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# The Current State of Alcohol Screening and Management in Virginia Primary Care Practices:

## An Evaluation of Preventive Service Use

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## INTRODUCTION

Unhealthy alcohol use (UAU) is the third leading cause of preventable premature deaths in the United States.[1] There are over 88,000 alcohol-attributable deaths annually from both acute (eg, motor vehicle accidents) and chronic causes (eg, alcoholic liver disease).[2] Almost one-third of US adults engage in risky alcohol use during their lifetime.[3] During the coronavirus disease 2019 pandemic, alcohol use rates rose dramatically by 39%, and they have largely remained elevated since.[4,5]

*UAU* includes the full spectrum of risky or hazardous drinking to severe alcohol use disorder (AUD). The National Institute of Alcohol Abuse and Alcoholism (NIAAA) defines *risky drinking or hazardous drinking* as consumption of alcohol above the recommended daily, weekly, or per occasion limits, but not meeting criteria for AUD. For women and men over the age of 65 years, this is more than 3 drinks per day or more than 7 drinks per week. For men aged 21 to 64 years, this is more than 4 drinks per day or more than 14 drinks per week. A standard drink is defined as 12.0 oz of beer (5% alcohol), 5.0 oz of wine (12% alcohol),

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or 1.5 oz of liquor (40% alcohol). Adolescents, women who are pregnant or are trying to get pregnant, and adults who are planning to drive or operate machinery should avoid alcohol completely.[6] NIAAA defines binge *drinking or heavy drinking* episodes, a form of risky or hazardous drinking as 4 or more drinks for women and 5 or more drinks for men over 2 hours.[6]

The World Health Organization defines *alcohol abuse* as a pattern of drinking that is already causing damage to physical health (eg, liver damage from chronic drinking), mental health (eg, depressive episodes secondary to drinking), or legal or social problems (eg, trouble at home, work, or school).[7] As per the Diagnostic and Statistical Manual of Mental Disorders-fifth edition (DSM-5) criteria, *AUD* is defined as a maladaptive pattern of alcohol use leading to clinically significant impairment or distress. To meet criteria for diagnosis, people need to have at least 2 of 12 symptoms over a 12-month period (Box 1). People with 2 to 3 symptoms are considered to have mild AUD, 4 to 5 symptoms moderate AUD, and 6 or more symptoms severe AUD.[8]

## PREVALENCE

UAU is common and increasing in adults.[9] Between 2001 and 2013, the prevalence of AUD increased from 8.5% to 12.7% in the United States. According to the 2021 National Survey on Drug Use and Health, 11.3% of adults had AUD in the past year.[10] Similarly, high-risk drinking increased by 29.9%. Compounding these increases, 26.2% of adults reported binge drinking in the previous month.[11] Women, black people, older adults, and people with lower levels of education and income have had more pronounced increases in AUD and risky drinking, multiplying the health inequities caused by UAU.[12]

## US PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

In 2018, the US Preventive Services Task Force (USPSTF) updated its recommendation for screening and counseling for UAU.[13] Specifically,

> The USPSTF recommends screening for unhealthy alcohol use in primary care settings in adults 18 years or older, including pregnant women, and providing persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce unhealthy alcohol use.

The USPSTF also found insufficient evidence to recommend screening and brief behavioral counseling interventions for alcohol use in adolescents aged 12 to 17 years.

Based on the evidence review, the USPSTF found adequate evidence that:[13,14]

- UAU causes adverse health outcomes.
- There are numerous brief screening instruments that can detect UAU with acceptable sensitivity and specificity in primary care settings.
- Brief behavioral counseling interventions in adults who screen positive are associated with reduced UAU including reductions in the odds of exceeding

recommended drinking limits and heavy use episodes at 6-month to 12-month follow-up and increased likelihood that women remained abstinent from alcohol use during pregnancy.

- Reduced alcohol use is associated with reduced morbidity and mortality.
- There is an absence of reported harms in the evidence on behavioral interventions.

It is important to note that the primary evidence of benefit identified by the USPSTF is for identifying risky or hazardous drinking and providing brief behavioral interventions to reduce alcohol intake and reduce the proportion for people considered to be engaged in risky or hazardous drinking, as opposed to identifying and treating people with AUD. This can prevent both harms and adverse consequences of risky or hazardous drinking as well as the progression to AUD.

Also of note, the USPSTF first recommended screening and counseling for UAU in 2013, so for more than a decade, primary care clinicians should have offered this as a routine preventive service.[15]

## SCREENING INSTRUMENTS

In its evidence review, the USPSTF identified 45 studies reported in 56 publications on the accuracy of screening instruments.[14] Based on this evidence, the USPSTF recommends using 1 of 2 validated screening tools for the general primary care population: the Alcohol Use Disorders Identification Test-Concise (AUDIT-C)[14,16] and the NIAAA-recommended Single Alcohol Screening Question (SASQ).[17,18] These tools have adequate sensitivity and specificity to identify various levels of UAU. The AUDIT-C has 3 questions and takes about 2 minutes to administer (Box 2). It has a sensitivity of 90% and a specificity of 60% for assessing UAU.[16] The SASQ has 1 question and requires less than 1 minute to administer (see Box 2). It has a sensitivity of 82% and a specificity of 79% for detecting UAU.[18] There are also screening instruments available for specific populations, including college student, pregnant people, adolescents, and pediatric patients.[19]

If an individual screens positive, further diagnostic evaluation is indicated before diagnosing a person with UAU and to determine next steps. The screening instruments have higher sensitivity and lower specificity to ensure that people with UAU are not missed, but they risk overclassifying people with UAU who do not meet diagnostic criteria. Steps to make a diagnosis include a complete history and physical, administering the full AUDIT 10 questions, assessing for the presence of DSM-5 symptoms, and evaluating the patient's social history. Primary care clinicians should be fully capable and competent to conduct this assessment and make the formal diagnosis.

## COUNSELING AND TREATMENT

The specific counseling and treatment approach will depend on the nature and severity of a person's UAU, individual preferences, resource availability, and other social factors contributing to a person's behaviors. A pragmatic and adaptive approach that accommodates

needs over time will likely be necessary. Fig. 1 shows a simple initial approach to behavior counseling and treatment based on severity of UAU.[20]

## Brief Behavioral Counseling

The USPSTF identified 68 trials in 102 publications that assessed the effect of counseling interventions on alcohol use as well as health, social, and legal outcomes in a screen-detected population.[14] Overall, the studies showed counseling decreased binge drinking, frequency of drinking, and weekly intake resulting in a long-term reduction in alcohol use.[21] As a result of counseling, 14% more adults were drinking within recommended limits at 6 and 12 months. This correlated with the number needed to treat 7 adults with UAU to help 1 adult drink within recommended limits.

The interventions varied in their specific components, administration, length, and number of interactions. Interventions ranged from 0 to 21 sessions, but most were 4 or fewer sessions and the median number of sessions was 1. Contact time ranged from 1 to 600 minutes, but most interventions were under 2 hours and the median contact time was 30 minutes. Thirty percent of the interventions reviewed by the USPSTF were Web-based. Brief interventions were delivered face-to-face during office visits or via a virtual or telehealth visit—an increasingly important route of health care delivery during the pandemic. Fully, a third of interventions were delivered solely by the primary care team.

The most frequently studied intervention was personalized normative feedback, in which participants were shown how their alcohol use compares with that of others. Other commonly studied interventions were motivational interviewing, strategies to reduce drinking, drinking diaries, action plans, alcohol use prescriptions, feedback on how a person's alcohol consumption impacts their health, management of chronic comorbid conditions including anxiety and stress, and the use of social support systems.[14,22,23] Motivational interviewing is 1 technique commonly taught to and used by primary care clinicians to help patients improve a range of health behaviors. In particular, patients who are ambivalent to change early in discussions are likely to respond positively to motivational interviewing and are more willing to change after the use of motivational interviewing principles.[24] "Change talk," or the discussion of possible modification of drinking behaviors, is also linked to reduced alcohol intake. During motivational interviewing, when patients offer ideas to change, they are more likely to act on recommendations to reduce alcohol use.[24,25]

## Referral

A popular primary care approach to addressing UAU has been the SBIRT—Screening, *B*rief *I*ntervention, and *R*eferral to *T*reatment. The idea is that primary care clinicians screen to identify UAU, start counseling, and then refer. Potential referral options can include individual (eg, cognitive behavioral therapy) or group programs (eg, Alcoholics Anonymous). They can be delivered by addiction medicine specialists, mental health providers, health systems, community service boards, and even employers (eg, Employee Assistance Programs). A major barrier to this approach has been limited people and programs available in most communities to which patients can be referred for treatment.

Additionally, there is often a stigma, often self-imposed by patients, with attending these programs.

While more intensive support through referrals is needed and beneficial for people with AUD and people with risky drinking who cannot make desired changes (see Fig. 1), the lack of referral resources should not be a barrier to screening and treating people for UAU. Most of the health outcome benefits identified in the USPSTF screening recommendation was for behavioral counseling for people with risky drinking that can be delivered in the primary care setting.

### Medications

In combination with behavioral counseling, medications have been shown to reduce alcohol use and improve patient outcomes, and are safe to prescribe in the primary care setting.[26] Three drugs have Food and Drug Administration approval for treating UAU: naltrexone and acamprosate (considered first-line therapy) and disulfiram (considered second-line). Naltrexone has few side effects (insomnia, tiredness), is affordable (about $35 per month) and has both a short-acting and long-acting version. One study demonstrated that 32% receiving long-acting naltrexone remained abstinent over 6 months compared to 11% receiving placebo.[27] Acamprosate has similar benefits and few side effects (diarrhea, insomnia, depression), but is more expensive (about $230 per month). While first used for UAU, disulfiram has no long-term data on efficacy and a greater side effect profile, causing nausea, vomiting, and gastrointestinal distress when taken with alcohol.

## CURRENT STATE OF PREVENTIVE SERVICE DELIVERY

Despite the USPSTF recommendations, most clinicians report that they do not routinely use AUDIT-C or SASQ for screening and do not frequently provide brief counseling interventions.[28] Similarly, the majority of patients do not recall their clinician asking them about alcohol use or providing any feedback on their drinking habits.[29]

### Evaluation Design

As part of a larger randomized controlled trial to demonstrate whether practice facilitation improves primary care screening, counseling, and treatment for UAU, we analyzed the baseline study data for both early and delayed intervention practices to understand the current state of screening, counseling, and treatment in primary care. Primary care practices throughout Virginia were recruited to participate between April 2020 and August 2022.[30] Practices are randomized and allocated to receive a 6-month practice facilitation intervention at enrollment (early intervention) or 6 months after enrollment (delayed intervention). Each practice identified a clinician/practice champion to lead the practice prevention improvement project. Practice facilitation included a current state analysis, provision of tools for screening, brief intervention training, a Web site with referral options, and education on medication management. We created an online repository with dozens of resources to help clinicians feel more comfortable and confident with screening, counseling, and treatment that is publicly available.[31] The full study protocol has been published,[20]

approved by the Virginia Commonwealth University IRB (HM20016728), and registered at clinicaltrials.gov.[32]

## Data Sources

To assess outcomes, we used 4 data sources—a practice survey, electronic health record (EHR) chart review, patient survey, and transcripts from practice facilitation meetings. The practice surveys were completed by the practice champions, office manager, and key staff. Data collected included number of clinicians participating, current payer mix, race and ethnicity of patients, the number of patients seen per day, type of EHR, rurality, and practice ownership. The EHR chart review was performed for 60 patients prior to the intervention for each practice. Patients aged 18 to 79 years with a visit within the past 3 months were randomly selected for inclusion. Each practice determined which visit type (ie,: preventive visits, chronic visits, all visits) they planned to routinely screen patients. This visit type acted as the pool for random selection, specific to each practice. Data was collected from both EHR structured fields and text from notes and included encounter type, diagnoses for the 3 most recent encounters (including alcohol-related diagnoses), alcohol screening tool used and score in the past 2 years (if applicable), interventions provided by practice staff and clinicians, and medication prescriptions related to substance use.

The same 60 patients from each practice were mailed a survey via a modified Dillman method at enrollment.[33] The survey included demographic information not available in the EHR, Consumer Assessment of Health care Providers and Services Patient Questionnaire,[34] AUDIT-C, and if their clinician asked about their alcohol use, encouraged them to drink less, and offered advice regarding alcohol use. Patients were considered to screen positive for UAU if the AUDIT-C score was 3 or more (female) or 4 or more (male).[16] Patients were also asked about their comfort level speaking to clinicians about alcohol, and if uncomfortable, why. Patients could complete the survey on paper and return it with the prepaid envelope, over the phone with a research staff, or online.

Each meeting with the practice champion team, staff, or larger group was audio recorded and transcribed using the auto-transcription program Otter.ai. Additionally, following each meeting, facilitators entered detailed notes into a structured field note template, which was constructed using domains adapted from the Consolidated Framework for Implementation Research.[35] Two members of the research team then coded the qualitative data using a thematic and immersion-crystallization approach. Codes were initially derived from the field note template and were expanded as additional themes emerged. Research team members cycled between independent coding and group discussion to identify and codify emergent themes and resolve discrepancies.

## Results: Practice and Patient Participation

We recruited 76 practices in the study. After dropout, data were available for 63 practices. Each practice identified between 1 and 5 champions to lead their practice change efforts. The practices were generally representative of the range of practice size, ownership, geography, and communities served as primary care in Virginia (Table 1).[30] The 63 practices used 11 different EHRs. Most practices (45) were owned by hospitals or health systems,

and nearly half were patient-centered medical homes (PCMHs) (31). Locations (urban, suburban, rural) varied but were representative of Virginia's geography.

Of the 3760 unique patients included in our baseline sample, 63.2% were white, 19.7% were black, 5.1% were Asian, and the remainder were American Indian, more than 1 race, other, or not reported (see Box 2). Patient ethnicity was largely non-Hispanic (79.5%), with 8.5% Hispanic and 12.0% not reported. Age was distributed between 18 and 75 years per sampling criteria. More women were included in the study (61.0%), in a similar proportion to the population of people seen in primary care. Fully 56.5% of patients were commercially insured, 22.3% had Medicare, 13.3% had Medicaid, 0.5% were dual enrolled, 6.6% were self-pay, and 0.9% had Tricare. The demographics of participating patients was representative of the overall population in Virginia.[30] Of the 3760 patients mailed the survey, 846 patients completed it (22.5% response rate). Survey respondents were similar to the overall sample with some minor differences (Table 2).

## Screening, Counseling, and Treatment Rates

Of 3760 charts reviewed, 2602 (69.2%) patients had documentation of alcohol use, but only 409 (10.9%) had documented screening using the USPSTF-recommended AUDIT-C or SASQ (Fig. 2). Alcohol use was primarily documented using "other" approaches, often text in an office note. For example, a clinician may have documented "drinks alcohol" without describing the number of drinks or frequency. As a result, only 233 (6.6%) patients had documented UAU, 52 patients (22.3% of those identified) were identified with the AUDIT-C or SASQ, and 64 (27.5% of those identified) had some form of UAU listed on their problem list. The remaining 123 patients (52.7% of those identified) had to be imputed by the chart reviewer, meaning that UAU based on AUDIT-C or SASQ criteria could be inferred (eg, office visit note says "binge drinks weekly" or "drinks 20 beers per week"). Few patients with UAU had documented counseling (55 patients), provision of educational material (2 patients), referral for more support (9 patients), or were prescribed medications (8 patients).

Of the 805 survey respondents who completed the AUDIT-C, 193 (24.0%) had UAU—more than triple the rate identified by chart review (6.2%) (Fig. 3). Like the chart review, patients with UAU based on their AUDIT-C score reported low rates of clinician counseling (29 patients), provision of educational material (3 patients), referral (2 patients), or medication prescription (2 patients).

## Qualitative Results

Qualitative data indicate high diversity in alcohol misuse screening processes, both across practices and among clinicians in a single practice. This included the timing and frequency of screening (eg, every visit, annual wellness visits, new patient intake visits), populations screened, modes of assessment (eg, self-report on intake form, verbal use of validated instrument during nurse visit), and modes of documentation (eg, use of structured EHR fields) (Table 3). Facilitators to regular screening included the ability to bill and receive reimbursement for screening and counseling, having alcohol screening measures credited toward PCMH certification, having the AUDIT-C or SASQ embedded in the EHR to prompt regular screening and to document results, and the desire to provide better patient care.

However, practices reported a lack of follow-up to positive screens. This resulted from structural issues such as a lack of access to, or ability to adequately coordinate with, behavioral health therapy, and perceptions among clinicians that patients are unwilling to seek treatment (see Table 3).

### Evaluation Limitations

Our evaluation has some limitations. We recruited practices willing to participate in a study; as such, they may have been more motivated to address UAU. While our patient survey had a reasonable response rate (22.5%), the results may not represent all patients at risk for UAU. Of note, we would expect both the practice participation bias and patient response bias to result in lower rates of UAU and better care, so our findings may be more concerning. Finally, the EHR review could only capture documentation of clinician counseling, brief interventions, or referrals. Clinicians likely provide additional care that is not recorded. If true, this highlights the need for EHRs to have better tools and supports to document counseling and treatment.[36]

## FUTURE PRIMARY CARE NEEDS

We believe that our findings in Virginia should serve as a call to action for primary care. UAU is hurting the patients and communities we care for, and there is evidence that primary care can make a difference with evidence-based screening and counseling. Grounded in longitudinal, trusting relationships, primary care offers a nonjudgmental space to identify and treat UAU,[37] yet this preventive service is extremely poorly delivered.

While 1 in 4 people being willing to share on a research survey that they engage in risky drinking, clinicians identified less than half of the people with UAU. A primary cause was likely that clinicians rarely used the recommended screening instruments. Surprisingly, clinicians document and patients report that they discuss alcohol use for most visits. Care would be improved, and clinician time would be more efficiently better spent if the recommended AUDIT-C or SASQ was used for screening.

Once UAU is identified, primary care should feel comfortable and confident with providing behavioral counseling. The evidence demonstrates that this is feasible and effective in primary care if done right. However, clinicians rarely document any details of counseling for risky drinking, and while patients recall discussing alcohol, these discussions appear to be generic and lack the use of evidence-based techniques. Clinicians report that their workflow and lack of follow-up might hinder screening, counseling, and treatment. Clinicians also report that they do not feel comfortable or confident in discussing alcohol use with patients. This may be related to their personal biases about alcohol use, own risky drinking behaviors, past experiences with patients with severe AUD, limited understanding of concrete actions and steps to help patients, and lack of referral resources for patients with greater needs.

Standardizing the process, improving documentation of patients' behaviors and needs, creating alerts and reminders and quality measures, and ensuring follow-up are needed to improve care. Fortunately, there are many simple steps primary care clinicians can take right now to improve care like focusing on their ability to help people engaged in risky drinking to

reduce their alcohol use to non-risky levels, routinely providing normative feedback, having educational material to give patients, using known techniques like motivational interviewing, and considering referrals to cognitive behavioral therapists who are already part of many primary care interprofessional teams. As primary care clinicians become more comfortable helping people with UAU, maybe they can implement more robust approaches, improve their EHR functionality, and even develop comfort with prescribing medications to help increase success.

UAU should be treated as any other physiologic disease—with prompt follow-up, people-centered counseling, and, as appropriate, referral and prescription of medications rather than as a stigmatized and unchangeable social behavior. Routine screening and counseling for UAU is within reach for most primary care practices. Prevention of UAU will reduce alcohol related morbidity and mortality.

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**Box 1**

### The diagnostic and statistical manual of mental disorders, fifth edition, symptom criteria for the diagnosis of alcohol use disorder[8]

Alcohol use disorder (AUD) is a maladaptive pattern of alcohol use leading to clinically significant impairment or distress, as manifested by 2 (or more) of the following, occurring within a 12-mo period:

1. Having times when the person drank more, or longer, than intended.
2. More than once wanted to cut down or stop, tried it, but could not.
3. Spending a lot of time drinking or being sick/getting over the aftereffects of drinking.
4. Wanting to drink so badly that they could not think of anything else.
5. Found that drinking (or being sick from drinking) often interfered with taking care of home or family responsibilities, caused problems at work, or caused problems at school.
6. Continuing to drink even though it was causing trouble with family and friends.
7. Given up or cut back on activities that were important or interesting in order to drink.
8. More than once gotten into situations while or after drinking that increased the chances of getting hurt (eg, driving, swimming, unsafe sexual behavior).
9. Continued to drink even though it was causing depression or anxiety, other health problems, or causing memory blackouts.
10. Having to drink much more than previously in order to get the desired effect, or finding that the usual number of drinks had much less effect than previously.
11. Experiencing the symptoms of withdrawal after the effects of alcohol were wearing off, such as trouble sleeping, shakiness, restlessness, nausea, sweating, racing heart, or seizure.

Severity is based on the number of symptoms present:

- Mild: 2–3 symptoms
- Moderate: 4–5 symptoms
- Severe: ≥6 symptoms

**Box 2**

## The alcohol use disorders identification test-concise and single alcohol screening question screening instruments[16,18]

Alcohol Use Disorders Identification Test-Concise (AUDIT-C)

**Questions**

1. How often do you have a drink containing alcohol?
   - Responses: Never, monthly, or less, 2 to 4 times per month, 2 to 3 times per week, 4 or more times per week
2. How many standard drinks containing alcohol do you have in a typical day?
   - Responses: 1 or 2, 3 or 4, 5 or 6, 7 to 9, 10 or more
3. How often do you have 6 or more drinks on 1 occasion?
   - Responses: Never, less than monthly, monthly, weekly, daily, or almost daily

**Scoring**

Score each answer between 0 and 4. Sum the 3 responses for a total score. A score ≥*4 for men* and ≥*3 for women* is considered a positive screen.

Single Alcohol Screening Question (SASQ)

**Questions**

- For men: How many times in the past year have you had 5 or more drinks in a day?
- For women: How many times in the past year have you had 4 or more drinks in a day?

**Scoring**

*More than once* is considered a positive screen.

**KEY POINTS**

- Screening for unhealthy alcohol use (UAU) identifies those with risky drinking and can prevent downstream sequelae of long-term alcohol misuse. While the Alcohol Use Disorders Identification Test-Concise and Single Alcohol Screening Question are the recommended screening instruments by the US Preventive Services Task Force, they are not regularly used in clinical practice.
- Electronic health records with built-in validated tools, educational material, and counseling resources are needed to improve screening and counseling for UAU.
- Few patients with UAU received counseling, follow-up, referral, or medications. Without adequate identification of UAU, providing follow-up support is challenging.
- Brief counseling interventions for people with risky drinking are proven to improve health outcomes and are feasible to deliver in primary care but are also highly under-delivered.

## CLINICS CARE POINTS

- UAU is the third leading cause of preventable death in the United States and leads to 3.8 million deaths in the United States annually. Identification of early alcohol misuse and prevention of alcohol dependence can reduce downstream morbidity and mortality. Recommended, validated tools to screen patients for UAU such as the AUDIT-C and SASQ are available for use in clinical practice. Follow-up positive screening ( ≥ 3 points female, ≥ 4 points male) with the full AUDIT or discussion about drinking behaviors.
- Integrate brief interventions, such as normalized feedback (relating the individuals drinking behaviors to the age-appropriate national average alcohol behaviors), for patients in clinic at the time UAU is identified. Consider providing medication, such as naltrexone, if the patient desires. Plan for short-term follow-up. Use local resources such as counselors and support groups for additional patient aid.
- Encourage patients to identify triggers, patterns, and motivations to drink; address these factors and plan for ways to reduce or avoid alcohol.

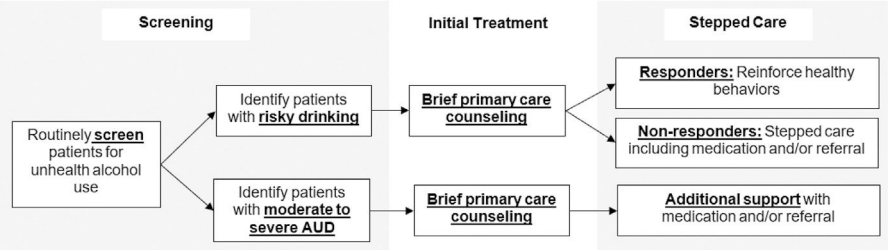


**Fig. 1.**

General initial approach to screening, counseling, and treatment of unhealthy alcohol use in primary care.[20] A stepped approach that starts with brief counseling in the primary care setting and referral or medication treatment for people with risky or hazardous drinking that do not respond, and immediate referral and/or medication for people with more moderate to severe alcohol use disorder (AUD).

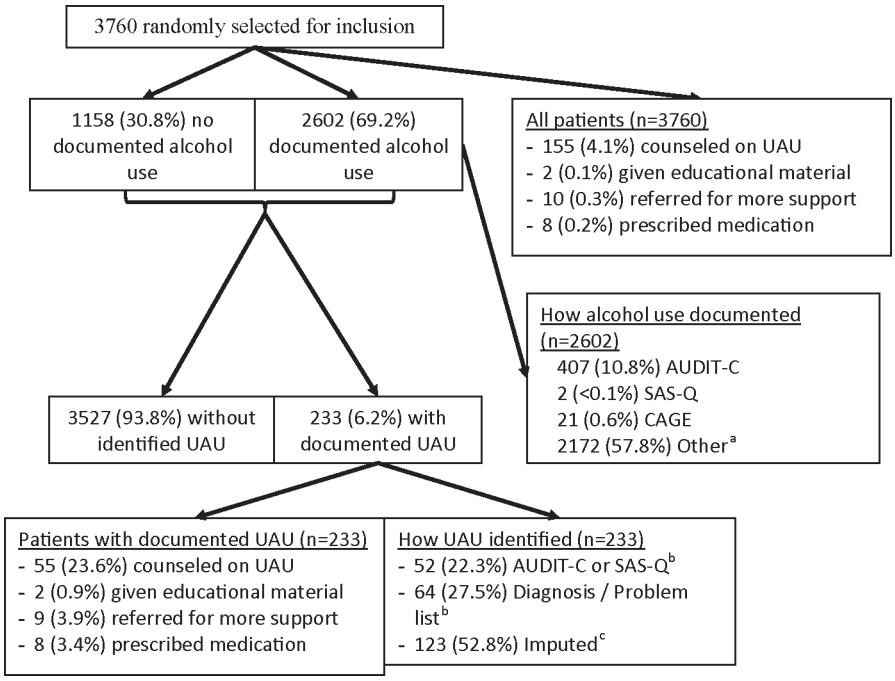


**Fig. 2.**

Screening, counseling, and intervention rates for unhealthy alcohol use (UAU) as documented in the electronic health record (EHR). While clinicians documented alcohol use for most patients, they infrequently used the recommended screening instrument (AUDIT-C or SASQ). Additionally, only 9.6% of patients had documented UAU, less than screened positive on the patient survey. Few patients received counseling, educational material, referral for more support, or medications to reduce alcohol use. [a]Recorded in other places such as text of office visit or social history section of EHR. [b]Six patients were identified as UAU by both the AUDIT-C or SASQ and from the diagnosis/problem list. [c]Imputed UAU based on elements documented in text or structured fields but did not fully complete the screening instrument or claim UAU. AUDIT-C, alcohol use disorders identification test-concise; CAGE, cut-down, annoyed, guilty, and eye-opener; SASQ, single alcohol screening question.

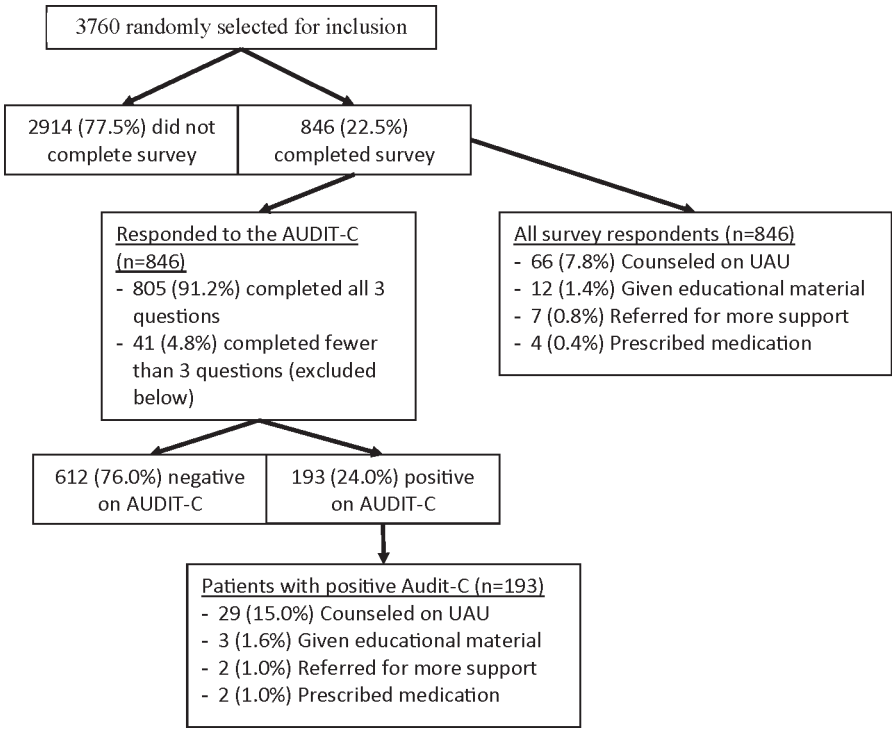


**Fig. 3.**

Screening, counseling, and intervention rates for unhealthy alcohol use (UAU) as reported on the patient survey after the office visit. Among survey respondents, 24.0% scored positive on the Alcohol Use Disorders Identification Test-Concise (AUDIT-C) for UAU. Many patients with UAU were missed based on documentation in the electronic health record (EHR), but most reported the clinician did ask about alcohol use. Few patients received counseling, educational material, referral for more support, or medications to reduce alcohol use.

**Table 1**

Characteristics of participating practices

| **Practice Characteristics** | **n = 63** |
|---|---|
| Practice ownership | 1 University-owned<br>6 FQHC<br>11 Clinician-owned<br>45 Hospital/health system |
| PCMH status | 31 PCMH<br>32 non-PCMH |
| Location (urban, suburban, rural) | 10 Urban<br>21 Suburban<br>32 Rural |
| EMR | 1 All Scripts<br>1 Aprima<br>1 Greenway Intergy<br>1 Nextgen<br>1 Practice Fusion<br>1 Capterra<br>1 Cerbo<br>1 eMDs<br>2 Athena<br>8 eClinical Works<br>45 Epic |

*Abbreviations:* EMR, electronic medical record; FQHC; federally qualified health center; PCMH, patient-centered medical home.

## Table 2

Patient characteristics

| Patient Characteristics | Overall EHR Sample n = 3760 | Survey Respondents[a] n = 846 |
|---|---|---|
| Patient race | | |
| White | 2377 (63.2%) | 556 (65.7%) |
| Black | 740 (19.7%) | 166 (19.6%) |
| American Indian or Alaska Native | 12 (0.3%) | 3 (0.4%) |
| Asian | 192 (5.1%) | 36 (4.3%) |
| Native Hawaiian or Pacific Islander | 9 (0.2%) | 4(0.5%) |
| More than 1 | 27 (0.7%) | 3 (0.4%) |
| Other | 130 (3.5%) | 16 (1.9%) |
| Not reported | 273 (7.3%) | 62 (7.3%) |
| Patient ethnicity | | |
| Hispanic/Latino | 318 (8.5%) | 41 (4.8%) |
| Non-Hispanic | 2989 (79.5%) | 672 (79.4%) |
| Not reported | 453 (12.0%) | 133 (15.7%) |
| Age | | |
| 18–39 | 1091 (29.0%) | 117 (13.8%) |
| 40–59 | 1488 (39.6%) | 281 (33.2%) |
| 60–75 | 1084 (28.8%) | 409 (48.4%) |
| 76 and older | 97 (2.6%) | 39 (4.6%) |
| Gender | | |
| Men, including transgender men | 1464 (38.9%) | 326 (38.5%) |
| Women, including transgender women | 2294 (61.0%) | 520 (61.5%) |
| Non-binary, gender non-conforming | 2 (0.1%) | 0 (0.0%) |
| Insurance | | |
| Commercial | 2124 (56.5%) | 433 (51.2%) |
| Medicare | 839 (22.3%) | 306 (36.2%) |
| Medicaid | 500 (13.3%) | 72 (8.5%) |
| Both Medicaid and Medicare | 17 (0.5%) | 5 (0.6%) |
| Self-pay | 247 (6.6%) | 24 (2.8%) |
| Tricare | 33 (0.9%) | 6 (0.7%) |

*Abbreviation:* EHR, electrònic health record.

[a]All patients in overall sample mailed survey, so survey respondents represent a subset of the overall sample.

## Table 3

Thematic evaluation of champion perceptions of alcohol screening

| Theme | Examples | Specific Quotations |
|---|---|---|
| Challenges to screening | | |
| High variability in the selection of the clinical screening cohort | Clinicians may screen newpatientsonly, screen every visit, or screen only "as needed" | "We currently [screen] all patients that come in for their regular office visit. We use the AUDIT-C and we also follow-up with the CAGE as well." "Part of the underlying issue is it's not done with every visit." "We don't have a standardized method across the entire group." |
| High variability in the clinical screening approach | Screening methods included self-report by patient on intake form, self-report during rooming process, verbal use of recommended tool, and non-validated tool use | "Pre-COVID we were doing the tablet, but since COVID came around, it's verbally." "I think that's the nurse preference. I know some of them do verbally and some of them give them the form to fill out. I personally feel like the patients are more honest with themselves when they get the form to fill out rather than answering the questions verbally. A lot of times they'll tell the nurse one thing and then when they open up to us [clinicians] it may be more alcohol consumption than previously discussed." |
| Concern about validity of screening instruments | Some clinicians questioned the generalizability of screening approaches | "Since the threshold fortesting positive is really low, almost every patient who drinks will be positive." |
| Facilitators to screening | | |
| Reimbursement | Increased payment for alcohol misuse screening | "In terms of the counseling piece of alcohol, we're going to be doing more of that, primarily because it's reimbursable now." "We're spending a lot more time on prevention and chronic care management. Since we can capitalize on some of the reimbursement that comes along with that, so it's become an essential part of what we do." |
| EHR workflow | Validated tool and screening built into EHR prompted consistent screening and documentation | "There's a spot where we go into the chart. So, it's done verbally and then recorded in a structured EHR field." |
| Clinician perception of screening for UAU | Desire for professional development and to provide better patient care | "For me motivationally, the more I learn, the more pleasing my job becomes, so that's one of the areas of thinking, to be able to help." |
| PCMH Status | Screening for alcohol drives PCMH recertification | "And then the provider can refer the patient to wherever they want and take care of whatever needs to be taken care of, and then I have it set up to tracks for our PCMH measures." |
| Challenges to address positive screening | | |
| Inconsistent follow-up workflow | Dependent on the severity of score and patient willingness to receive treatment | "If they do not complain about it, I just don't deal with it. So that's a bad habit I know I have to change, to be honest." |
| Access to behavioral health counseling highly inconsistent | Limited availability of behavioral health therapy (specifically in rural locations) Limited ability to coordinate and communicate with behavioral health counselors | "Well this is one of the major issues I've had over the years, knowing where to send people for counseling." "When you're an independent practice, getting those notes from the counselor, making sure that they're following up with their therapist, all that good stuff, it's hard to do and I just don't feel comfortable throwing a medication at somebody when I know that the risk of relapse is really high without that safety net of all those people." |

*Abbreviations:* AUDIT-C, alcohol use disorders Identification test-concise; CAGE, cut-down, annoyed, guilty, and eye-opener; COVID, coronavirus disease 2019; EHR, electronic health record; PCMH, patient-centered medical home, UAU, unhealthy alcohol use.