

## Screening for Unhealthy Alcohol Use Among Patients With Multiple Chronic Conditions in Primary Care



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**Introduction:** Unhealthy alcohol use increases the risk for and exacerbation of chronic health conditions. As such, screening, prevention, and management of unhealthy alcohol use is especially critical to improving health outcomes for patients with multiple chronic health conditions. It is unclear to what extent multiple chronic condition status is a barrier to screening for unhealthy alcohol use in the primary care setting. The authors hypothesized that patients with multiple chronic conditions would be at lower odds of being screened for unhealthy alcohol use than patients without multiple chronic conditions.

**Methods:** The authors performed a secondary analysis of electronic health record data for patients from 67 primary care practices in Virginia (2020–2023). Using the Center for Medicare and Medicaid Services' chronic disease framework, they classified patients by multiple chronic condition status: no multiple chronic conditions, physical multiple chronic conditions, mental health multiple chronic conditions, and physical and mental health multiple chronic conditions. They used multiple logistic regressions with an added practice-level random effect to analyze the relationship between multiple chronic condition status and the odds of receiving an alcohol-related assessment, of being screened for unhealthy alcohol use with a U.S. Preventive Services Task Force–recommended instrument, and of screening positive for unhealthy alcohol use within the past 2 years.

**Results:** Within a final cohort of  $n=11,789$ , a total of 6,796 patients (58%) had multiple chronic conditions (29% physical multiple chronic conditions, 4% mental health multiple chronic conditions, and 25% physical and mental health multiple chronic conditions). In all, 69% of patients were screened for unhealthy alcohol use, whereas 16% were screened with a U.S. Preventive Services Task Force–recommended instrument, and 7% screened positive for unhealthy alcohol use. Patients with physical and mental health multiple chronic conditions had 0.9 times lower odds of receiving any screening for unhealthy alcohol use than those with no multiple chronic conditions (95% CI=0.8, 1.0;  $p=0.0240$ ), whereas patients with only physical multiple chronic conditions or only mental health multiple chronic conditions had similar odds. There was no difference in the odds of being screened with a U.S. Preventive Services Task Force–recommended instrument on the basis of multiple chronic condition status. Patients with mental health multiple chronic conditions and physical and mental health multiple chronic conditions had 1.8 and 1.5 times greater

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2773-0654/\$36.00  
<https://doi.org/10.1016/j.focus.2024.100233>

odds of screening positive for unhealthy alcohol use, respectively (95% CI=1.3, 2.7;  $p=0.0014$  and 95% CI=1.2, 1.8;  $p=0.0003$ ).

**Conclusions:** Although patients with chronic mental health conditions were more likely to screen positive for unhealthy alcohol use than patients without multiple chronic conditions, Virginia primary care patients with physical and mental health multiple chronic conditions were less likely to receive an alcohol-related assessment during the past 2 years. Given the overall modest rate of screening with a U.S. Preventive Services Task Force–recommended instrument, further efforts are needed to create the conditions for high-quality alcohol-related preventive service delivery in primary care, particularly for patients with high complexity and/or mental health conditions.

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## INTRODUCTION

More than 100 million Americans (40% of the U.S. population) suffer from multiple chronic conditions (MCCs), the co-occurrence of 2 or more long-term health conditions lasting longer than 1 year.<sup>1–3</sup> MCCs are associated with functional decline, morbidity, mortality, and increased healthcare utilization and costs.<sup>4,5</sup> For every U.S. dollar spent on health care, >75 cents goes to caring for patients with MCCs.<sup>3</sup> With the national and global prevalence of MCCs on the rise, there have been numerous calls for improved systems of care for this complex patient population.<sup>1,6–8</sup>

High-quality primary care is one approach to enhancing health outcomes for patients with MCCs. The delivery of on-time clinical preventive services is an important function of primary care. For example, the U.S. Preventive Services Task Force (USPSTF) recommends that persons aged >18 years be screened for unhealthy alcohol use (UAU) in primary care, with brief intervention, medication therapy, and referral for additional treatment provided when warranted.<sup>9</sup> The prevention, detection, and management of UAU carry particular value for patients with MCCs because UAU can exacerbate most chronic conditions and increase the risk of developing additional chronic conditions.<sup>10–14</sup> Furthermore, some health conditions are associated with increased risk for UAU.<sup>14–19</sup>

Numerous barriers to the delivery of alcohol preventive services have been identified,<sup>20–23</sup> but the degree to which MCC status influences the likelihood of being screened for UAU is not well understood. Given the competing demands associated with caring for high-complexity patients and the time and resource limitations faced by primary care teams, it is reasonable to hypothesize that patients with MCCs are less likely to be screened for UAU during primary care visits than patients without MCCs. However, Ornstein et al.<sup>24</sup> and

Chatterton and colleagues<sup>25</sup> reported higher rates of screening for UAU in patients with MCCs than in those without MCCs in 2010–2011 and 2014–2016, respectively, even when controlling for visit frequency. Because MCC rates continue to rise, and many factors contribute to increased demands on primary care, it is important to evaluate whether or not rates have changed in recent years. In addition, the previous studies assess the influence of any type of MCC on the likelihood of receiving screening for UAU.<sup>24–26</sup> There is some evidence that preventive service delivery rates vary by MCC type (e.g., physical conditions, mental health conditions, both physical and mental health conditions),<sup>27</sup> but it is unclear to what extent MCC type influences the odds of screening for UAU in primary care.

The identification of alcohol screening patterns among different MCC patient groups would provide insight into patient complexity as a barrier to preventive service delivery and inform interventions to improve care for a high-priority patient population. Thus, the purpose of this study was to evaluate variation in screening for UAU on the basis of MCC status and MCC type in the Virginia primary care setting. The authors hypothesized lower rates of screening for UAU in patients with MCCs than in those with no MCCs and that patients with both physical and mental health chronic conditions would be screened at the lowest rates.

## METHODS

The authors performed a cross-sectional secondary analysis of electronic health record (EHR) data collected from 67 primary care practices participating in a state-wide intervention to improve screening and management of UAU between 2020 and 2023 (R18HS027077). Family medicine, general internal medicine, and

women's health clinics representing health systems, community health centers, and private clinics throughout the Commonwealth of Virginia were included in the cohort. Details about the protocol and study recruitment have been previously published.<sup>28,29</sup> Briefly, as part of a pragmatic immediate versus delayed RCT, practices were randomized to receive 6 months of practice facilitation (e.g., academic detailing/education, workflow coaching, performance feedback delivered by a trained facilitator) immediately or after a 6-month delay. Facilitators guided practices to improve their processes and clinic workflow to support the screening of all adult patients for UAU with a validated USPSTF-recommended instrument such as the Alcohol Use Disorders Identification Test-Concise<sup>30</sup> or Single-Item Alcohol Screening Questionnaire,<sup>31</sup> without regard for MCCs.

Data analyzed for this report were collected at baseline and 3 and 6 months after the onset of practice facilitation or during the 6 months prior to practice facilitation for delayed facilitation (usual care) practices. The IRB of Carilion Clinic approved this study (IRB Number 23-1909). The informed consent requirement was waived on the basis of the collection of deidentified data unable to be linked to patient identifiers.

### Study Sample

From the EHR for up to 180 randomly selected patients (aged 18–79 years) seen in each practice within the previous 90 days, the study team extracted demographics (age, sex, race, ethnicity, and insurer) and problem list and visit diagnosis codes (ICD-10) through automated report or manual chart review, depending on what was available within each practice. The only patients who met age and visit criteria who were excluded from the sample were those whose visit to primary care was for a nonoffice visit (e.g., laboratory test, procedure, vaccine). The extraction process was internally validated by the study team.

### Measures

The authors also extracted the following alcohol screening outcomes for the previous 2 years through manual chart review: (1) evidence of any alcohol-related screening or assessment in the social history, structured data, clinician note, or problem list/visit diagnosis areas of the patient's chart; (2) whether a USPSTF-recommended instrument (e.g., Alcohol Use Disorders Identification Test-Concise or Single-Item Alcohol Screening Questionnaire) was used for the assessment (primary outcome); and (3) any positive identification of UAU based on National Institute for Alcohol Abuse and Alcoholism (Appendix A, available online, provides additional details about alcohol screening outcomes). A 10%

sample of each practice's extraction was assessed for quality assurance. If errors were detected, the full chart review was repeated and checked by 2 team members.

Using the Center for Medicare & Medicaid Services Chronic Conditions algorithm,<sup>32</sup> the study team classified patients by MCC status as informed by the methods of Ukhanova et al.<sup>27</sup>: 0 or 1 chronic condition (MCC<sub>0</sub>),  $\geq 2$  physical chronic conditions and 0 mental health chronic conditions (physical MCCs [MCC<sub>P</sub>]),  $\geq 2$  mental health chronic conditions and 0 physical chronic conditions (mental health MCCs [MCC<sub>MH</sub>]), and  $\geq 1$  physical chronic condition and  $\geq 1$  mental health chronic condition (physical and mental health MCCs [MCC<sub>P+MH</sub>]). Widely applied in the health services research literature,<sup>27,33–36</sup> the Center for Medicare & Medicaid Services algorithm uses ICD-10 codes to associate patients with 29 physical and 8 mental chronic health conditions (Appendix B, available online, provides the list of conditions).

### Statistical Analysis

The study team performed descriptive analyses of demographics, chronic conditions, and alcohol screening outcomes, both overall and stratified by MCC status. Differences in demographics across MCC status were assessed through chi-square tests (categorical variables) and ANOVA (continuous variables). Using multiple logistic regression, the authors evaluated the relationship between MCC status and alcohol screening outcomes, adjusting for demographics, treatment (immediate versus delayed intervention), and study timepoint. A mixed model was fit, adding a random practice intercept to the multiple logistic regression. ORs, 95% CIs, *p*-values, and calculated intraclass correlation coefficients<sup>32,33</sup> are reported. All statistical analyses were performed at Virginia Commonwealth University using SAS, Version 9.4 (SAS Institute, Cary, NC), in September 2023.

## RESULTS

Within a final cohort of 11,789 patients (aged 49.7 years, 61% female, 64% White, 50% rural, 24% Medicaid/Medicare–Medicaid dual eligible/uninsured), more than half of patients were classified as having MCCs (3,476 [29%] MCC<sub>P</sub>; 419 [4%] MCC<sub>MH</sub>; and 2,901 [25%] MCC<sub>P+MH</sub>) (Table 1) (Appendix B, available online, provides the list of 29 physical chronic conditions and 8 mental chronic conditions). There were differences in the makeup of each MCC group across age ( $p < 0.001$ ), sex ( $p < 0.001$ ), race ( $p < 0.001$ ), ethnicity ( $p < 0.001$ ), insurer ( $p < 0.001$ ), rurality ( $p < 0.001$ ), and treatment ( $p < 0.001$ ) but not timepoint ( $p = 0.448$ ) (Table 1). Overall, 69% of patients received an alcohol-related screening

**Table 1.** Demographic and Clinical Characteristics of Primary Care Patients With MCCs

Characteristic	Overall (N=11,789)	Physical MCCs (n=3,476)	Mental MCCs (n=419)	Physical and mental MCCs (n=2,901)	No MCCs (n=4,993)	$\chi^2$ test p-value	
<b>Age</b>							
Mean (SD)	49.7 (16.6)	61.2 (11.4)	33.3 (11.9)	53.7 (14.1)	40.8 (15.2)		
<b>Sex, n (%)</b>							
Female	7,206 (61.1%)	1765 (50.8%)	314 (74.9%)	2,000 (68.9%)	3,127 (62.6%)	<0.0001	
Male	4,578 (38.8%)	1709 (49.2%)	105 (25.1%)	900 (31.1%)	1,863 (37.3%)		
Nonbinary	5 (0.0%)	1 (0.0%)	0 (0%)	1 (0.0%)	3 (0.1%)		
<b>Race, n (%)</b>							
White	7,550 (64.0%)	2072 (59.6%)	324 (77.3%)	2,147 (74.0%)	3,007 (60.2%)	<0.0001	
Black	2,167 (18.4%)	828 (23.8%)	50 (11.9%)	506 (17.4%)	783 (15.7%)		
Asian	596 (5.1%)	159 (4.6%)	8 (1.9%)	52 (1.8%)	377 (7.6%)		
American Indian	22 (0.2%)	5 (0.1%)	0 (0%)	4 (0.1%)	13 (0.3%)		
Native Hawaiian or Pacific Islander	19 (0.2%)	5 (0.1%)	1 (0.2%)	1 (0.0%)	12 (0.2%)		
Multiple races	77 (0.7%)	11 (0.3%)	3 (0.7%)	15 (0.5%)	48 (1.0%)		
Other	250 (2.1%)	79 (2.3%)	6 (1.4%)	37 (1.3%)	128 (2.6%)		
Not reported	1,108 (9.4%)	317 (9.1%)	27 (6.4%)	139 (4.8%)	625 (12.5%)		
<b>Ethnicity, n (%)</b>							
Hispanic or Latino	921 (7.8%)	312 (9.0%)	16 (3.8%)	136 (4.7%)	457 (9.0%)		<0.0001
Non-Hispanic or Latino	9,369 (79.5%)	2772 (79.7%)	355 (84.7%)	2,514 (86.7%)	3,728 (74.7%)		
Not reported	1,499 (12.7%)	392 (11.3%)	48 (11.5%)	251 (8.7%)	808 (16.2%)		
<b>Insurer, n (%)</b>							
Commercial or private	6,585 (55.9%)	1369 (39.4%)	277 (66.1%)	1,296 (44.7%)	3,643 (73.0%)	<0.0001	
Medicaid	1,576 (13.4%)	377 (10.8%)	108 (25.8%)	505 (17.4%)	586 (11.7%)		
Medicare	2,731 (23.2%)	1421 (40.9%)	19 (4.5%)	945 (32.6%)	346 (6.9%)		
Dual Medicare and Medicaid	48 (0.4%)	19 (0.5%)	1 (0.2%)	19 (0.7%)	9 (0.2%)		
Self-pay/uninsured	720 (6.1%)	270 (7.8%)	11 (2.6%)	103 (3.6%)	336 (6.7%)		
Tricare	129 (1.1%)	20 (0.6%)	3 (0.7%)	33 (1.1%)	73 (1.5%)		
<b>Rurality, n (%)</b>							
Rural	5,890 (50.0%)	1845 (53.1%)	223 (53.2%)	1,732 (59.7%)	2,090 (41.9%)	<0.0001	
Suburban or town	4,120 (34.9%)	1063 (30.6%)	135 (32.2%)	715 (24.6%)	2,207 (44.2%)		
City	1,779 (15.1%)	568 (16.3%)	61 (14.6%)	454 (15.6%)	696 (13.9%)		
<b>Intervention, n (%)</b>							
Immediate	5,610 (47.6%)	1524 (43.8%)	196 (46.8%)	1,225 (42.2%)	2,665 (53.4%)	<0.0001	
Delayed	6,179 (52.4%)	1952 (56.2%)	223 (53.2%)	1,676 (57.8%)	2,328 (46.6%)		
<b>Timepoint, n (%)</b>							
Baseline	4,000 (33.9%)	1152 (33.1%)	137 (32.7%)	1,032 (35.6%)	1,679 (33.6%)	<0.0001	
3 months	3,905 (33.1%)	1151 (33.1%)	144 (34.4%)	932 (32.1%)	1,678 (33.6%)		
6 months	3,884 (32.9%)	1173 (33.7%)	138 (32.9%)	937 (32.3%)	1,636 (32.8%)		
<b>MCC<sub>P</sub></b>							
Mean (SD)	1.70 (1.68)	3.22 (1.29)	0 (0)	2.48 (1.46)	0.337 (0.473)	<0.0001	
<b>MCC<sub>MH</sub></b>							
Mean (SD)	0.504 (0.813)	0 (0)	2.35 (0.585)	1.46 (0.707)	0.147 (0.354)	<0.0001	

MCC, multiple chronic condition; MCC<sub>MH</sub>, mental health multiple chronic condition; MCC<sub>P</sub>, physical multiple chronic condition.

or assessment during the past 2 years, but only 16% were screened with a USPSTF-recommended instrument (Table 2<sup>37</sup>). A total of 770 patients (7%) screened positive for UAU (Table 2<sup>37</sup>).

From the multiple regression analyses, there was no difference in the likelihood of receiving any alcohol-

related assessment between each MCC group and MCC<sub>0</sub> group. However, patients with MCC<sub>P+MH</sub> had 1.4 times greater odds of being screened with a USPSTF-recommended instrument than patients with MCC<sub>0</sub> (95% CI=1.2, 1.6;  $p<0.001$ ), whereas patients with only MCC<sub>P</sub> or only MCC<sub>MH</sub> had similar odds (Table 2<sup>37</sup>). Patients

**Table 2.** Alcohol Screening Outcomes for Primary Care Patients With MCCs

Outcome	Overall (N=11,789), n (%)	Physical MCCs (n=3,476), n (%)	Mental MCCs (n=419), n (%)	Physical and mental MCCs (n=2,901), n (%)	No MCCs (n=4,993), n (%)
Any alcohol assessment in the past 2 years					
Received	8,092 (68.6%)	2,309 (66.4%)	297 (70.9%)	1,969 (67.9%)	3,517 (70.4%)
Did not receive	3,697 (31.4%)	1,167 (33.6%)	122 (29.1%)	932 (32.1%)	1,476 (29.6%)
Alcohol screening with USPSTF-recommended instrument in the past 2 years					
Received	1,907 (16.2%)	567 (16.3%)	64 (15.3%)	550 (19.0%)	726 (14.5%)
Did not receive	6,185 (52.5%)	1,742 (50.1%)	233 (55.6%)	1,419 (48.9%)	2,791 (55.9%)
Unknown (no assessment)	3,697 (31.4%)	1,167 (33.6%)	122 (29.1%)	932 (32.1%)	1,476 (29.6%)
Unhealthy alcohol use categorization					
Positive	770 (6.5%)	195 (5.6%)	40 (9.5%)	238 (8.2%)	297 (5.9%)
Negative	7,349 (62.3%)	2,120 (61.0%)	259 (61.8%)	1,745 (60.2%)	3,235 (64.6%)
Unknown	3,670 (31.1%)	1,161 (33.4%)	120 (29.6%)	918 (31.6%)	1,471 (29.5%)

Note: Rurality was determined from practice ZIP codes using the National Center for Education Statistics' EDGE program.<sup>37</sup> EDGE, Education Demographic and Geographic Estimates; MCC, multiple chronic condition; USPSTF, U.S. Preventive Services Task Force.

with MCC<sub>MH</sub> or MCC<sub>P+MH</sub> had 1.7 times and 1.4 times greater odds of screening positive for UAU than those with MCC<sub>0</sub> (95% CI=1.2, 2.5; *p*=0.003 and 95% CI=1.2, 1.8; *p*<0.001, respectively), whereas those with MCC<sub>P</sub> were not statistically different from those with MCC<sub>0</sub> (Table 3).

However, when adding the random practice intercept, patients with MCC<sub>P+MH</sub> had 0.9 times lower odds of receiving any screening (95% CI=0.8, 1.0; *p*=0.0240) (Table 3). There was no difference between each MCC group and MCC<sub>0</sub> group in the likelihood

of being screened with a USPSTF-recommended instrument. Patients with MCC<sub>MH</sub> and MCC<sub>P+MH</sub> had 1.8 and 1.5 times greater odds of screening positive than those with MCC<sub>0</sub> (95% CI=1.3, 2.7; *p*=0.001 and 95% CI=1.2, 1.8; *p*<0.001, respectively), whereas those with MCC<sub>P</sub> were not statistically different from those with MCC<sub>0</sub> (Table 3). Intraclass correlation coefficients for the 3 models were 0.34, 0.78, and 0.12, respectively, indicating that practices were strongly associated with the use of a USPSTF-recommended instrument.

**Table 3.** Logistic Regression Results: Variation in Alcohol Screening Outcomes Based on MCC Status

MCC status	Any alcohol-related assessment (n=11,789), OR (95% CI); <i>p</i>	Screening with USPSTF-recommended instrument (n=8,092), OR (95% CI); <i>p</i>	Positive screening for unhealthy alcohol use (n=8,119), OR (95% CI); <i>p</i>
Multiple logistic models: OR compared with MCC <sub>0</sub>			
MCC <sub>P</sub>	0.929 (0.830, 1.040); 0.2015	1.087 (0.925, 1.277); 0.3094	0.856 (0.685, 1.071); 0.1742
MCC <sub>MH</sub>	1.001 (0.800, 1.253); 0.9904	0.992 (0.724, 1.357); 0.9581	<b>1.735 (1.203, 2.503); 0.0032</b>
MCC <sub>P+MH</sub>	0.961 (0.861, 1.073); 0.4788	<b>1.396 (1.198, 1.626); &lt;0.0001</b>	<b>1.449 (1.185, 1.773); 0.0003</b>
Mixed multiple logistics models with practice random effect: OR compared with MCC <sub>0</sub>			
ICC	0.336	0.781	0.123
MCC <sub>P</sub>	0.923 (0.812, 1.048); 0.2170	0.827 (0.622, 1.098); 0.1893	0.902 (0.715, 1.137); 0.3817
MCC <sub>MH</sub>	0.998 (0.777, 1.282); 0.9895	1.298 (0.757, 2.227); 0.3429	<b>1.844 (1.266, 2.687); 0.0014</b>
MCC <sub>P+MH</sub>	<b>0.865 (0.762, 0.981); 0.0240</b>	1.038 (0.783, 1.378); 0.7937	<b>1.484 (1.198, 1.837); 0.0003</b>

Note: Bold font indicates statistical significance (*p*<0.05). ICC, intraclass correlation coefficient; MCC, multiple chronic condition; MCC<sub>MH</sub>, mental health multiple chronic condition; MCC<sub>P</sub>, physical multiple chronic condition; MCC<sub>P+MH</sub>, physical and mental health multiple chronic condition; USPSTF, U.S. Preventive Services Task Force.

## DISCUSSION

Despite the potential for preventing disease and improving population health outcomes, clinical preventive services such as alcohol screening and counseling are delivered at suboptimal rates in U.S. primary care.<sup>25,38–43</sup> Previous studies report greater odds of screening for UAU among patients with MCCs in primary care, independent of visit frequency.<sup>24,25</sup> However, the present investigation showed that within a diverse, statewide cohort of over 11,000 patients, those with MCCs had similar or lower odds of receiving an alcohol-related screening or assessment in primary care. Furthermore, fewer than 1 in 4 patients who received an alcohol-related assessment were screened with a USPSTF-recommended instrument, which is more reliable in detecting UAU. These findings may reflect current demands, stress, and resource limitations faced by primary care teams. Continued efforts are needed to promote the delivery of high-quality alcohol screening services in primary care.

Although the USPSTF recommends that all adults be screened for UAU,<sup>9</sup> it is especially critical for patients with MCCs who may be at greater risk for UAU and who are likely to experience greater consequences of UAU than those without MCCs.<sup>10–19</sup> UAU exacerbates most chronic physical and mental health chronic conditions and increases the risk for developing other chronic health conditions. Timko and colleagues<sup>26</sup> outline 3 mechanisms by which UAU exacerbates chronic conditions: through a direct impact, by increasing disease risk factors, and by reducing capacity for self-management of chronic conditions. In addition, in this study, patients with mental health chronic conditions (with or without physical chronic conditions) had significantly greater odds of screening positive for UAU, which is consistent with the literature.<sup>14–19</sup> Thus, because patients with MCCs are described as a high-risk population and national priority for improved health outcomes,<sup>1,6–8</sup> results of this investigation may inform initiatives to improve clinic workflows and practice and care team capacity for providing alcohol screening services to this important population.

The delivery of alcohol preventive services is especially essential in the primary care setting. Primary care is the entry to health care for many patients, and primary care teams coordinate patients' care around MCCs.<sup>26</sup> Individuals with access to primary care and who have increasing frequency of primary care visits have lower likelihood of risky drinking.<sup>44</sup> Increasing access to primary care has been shown to increase the odds of screening for UAU among socioeconomically

disadvantaged patients, particularly those with MCCs.<sup>45</sup> Furthermore, brief interventions for UAU can be successfully delivered in primary care<sup>46–48</sup> and have been shown effective in reducing UAU.

In this study, a relatively high proportion of patients (69%) received some type of alcohol-related assessment. However, similar to others,<sup>24,25,38,39,49</sup> the study team identified low rates of screening for UAU with a USPSTF-recommended instrument (16%). Although this study found MCC status to influence the odds of receiving an alcohol-related assessment ( $MCC_{P+MH}$ ), the low proportion of patients assessed through USPSTF-recommended instrument suggests additional barriers to delivery of high-quality alcohol preventive services in primary care. Potential barriers include limited EHR capacity, clinician training, and reimbursement for screening services.<sup>20,22,23</sup> The coronavirus disease 2019 (COVID-19) pandemic may have also interrupted typical clinic workflow around screening for UAU. Future efforts to enhance primary care screening for UAU should build on previous successful initiatives through consideration of clinical complexity, contemporary context, and other identified barriers.<sup>40,50</sup>

### Limitations

This study used a large, statewide cohort that represented the demographic diversity of the state of Virginia<sup>29</sup> to evaluate the relationship between MCC status and alcohol-related outcomes in real-world primary care practices. Unlike previous literature, this study examined variation by MCC type (physical versus mental health conditions), which increases translatability of findings into primary care practice. This analysis incorporates >35 chronic conditions, all shown to be impacted by UAU,<sup>1,6–8</sup> and both patient- and practice-level factors previously shown to influence alcohol screening.<sup>46</sup>

Data used for this study were limited to those that were available in the EHR, which may not always accurately reflect chronic condition diagnoses or alcohol screening services delivered. However, the large sample size represented 67 different practices, which limits the influence of any particular practice or care teams whose documentation was incomplete or inaccurate. Patient surveys collected in conjunction with this study (but reported elsewhere) indicate strong agreement between alcohol screening outcomes data documented in the EMR and those by patient surveys.<sup>40</sup> In addition, the secondary outcome of likelihood of positive screening for UAU was limited to patients who had received an alcohol-related screening or assessment. As such, approximately 30% of the cohort was not included in screening result outcome.

## CONCLUSIONS

During 2020–2023, 69% of Virginia primary care patients received an alcohol-related assessment, but only 1 in 4 of these involved screening for UAU with a USPSTF-recommended instrument. Patients with MCCs had the same or lower odds of receiving assessment or screening for UAU during the previous 2 years. These findings contradict previous literature, which revealed higher likelihood of screening among patients with MCCs.<sup>24,25</sup> Patients with MCCs are a uniquely complex, challenging, and costly population to treat in primary care.<sup>1,51</sup> Considering the increased risk of UAU in patients with MCCs; the role of UAU in the exacerbation of chronic health conditions; and the importance of screening for UAU to the primary, secondary, and tertiary prevention and management of MCCs, continued efforts are needed to create the conditions for the delivery of alcohol-related preventive services in primary care, particularly to patients with high complexity and/or mental health conditions.

## ACKNOWLEDGMENTS

The sponsor of this study had no role in the design of this study; collection, analysis, and interpretation of data; writing of the report; or decision of where to submit.

This work was supported by a grant from the Agency for Healthcare Research and Quality (R18HS027077, principal investigator: AHK).

Preliminary findings from this study were presented as an oral presentation at the 2022 Annual Meeting of the North American Primary Care Research Group (Rockwell).

JWE and AHK served on the U.S. Preventive Services Task Force for the 2020 Recommendation for Unhealthy Alcohol Use in Adolescents and Adults: Screening and Behavioral Counseling Interventions Recommendation. No other disclosures were reported.

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## SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found in the online version at [doi:10.1016/j.focus.2024.100233](https://doi.org/10.1016/j.focus.2024.100233).

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