & Development*

- Patient cohort
  - 10% representative sample of VA patients who obtained services during FY 2004-2005
  - N = 570,018
- Medicare race data were obtained from Medicare Vital Status file
- DoD race data were obtained from the VA/DoD Identity Repository (VADIR) database for individuals <65 years
  - VA/DoD data-sharing agreement
  - Self-reported race/ethnicity obtained from service members

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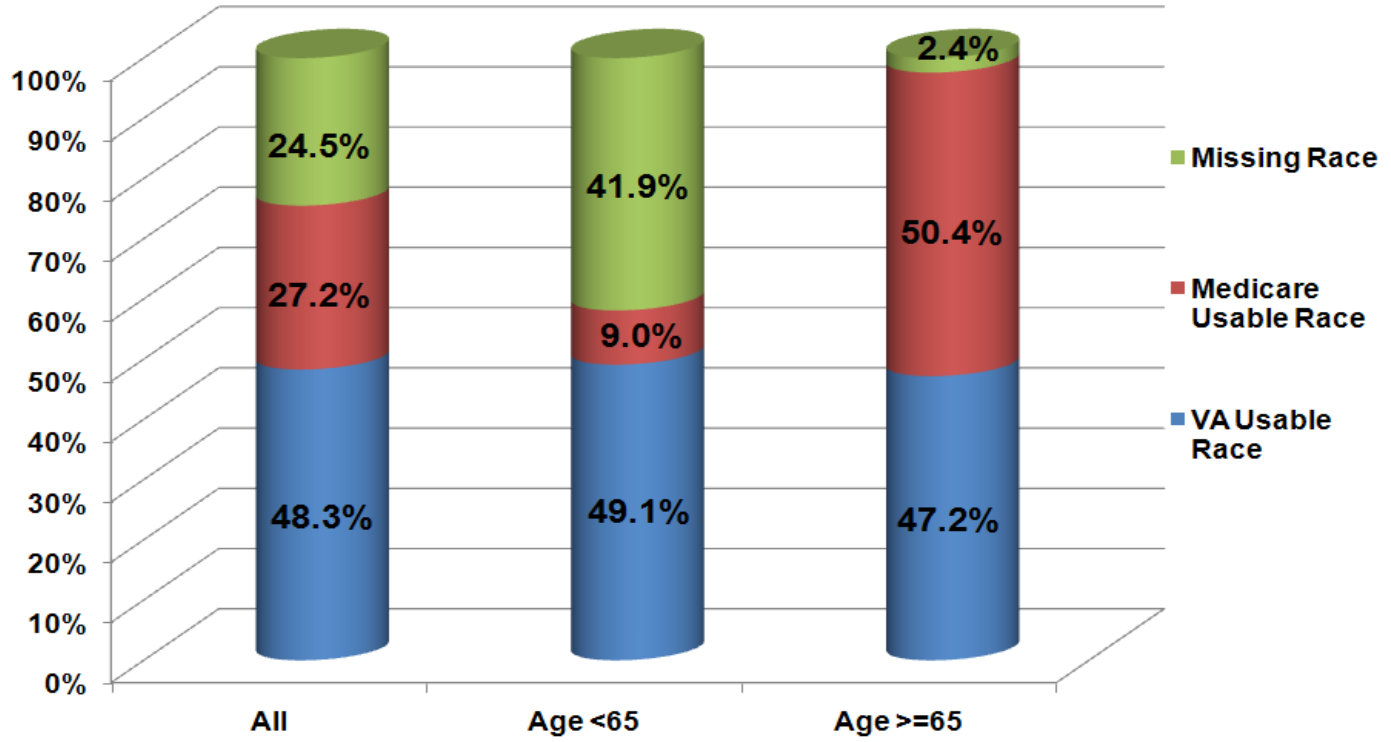
Patients with & without Usable Race Data in VA MedSAS	Usable Race Value (n=275,008)	No Usable Race Value (n=295,010)
Age, ≥65 years, %	43	45
Male, %	94	89
Married, %	56	56
Geographic Region, %		
Northeast	16	17
South	44	37
Midwest	23	21
West	17	25

Aim 1a: Improvement in Race Completeness with Addition of Medicare Data from 2004-2005

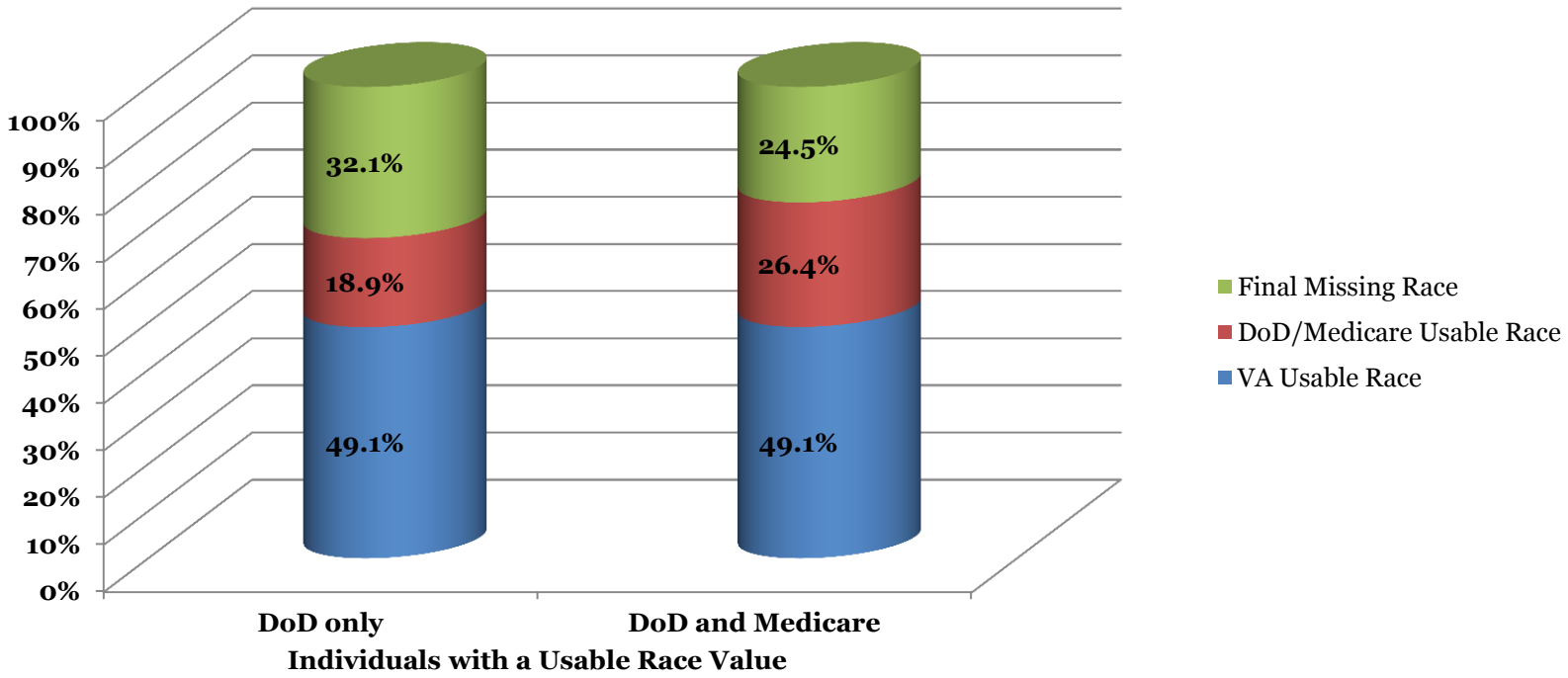
Figure 3. Adding Medicare Data Improves Race Data Completeness [a]



[a] Sample sizes: All 570,018; Age <65 319,756; Age >=65 250,262

Aim 1b: Improvement in Race Completeness with *Addition of Medicare and DoD* Data from 2004-2005

Figure. Adding DoD or DoD and Medicare Data Improves Race Data Completeness Among Non-Elderly (N = 319,756)

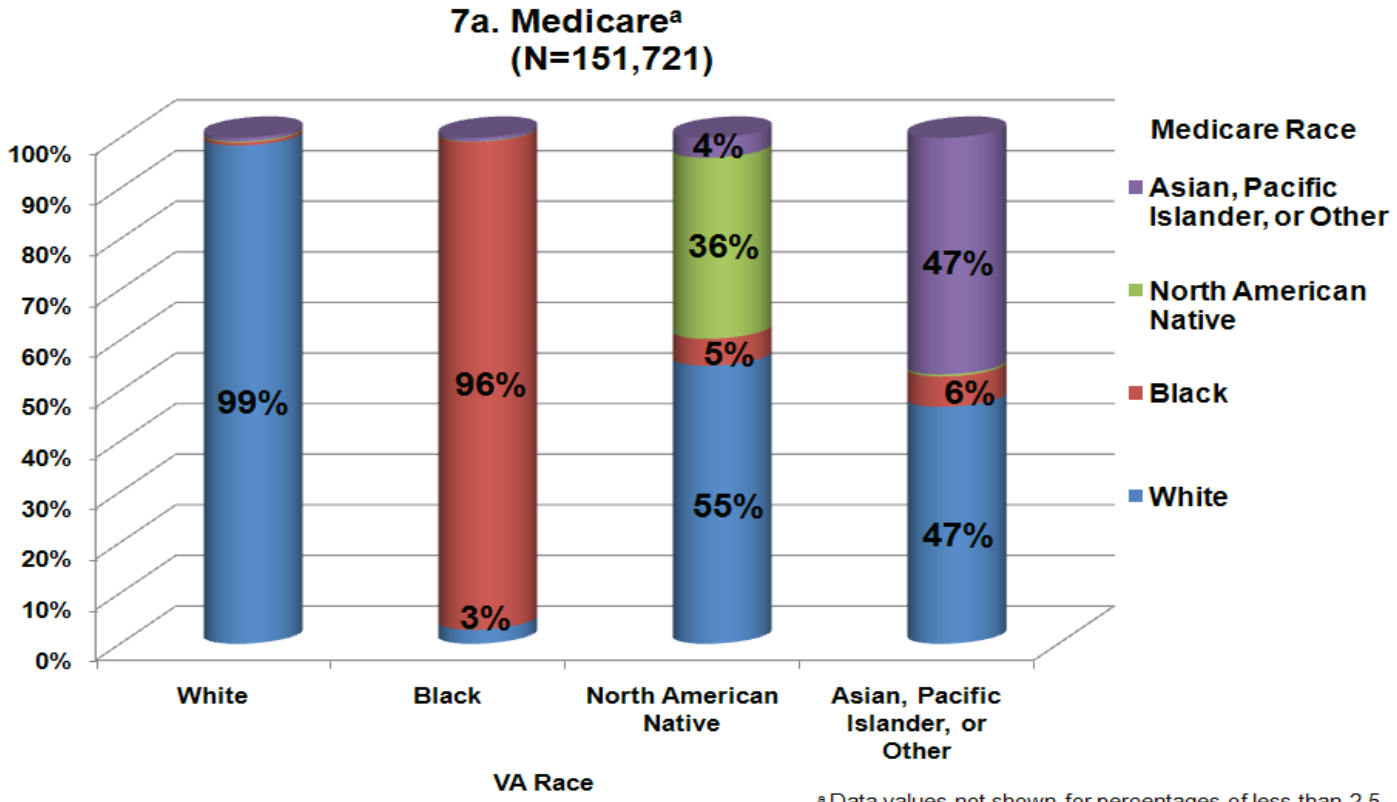


Aim 2: Comparison of Medicare with VA and DoD Data, 2004-2005

VA Race	Medicare Race	DoD Data	Classification Constructed for Consistency Analysis
White	White	White	White
Black or African American	Black	Black	Black or African American
American Indian or Alaska Native	North American Native	American Indian or Alaska Native	North American Native
Asian	Asian	Asian or Pacific Islander	Asian, Pacific Islander, or Other
Native Hawaiian or Other Pacific Islander	Other	Other	

Aim 2a: Comparison of VA with Medicare Data, 2004-2005

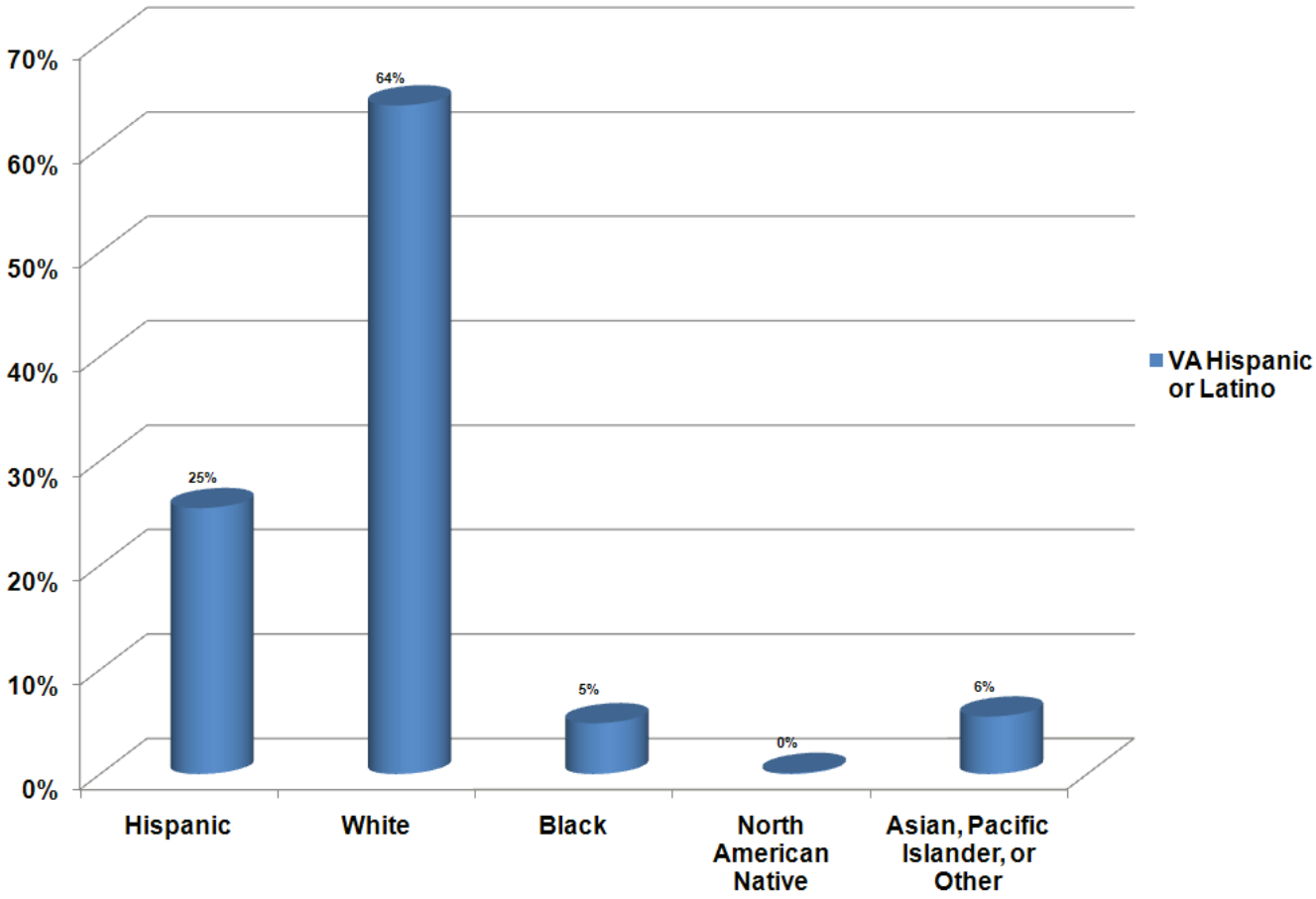
Figure 7. Concordance Between VA Race Values and Race Values from External Sources



[a] Data values not shown for percentages of less than 2.5

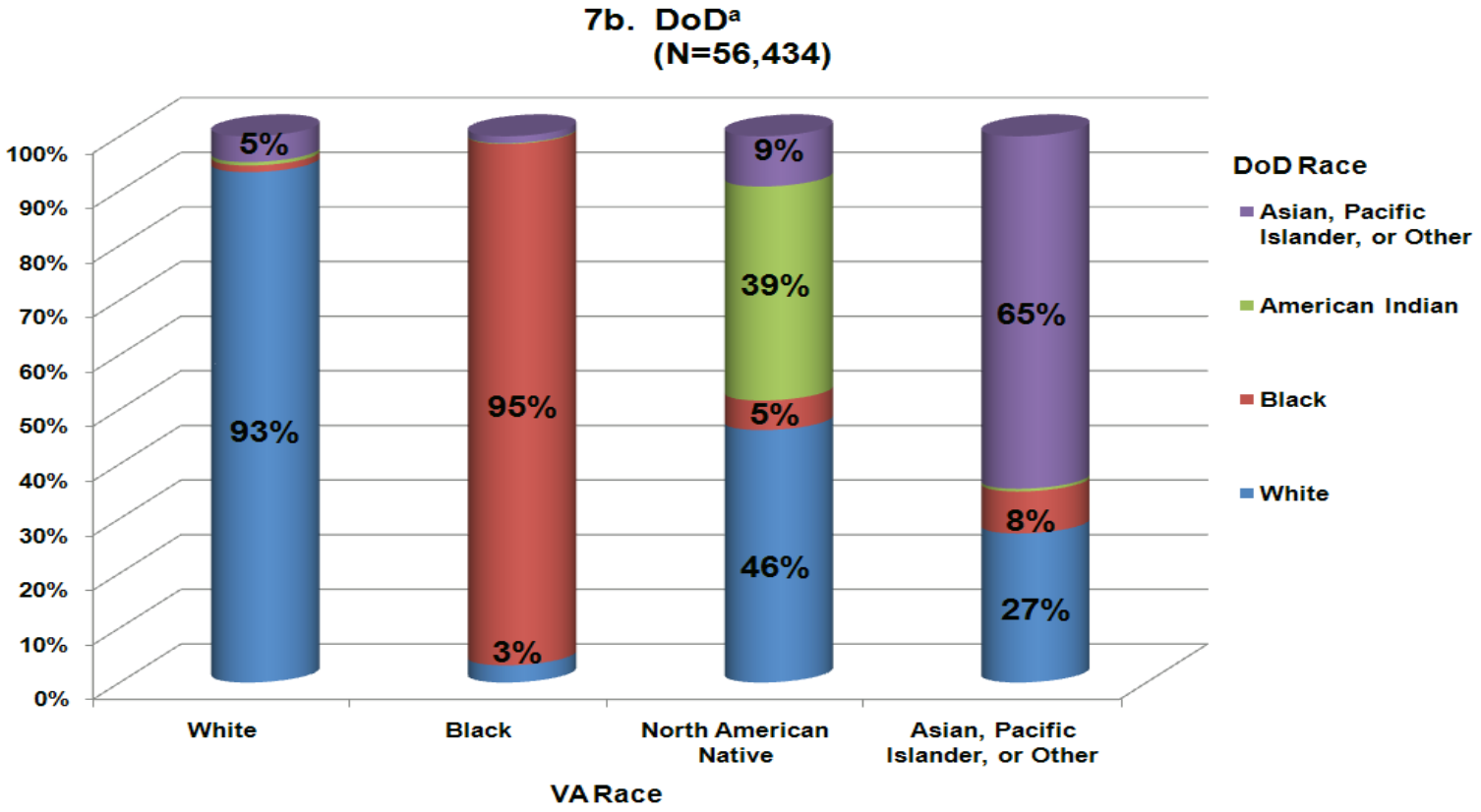
Aim 2a: Comparison of VA with Medicare Data, 2004-2005

Figure 8. Medicare Race Among VA Self-Reported Hispanics



Aim 2b: Comparison of VA with DoD Data, 2004-2005

Figure 7. Concordance Between VA Race Values and Race Values from External Sources



[a] Data values not shown for percentages less than 2.5

Use of Medicare and DoD Data for Improving VA Race Data Quality
Stroupe, et al. (2010) *Journal of Rehabilitation Research & Development*

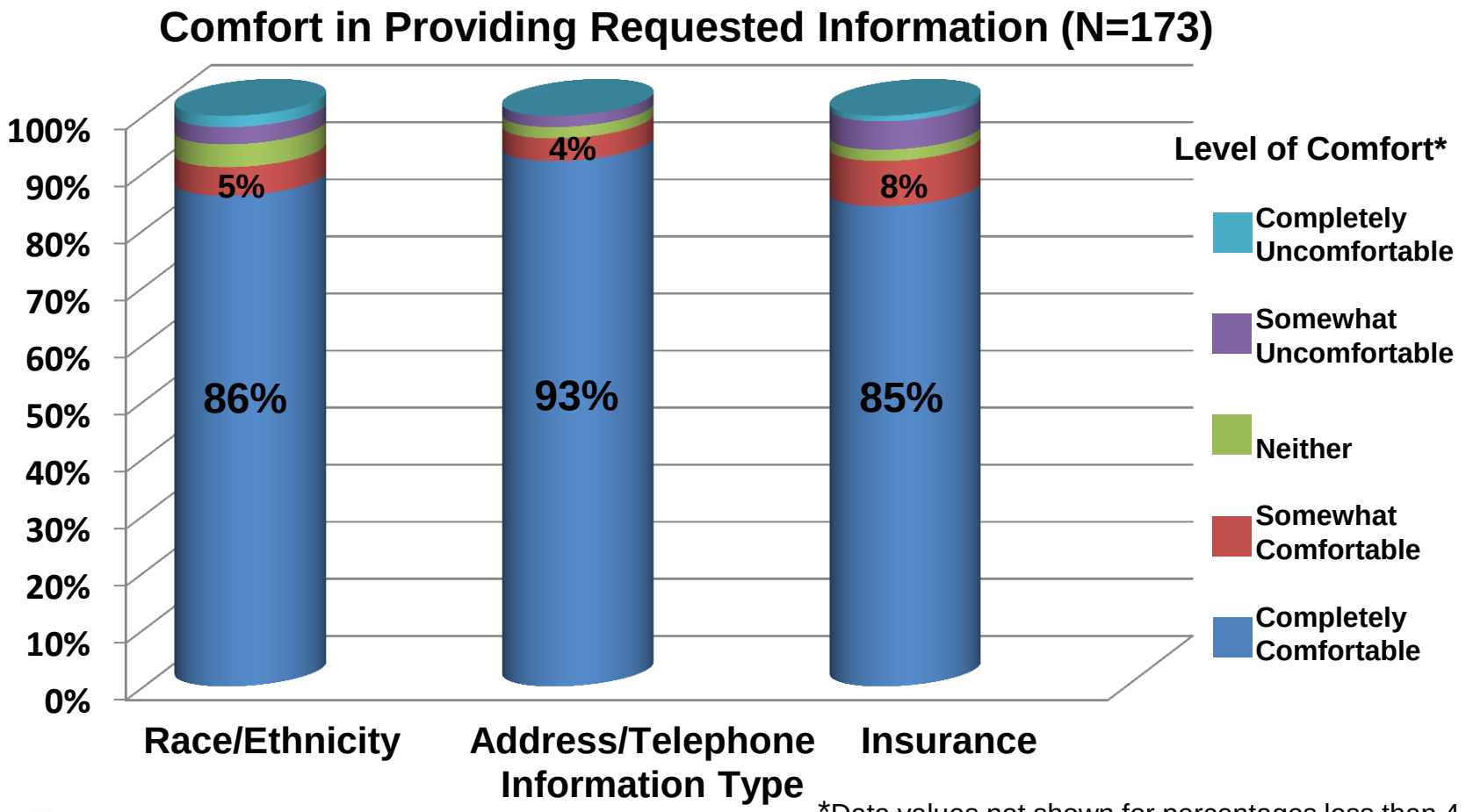
Conclusion

- Supplementing VA with Medicare and DoD data improves VA race data completeness substantially
- More study is needed to understand poor rates of agreement between VA and external sources in identifying non-African-American minority individuals

Improving Patient Demographic Information in VA Databases

- T21-funded collaboration between Center for Health Equity Research and Promotion and Veterans Engineering Resource Center
- Patients (n=173) with missing or declined race at VA Pittsburgh Healthcare System were surveyed by telephone regarding their:
  - Comfort with being asked to provide race/ethnicity, address/telephone, and insurance when coming to the VA
  - Preference for providing that information to a clerk or computer kiosk (n=48 seen at site with kiosks)

Comfort in Providing Race/Ethnicity Data



*Data values not shown for percentages less than 4

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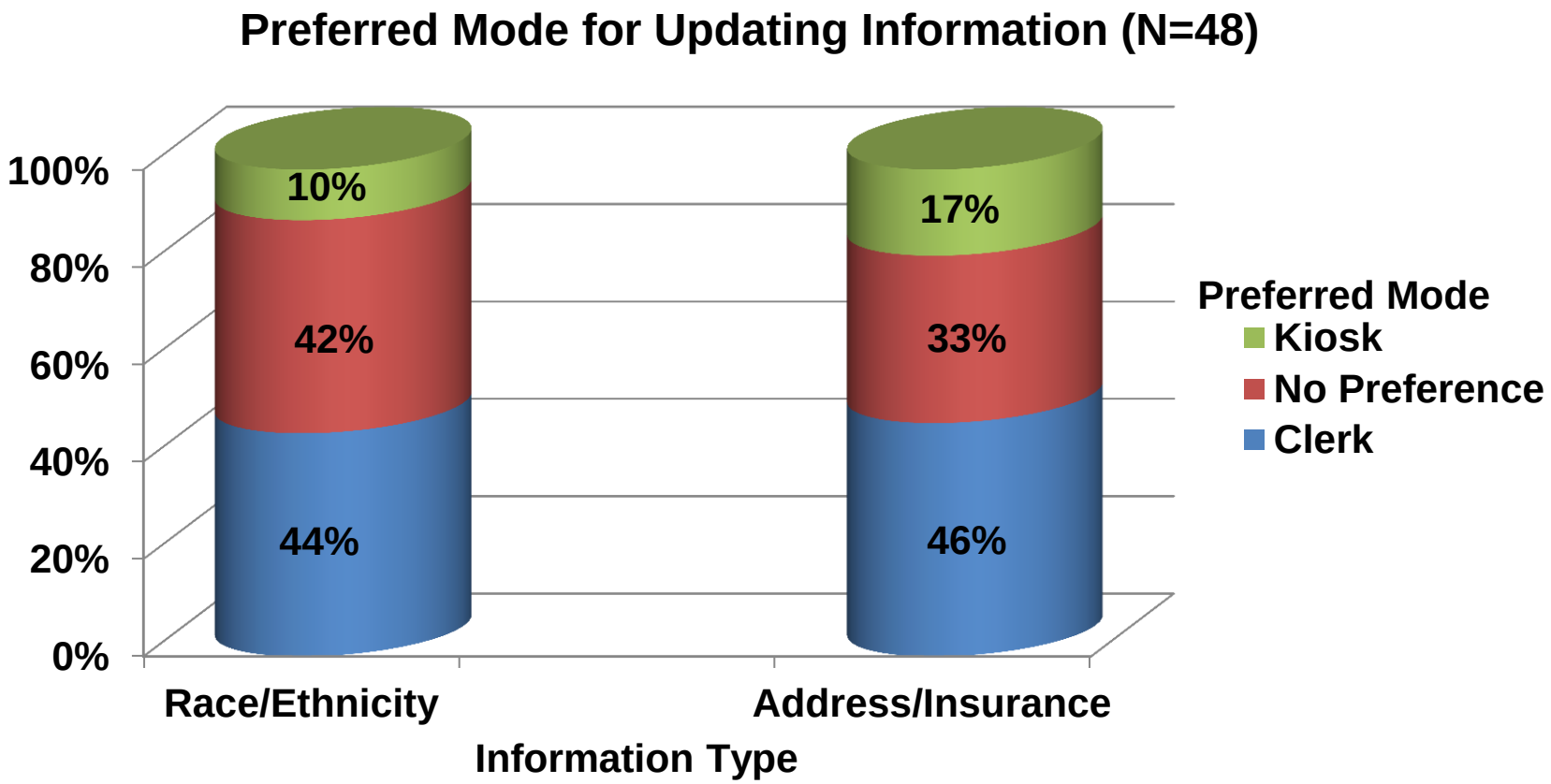
Preference for Collection of Race/Ethnicity Data



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Recommendations

- Supplement inpatient race and ethnicity with outpatient data when using MedSAS files
- When multiple sources of race and ethnicity exist
  - Use self-identified race and ethnicity, if available
  - Use data from the old collection method, only if data from the new collection method are not available
- Use the RACE variable to obtain ethnicity and race collected by the old method (MedSAS)
- Use Sub.PatientRace to obtain ethnicity collected by the old method (CDW)

Recommendations

- Use of Medicare race information will reduce the problem of missing race in VA studies using administrative data
- When using VA VSF, match on date of birth and gender, in addition to (scrambled) SSN
  - Researchers will be most likely to identify the right individuals in the VSF if they use all 3 elements when conducting their VSF-study cohort record match

Recommendations

- Classifying minorities as either Black/African American or Other in VA studies using Medicare race information results in higher rates of accurate classification than other groupings
  - VA North American Natives and Hispanics frequently misclassified as White (and Non-Hispanic) in Medicare
  - Medicare White and African-American categories, both had high predictive values for VA race

Recommendations

- Medicare data cannot be used to identify Hispanics with any degree of accuracy or completeness
- RTI_RACE in the Medicare Denominator file can increase the identification of Hispanics and Asians
- Consider other supplementary data sources
  - Department of Defense
  - Special surveys

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VIReC Help

- VIReC Webpage- http://vaww.virec.research.va.gov (VA Intranet only)
  - Information on VA data sources and how to access data
  - Documentation on some VA datasets, e.g., MedSAS datasets
- HSRData Listserv
  - More information - http://vaww.virec.research.va.gov/Support/HSRData-L.htm (VA Intranet only)
  - Discussion among 1,000+ data stewards, managers, and users
  - Past messages in archive (on intranet)
- VIReC Help Desk VIReC@va.gov
  - VIReC staff will answer your question and/or direct you to available resources on topics

Selected Recent References on Race/Ethnicity Data

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Questions?

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Extracting Data from the EHR Using CAPRI and VistAWeb

March 2, 2015

Linda Williams, MD