

SUPPLEMENTAL DIGITAL CONTENT

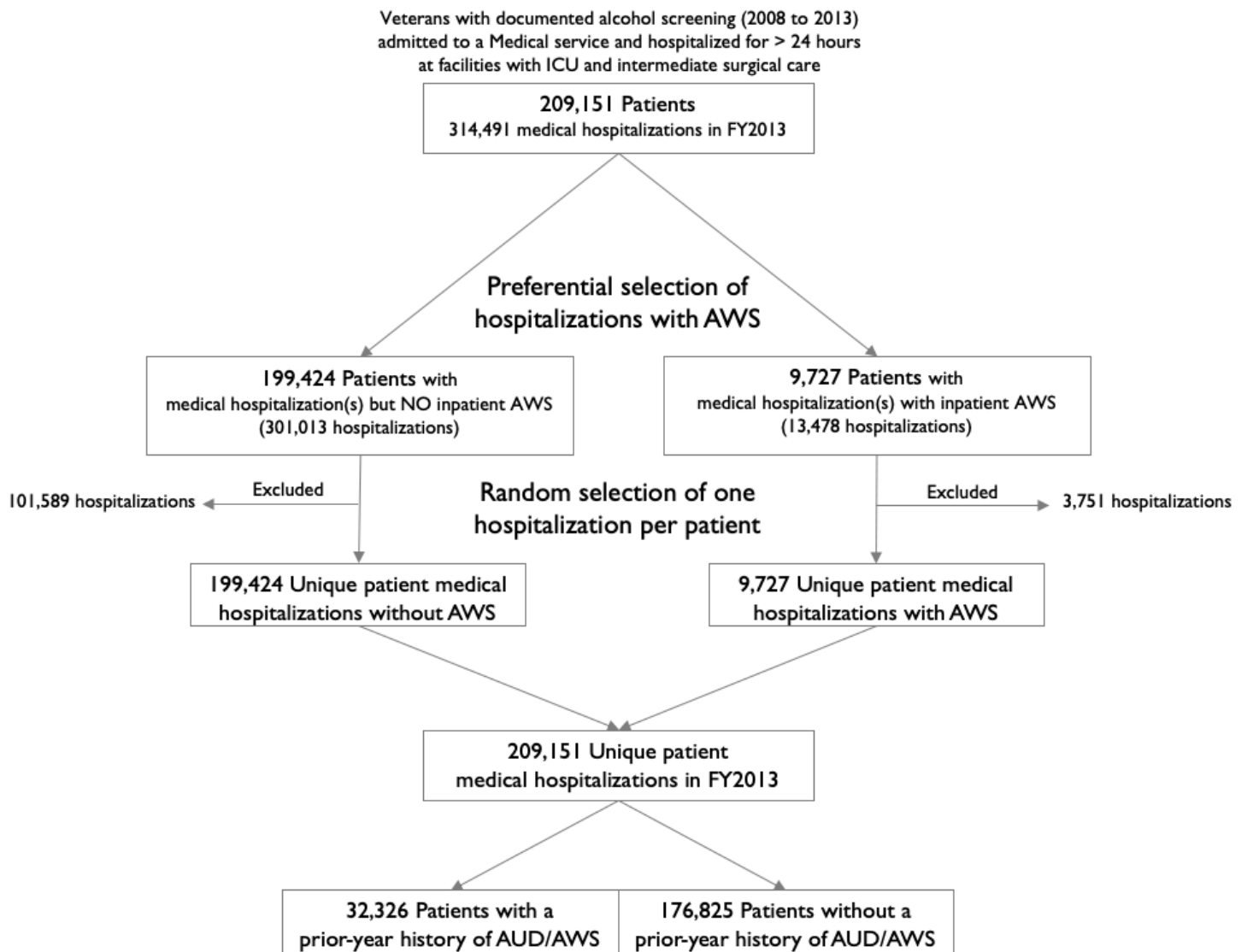
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This supplementary material has been provided by the authors to give readers additional information about their work.



eFigure 1. Flowchart for generating the dataset of medical inpatients engaged in care (determined by mandatory alcohol screening) in the Veterans Health Administration in FY2013, prioritizing admissions complicated by AWS
 ICU = intensive care unit, FY2013 = fiscal year 2013, AUD = alcohol use disorder, AWS = alcohol withdrawal syndrome

eBox 1. ICD-9-CM Diagnostic and Procedure Codes

Alcohol Withdrawal Syndrome:

- Diagnostic Codes: 291.0, 291.3, 291.5, 291.8, 291.81
- Procedure Codes: 94.62, 94.63, 94.68, 94.69

Alcohol Use Disorder:

- Diagnostic Codes: 303.x and 305.0x

eTable I. Characteristics of medical inpatients in the Veterans Health Administration in FY2013 by prior-year history of AUD and/or AWS

	Prior-year AUD/AWS (n = 32,326)		No prior-year AUD/AWS (n = 176,825)	
Age years, mean (sd)	60.3	(10.3)	69.3	(12.7)
Male, no. (%)	31,335	(96.9)	169,034	(95.6)
Race, no. (%)				
White	20,364	(63.0)	120,208	(68.0)
Black	8,328	(25.8)	33,904	(19.2)
Hispanic/Latino	1,511	(4.7)	9,363	(5.3)
Other Race/Ethnicity	914	(2.8)	4,785	(2.7)
Unknown	1,209	(3.7)	8,565	(4.8)
Single, no. (%)	24,138	(74.7)	95,950	(54.3)
Homeless, no. (%)	8,270	(25.6)	7,196	(4.1)
Prior-year medical diagnoses, no. (%)				
Pain-related	24,231	(75.0)	128,735	(72.8)
Seizure	2,923	(9.0)	7,790	(4.4)
Cerebrovascular disease	3,827	(11.8)	28,781	(16.3)
Dementia	2,715	(8.4)	18,526	(10.5)
Heart failure	4,950	(15.3)	42,943	(24.3)
Chronic obstructive pulmonary disease	10,740	(33.2)	52,689	(29.8)
Gastrointestinal disorder	4,391	(13.6)	14,407	(8.2)
Cirrhosis	5,377	(16.6)	5,971	(3.4)
Chronic kidney disease	3,322	(10.3)	36,740	(20.8)
Acute kidney injury ^a	4,243	(13.1)	24,060	(13.6)
Diabetes	8,712	(27.0)	77,241	(43.7)
Malignancy	5,402	(16.7)	38,176	(21.6)
Trauma	9,348	(28.9)	38,042	(21.5)
Pneumonia	4,003	(12.4)	26,041	(14.7)
Sepsis/shock ^a	4,026	(12.5)	22,027	(12.5)
Prior-year AD, no. (%)	32,028	(99.1)	0	(0.0)
Prior-year AWS, no (%)	6,905	(21.4)	0	(0.0)
Prior-year other substance use diagnosis ^b , no. (%)	12,380	(38.3)	7,912	(4.5)
Prior-year mental health diagnoses, no. (%)				
Anxiety	7,287	(22.5)	19,767	(11.2)
Depression	14,335	(44.4)	42,210	(23.9)
Post-traumatic stress disorder	8,835	(27.3)	21,309	(12.1)
Bipolar disorder	3,324	(10.3)	5,068	(2.9)
Psychotic disorder	3,704	(11.5)	10,168	(5.8)
Prior-year outpatient care				
Emergency Department care	23,279	(72.0)	107,763	(60.9)
Primary care ^a	30,105	(93.1)	164,407	(93.0)
Specialty Medical/Surgical care	27,697	(85.7)	158,161	(89.4)
Mental Health/Substance use care	22,718	(70.3)	55,669	(31.5)
Prior-year inpatient care				
Medical admission	15,586	(48.2)	66,542	(37.6)
Surgical admission ^a	2,597	(8.0)	13,894	(7.9)
Mental health/Substance use admission	5,311	(16.4)	2,469	(1.4)

FY2013 = fiscal year 2013, AUD = alcohol use disorder, AWS = alcohol withdrawal syndrome

^a Not statistically significant at the $p < 0.001$ level

^b Includes only drug use disorders

eTable 2. Probability of AWS based on prior-year health characteristics among medical inpatients with and without prior-year AUD and/or AWS in the Veterans Health Administration in fiscal year 2013

	Prior-year AUD/AWS ^a (n = 32,326)				No prior-year AUD/AWS ^a (n = 176,825)			
	OR	(95% CI)	Pred %	(95% CI)	OR	(95% CI)	Pred %	(95% CI)
Age								
< 40 years	-	-	23.9	(21.3-26.4)	-	-	0.6	(0.4-0.9)
40-49 years	1.6	(1.4-1.9)	32.0	(29.5-34.5)	1.4	(0.9-2.0)	0.8	(0.6-1.1)
50-59 years	1.3	(1.1-1.5)	28.0	(26.0-30.0)	1.7	(1.2-2.4)	1.1	(0.9-1.2)
60-69 years	1.1	(1.0-1.3)	25.5	(23.6-27.4)	1.7	(1.2-2.3)	1.0	(0.9-1.2)
≥ 70 years	0.8	(0.7-1.0)	20.7	(18.6-22.8)	0.7	(0.5-1.0)	0.4	(0.4-0.5)
Sex								
Female	0.7	(0.6-0.8)	21.5	(18.7-24.2)	0.3	(0.2-0.4)	0.3	(0.1-0.4)
Race								
White	-	-	28.3	(26.3-30.2)	-	-	0.8	(0.6-0.9)
Black	0.7	(0.6-0.7)	22.0	(20.2-23.9)	1.1	(0.9-1.3)	0.9	(0.7-1.0)
Hispanic/Latino	0.9	(0.8-1.0)	26.2	(23.3-29.2)	1.1	(0.8-1.5)	0.9	(0.6-1.1)
Other Race/Ethnicity	0.9	(0.8-1.1)	26.3	(23.3-29.6)	0.8	(0.5-1.2)	0.6	(0.4-0.9)
Unknown	0.8	(0.7-0.9)	21.4	(21.5-27.3)	1.1	(0.9-1.4)	0.9	(0.7-1.1)
Single								
Homeless	1.2	(1.1-1.3)	27.1	(25.2-28.9)	1.8	(1.6-2.0)	1.0	(0.8-1.1)
Prior-year medical diagnoses								
Pain-related	0.7	(0.7-0.8)	25.1	(23.3-26.9)	0.8	(0.7-0.9)	0.7	(0.6-0.9)
Seizure	1.9	(1.7-2.1)	36.4	(33.8-39.0)	2.0	(1.6-2.5)	1.5	(1.1-1.9)
Cerebrovascular disease	0.6	(0.6-0.7)	20.6	(18.5-22.6)	0.7	(0.5-0.8)	0.6	(0.4-0.7)
Dementia	0.8	(0.7-0.9)	22.7	(20.4-25.0)	0.5	(0.3-0.6)	0.4	(0.3-0.5)
Heart failure	0.7	(0.6-0.7)	20.8	(18.8-22.8)	0.7	(0.6-0.9)	0.6	(0.5-0.8)
COPD	0.9	(0.8-1.0)	25.3	(23.4-27.2)	1.2	(1.1-1.4)	0.9	(0.8-1.1)
Gastrointestinal disorder	1.2	(1.1-1.3)	28.8	(26.6-31.0)	1.1	(0.9-1.4)	0.9	(0.7-1.1)
Cirrhosis	1.2	(1.1-1.3)	29.3	(27.1-31.5)	2.4	(1.9-3.0)	1.8	(1.4-2.2)
Chronic kidney disease	0.6	(0.5-0.7)	19.1	(16.9-21.2)	0.5	(0.4-0.6)	0.4	(0.3-0.5)
Acute kidney injury	0.9	(0.8-1.0)	24.8	(22.6-27.1)	1.2	(0.9-1.5)	0.9	(0.7-1.2)
Diabetes	0.6	(0.5-0.6)	19.7	(18.0-21.4)	0.5	(0.4-0.6)	0.5	(0.4-0.6)
Malignancy	0.5	(0.4-0.5)	17.0	(15.2-18.7)	0.6	(0.5-0.8)	0.6	(0.4-0.7)
Trauma	1.2	(1.1-1.2)	28.3	(26.2-30.3)	1.2	(1.1-1.4)	1.0	(0.8-1.1)
Pneumonia	0.6	(0.6-0.7)	20.2	(18.2-22.2)	0.8	(0.7-1.0)	0.7	(0.5-0.8)
Sepsis/shock	0.9	(0.8-1.0)	24.4	(22.2-26.6)	1.1	(0.9-1.4)	0.9	(0.7-1.1)
Prior-year other SUDs ^b	0.9	(0.9-1.0)	25.9	(24.0-27.8)	2.1	(1.7-2.6)	1.6	(1.2-1.9)
Prior-year MH diagnoses								
Anxiety	1.1	(1.0-1.2)	27.6	(25.5-29.6)	1.1	(0.9-1.3)	0.9	(0.7-1.1)
Depression	1.0	(0.9-1.1)	26.5	(24.6-28.4)	0.9	(0.7-1.0)	0.7	(0.6-0.9)
PTSD	0.9	(0.9-1.0)	25.7	(23.8-27.6)	1.0	(0.8-1.2)	0.8	(0.6-1.0)
Bipolar disorder	0.8	(0.7-0.9)	22.9	(20.7-25.0)	0.9	(0.7-1.3)	0.8	(0.5-1.0)
Psychotic disorder	0.7	(0.6-0.8)	20.9	(18.9-22.8)	0.9	(0.7-1.2)	0.7	(0.5-0.9)
Prior-year outpatient care								
Emergency Department care	0.9	(0.8-0.9)	25.8	(24.0-27.6)	0.8	(0.7-0.9)	0.7	(0.6-0.8)
Primary care	0.6	(0.5-0.6)	25.6	(23.8-27.4)	0.6	(0.5-0.7)	0.7	(0.6-0.8)
Specialty Medical/Surgical care	0.6	(0.5-0.6)	24.8	(23.0-26.6)	0.5	(0.4-0.6)	0.7	(0.6-0.8)
MH/SUD care	1.0	(0.9-1.1)	26.5	(24.7-28.4)	0.7	(0.6-0.8)	0.6	(0.5-0.8)
Prior-year inpatient care								
Medical admission	1.6	(1.5-1.7)	30.5	(28.5-32.6)	0.6	(0.5-0.7)	0.5	(0.4-0.6)
Surgical admission	0.6	(0.5-0.7)	19.2	(17.1-21.4)	0.8	(0.6-1.0)	0.6	(0.4-0.8)
MH/SUD admission	1.8	(1.6-1.9)	24.5	(22.1-26.9)	0.8	(0.4-1.3)	0.6	(0.3-1.0)

AWS = alcohol withdrawal syndrome, AUD = alcohol use disorder, OR = odds ratio, CI = confidence interval, Pred % = predicted probability, COPD = chronic obstructive pulmonary disease, MH = mental health, PTSD = post-traumatic stress disorder, SUD = substance use disorder, **Bold font** = statistically significant at the p < 0.001 level

^a Adjusted for all patient demographics, diagnoses, and health services utilization covariates, with hospital facility as a random effect to account for covariance at the hospital level.

^b Includes only drug use disorders