

Supplement

Table A Alcohol use disorder, depression, and PTSD diagnoses, treatment, and medications

Condition	Diagnosis (ICD-9 codes)		Specialty care treatment		Medications
	Code	Name	Clinic stop code number	Clinic stop code name	Medication name
Alcohol use disorder	291	Alcohol psychoses	513	Substance use disorder – individuals	Disulfiram
	303	Alcohol dependence syndrome	514	Substance use disorder – home visit	Naltrexone oral
	305.0	Nondependent alcohol abuse	519	Substance use disorder/PTSD teams	Extended-release Naltrexone injection (Vivitrol)
			523	Opioid substitution	Acamprosate
			545	Telephone substance use disorder	Topiramate
			547	Intensive substance use disorder –group	
			548	Intensive substance use disorder – individual	
			560	Substance use disorder – group	
			Bed-section number	Bed-section description	
			27	Substance abuse residential treatment program	
			29	Substance abuse compensated work therapy/transitional residence (CWT/TR) program	
			72	Alcohol dependence – high intensity	
			73	Drug dependence – high intensity	
			74	Substance abuse – high intensity	
			84	Substance abuse intermediate care	
			86	Domiciliary substance abuse	

			90	Substance abuse star I, II & III	
			111	Substance abuse residential program	
Depression	Code	Name	Clinic stop code number	Clinic stop code name	Medication name
	300.4	Dysthymic disorder	292	Observation psychiatry	<u>First line:</u>
	293.83	Mood disorder in conditions classified elsewhere	502	Mental health clinic individual	Citalopram
	301.12	Chronic depressive personality disorder	503	Mental health residential care individual	Escitalopram
	298.0	Depressive type psychosis	505	Day treatment – individual	
	311	Depressive disorder, not elsewhere classified	506	Day hospital – individual	Fluoxetine
	312	Disturbance of conduct	508	Health Care for Homeless Veterans (HCHV)/Homeless Chronically Mentally Ill (HCMI) – group	Paroxetine
	296.9	Other and unspecified affective psychoses	509	Psychiatry – individual	Sertraline
	297	Paranoid states	510	Psychology – individual	Duloxetine
	309.0	Adjustment disorder, depressive	512	Mental health consultation	Venlafaxine
	309.1	Depressive reaction prolonged	520	Long-term enhancement - individual	Bupropion
	309.2	With predominant disturbance of other emotions	521	Long-term enhancement - group	Mirtazapine
	296.2	Major depression, single episode	525	Women’s stress disorder treatment teams	
	296.3	Major depression, recurrent episode	526	Telephone/special psychiatry	<u>Broad:</u>
	296.4	Bipolar affective disorder, manic	527	Telephone mental health	Citalopram
			528	Telephone/HCMI	Escitalopram
			529	HCHV/HCMI – individual	Fluoxetine
		531	Mental health primary care team - individual	Paroxetine	

		532	Psychosocial rehabilitation - individual	Sertraline
		533	Mental health intervention biomedical care – individual	Duloxetine
		534	Mental health integrated care – individual	Venlafaxine
		537	Telephone/psychosocial rehabilitation	Bupropion
		538	Psychological testing	Mirtazapine
		539	Mental health integrated care group	Amitriptyline
		546	Telephone mental health intensive case management (MHICM) – individual	Doxepin
		550	Mental health clinic (group)	Imipramine
		551	Intensive psychiatric community care (IPCC) community clinic/day program visit	Trimipramine
		552	MHICM – individual	Desipramine
		553	Day treatment – group	Nortriptyline
		554	Day hospital – group	Protriptyline
		557	Psychiatry – group	Amoxapine
		558	Psychology – group	Maprotiline
		559	Psychosocial rehabilitation - group	Isocarboxazid
		563	Primary care/special psychiatry, Mental health primary care team -- group, Mental health primary care - group	Phenelzine
				Selegiline
				Tranlycypromine
		564	Mental health team case management	Trazodone
		565	Mental health intervention biomedical care – group	Nefazodone
		566	Mental health risk-factor reduction educational – group	Desvenlafaxine
		567	MHICM – group	
		571	Services for returning veterans – mental health (SeRV-MH) – individual	
		572	SeRV-MH – group	

		573	Mental health incentive therapy face-to-face	
		576	Psycho-geriatric clinic – individual	
		577	Psycho-geriatric clinic – group	
		578	Psychogeriatric day program	
		579	Telephone psycho-geriatrics	
		582	Psychosocial rehabilitation recovery center (PRRC) – individual	
		583	PRRC – group	
		584	Telephone PRRC	
		586	Residential rehabilitation treatment program (RRTP) – individual	
		587	RRTP – group	
		588	RRTP aftercare – individual	
		594	RRTP aftercare - community	
		595	RRTP aftercare – group	
		596	RRTP admission screening services	
		597	Telephone/RRTP	
		598	RRTP pre-admission – individual	
		599	RRTP pre-admission – group	
		Bed section code	Bed-section description	
		25	Psychiatric residential rehabilitation treatment program	
		33	GEM psychiatric beds	
		70	Acute psychiatry (< 45 days)	
		71	Long term psychiatry (> 45 days)	
		76	Psychiatric mentally infirm	
		77	PRRTP	
		92	Psychiatry – general internal	

			93	High intensity general psychiatry inpatient	
			94	Psychiatric observation	
			109	Psychiatric residential rehabilitation program	
PTSD		Same as depression (above), plus PTSD-specific items listed below.			
			Clinic stop code number	Clinic stop code name	Medication name
	Code	Name			
	309.81	Post-traumatic stress disorder	516	PTSD – group	<u>First line:</u>
			519	Substance use disorder/PTSD teams	Fluoxetine
			540	PTSD clinical team (PCT) post-traumatic stress – individual	Paroxetine
			541	PTSD Post-traumatic stress	Sertraline
			542	Telephone PTSD	Fluvoxamine
			561	PCT – post-traumatic stress – group	Citalopram
			562	PTSD – individual	Escitalopram
			580	PTSD day hospital	Venlafaxine
			581	PTSD day treatment	Mirtazapine
			582	Psychosocial rehabilitation recovery center (PRRC) – individual	Nefazodone
			Bed-section code	Bed-section description	Imipramine
			26	PTSD residential rehabilitation program	Amitriptyline
			79	Specialty inpatient PTSD unit	Desipramine
			91	Evaluation and brief treatment PTSD unit (EBTPU)	Nortriptyline
			110	PTSD residential rehabilitation program	Protriptyline
					Clomipramine
					Phenelzine
				Tranlycypromine	

					Broad:
					Prazosin
					Duloxetine

PTSD = Posttraumatic Stress Disorder

Description of control variables

Demographic characteristics from the Defense Enrollment Eligibility Reporting System (DEERS) included age, marital status, and race/ethnicity. Deployment and demobilization characteristics from the Contingency Tracking System (CTS) and DEERS included rank, number of deployments prior to index deployment, probable serious injury during index deployment, cohort (FY of demobilization date between 2008-11), repeat deployment in post-index year, residence region at end of index deployment, and length (in months) of index deployment. Health and healthcare measures constructed from the Military Health System (MHS) Data Repository and PDHRA included hospitalized since last deployment, wounded, injured, assaulted, or hurt on last deployment, DoD provided health insurance (i.e., TRICARE) after index deployment, conflict with spouse/family, and gap (in months) between the demobilization date and index PDHRA date. Additional healthcare predictor variables were created using information from the VHA Enrollment File and National Patient Care Databases: received pre-demobilization VHA services as an enrollee in the VHA system, received pre-demobilization services as a non-enrollee in the VHA system, received post-demobilization, pre-PDHRA VHA services as a non-enrollee, and drive time (in hours) to nearest VHA facility with primary care.

Table B Characteristics^a of ARNG and AR

	ARNG women N=4,209		ARNG men N=48,799		AR women N=2,903		AR Men N=17,253	
Categorical variables	N	%	N	%	N	%	N	%
Married	1,274	30.27	25,285	51.81	900	34.10	8,998	52.15
Race/ethnicity								
Non-Hispanic White	2,679	63.65	38,632	79.17	1,582	54.50	12,135	70.34
Non-Hispanic African American	896	21.29	5,017	10.28	759	26.15	2,249	13.04
Hispanic	378	8.98	3,141	6.44	381	13.12	1,832	10.62
Asian or Pacific Islander	156	3.71	1,255	2.57	136	4.68	808	4.68
American Indian/Alaska Native	60	1.43	425	.87	28	.96	143	.83
Other	40	.95	329	.67	17	.59	86	.50
Rank								
Junior enlisted	2,589	61.51	24,992	51.21	1,310	45.13	7,184	41.64
Senior enlisted	1,192	28.32	18,431	37.77	1,055	36.34	6,790	39.36
Junior officer	320	7.60	3,372	6.91	286	9.85	1,499	8.69
Senior officer	69	1.64	1,065	2.18	212	7.30	1,499	8.40
Warrant officer	39	0.93	939	1.92	40	1.38	331	1.92
Probable serious injury during index deployment ^b	70	1.66	824	1.69	88	3.03	385	2.23
Repeat deployment in the post-index year	50	1.19	767	1.57	77	2.65	465	2.70
Hospitalized since last deployment	148	3.52	1,170	2.40	111	3.82	430	2.49
Wounded, injured, assaulted, or hurt on index deployment	1,064	25.28	11,668	23.91	794	27.35	4,217	24.44
Cohort^c								
2008	409	9.72	6,375	13.06	505	17.40	2,848	16.51
2009	949	22.55	12,128	24.85	734	25.28	4,350	25.21
2010	2,002	47.56	21,252	43.55	984	33.90	6,142	35.60
2011	849	20.17	9,044	18.53	680	23.42	3,913	22.68
Received pre-demobilization ^d VHA services as enrollee in VHA system	550	13.07	8,670	17.77	468	16.12	2,691	15.60
Received pre-demobilization VHA services as non-enrollee	373	8.86	3,059	6.27	460	15.85	1,602	9.29
TRICARE after index deployment	1,865	44.31	18,808	38.54	1,469	50.60	7,348	42.59
Residence region at end of index deployment								
South	1,997	47.45	21,887	44.85	1,277	43.99	6,756	39.16
West	640	15.21	7,611	15.60	462	15.91	2,739	15.88
Midwest	977	23.21	11,743	24.06	658	22.67	4,355	25.24

Northeast	595	14.14	7,558	15.49	506	17.43	3,403	19.72
Received post-demobilization, pre-PDHRA VHA services as non-enrollee	68	1.62	603	1.24	26	.90	101	.59
Self-report of Conflict with spouse/family (when measured?)	873	20.74	9,130	18.71	566	19.50	2,956	17.13
Continuous variables	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age in years	27.36	8.00	29.87	8.95	29.94	9.46	31.33	9.61
Length (in months) of index deployment	9.28	2.31	9.12	2.28	10.02	2.48	9.98	2.46
Number of deployments prior to index deployment	.24	.49	.44	.63	.37	.62	.53	.72
Gap (in months) between demobilization date and index PDHRA date	3.10	1.62	3.10	1.78	3.76	2.18	3.88	2.16
Drive time (in hours) to nearest VHA facility	.52	.57	.56	.58	.44	.52	.48	.53

^aMeasured at month before index deployment unless indicated. ^bIndex refers to a deployment ending in FY2008-2011. ^cCohort refers to fiscal year of index deployment end date.

^dDemobilization refers to a demobilization after the index deployment.

AR = Army Reserve; ARNG = Army National Guard

Table C Odds ratios associated with control variables^a as predictors of VHA linkage in the 6 months after demobilized ARNG and AR members' PDHRA questionnaires

	ARNG women N=4,209		ARNG men N=48,799		AR women N=2,903		AR men N=17,253	
	OR	CI	OR	CI	OR	CI	OR	CI
Demographic characteristics								
Age in years	1.01	1.001, 1.02	1.009	1.006, 1.011	1.01	1.002, 1.03	1.01	1.001, 1.01
Married	.87	.75, 1.01	1.006	.96, 1.05	.76	.62, .92	.88	.80, .96
Race/ethnicity (Non-Hispanic White as reference)								
Non-Hispanic African American	1.09	.91, 1.31	.996	.93, 1.07	1.12	.90, 1.40	.91	.81, 1.03
Hispanic	1.22	.94, 1.58	.98	.89, 1.07	1.13	.85, 1.48	1.01	.89, 1.16
Asian or Pacific Islander	.62	.41, .92	.97	.85, 1.12	.86	.55, 1.33	.85	.70, 1.04
American Indian/Alaska Native	1.21	.68, 2.13	1.004	.81, 1.25	.50	.19, 1.30	.86	.56, 1.34
Other	1.48	.74, 2.94	1.06	.83, 1.35	1.97	.69, 5.64	.86	.49, 1.50
Deployment and demobilization characteristics								
Rank (Junior enlisted as reference)								
Senior enlisted	.69	.57, .82	.83	.78, .87	.63	.50, .81	.83	.74, .92
Junior officer	.80	.61, 1.05	.69	.63, .75	.63	.45, .89	.63	.54, .75
Senior officer	.59	.31, .999	.72	.62, .83	.51	.32, .81	.72	.60, .87
Warrant officer	.47	.22, 1.01	.78	.67, .91	.38	.17, .88	.91	.67, 1.22
Number of deployments prior to index deployment	.83	.71, .98	.83	.80, .87	.91	.77, 1.07	.89	.84, .95
Probable serious injury during index deployment ^b	.96	.57, 1.61	.78	.67, .92	.55	.31, .96	1.11	.87, 1.41
Cohort ^c (2008 as reference)								

2009	1.42	1.09, 1.86	1.26	1.17, 1.36	1.21	.91, 1.59	1.31	1.15, 1.48
2010	1.34	1.05, 1.71	1.20	1.12, 1.29	1.20	.92, 1.56	1.25	1.11, 1.41
2011	1.27	.96, 1.68	1.14	1.05, 1.24	.95	.72, 1.27	1.08	.95, 1.23
Repeat deployment in the post-index year	.74	.39, 1.41	.51	.42, .61	.50	.25, .99	.36	.26, .50
Residence region at end of index deployment (West as reference)								
South	1.30	.96, 1.76	1.23	1.008, 1.51	1.18	.87, 1.61	1.08	.89, 1.29
Midwest	1.89	1.36, 2.62	1.23	.99, 1.52	1.45	1.04, 2.02	1.27	1.05, 1.55
Northeast	1.24	.87, 1.78	1.04	.83, 1.32	1.14	.79, 1.65	1.19	.96, 1.46
Length (in months) of index deployment	.99	.96, 1.03	1.01	.998, 1.02	1.03	.99, 1.07	1.01	.99, 1.03
Health and healthcare characteristics								
Hospitalized since last deployment	1.05	.73, 1.51	.99	.87, 1.13	.999	.63, 1.59	1.50	1.21, 1.87
Wounded, injured, assaulted, or hurt on last deployment	1.60	1.37, 1.86	1.78	1.70, 1.87	2.12	1.76, 2.56	1.75	1.61, 1.90
Received pre-demobilization ^d VHA services as enrollee in VHA system	2.02	1.61, 2.53	1.94	1.84, 2.06	2.43	1.91, 3.10	2.29	2.07, 2.53
Received pre-demobilization VHA services as non-enrollee	1.37	1.08, 1.73	1.30	1.19, 1.41	1.48	1.17, 1.87	1.46	1.29, 1.65
PRIME/TRS after index deployment	.90	.79, 1.04	.97	.93, 1.01	.70	.58, .84	.92	.85, 1.001
Gap (in months) between demobilization date and index	.80	.76, .84	.85	.84, .86	.84	.80, .88	.85	.83, .87

PDHRA date								
Received post-demobilization, pre-PDHRA VHA services as non-enrollee	2.45	1.43, 4.22	1.86	1.55, 2.23	1.18	.49, 2.86	1.47	.95, 2.28
Conflict with spouse/family	1.28	1.06, 1.53	1.53	1.45, 1.62	1.21	.96, 1.53	1.55	1.40, 1.72
Drive time (in hours) to nearest VHA facility	.85	.74, .96	.94	.90, .98	.69	.57, .84	.90	.83, .97

^aMeasured at month before index deployment unless indicated. ^bIndex refers to a deployment ending in FY2008-2011. ^cCohort refers to fiscal year of index deployment end date. ^dDemobilization refers to a demobilization ending in FY2008-12.

AR = Army Reserve; ARNG = Army National Guard; CI = confidence interval; OR = odds ratio; PDHRA = Post-Deployment Health Reassessment questionnaire; VHA = Veterans Health Administration

Table D Characteristics^a of ARNG and AR, with VHA linkage 6 months post-PDHRA

	ARNG women N=1,731		ARNG men N=18,659		AR women N=851		AR men N=3,927	
Categorical variables	N	%	N	%	N	%	N	%
Married	493	28.48	9,835	52.71	252	29.61	2,011	51.21
Race/ethnicity								
Non-Hispanic White	1,118	64.59	15,016	80.48	441	51.82	2,782	70.84
Non-Hispanic African American	376	21.72	1,908	10.23	246	28.91	500	12.73
Hispanic	154	8.90	1,086	5.82	116	13.63	442	11.26
Asian or Pacific Islander	41	2.37	375	2.01	35	4.11	157	4.00
American Indian/Alaska Native	24	1.39	158	.85	6	.71	28	.71
Other	18	1.04	116	.62	7	.82	18	.46
Rank								
Junior enlisted	1,092	63.08	9,682	51.89	411	48.30	1,676	42.68
Senior enlisted	482	27.85	7,246	38.83	310	36.43	1,636	41.66
Junior officer	123	7.11	1,032	30.60	74	8.70	257	6.54
Senior officer	23	1.33	357	1.91	47	5.52	285	7.26
Warrant officer	11	.64	342	1.83	9	1.06	73	1.86
Probable serious injury during index deployment ^b	32	1.85	285	1.53	22	2.59	117	2.98
Repeat deployment in the post-index year	15	.87	181	.97	11	1.29	46	1.17
Hospitalized since last deployment	63	3.64	482	2.58	33	3.88	146	3.72
Wounded, injured, assaulted, or hurt on last deployment	542	31.31	5,949	31.88	338	39.72	1,371	34.91
Cohort^c								
2008	150	8.67	2,137	11.45	131	15.39	577	14.69
2009	407	23.51	4,886	26.19	221	25.97	1,026	26.13
2010	825	47.66	8,186	43.87	302	35.49	1,446	36.82
2011	349	20.16	3,450	18.49	197	23.15	878	22.36
Received pre-demobilization ^d VHA services as enrollee in VHA system	304	17.56	4,468	23.95	212	24.91	1,013	25.80
Received pre-demobilization VHA services as non-enrollee	185	10.69	1,454	7.79	178	20.92	525	13.37
TRICARE after index deployment	744	42.98	7,327	39.27	375	44.07	1,624	41.35
Residence region at end of index deployment								
South	768	44.37	7,632	40.90	368	43.24	1,446	36.82
West	223	12.88	2,614	14.01	122	14.34	598	15.23

Midwest	496	28.65	5,379	28.83	217	25.50	1,097	27.93
Northeast	244	14.10	3,034	16.26	144	16.92	786	20.02
Received post-demobilization, pre-PDHRA VHA services as non-enrollee	41	2.37	339	1.82	11	1.29	35	.89
Conflict with spouse/family	447	25.82	4,696	25.17	213	25.03	996	25.36
Age in years	27.57	7.94	30.17	9.01	30.11	9.45	31.45	9.62
Length (in months) of index deployment	9.26	1.75	9.11	2.00	10.07	2.71	9.97	2.11
Number of deployments prior to index deployment	.24	.50	.44	.63	.39	.62	.55	.71
Gap (in months) between demobilization date and index PDHRA date	2.80	1.29	2.83	1.51	3.30	1.85	3.43	2.00
Drive time (in hours) to nearest VHA facility	.50	.52	.54	.55	.39	.49	.46	.50

^aMeasured at month before index deployment unless indicated. ^bIndex refers to a deployment ending in FY2008-2011. ^cCohort refers to fiscal year of index deployment end date.

^dDemobilization refers to a demobilization ending in FY2008-11.

AR = Army Reserve; ARNG = Army National Guard; PDHRA = Post-Deployment Health Reassessment questionnaire; VHA = Veterans Health Administration

Table E Percent screening disagreement for AUDIT-C, PHQ-2, and PC-PTSD in PDHRA and VHA

	VHA negative ARNG women		VHA negative ARNG men		VHA positive ARNG women		VHA positive ARNG men		VHA negative AR women		VHA negative AR men		VHA positive AR women		VHA positive AR men	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
AUDIT-C																
PDHRA negative					57/1,436	3.97	991/12,795	7.74					25/729	3.43	207/2,832	7.31
PDHRA positive	135/295	45.76	2,056/5,864	35.06					65/122	53.28	430/1,095	39.27				
PHQ-2																
PDHRA negative					88/1,517	5.80	875/16,788	5.21					64/730	8.77	194/3,476	5.58
PDHRA positive	96/214	44.86	784/1,871	41.90					56/121	46.28	226/451	50.11				
PC-PTSD																
PDRHA negative					136/1,536	8.85	1,495/16,623	8.99					52/733	7.09	322/3,420	9.42
PDHRA positive	66/195	33.85	509/2,036	25.00					38/118	32.20	141/507	27.81				

■ Screen negative on PDHRA and screen positive when rescreened within 6 months in VHA.

— Screen positive on PDHRA and screen negative when rescreen within 6 months in VHA.

AR = Army Reserve; ARNG = Army National Guard; AUDIT-C = Alcohol Use Disorder Identification Test consumption; PC-PTSD = Primary Care Posttraumatic Stress Disorder; PHQ-2 = Patient Health Questionnaire; PDHRA = Post-Deployment Health Reassessment questionnaire; VHA = Veterans Health Administration

Table F Rescreening, diagnosis and treatment (within 6 months of rescreen) for alcohol misuse, depression, and PTSD in VHA

	ARNG women		ARNG men		AR women		AR men	
	N	%	N	%	N	%	N	%
Alcohol misuse								
Out of sample, had positive AUDIT-C in VHA	177/1,731	10.22	3,905/18,659	20.93	71/851	8.34	720/3,927	18.33
Out of those who screened positive, diagnosed with AUD	34/177	19.21	794/3,905	20.33	18/71	25.35	159/720	22.08
Out of those diagnosed, received AUD specialty care	8/34	23.53	194/794	24.43	2/18	11.11	31/159	24.53
Out of those diagnosed, received AUD medicine	3/34	8.82	21/794	2.64	0/18	0	7/159	4.40
Depression								
Out of sample, had positive PHQ-2 score	179/1,731	10.34	1,637/18,659	8.77	110/851	12.93	353/3,927	8.99
Out of those who screened positive, diagnosed with depression	127/179	70.95	845/1,637	51.62	71/110	64.54	189/353	53.54
Out of those diagnosed, received depression specialty care	94/127	74.02	621/845	73.49	55/71	76.06	143/189	75.66
Out of those diagnosed, received MDD first line medicine	87/127	68.50	547/845	64.73	48/71	67.61	131/189	69.31
Out of those diagnosed, received MDD all-inclusive medicine	93/127	73.23	586/845	69.35	49/71	69.01	136/189	71.96
PTSD								
Out of sample, had positive PTSD score	244/1,731	14.10	2,689/18,659	14.41	119/851	13.98	616/3,927	15.68
Out of those who screened positive, diagnosed with PTSD	106/244	43.44	1,349/2,689	50.17	56/119	47.06	336/616	54.54
Out of those diagnosed, received PTSD specialty care	78/106	73.58	1,073/1,349	79.54	47/56	83.93	266/336	79.17
Out of those diagnosed, received PTSD primary medicine	59/106	55.66	746/1,349	55.30	30/56	53.57	181/336	53.87
Out of those diagnosed, received PTSD all-inclusive medicine	61/106	57.55	789/1,349	58.45	32/56	57.14	194/336	57.74

AR = Army Reserve; ARNG = Army National Guard; MDD = Major Depressive Disorder; PTSD = Posttraumatic Stress Disorder; PHQ-2 = Patient Health Questionnaire; VHA = Veterans Health Administration