

VA-HRS Data Linkage Project

**Removal of Title 38 Section 7332 Protected Conditions Data
from Veterans' Records**

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BACKGROUND: Title 38 (*Veterans Benefits*) Section 7332 (*Confidentiality of Certain Medical Records*) of the U.S. Code prohibits the VA's disclosure, even for deceased veterans, of

Records of the identity, diagnosis, prognosis, or treatment of any patient or subject which are maintained in connection with the performance of any program or activity (including education, training, treatment, rehabilitation, or research) relating to drug abuse, alcoholism or alcohol abuse, infection with the human immunodeficiency virus, or sickle cell anemia... (38 USC 7332, available: <http://uscode.house.gov/>)

Thus, all information possibly identifying a veteran as having received those services needed to be identified and removed prior to constructing the VA-HRS data files. Living HRS veteran respondents authorized VA to disclose their information to the HRS, including that related to protected conditions (PC). Therefore, no information related to living veterans was identified or removed.

PURPOSE: This document describes how information related to protected conditions was defined, identified, and removed.

METHODS:

Identification of Deceased Veteran HRS respondents

For the purpose of removing protected conditions information, Veterans were identified as deceased based on having a death date in VA data or, in its absence, HRS data indicating the respondent is deceased, whether or not a death date was available. We searched the VA data sources most recently on 8/27/2014.

Identification of Protected Conditions Information in Veterans' Records

Information in VA administrative and clinical data that could identify a veteran as having received services related to PC may be found in healthcare encounter records, medication dispensing records, and laboratory test records. We identified all records belonging to each deceased veteran in those data sources using the veteran's social security number as the unique identifier. We assembled lists of diagnosis codes and procedure codes for each condition from medical coding software and published literature; drug names from the VA National Drug Code list, the FDA website, and published literature; VA Drug Class codes from the VA Pharmacy Benefits Management Drug Class list; and laboratory test names and codes in the VA Medical Cost Accounting Office's DSS Product Table and Laboratory Observation Identifiers Names and Codes (LOINC) from the LOINC code repository (<http://www.loinc.org>). We also obtained physician review of the lists. To identify records containing evidence of protect conditions services, we searched for those diagnosis and procedure codes, drug

names, and test names and codes in the relevant data fields in each data source. Data sources, code sets, and specific codes used are available in the Protected Conditions Codebook.

Removal of Protected Conditions Information from Veterans' Records

In some records, it was possible to remove data related to a PC while preserving the integrity of the remaining (non-PC) information in the record. In other cases, the entire record had to be removed in order to either prevent identification of the individual as having received PC services or avoid distortion of the information that was derivable from the remaining data. When an entire record is removed, non-PC information may be lost. Specific decision rules used to determine whether to remove only the PC identifier (e.g., diagnosis code, test name) versus the entire record are shown in the table.

Protected Condition Information: Decision Rules for Removal of Entire Record vs. Selected Information Within the Record		
Data Source / Record Type	Remove Entire Record	Remove PC Identifier(s) Only
Inpatient Stays	Principal diagnosis indicates PC OR MDC or DRG indicates PC OR All bedsection DRGs or MDCs for the stay indicate PC treatment OR All treating specialty codes for the stay indicate PC treatment (i.e., there are no non-PC related treating specialty codes) OR All procedure codes for the stay indicate PC treatment (i.e., there are no non-PC related procedure codes)*	PC is a secondary diagnosis AND Record contains at least one bedsection DRG or MDC after any PC related codes are removed AND Record contains at least one bedsection code after any PC related codes, if present, are removed. AND Record contains at least one procedure code after any PC related codes, if present, are removed.
Outpatient Encounters	PC is the principal diagnosis OR All procedure codes for the encounter indicate PC treatment (i.e., there are no non-PC related procedure codes) OR The clinic stop code on the record (whether primary or secondary) identifies the service as PC related	PC is a secondary diagnosis AND Record contains at least one procedure code after the PC related code is removed. AND Record contains at least one clinic stop code after the PC related code is removed
Pharmacy Dispensing	All identified records [†]	
Laboratory Testing	All identified records [†]	
* Remove complete stay record ("Main" files) and all associated detailed records ("Bedsection", "Procedure", and "Surgery" files) † Pharmacy data and laboratory testing data are at the individual prescription/laboratory test level. Therefore, removing the PC information required the removal of the record.		

Confirmation of the absence of PC information in VA-HRS Datasets

Following the above procedures and construction of the VA-HRS Datasets, we searched the datasets for the PC codes and product/test names. We also searched the text of formatted values of the codes for keywords indicating PCs or PC-related services (see Codebook for keywords).

RESULTS: Figure 1 shows healthcare utilization for living and deceased veterans in VA-HRS data and protected condition information for the deceased group. Of the 2,361 matched veterans, 1,445 (61.2%) were deceased and so had their records searched for PC information. Of the deceased veterans, 950 (65.7%) had VA healthcare utilization data. We found PC information in the healthcare records of 175 (18.4%) of those. Of the 175 with PC information, 145 (82.9%) had information relating to drug abuse, alcoholism or alcohol abuse, 6 (3.4%) had information relating to HIV/AIDS testing and treatment, and 48 (27.4%) had information relating to HIV screening (antigen and/or antibody testing) but no other records indicating HIV-related testing (e.g., CD-4 count) or treatment. Therefore, 8.7%, 0.4%, and 5.1% of all 1,669 matched veterans had information that was removed from their records relating to drug/alcohol abuse, HIV testing and treatment, and HIV screening, respectively. Following removal of this information, 3 veterans had no remaining records and so will appear to have used no VA healthcare.

The following tables compare the demographic characteristics, healthcare utilization, and selected chronic health conditions of participants whose records were altered to remove PC information and participants with no PC information in VA healthcare data. In interpreting this information, it is important to remember that, by definition, all participants whose records were altered or removed are deceased.

Table 1 presents demographic information. Veterans with PC information were younger than those without (59.4% vs 50.5% born after 1930). Consistent with later birth, among deceased veterans, those with PC information tended to have died more recently (60.6% vs. 42.2% in 2006 or later).

Table 2 presents information on VA healthcare utilization, specifically, inpatient stay counts and length of stays, outpatient visits which include services such as lab and diagnostic imaging, and outpatient provider encounters. Table 3 presents the same information but percentage calculations are based on denominators that exclude those with no utilization in the particular category. Length of stay information is excluded since those numbers are identical to those in Table 2. Veterans with PC information were more likely than those without to have had at least one inpatient stay (61.1% vs. 24.1%) and, among those with inpatient stays, tended to have a greater number of stays (mean [SD] 4.2 [4.0] vs 3.0 [2.6]). Similarly, veterans with PC information had a higher mean length of stay (10.0 [29.3] days vs. 8.3 [24.1] days), though median length of stay was 4 days in both groups. For outpatient care, veterans with PC information averaged twice as many provider encounters as those without PC information (among those with outpatient encounters, mean [SD] 113.7 [193.3] vs. 56.6 [93.1]).

Table 3 presents information on chronic conditions among veterans with and without PC information. For all four conditions—cancer, chronic obstructive pulmonary disease, diabetes, and depression—prevalence in VA data was higher among veterans with PC than those without PC information.

In summary, veterans with PC information tended to be younger, to have used more inpatient and outpatient healthcare services in the VA, and tended to be sicker, at least in relation to some of the most common chronic conditions.

Figure 1. Vital status, VA healthcare use, and protected condition information among veterans in VA-HRS data

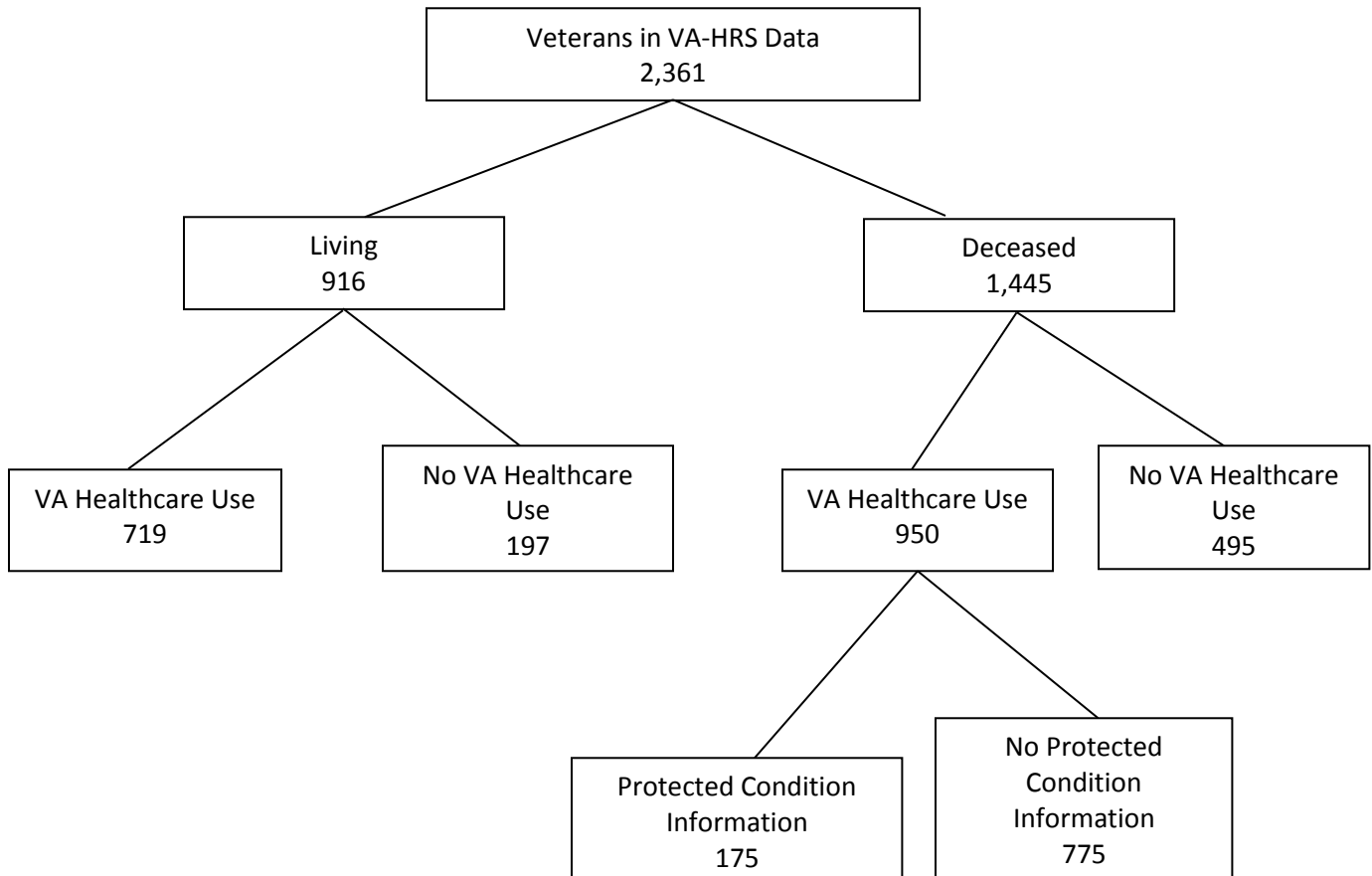


Table 1. Demographics*

Sample Characteristics	All (N= 2,361)		No Protected Condition (N = 2,186)		With Protected Condition (N=175)	
	N	%	N	%	N	%
Year of Birth						
Prior 1910	27	1.1	27	1.2	0	0.0
1911 - 1920	329	13.9	311	14.2	18	10.3
1921 - 1930	798	33.8	745	34.1	53	30.3
1931 - 1940	690	29.2	630	28.8	60	34.3
1941 - 1950	343	14.5	311	14.2	32	18.3
1951 - 1960	171	7.2	160	7.3	11	6.3
1961 - 1970	3	0.1	2	0.1	1	0.6
Year of Death						
Living	916	38.8	916	41.9	0	0.0
Death Date Missing	1	0.0	0	0.0	1	0.6
Prior 1990	2	0.1	2	0.1	0	0.0
1991 - 1995	83	3.5	83	3.8	0	0.0
1996 - 2000	280	11.9	268	12.3	12	6.9
2001 - 2005	437	18.5	381	17.4	56	32.0
2006 - 2010	472	20.0	404	18.5	68	38.9
2011 - 2015	170	7.2	132	6.0	38	21.7
Sex[†]						
Male	2,284	96.7	-	-	-	-
Female	77	3.3	-	-	-	-
Race[†]						
Black or African American	329	13.9	-	-	-	-
White	1,731	73.3	1,602	73.3	129	73.7
Other	301	12.7	-	-	-	-
Ethnicity[†]						
Hispanic or Latino	72	3.0	-	-	-	-
Not Hispanic or Latino	1,219	51.6	1,078	49.3	141	80.6
Unknown	1,070	45.3	-	-	-	-
Census Division						
Unknown	715	30.3	715	32.7	0	0.0
1 - New England	67	2.8	59	2.7	8	4.6
2 - Middle Atlantic	198	8.4	176	8.1	22	12.6
3 - East North Central	294	12.5	265	12.1	29	16.6
4 - West North Central	129	5.5	118	5.4	11	6.3
5 - South Atlantic	426	18.0	383	17.5	43	24.6
6 - East South Central	103	4.4	92	4.2	11	6.3
7 - West South Central	172	7.3	156	7.1	16	9.1
8 - Mountain	98	4.2	81	3.7	17	9.7
9 - Pacific	159	6.7	141	6.5	18	10.3
Census Region						
Unknown	715	30.3	715	32.7	0	0.0
1 - Northeast	265	11.2	235	10.8	30	17.1
2 - Midwest	423	17.9	383	17.5	40	22.9
3 - South	701	29.7	631	28.9	70	40.0
4 - West	257	10.9	222	10.2	35	20.0

* Sex information taken from HRS data; all other data from VA sources.

† Breakdown by protected condition status not shown due to small cell sizes.

Table 2. VA HEALTHCARE UTILIZATION

		All (N=1,669)	No Protected Conditions (n=1,494)	With Protected Conditions (N=175)
Inpatient Stays	1 or more N(%)	467 (28.0%)	360 (24.1)	107 (61.1%)
	Counts			
	N	1510	1,063	447
	Mean	0.91	0.71	2.55
	SD	2.15	1.79	3.72
	Min	0	0	0
	Max	22	16	22
	1st Percentile	0	0	0
	25th Percentile	0	0	0
	Median	0	0	1
	75th Percentile	1	0	3
	Length of Stay			
	N	13,268	8,820	4,448
	Mean	8.79	8.30	9.95
	SD	25.75	24.09	29.30
	Min	1	1	1
	Max	673	673	415
	10th Percentile	1	1	1
	25th Percentile	2	2	2
Median	4	4	4	
75th Percentile	8	8	7	
Outpatient Visits*	1 or more N(%)	1,642 (98.4%)	1,468 (98.3%)	174 (99.4%)
	Counts			
	N	115,092	93,415	21,677
	Mean	69.0	62.5	123.9
	SD	108.6	91.7	193.7
	Min	0	0	0
	Max	1,667	1,381	1,667
	10th Percentile	0	0	1
	25th Percentile	8	8	24
	Median	32	29	60
	75th Percentile	87	82	145
Outpatient Provider Encounters†	1 or more	1,589 (95.2%)	1,418 (94.9%)	171 (97.7%)
	N	99,736	80,294	19,442
	Mean	59.8	53.7	111.1
	SD	107.9	91.6	191.9
	Min	0	0	0
	Max	1,710	1,710	1,708
	10th Percentile	0	0	0
	25th Percentile	6	5	18
	Median	23	21	54
75th Percentile	71	64	120	

* 1 visit comprises all encounters a veteran may have in a single day at a VA facility.

† Counts of encounters exclude lab, diagnostic imaging, telephone services, and some ancillary services such as orthotics.

Table 3. VA HEALTHCARE UTILIZATION: Denominators Exclude Those with Zero Stays/Visits

		All (N=1,669)	No Protected Conditions (n=1,494)	With Protected Conditions (N=175)
Inpatient Stays	1 or more N(%)	467 (28.0%)	360 (77.1)	107 (61.1%)
	Counts			
	N	1,510	1,063	447
	Mean	3.23	2.95	4.18
	SD	3.01	2.59	3.99
	Min	1	1	1
	Max	22	16	22
	1st Percentile	1	1	1
	25th Percentile	1	1	2
	50th Percentile	2	2	3
75th Percentile	4	4	6	
Outpatient Visits*	1 or more N(%)	1,642 (98.4%)	1,468 (98.3%)	174 (99.4%)
	Counts			
	N	115,092	93,415	21,677
	Mean	70.1	63.6	124.6
	SD	109.1	92.1	194.0
	Min	1	1	1
	Max	1,667	1,381	1,667
	10th Percentile	1	1	1
	25th Percentile	9	8	24
	Median	33	30	60
75th Percentile	90	83	145	
Outpatient Provider Encounters[†]	1 or more	1,589 (95.2%)	1,418 (94.9%)	171 (97.7%)
	N	99,736	80,294	19,442
	Mean	62.8	56.6	113.7
	SD	109.8	93.1	193.3
	Min	1	1	1
	Max	1,710	1,710	1,708
	10th Percentile	1	1	1
	25th Percentile	8	7	20
	Median	25	23	56
75th Percentile	74	68	121	

* 1 visit comprises all encounters a veteran may have in a single day at a VA facility.

† Counts of encounters exclude lab, diagnostic imaging, telephone services, and some ancillary services such as orthotics.

Table 4. Chronic Conditions Diagnoses in VA Data

	All		No Protected Conditions		With Protected Conditions	
	(N=1,669)		(N=1,494)		(N=175)	
	N	%	N	%	N	%
Cancer	395	23.7	336	22.5	59	33.7
COPD	316	18.9	257	17.2	59	33.7
Diabetes	481	28.8	426	28.5	55	31.4
Depression	217	13.0	173	11.6	44	25.1