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## Co-occurring Medical Multimorbidity, Mental Illness, and Substance Use Disorders among Older Criminal Legal System-Involved Veterans

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### Abstract

**Background:** Older veterans involved in the criminal legal system (CLS) may have patterns of multimorbidity that place them at risk for poor health outcomes.

**Objectives:** To estimate the prevalence of medical multimorbidity (≥ 2 chronic medical diseases), substance use disorders (SUDs), and mental illness among CLS-involved veterans aged ≥ 50.

**Research Design:** Using Veterans Health Administration (VHA) health records, we estimated the prevalence of mental illness, SUDs, medical multimorbidity, and the co-occurrence of these conditions among veterans by CLS involvement as indicated by Veterans Justice Programs (VJP) encounters. Multivariable logistic regression models assessed the association between CLS involvement, the odds for each condition, and the co-occurrence of conditions.

**Subjects:** Veterans aged ≥ 50 who received services at VHA facilities in 2019 (n=4,669,447).

**Measures:** Mental illness, SUD, medical multimorbidity.

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**Results:** An estimated 0.5% (n=24,973) of veterans age 50 had CLS involvement. For individual conditions, veterans with CLS involvement had a lower prevalence of medical multimorbidity compared to veterans without but had a higher prevalence of all mental illnesses and SUDs. After adjusting for demographic factors, CLS involvement remained associated with concurrent mental illness and SUD (adjusted odds ratio [aOR] 5.52, 95% CI=5.35-5.69), SUD and medical multimorbidity (aOR=2.09, 95% CI=2.04-2.15), mental illness and medical multimorbidity (aOR=1.04, 95% CI=1.01-1.06), and having all three simultaneously (aOR=2.42, 95% CI=2.35-2.49).

**Conclusions:** Older veterans involved in the CLS are at high risk for co-occurring mental illness, SUDs, and medical multimorbidity, all of which require appropriate care and treatment. Integrated care rather than disease-specific care is imperative for this population.

### Keywords

Chronic Disease; Substance Use Disorders; Mental Illness; Criminal Legal System

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### Introduction

The prevalence of psychiatric disorders and disabilities is higher among correctional populations than in the general population, leading many to consider age 50 to be the start of “older age” among people in the criminal legal system (CLS) (i.e., jail, prison).<sup>1-4</sup> Older adults are among the fastest-growing populations in correctional supervision,<sup>5</sup> and despite having multiple chronic diseases, often receive sub-standard care while incarcerated<sup>6</sup> while experiencing barriers to care upon release.<sup>7</sup>

CLS-involved adults who served in the US armed forces have potentially traumatic experiences, including adverse childhood events,<sup>8</sup> trauma exposure during military service, and traumatic incarceration experiences. Therefore, veterans with CLS involvement often have a high prevalence of post-traumatic stress disorder (PTSD), substance use disorders (SUD), and mental illness.<sup>9-12</sup> To prevent homelessness and address health and psychosocial risk factors experienced by CLS-involved veterans, the Veterans Health Administration (VHA) created the Veterans Justice Programs (VJP) to link CLS-involved veterans with services. Comprised of two programs, the Veterans Justice Outreach (VJO) and the Health Care for Reentry Veterans (HCRV) programs provide outreach to veterans at multiple points in the CLS, including contact with law enforcement, jail, courts, and those under community supervision to connect them to care.<sup>9,13</sup> For interested veterans, outreach staff meet with veterans in CLS settings and work with that veteran to identify and connect them with the appropriate services. Veterans are ineligible for VHA healthcare while incarcerated but can meet with VJP staff to coordinate linkage to care including connections to appropriate housing services if indicated.

While research from these programs has focused on SUD and mental illness among CLS-involved veterans,<sup>9-10,12,14</sup> little is understood about multimorbidity within this population. This study used national VHA data to describe the health of veterans aged 50 with CLS involvement through the lens of multimorbidity to inform an integrated approach to care.

## Methods

This national study used VHA electronic health records from the Corporate Data Warehouse, which contains data for all care provided by VHA. This study was approved by the local Institutional Review Board and the VA Research & Development committee.

### Study Sample

The sample consisted of any veteran who received inpatient or outpatient care at VHA in fiscal year (FY) 2019. Veterans who were aged <50 during the entirety of FY2019 were excluded.

### Measures

**Exposure variable.**—The exposure variable was contact with the VJP in FY2019, identified using a clinic stop code of 591 for HCRV or 592 for VJO. Veterans were also identified as having contact with VJP if they had a Homeless Outreach Management and Evaluation (HOMES) record indicating contact with the HCRV or VJO programs.<sup>13</sup> Among identified VJP patients, 67% had a clinic code, 5% had a HOMES record, and 28% had both indications in their records.

**Chronic conditions.**—Conditions were identified using International Classification of Diseases, Tenth Revision, Clinical Modification [ICD-10-CM] codes. Medical conditions included those utilized by the Deyo comorbidity index.<sup>15</sup> Medical multimorbidity (MM) was defined as two or more of the medical conditions. Mental illness included anxiety, bipolar disorder, depression, personality disorders, PTSD, schizophrenia, and other mental health disorders. SUD included alcohol, amphetamine, cannabis, cocaine, opioid, and other drug use (see Supplemental Table 1). Veterans were coded as having a condition if an ICD-10 code appeared in the same fiscal year.

**Demographic characteristics.**—Demographic characteristics measured included sex, age, race/ethnicity, marital status, rurality, homelessness, and military service-connected disability status.

**Statistical Analyses.**—Descriptive statistics of demographic characteristics and each chronic condition, as well as the co-occurrence of conditions (MM and SUD; MM and mental illness; SUD and mental illness; and all three conditions), were generated overall and stratified by VJP encounter with comparisons made using the  $\chi^2$  test. Unadjusted and adjusted logistic regression models were used to examine differences in conditions by CLS involvement. Multivariable logistic regression models were adjusted for age, sex, race/ethnicity, marital status, rurality, homeless status, and service-connected disability rating. Missing data included 5.0% for race/ethnicity, 0.6% for residence status, and 0.1% for gender and excluded from analyses. All analyses were conducted using SAS, version 9.04.

## Results

A total of 4,669,447 veterans aged  $\geq 50$  overall received care at VHA facilities in FY2019, and of these veterans, 24,973 (0.5%) received services from the VJP (Table 1). Compared

to veterans with no CLS involvement, veterans with VJP contact were more likely to be male, Black, and not married ( $p < 0.001$ ). Among CLS-involved veterans, 43.1% experienced homelessness or received homeless services compared to 3.1% of non-legal involved veterans ( $p < 0.001$ ). Veterans in VJP had an average of 5.5 visits (standard deviation [SD]=11.8) with a range of 1-200 visits, while non-VJP veterans had an average of 4.8 visits (SD=10.3) with a range of 1-363 visits in FY19 ( $p < 0.001$ ).

CLS-involved veterans had a higher percentage of any mental illness (61.0% vs. 27.3%,  $p < 0.001$ ) and for every specific mental illness compared to veterans without CLS involvement (Table 2). CLS-involved veterans also had a higher percentage of any SUD (47.8% vs. 6.7%,  $p < 0.001$ ) and by substance type. For chronic medical diseases, CLS-involved veterans had a higher percentage of HIV (1.4% vs. 0.4%,  $p < 0.001$ ), chronic obstructive pulmonary disease (16.8% vs. 14.0%;  $p < 0.001$ ), hepatitis B/C (9.8% vs. 1.9%,  $p < 0.001$ ), but had a lower percentage for MM (39.2% vs. 47.3%,  $p < 0.001$ ). In addition, CLS-involved veterans had a higher percentage of all combinations of co-occurring outcomes (MM, any SUD, and any mental illness) including having all three simultaneously (19.9% vs. 2.3%,  $p < 0.001$ ).

Among adults age 50, CLS-involved veterans had higher odds of any mental illness (adjusted odds ratio [aOR]=2.78, 95% CI=2.70-2.86) and for each specific mental illness (Table 3). The same pattern was also observed for any SUD (aOR=5.51, 95% CI=5.35-5.68) and for each individual SUD, with amphetamine use disorder having the highest odds (aOR=5.58, 95% CI 5.31-5.87). For chronic medical diseases, CLS-involved veterans had higher odds of Hepatitis B/C (aOR=2.07, 95% CI=1.98-2.17) and HIV (aOR=1.41, 95% CI=1.25-1.58), but lower odds for having MM (aOR=0.50, 95% CI=0.49-0.51). CLS-involved veterans had higher odds of co-occurring mental illness and SUD (aOR=5.52, 95% CI=5.35-5.69), mental illness and MM (aOR=1.04, 95% CI=1.01-1.06), SUD and MM (aOR=2.09, 95% CI=2.04-2.15), and having all three concurrently (aOR=2.42, 95% CI=2.35-2.49).

## Discussion

This national study of veterans aged 50 involved in the CLS estimated a high prevalence of mental illness and SUD, consistent with previous research among CLS-involved veterans of all ages.<sup>11-13</sup> Additionally, this study found a higher prevalence of co-occurring mental illness, SUD, and MM compared to those reported among non-veteran CLS-involved older adults in a national study.<sup>3</sup> While multimorbidity is common among older veterans and represents a high-cost patient population within the VHA system,<sup>16</sup> CLS-involved older veterans have unique healthcare needs because of the complex interplay between SUD, mental illness, and MM.

Our study found that being CLS involved was strongly associated with being diagnosed with a stimulant use disorder. Despite the high prevalence of methamphetamine use among CLS-involved older adults in general,<sup>3</sup> most research on SUD interventions for CLS populations focuses on alcohol or opioid use disorders.<sup>17-20</sup> Meanwhile the prevalence of co-occurring opioid and methamphetamine use disorder is increasing sharply among veterans<sup>21</sup> and

methamphetamine use itself is associated with multimorbidity.<sup>22</sup> Proper screening of older CLS-involved veterans for SUDs is critical in linking patients to treatment, including contingency management.<sup>23</sup>

Our study also found a high burden of chronic medical diseases among older CLS-involved veterans, which is consistent with previous literature on non-veteran older adults with CLS involvement.<sup>24–25</sup> HIV and Hepatitis B/C were strongly associated with being CLS involved and presents a unique opportunity to integrate HIV, hepatitis, and SUD prevention and treatment.<sup>26–27</sup> Given that this population is among the most vulnerable with respect to SUD and related infectious diseases, linkage to care along with integrated services, including infectious diseases should be a priority within the VHA. While HIV and hepatitis were strongly associated with being CLS involved, this same population had significantly lower odds for other chronic medical diseases than older veterans who were not CLS involved. A possible reason is that CLS-involved veterans may not engage with primary care in the VHA system and therefore have fewer opportunities to receive a diagnosis. Furthermore, there may be effects due to attrition-by-death or attrition-by-incarceration among CLS-involved adults and therefore not accounted for in the electronic health record. Despite lower odds of MM, we still found that nearly a third of older CLS-involved veterans had MM as well as higher odds of having concurrent MM, SUD, and mental illness compared to those without CLS involvement.

The results of this study document the high prevalence of multimorbidity among older CLS-involved veterans and suggest that they are prime candidates for integrated care. The VA has prioritized integrating mental health into primary care through the Primary Care-Mental Health Integration (PC-MHI) model,<sup>28</sup> which delivers quality mental health treatment to a larger patient population.<sup>29–30</sup> However, PC-MHI was designed for common psychiatric conditions<sup>31</sup> and likely not as effective for CLS-involved patients with multimorbidity mainly driven by psychiatric disease and SUD and who also experience other challenges, including homelessness.<sup>2,32–34</sup> Furthermore, stigma and discrimination related to incarceration, SUD, mental illness, and homelessness<sup>18–19, 35–38</sup> may prevent patients from engaging in primary care or a Patient Aligned Care Team (PACT). While there is a range of specialized PACT teams within the VHA for specific populations, including Homeless-Patient Aligned Care (H-PACT)<sup>39</sup> and geriatric PACT (GeriPACT)<sup>40</sup> teams, many of these care services could be better integrated with VJP programs and community programs that serve CLS-involved veterans.

The needs of CLS-involved people with mental illness necessitate an integrated community behavioral health system as the focal point of care for this population.<sup>41</sup> Such models of care must actively incorporate issues related to aging, including functional impairments.<sup>1</sup> While the VHA has a number of programs focused on connecting at-risk CLS-involved veterans<sup>4</sup> to SUD and mental health treatment, further work is needed to integrate geriatric-based care.<sup>42</sup> Models incorporating geriatric care are well-suited to address the complexity of living with multimorbidity but must be delivered in accessible settings for older CLS-involved veterans. Some examples could include training VJP providers in geriatric assessment tools with available referrals,<sup>43</sup> modified integrated care models such as those studied for older adults with serious mental illness,<sup>44</sup> or a more intensive expansion of

services (including SUD treatment) within GeriPACT or H-PACT teams with specialized training in the specific needs of CLS-involved veterans. Collaboration between PACT teams could also be considered for especially high-risk veterans with combined case management.

This study has important limitations. The study sample of CLS-involved veterans is identified through programs that focus on connecting veterans who usually have high treatment needs, which could explain the high rates of mental illness and SUD.<sup>4, 6-7</sup> Furthermore, this study is not generalizable to veterans who are ineligible for VHA benefits or are not connected to VJPs. Although there is VJP staff affiliated with each VHA facility, their ability to provide outreach in criminal justice settings depends on the identification of veterans in CLS settings and coordination with criminal justice agencies. It is unknown what proportion of all veterans in the CLS is in the VJPs or what proportion in the CLS who do not receive VJP utilize VHA services. Given this analysis is cross-sectional, we cannot determine the timing of diagnosis with respect to VJP contact. Additionally, the lack of information on the severity of mental illness prohibits examination of serious mental illness versus other mental health conditions across the groups. Finally, this study relies on administrative records rather than diagnostic interviews and may not reflect the burden of health conditions in this population, especially among veterans with infrequent VHA services use. Future work could include linking VHA with Medicare data to address this limitation and capture broader healthcare utilization.

## Conclusions

This study uses national data to demonstrate that CLS-involved veterans aged 50 experience a high level of co-occurring morbidity from MM, mental illness, and SUD compared to veterans who do not have CLS involvement. Given the complexity older CLS-involved veterans experience, their care through the VHA must be patient-centered, recognize the stigma around being CLS-involved, and truly be integrated with collaborative services to improve the health of this population at high risk for poor outcomes.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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**Table 1.**

Characteristics of Veterans Aged 50 at Veterans Health Administration Facilities, by Veterans Justice Programs Contact in Fiscal Year 2019

Characteristics	Overall (N = 4,669,447)		Any VJP Contact (n=24,973)		No VJP Contact (n=4,644,474)		p-value
	N	%	N	%	N	%	
<b>Age</b>							
50-64, years	1,430,399	30.6	17,602	70.5	1,412,797	30.4	< 0.001
65, years	3,239,048	69.4	7,371	29.5	3,231,677	69.6	
<b>Sex</b>							
Female	271,090	5.8	1,107	4.4	269,983	5.8	< 0.001
Male	4,398,346	94.2	23,863	95.6	4,374,483	94.2	
<b>Race/ethnicity</b>							
American Indian/Alaskan Native	40,376	0.9	358	1.5	40,018	0.9	< 0.001
Black	757,478	17.4	8,297	35.8	749,181	17.3	
Native Hawaiian/Pacific Islander	77,013	1.8	257	1.1	76,756	1.8	
Hispanic	231,674	5.3	1,329	5.7	230,345	5.3	
White	3,252,816	74.6	12,930	55.8	3,239,886	74.7	
<b>Marital status</b>							
Single/Divorced/ separated/ widowed	1,931,156	41.4	19,168	76.8	1,911,988	48.5	< 0.001
Married	2,738,291	58.6	5,805	23.2	2,732,486	58.8	
<b>Residence</b>							
Rural	1,630,173	35.0	4,819	19.4	1,625,354	35.1	< 0.001
Urban	3,026,094	65.0	19,967	80.6	3,006,127	64.9	
<b>Housing status</b>							
Housed	4,516,926	96.7	14,217	56.9	4,502,709	96.9	< 0.001
Homeless	152,521	3.3	10,756	43.1	141,756	3.1	
<b>Service-connected disability rating</b>							
None	2,251,370	48.2	13,495	54.0	2,237,875	48.2	< 0.001
<50%	943,054	21.2	4,269	17.1	938,785	20.2	
50-100%	1,475,023	31.6	7,209	28.9	1,467,814	31.6	

VJP = Veterans Justice Programs

**Table 2.**

Mental Illness, Substance Use Disorder, and Chronic Medical Diseases Among Veterans Aged 50 at Veterans Health Administration Facilities by Veterans Justice Programs (VJP) Contact in 2019

Characteristics	Overall		Any VJP contact		No VJP Contact		p-value
	N	%	N	%	N	%	
Mental illness - Any	1,283,620	27.5	15,223	61.0	1,268,397	27.3	< 0.001
Anxiety	425,300	9.1	5,847	23.4	419,453	9.0	< 0.001
Bipolar	84,706	1.8	2,466	9.9	82,240	1.8	< 0.001
Depression	778,652	16.7	10,722	42.9	767,930	16.5	< 0.001
Personality disorders	32,876	0.7	1,751	7.0	31,125	0.7	< 0.001
Post-traumatic stress disorder	563,001	12.1	7,175	28.7	555,826	12.0	< 0.001
Schizophrenia	66,596	1.4	1,576	6.3	65,020	1.4	< 0.001
Other	24,615	0.5	931	3.7	23,684	0.5	< 0.001
Substance use disorder (SUD) - Any	322,987	6.9	12,152	48.7	310,835	6.7	< 0.001
Alcohol	245,589	5.3	9,488	38.0	236,101	5.1	< 0.001
Amphetamine	19,662	0.4	2,746	11.0	16,916	0.4	< 0.001
Cannabis	68,821	1.5	3,677	14.7	65,144	1.4	< 0.001
Cocaine	42,442	0.9	4,287	17.2	38,155	0.8	< 0.001
Opioid	32,529	0.7	1,833	7.3	30,696	0.7	< 0.001
Other	26,253	0.6	2,931	11.7	23,322	0.5	< 0.001
Chronic medical disease							
Asthma	148,406	3.2	822	3.3	147,584	3.2	0.30
Bronchitis/COPD	655,804	14.0	4,201	16.8	652,603	14.0	< 0.001
Cerebrovascular disease	277,729	6.0	1,129	4.5	276,600	6.0	< 0.001
Dementia	154,212	3.3	469	1.9	153,743	3.3	< 0.001
Diabetes and/or Diabetes with chronic complications	1,419,011	30.4	5,005	20.0	1,414,006	30.4	< 0.001
Hepatitis B/C	92,579	2.0	2,457	9.8	90,122	1.9	< 0.001
HIV	19,975	0.4	339	1.4	19,636	0.4	< 0.001
Hypertension	2,652,711	56.8	11,095	44.4	2,641,616	56.9	< 0.001
Malignancy	402,555	8.6	1,278	5.1	401,277	8.6	< 0.001
Metastatic solid tumor	44,380	1.0	145	0.6	44,235	1.0	< 0.001
Myocardial infarction	88,559	1.9	495	2.0	88,064	1.9	0.30
Peptic ulcer disease	23,492	0.5	199	0.8	23,293	0.5	< 0.001
Renal disease	444,212	9.5	1,236	5.0	442,976	9.5	< 0.001
Rheumatic heart disease	306,893	6.6	1,189	4.8	305,704	6.6	< 0.001
Rheumatologic disease	66,071	1.4	219	0.9	65,852	1.4	< 0.001
Vascular disease	348,411	7.5	1,239	5.0	347,172	7.5	< 0.001
Medical multimorbidity <sup>a</sup>	2,207,398	47.3	9,779	39.2	2,197,619	47.3	< 0.001
Co-occurring conditions							

Characteristics	Overall		Any VJP contact		No VJP Contact		p-value
	N	%	N	%	N	%	
Mental illness + SUD	197,581	4.2	9,712	38.9	187,869	4.1	< 0.001
Mental illness + Medical Multimorbidity	700,704	15.0	7,483	30.0	693,221	14.9	< 0.001
SUD + Medical Multimorbidity	176,935	3.8	5,781	23.2	171,154	3.7	< 0.001
Mental illness + SUD + Medical Multimorbidity	110,308	2.4	4,961	19.9	105,347	2.3	< 0.001

<sup>a</sup>Two or more of the above chronic diseases; COPD = chronic obstructive pulmonary disease; SUD = substance use disorder; VJP = Veterans Justice Programs.

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**Table 3.**

Logistic Regression Models Examining Criminal Legal System Involvement Associated with Differences in Mental illness, Substance Use Disorder, and Chronic Medical Disease Prevalence Among Veterans Aged 50, Veterans Health Administration Facilities in 2019

Characteristics	Unadjusted			Adjusted <sup>a</sup>		
	Odds Ratio	95% CI	p-value	Odds Ratio	95% CI	p-value
Mental illness - Any	4.22	4.11-4.33	< .0001	2.78	2.70-2.86	< 0.001
Anxiety	3.10	3.01-3.20	< .0001	1.99	1.92-2.05	< 0.001
Bipolar	6.04	5.79-6.30	< .0001	2.50	2.38-2.62	< 0.001
Depression	3.84	3.74-3.94	< .0001	2.28	2.21-2.34	< 0.001
Personality disorders	11.24	10.69-11.82	< .0001	3.02	2.85-3.20	< 0.001
Post-traumatic stress disorder	3.02	2.94-3.10	< .0001	2.68	2.59-2.78	< 0.001
Schizophrenia	4.81	4.57-5.07	< .0001	1.66	1.57-1.76	< 0.001
Other	7.49	7.00-8.01	< .0001	2.17	2.02-2.33	< 0.001
Substance use disorder (SUD) - Any	13.27	12.94-13.61	< .0001	5.51	5.35-5.68	< 0.001
Alcohol	11.52	11.22-11.83	< .0001	4.65	4.51-4.79	< 0.001
Amphetamine	33.55	32.12-35.05	< .0001	5.58	5.31-5.87	< 0.001
Cannabis	11.94	11.51-12.38	< .0001	3.17	3.04-3.30	< 0.001
Cocaine	26.93	25.98-27.91	< .0001	4.94	4.73-5.16	< 0.001
Opioid	11.87	11.30-12.48	< .0001	3.36	3.18-3.55	< 0.001
Other	27.18	26.07-28.33	< .0001	5.15	4.90-5.40	< 0.001
Chronic medical disease						
Asthma	1.05	0.98-1.12	0.18	1.02	0.95-1.10	0.54
Bronchitis/COPD	1.23	1.19-1.27	< .0001	1.00	0.97-1.04	0.87
Cerebrovascular disease	0.75	0.70-0.79	< .0001	0.69	0.65-0.73	< 0.001
Dementia	0.56	0.52-0.62	< .0001	0.61	0.55-0.67	< 0.001
Diabetes and/or Diabetes with chronic complications	0.39	0.38-0.41	< .0001	0.44	0.42-0.45	< 0.001
Hepatitis B or C	5.48	5.25-5.72	< .0001	2.07	1.98-2.17	< 0.001
HIV	3.34	3.00-3.72	< .0001	1.41	1.25-1.58	< 0.001
Hypertension	0.60	0.58-0.61	< .0001	0.65	0.64-0.67	< 0.001
Malignancy	0.57	0.54-0.60	< .0001	0.61	0.58-0.65	< 0.001
Metastatic solid tumor	0.59	0.50-0.70	< .0001	0.53	0.45-0.63	< 0.001
Myocardial infarction	1.06	0.97-1.16	0.19	0.86	0.78-0.94	< 0.001
Peptic ulcer disease	1.59	1.38-1.82	< .0001	1.15	0.99-1.33	0.06
Renal disease	0.49	0.47-0.52	< .0001	0.53	0.50-0.56	< 0.001
Rheumatic heart disease	0.71	0.67-0.75	< .0001	0.64	0.60-0.68	< 0.001
Rheumatologic disease	0.61	0.53-0.70	< .0001	0.75	0.65-0.86	< 0.001
Vascular disease	0.65	0.61-0.68	< .0001	0.65	0.61-0.69	< 0.001
Medical multimorbidity <sup>b</sup>	0.48	0.47-0.49	< .0001	0.50	0.49-0.51	< 0.001

Characteristics	Unadjusted			Adjusted <sup>a</sup>		
	Odds Ratio	95% CI	p-value	Odds Ratio	95% CI	p-value
Co-occurring conditions						
Mental illness + SUD	15.22	14.82-15.62	< .0001	5.52	5.35-5.69	< 0.001
Mental illness + Medical Multimorbidity	1.59	1.55-1.62	< .0001	1.04	1.01-1.06	0.001
SUD + Medical Multimorbidity	5.23	5.10-5.36	< .0001	2.09	2.04-2.15	< 0.001
Mental illness + SUD + Medical Multimorbidity	7.17	6.98-7.36	< .0001	2.42	2.35-2.49	< 0.001

<sup>a</sup>Adjusted for sex, age, race/ethnicity, marital status, rurality, homelessness, and service-connected disability rating;

<sup>b</sup>Two or more of the above chronic diseases; COPD = chronic obstructive pulmonary disease; SUD = substance use disorder

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