



Published in final edited form as:

Am J Prev Med. 2022 February ; 62(2): 219–226. doi:10.1016/j.amepre.2021.07.013.

Alcohol Screening and Brief Intervention: Office-Based Primary Care Physicians, U.S., 2015–2016

Patricia P. Green, MSPH¹, Nicole A. Cummings, MPH, CPH², Brian W. Ward, PhD², Lela R. McKnight-Eily, PhD³

¹Division of Birth Defects and Infant Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, Georgia

²National Center for Health Statistics, Hyattsville, Maryland

³Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia

Abstract

Introduction: In 2013, the U.S. Preventive Services Task Force again recommended alcohol misuse screening and provision of brief behavioral counseling interventions to those engaged in risky drinking for all adults aged 18 years in primary care. This report presents national estimates of the provision of alcohol screening and brief intervention by U.S. primary care physicians, the screening methods, and the resources they identified as helpful in implementing alcohol/substance screening and intervention in primary care settings.

Methods: Data included 876 self-identified primary care physicians from the Physician Induction Interview portion of the 2015–2016 National Ambulatory Medical Care Survey, an annual nationally representative sample survey of nonfederal, office-based physicians in the U.S., encompassing all the 50 states and the District of Columbia. Descriptive estimates (annualized percentages) of alcohol misuse screening were generated for selected primary care physician characteristics. Estimates of how primary care physicians reported screening, the frequency of brief intervention, and resources identified as helpful in the implementation of screening/intervention procedures were also generated. Two-tailed significance tests were used to determine the differences between the compared groups. Data analyses were conducted in 2019–2021.

Results: In total, 71.7% of office-based primary care physicians reported screening patients for alcohol misuse. Statistically significant differences in screening were observed geographically and by provider specialty.

Conclusions: Less than 40% of primary care physicians who screened patients for alcohol misuse reported always intervening with patients who screened positive for risky alcohol use.

Address correspondence to: Patricia P. Green, MSPH, Division of Birth Defects and Infant Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, 4770 Buford Highway, MS - S106-3, Atlanta GA 30333., pap5@cdc.gov.

CREDIT AUTHOR STATEMENT

Patricia P. Green: Conceptualization; Funding acquisition; Project administration; Writing - review & editing. Nicole A. Cummings: Formal analysis; Validation; Writing - original draft; Writing - review & editing. Brian W. Ward: Formal analysis; Validation; Writing - original draft; Writing - review & editing. Lela R. McKnight-Eily: Conceptualization; Supervision; Writing - review & editing.

Collection of data on resources that primary care physicians report as being helpful for alcohol/substance screening and intervention implementation may be useful in continuous improvement efforts.

INTRODUCTION

Excessive alcohol use in the U.S. (includes binge drinking [consuming 4 alcoholic beverages per occasion for women/ 5 alcoholic beverages per occasion for men], heavy weekly drinking [8 alcoholic beverages for women/ 15 alcoholic beverages per week for men], and any drinking by pregnant women or individuals aged <21 years^{1,2}) has substantial societal and economic costs, including approximately 95,158 average annual deaths from 2011 to 2015³ and an estimated \$249 billion related to lost productivity, health care, and other costs in 2010.⁴ Excessive alcohol use is preventable and has been linked to injuries; chronic diseases, including heart disease; and other health effects,⁵ and alcohol use during pregnancy can lead to fetal alcohol spectrum disorders for infants.⁶

Alcohol screening and brief intervention (SBI), also known as alcohol misuse or unhealthy alcohol use SBIs, is an evidence-based, clinical preventive service recommended by the U.S. Preventive Services Task Force (USPSTF) for all adults aged 18 years (including pregnant women) in primary care settings⁷ to reduce excessive alcohol consumption. A brief counseling intervention is an interaction (typically 15 minutes) between the patient and provider that involves feedback related to the patient's screening results, a conversation about the impacts of excessive alcohol use on health, and a plan to reduce alcohol use if the patient desires to do so.⁷⁻¹⁰ Estimates of the provision of this service are few and limited in scope from the provider perspective.

The USPSTF has made several recommendations for alcohol SBI owing to its effectiveness in reducing alcohol misuse or risky drinking.⁷⁻⁹ In 2018, USPSTF made their most recent recommendation on the basis of findings from a systematic review that found that alcohol SBI was associated with a mean alcohol use reduction of 1.6 drinks per week, 40% reduction in odds of exceeding the recommended drinking limits, and a 33% reduction in heavy use episodes (by 33%) at 6–12 months of follow-up.⁸ However, research has found that U.S. adults report that alcohol SBI was not being implemented routinely in primary care (according to the 2011 Behavioral Risk Factor Surveillance System, which included estimates from 44 states and the District of Columbia).¹¹ More recent state-level estimates show that 81.4% of U.S. adults reported being asked about alcohol use, but only 37.8% reported being asked about binge-level consumption. Of those who asked about alcohol use at a checkup in the past 2 years and reported current binge drinking, only 41.7% were advised about the harms of drinking too much, and only 20.1% were advised to reduce or quit drinking.¹⁰

All of these cited studies are based on patient-reported data. To the best of our knowledge, this is the first publication using National Ambulatory Medical Care Survey (NAMCS) data to provide estimates of (1) alcohol SBI and practice characteristics, (2) screening methods, and (3) resources helpful for implementing screening and intervention reported by primary care physicians (PCPs).

METHODS

Study Sample

Data were from the Physician Induction Interview portion of the 2015–2016 NAMCS, an annual survey of nonfederal, office-based physicians in the U.S., encompassing all the 50 states and the District of Columbia. The Physician Induction data are approved by the National Center for Health Statistics Ethics Review Board (Protocols #2010-02 and #2016-03) and are available from the National Center for Health Statistics Research Data Center (<https://www.cdc.gov/rdc/index.htm>). Only physicians who identified themselves as primary care specialists^{12,13} received the survey module that contained the alcohol SBI questions (876 responding physicians). Owing to skip patterns,¹⁴ 245 of these responding PCPs who did not report screening for alcohol misuse did not receive all alcohol SBI questions (Figure 1). Weighted response rate for NAMCS was 46.0% in both 2015 and 2016. Details on the sampling design, weighting procedures, and their respective development for the 2015 and 2016 NAMCS can be found elsewhere.^{12,13}

Measures

The PCPs were asked: How do you screen for alcohol misuse? They could select all responses that applied: I don't screen, T-ACE,^{15,16} TWEAK,¹⁶ CAGE,¹⁷ CRAFFT,^{18,19} AUDIT,²⁰ ask number of drinks per occasion, ask frequency of drinking, ask binge question, I don't use a formal screening instrument, and other-specify. The 631 responding PCPs who selected 1 of these responses (other than I don't screen) were classified as providers who screened for alcohol misuse. Among those 631 responding PCPs who screened, data for each of the following survey questions were analyzed: how often they screened, how screening question(s) were administered, who within the office administered the screenings, and how often brief interventions were conducted among patients who screened positive for risky alcohol use. Response categories are presented in Table 1. NAMCS described brief interventions for risky alcohol use as “short discussions with patients who drink too much or in ways that are harmful.”¹⁴ A final question asked all the 876 responding PCPs (regardless of whether they screened for alcohol misuse) to select from a list of predetermined responses indicating resources that they thought were helpful in implementing alcohol/substance screening and intervention in primary care settings.

Statistical Analysis

Analyses were based on the data from 876 respondents. A total of 66 of these PCPs had missing alcohol screening data but were still included in the denominator to present more conservative estimates. Weighted estimates of alcohol misuse screening by selected PCP characteristics were generated. Among PCPs who screened for alcohol misuse, weighted estimates were generated for follow-up questions regarding screening methodology and brief intervention frequency. Finally, estimates of PCP-reported helpful resources for implementing alcohol SBI were generated. Analyses were conducted using SUDAAN, version 11.0, weighted to be representative of PCPs in office-based settings (annualized averages), and using proper subsetting procedures and design variables to account for covariance resulting from NAMCS complex cluster design that was drawn on the basis of both. Percentages are accompanied by Korn–Graubard 95% CIs^{21,22} and meet National

Center for Health Statistics presentation standards (Tables 1 and 2)²². Differences in proportions for mutually exclusive response categories are considered statistically significant on the basis of a 2-tailed p -value <0.05 that resulted from a significance test:

$$Z = \frac{|X_1 - X_2|}{\sqrt{s_1 + s_2}}$$

where X_1 and X_2 are the estimates being compared, and s_1 and s_2 are their corresponding SEs. Data analyses were conducted in 2019–2021.

RESULTS

A total of 71.7% of PCPs practicing in office-based settings indicated that they screened patients for alcohol misuse (Table 2). A higher percentage of general/family practice physicians (76.5%) reported screening patients for alcohol misuse than obstetricians/gynecologists (62.5%, $p=0.005$). A smaller percentage of PCPs practicing in the South (64.8%) reported screening compared with the percentage of PCPs in the Northeast (76.4%, $p=0.015$) and Midwest (78.9%, $p=0.002$). A higher percentage of PCPs at multispecialty offices (79.6%) reported screening than those at solo/single-specialty offices (71.1%, $p=0.023$).

The 3 most common screening questions were: *Ask the number of drinks per occasion* (59.5%), *ask the frequency of drinking* (57.2%), and *ask a binge drinking question* (33.2%) (Table 1). These top 3 questions were single-question screening tests, 1 of the 3 USPSTF-recommended instruments for screening for alcohol misuse in the primary care setting.⁹ TWEAK (Tolerance, Worried, Eye-opener, Amnesia, and Cut-down) was the least common instrument used (1.2%). More than half (52.2%) of the PCPs who screened for alcohol misuse reported doing so annually at every health maintenance visit, compared with 24.0% who reported screening when they suspected that a patient had an alcohol/substance-related problem ($p<0.001$), 15.7% who reported screening at every healthcare visit ($p<0.001$), and 7.4% who reported that they never/almost never screen for alcohol misuse ($p<0.001$). Of PCPs who screened, 57.3% reported that those who administered the screening were a physician, nurse practitioner, or physician assistant; 12.3% reported that they were a medical assistant; 6.5% reported that they were a nurse (excluding nurse practitioners); and 0.7% reported that they were administrative staff/other; 23.2% reported that they were unknown/did not respond. The screening was conducted through in-person/face-to-face interview most often (76.8%), followed by a patient completing a form (17.9%), or other screening approach (4.4%). Only 0.7% of PCPs who screened reported using electronic self-administration of screening questions. A total of 38% of PCPs who screened reported that they or someone in their practice always conducted brief interventions with their patients who screened positive for risky alcohol use, compared with the percentage of those who reported conducting them often (27.3%, $p<0.001$), sometimes (26.3%, $p<0.001$), or never (7.4%, $p<0.001$).

The most common resources selected by all PCPs (regardless if they screened for alcohol misuse) as being helpful for alcohol/substance screening and intervention implementation

included the following: access to patient education materials (40.1%), information about where/how to refer for additional services (39.9%), and an alcohol SBI implementation guide (38.4%) (Figure 2). When comparing the differences between PCPs who screened for alcohol misuse and those who did not, for each resource, a higher percentage of those who screened reported that resource as being helpful for alcohol/substance screening and intervention implementation than those who did not screen, with the exception of the other category. Precisely 24.8% of PCPs who did not screen for alcohol misuse reported other resources as being helpful compared with only 12.4% of PCPs who screened ($p<0.001$).

DISCUSSION

National data reported by PCPs about the provision of alcohol SBI are limited, and thus, this study helps to fill a gap in the empirical literature. During 2015–2016, a total of 71.7% of office-based PCPs in the U.S. reported screening patients for alcohol misuse, with variation by specialty, solo/single versus multispecialty practice, and U.S. region. The proportion of PCPs who reported screening for alcohol misuse was lowest among obstetricians and gynecologists (62.5%) than among general/family practice PCPs (76.5%). Future research would be needed to understand why this difference exists and whether it may be due to PCP differences in comfort levels among the types of PCPs when conducting alcohol SBI; fear of stigmatizing patients; fear of reporting requirements, policies, and legal actions (which vary by state) that could criminalize pregnant women for alcohol/substance abuse; or other reasons.²³ Understanding this would be important because recent findings have shown that 11.5% of U.S. pregnant women aged 18–44 years report drinking alcohol in the past 30 days.²⁴ Regional differences in alcohol SBI by PCPs were also found, where a lower percentage of PCPs in the South (64.8%) reported screening for alcohol misuse than in the Midwest (78.9%) and Northeast (76.4%). These may reflect a higher prevalence of regular alcohol consumption by U.S. adults in the Midwest and North.²⁵

The overall alcohol misuse screening estimate for providers (71.7%) in this study is lower than that of a 2016 study of PCPs, in which 96% of providers reported screening patients for alcohol misuse²⁶; however, although the study by Tan and colleagues²⁶ was nationally sampled, it was not nationally representative, and the data were from PCPs from a web-based social network. It also found that only 38% of providers who screened for alcohol misuse reported using a USPSTF-preferred screening tool.²⁶ However, the findings of this study are more consistent with a 2017 nationwide survey that assessed alcohol SBI receipt among U.S. adults in 13 states and the District of Columbia, in which 81% of respondents self-reported being asked by a health professional in-person or on a form about their alcohol use at their last routine checkup in the past 2 years.¹⁰

A total of 38% of PCPs who screened reported always conducting a brief intervention when patients screened positive for risky alcohol use. Furthermore, resources most often selected by PCPs as being helpful for alcohol/substance screening and intervention implementation align with findings of at least one other study of providers.²⁷

This study further adds to the dialogue around the standardized implementation of alcohol SBI for adults aged 18 years. For example, a number of PCPs stated that resources

would be helpful for alcohol/substance screening and intervention implementation, including access to patient education materials, information about where/how to refer for additional services, and an alcohol SBI implementation guide. Future research could investigate whether additional resources not asked about in NAMCS would be beneficial. For example, electronic health record reminders or implementation of the Healthcare Effectiveness Data Information Set measure *Unhealthy Alcohol Use Screening and Follow-Up*²⁸ may be beneficial in routinizing alcohol SBI implementation and ensuring that implementation is done with fidelity. In addition, incentivizing PCPs to conduct alcohol SBI, which was mentioned by providers in this study, and addressing some of the major barriers of standardized implementation²⁹ could be helpful. This study indicated that additional barriers, including access to patient education materials, information about where and how to refer patients for additional services, an implementation guide for SBI, training on how to conduct alcohol screening and intervention, and scripts of what to say to patients, may need to be further addressed in primary settings, and national NAMCS data can be used to continue to track the provision of this clinical preventive service.

Limitations

This study is subject to at least 5 limitations. First, NAMCS data were self-reported by PCPs and therefore might have been subject to recall or social desirability bias. Second, NAMCS PCPs were not asked to explain their reasons for using specific screening tools/instruments. Consequently, this analysis could not determine the reasons PCPs used each tool. Third, NAMCS described brief interventions as “short discussions with patients who drink too much or in ways that are harmful,”¹⁴ and it is unclear whether physicians understood brief intervention as a multicomponent intervention with specific requirements or whether their response indicates that alcohol misuse is addressed only if discovered during the visit. It is also unclear whether they only address alcohol misuse if there is some indication of dependence or some other medical concern, as opposed to being due to routine screening. Furthermore, in NAMCS, brief interventions are not defined as behavioral counseling, as the USPSTF recommendation states, but some examples were given, such as feedback from screening results; gathering further information in drinking patterns, alcohol-related harm, or symptoms of alcohol dependence; discussing the risks and consequences of drinking too much; and providing advice about cutting back or stopping. Fourth, PCPs were asked to indicate the resources that would be helpful for implementing alcohol/substance screening and intervention in primary care settings. Inclusion of substance screening in this question may have resulted in PCPs identifying resources that may not have been selected if the question asked solely about alcohol screening/intervention. Finally, the response rates for the 2015–2016 NAMCS were low, which did have the potential to impact the representativeness of the results or potentially introduce bias.

CONCLUSIONS

An estimated 28.3% of PCPs reported not screening patients for alcohol misuse; therefore, some individuals with alcohol misuse may not be identified and consequently may not receive appropriate brief interventions in primary care settings as recommended by USPSTF. Only 38.0% of PCPs who screened reported always conducting brief interventions among

their patients who screen positive for risky alcohol use. Questions for future research remain concerning the following: why alcohol SBI is not utilized by all PCPs as per USPSTF recommendation; why differences exist by specialty, practice, and region; and what the circumstances are that influence the receipt of brief intervention for patients who screen positive for alcohol misuse.

ACKNOWLEDGMENTS

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention or the National Center for Health Statistics.

Publication of this article was supported by the U.S. Centers for Disease Control and Prevention, an Agency of HHS, under a memorandum of understanding: 14FED1405206.

No financial disclosures were reported by the authors of this paper.

REFERENCES

1. Bouchery EE, Harwood HJ, Sacks JJ, Simon CJ, Brewer RD. Economic costs of excessive alcohol consumption in the U.S., 2006. [published correction appears in *Am J Prev Med.* 2013;44(2):198]. *Am J Prev Med.* 2011;41(5):516–524. 10.1016/j.amepre.2011.06.045. [PubMed: 22011424]
2. HHS, U.S. Department of Agriculture. 2015–2020 Dietary guidelines for Americans. 8th Edition Washington, DC: HHS, U.S. Department of Agriculture; December 2015. <http://health.gov/dietaryguidelines/2015/guidelines/>. Published December 2015. Accessed August 23, 2021.
3. Esser MB, Sherk A, Liu Y, et al. Deaths and years of potential life lost from excessive alcohol use - United States, 2011-2015. *MMWR Morb Mortal Wkly Rep.* 2020;69(39):1428–1433. 10.15585/mmwr.mm6939a6. [PubMed: 33001874]
4. Sacks JJ, Gonzales KR, Bouchery EE, Tomedi LE, Brewer RD. 2010 National and state costs of excessive alcohol consumption. *Am J Prev Med.* 2015;49(5):e73–e79. 10.1016/j.amepre.2015.05.031. [PubMed: 26477807]
5. Excessive alcohol use. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion; 2019. <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/alcohol.htm>. Accessed November 1, 2019.
6. Schuchat A The CDC's recommendations to help prevent fetal alcohol spectrum disorders. *Am Fam Physician.* 2017;95(1):6–7. <https://www.aafp.org/afp/2017/0101/p6.html>. Accessed October 8, 2021. [PubMed: 28075101]
7. Jonas DE, Garbutt JC, Amick HR, et al. Behavioral counseling after screening for alcohol misuse in primary care: a systematic review and meta-analysis for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2012;157(9):645–654. 10.7326/0003-4819-157-9-201211060-00544. [PubMed: 23007881]
8. O'Connor EA, Perdue LA, Senger CA, et al. Screening and behavioral counseling interventions to reduce unhealthy alcohol use in adolescents and adults: updated evidence report and systematic review for the U.S. Preventive Services Task Force. *JAMA.* 2018;320(18):1910–1928. 10.1001/jama.2018.12086. [PubMed: 30422198]
9. U.S. Preventive Services Task Force. Final recommendation statement: alcohol misuse: screening and behavioral counseling interventions in primary care. Rockville, MD: U.S. Preventive Services Task Force; 2013. <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/alcohol-misuse-screening-and-behavioral-counseling-interventions-in-primary-care>. Published 2013. Accessed August 23, 2021.
10. McKnight-Eily LR, Okoro CA, Turay K, Acero C, Hungerford D. Screening for alcohol use and brief counseling of adults –13 states and the District of Columbia, 2017. *MMWR Morb Mortal Wkly Rep.* 2020;69(10):265–270. 10.15585/mmwr.mm6910a3. [PubMed: 32163383]

11. McKnight-Eily LR, Liu Y, Brewer RD, et al. Vital signs: communication between health professionals and their patients about alcohol use—44 states and the District of Columbia, 2011. *MMWR Morb Mortal Wkly Rep.* 2014;63(1):16–22. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5779334/pdf/16-22.pdf>. Accessed September 3, 2021. [PubMed: 24402468]
12. National Center for Health Statistics. 2015 NAMCS micro-data file documentation. Hyattsville, MD: National Center for Health Statistics; 2017. https://ftp.cdc.gov/pub/health_statistics/nchs/dataset_documentation/NHAMCS/doc15_ed.pdf.
13. National Center for Health Statistics. 2016 NAMCS micro-data file documentation. Hyattsville, MD: National Center for Health Statistics; 2019. https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NAMCS/doc2016.pdf.
14. National Center for Health Statistics. National Ambulatory Medical Care Survey 2015 Panel: Physician Induction Interview Sample Card (Form NAMCS-1A). Hyattsville, MD: National Center for Health Statistics; 2015. https://www.cdc.gov/nchs/data/ahcd/2015_NAMCS_Physician_Induction_Interview_Sample_Card.pdf.
15. Sokol RJ, Martier SS, Ager JW. The T-ACE questions: practical prenatal detection of risk-drinking. *Am J Obstet Gynecol.* 1989;160(4):863–870. 10.1016/0002-9378(89)90302-5. [PubMed: 2712118]
16. Russell M New assessment tools for risk drinking during pregnancy: T-ACE, TWEAK, and Others. *Alcohol Health Res World.* 1994;18(1):55–61. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6876474/pdf/arhw-18-1-55.pdf>. Accessed September 1, 2021. [PubMed: 31798157]
17. Ewing JA. Detecting alcoholism. The CAGE Questionnaire. *JAMA.* 1984;252(14):1905–1907. 10.1001/jama.252.14.1905. [PubMed: 6471323]
18. Knight JR, Shrier LA, Bravender TD, Farrell M, Vander Bilt J, Shaffer HJ. A new brief screen for adolescent substance abuse. *Arch Pediatr Adolesc Med.* 1999;153(6):591–596. 10.1001/archpedi.153.6.591. [PubMed: 10357299]
19. Harris SK, Knight JR, Van Hook S, et al. Adolescent substance use screening in primary care: validity of computer self-administered versus clinician-administered screening. *Subst Abus.* 2016;37(1):197–203. 10.1080/08897077.2015.1014615. [PubMed: 25774878]
20. Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption—II. *Addiction.* 1993;88(6):791–804. 10.1111/j.13600443.1993.tb02093.x. [PubMed: 8329970]
21. Korn EL, Graubard BI. Confidence intervals for proportions with small expected number of positive counts estimated from survey data. *Surv Methodol.* 1998;24(2):193–201. <https://www150.statcan.gc.ca/nl/pub/12-001-x/1998002/article/4356-eng.pdf>. Accessed September 9, 2021.
22. Parker JD, Talih M, Malec DJ, et al. National Center for Health Statistics data presentation standards for proportions. *Vital Health Stat.* 2017;2(175):1–22. <https://stacks.cdc.gov/view/cdc/47786>. Accessed September 9, 2021.
23. AOG Committee Opinion No. 473: substance abuse reporting and pregnancy: the role of the obstetrician–gynecologist. *Obstet Gynecol.* 2011;117(1):200–201. 10.1097/AOG.0b013e31820a6216. [PubMed: 21173672]
24. Denny CH, Acero CS, Naimi TS, Kim SY. Consumption of alcohol beverages and binge drinking among pregnant women aged 18–44 years - United States, 2015–2017. *MMWR Morb Mortal Wkly Rep.* 2019;68(16):365–368. 10.15585/mmwr.mm6816a1. [PubMed: 31022164]
25. Crude percentages of current, regular alcohol consumption for adults aged 18 and over, United States, 2015–2018. National Health Interview Survey. Generated interactively. National Center for Health Statistics.; June 23, 2021. <https://www.cdc.gov/nchs/nhis/ADULTS/www/index.htm>.
26. Tan CH, Hungerford DW, Denny CH, McKnight-Eily LR. Screening for alcohol misuse: practices among U.S. primary care providers, Doc-Styles 2016. *Am J Prev Med.* 2018;54(2):173–180. 10.1016/j.amepre.2017.11.008. [PubMed: 29241721]
27. Partnership to End Addiction. *Addiction medicine: closing the gap between science and practice.* New York, NY: Partnership to End Addiction; June 2012. <https://drugfree.org/reports/addiction-medicine-closing-the-gap-between-science-and-practice/>.

28. Liu J, Rainis D, Strohmeier J, et al. Screening and follow-up for unhealthy alcohol use: quality improvement change package for health plans. Washington, DC: National Committee for Quality Assurance; 2020. https://www.ncqa.org/wp-content/uploads/2020/09/20200914_NCQA_Change_Package_2020.pdf.
29. Rosário F, Vasiljevic M, Pas L, Fitzgerald N, Ribeiro C. Implementing alcohol screening and brief interventions in primary health care: study protocol for a pilot cluster randomized controlled trial. *Fam Pract*. 2019;36(2):199–205. 10.1093/fampra/cmz062. [PubMed: 29939239]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

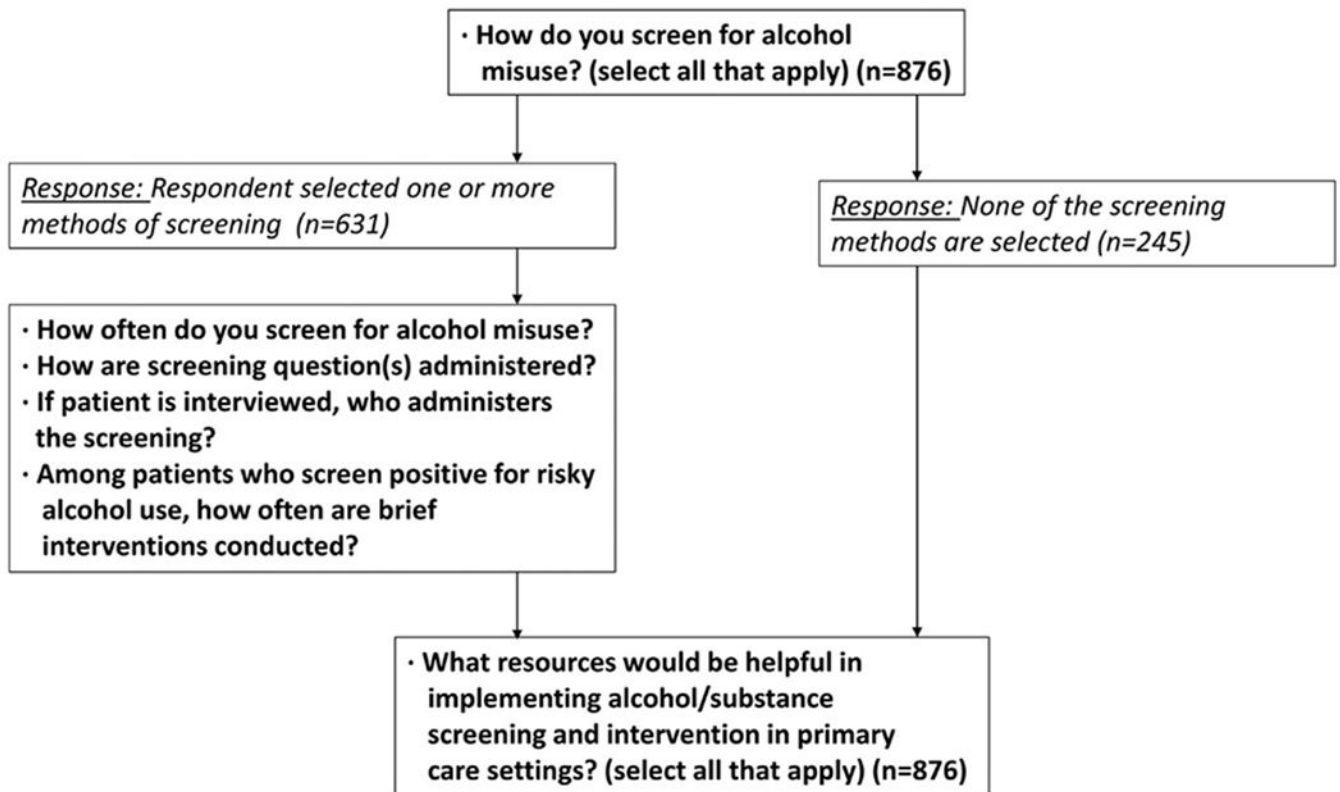


Figure 1. Flow of the Alcohol Screening and Brief Intervention Survey questions on the 2015–2016 National Ambulatory Medical Care Survey Physician Induction Interview.

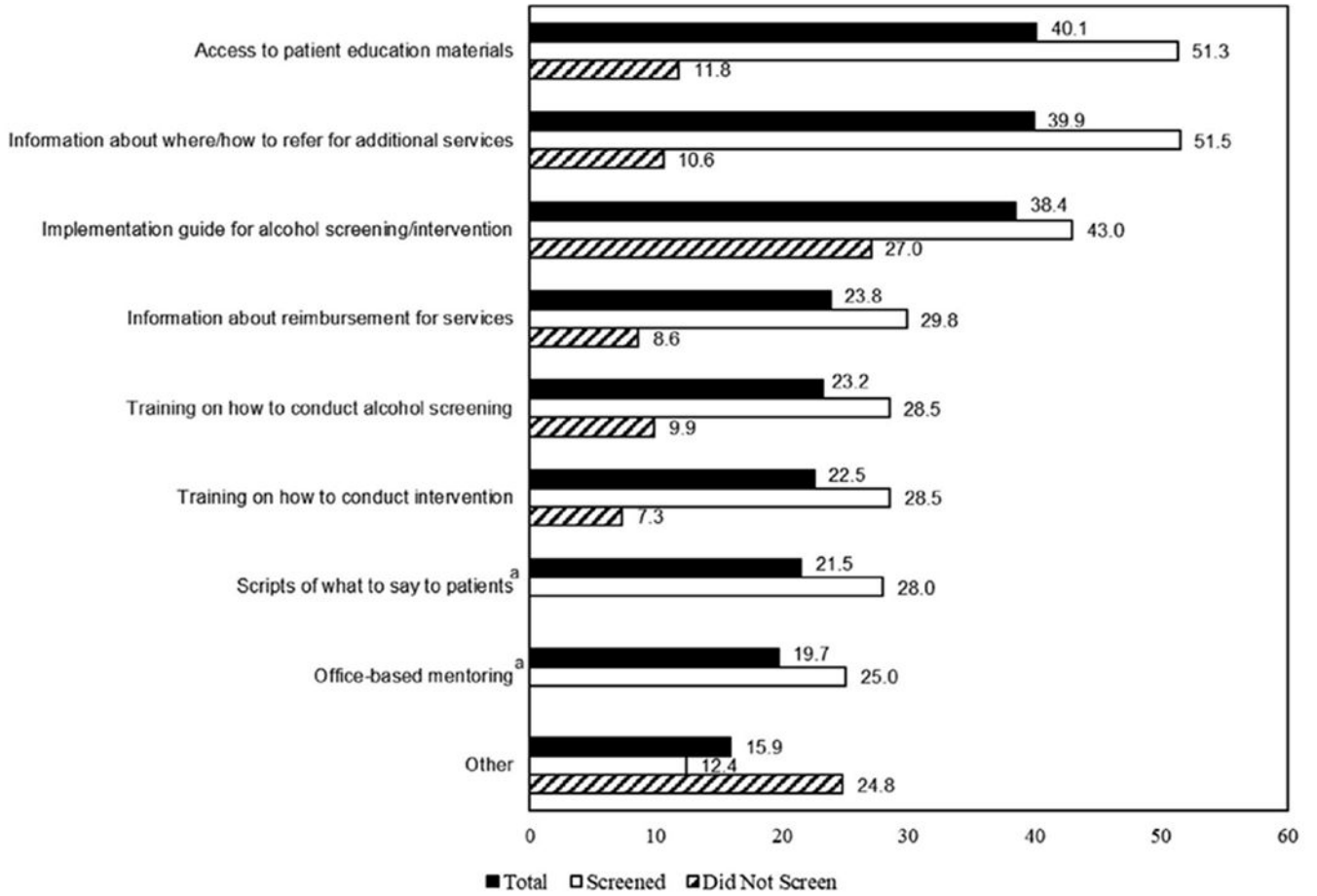


Figure 2. Percentage of office-based primary care physicians reporting specific resources that would be helpful for implementing alcohol/substance screening and intervention in primary care settings, by whether the physician screened for alcohol misuse: U.S., 2015–2016. Note: Categories are not mutually exclusive; respondents could select all that apply. All primary care physicians were asked the survey question “What resources would be helpful in implementing alcohol/substance use screening and intervention in primary care settings?” regardless whether (response: yes) or not (responses: no/don’t know/missing) they reported screening for alcohol misuse. Unweighted n=876. For each resource shown, the differences between physicians who did and did not screen were significant. ^aEstimate for did not screen does not meet National Center for Health Statistics standards of reliability. Source: NCHS, National Ambulatory Medical Care Survey, 2015–2016.

Table 1.

Alcohol SBI Among Office-Based PCPs Who Reported Screening for Alcohol Misuse: U.S., 2015–2016

Characteristics	% (95% CI)	Population count
How do you screen for alcohol misuse? (enter all that apply)		
T-ACE	3.9 (2.3, 6.3)	4,425
TWEAK	1.2 (0.4, 2.7)	1,400
CAGE	17.9 (14.0, 22.4)	20,284
CRAFFT	5.8 (3.7, 8.5)	6,518
AUDIT	5.2 (3.3, 7.7)	5,846
Ask the number of drinks per occasion	59.5 (54.6, 64.3)	67,290
Ask the frequency of drinking	57.2 (52.2, 62.0)	64,677
Ask binge question	33.2 (28.6, 38.1)	37,553
I don't use a formal screening instrument	16.1 (12.8, 20.0)	18,245
Other	9.3 (6.8, 12.4)	10,558
How often do you screen for alcohol misuse? ^{a,b}		
At every health maintenance visit (annually)	52.2 (47.2, 57.1)	59,005
At every health care visit	15.7 (12.4, 19.4)	17,722
When I suspect a patient has a substance/alcohol-related problem	24.0 (20.0, 28.5)	27,196
Almost never or never	7.4 (5.2, 10.2)	8,419
How are screening question(s) administered? ^a		
Interview (in-person/face-to-face)	76.8 (72.5, 80.7)	86,854
Patient completes a form	17.9 (14.3, 22.0)	20,274
Electronic (self-administered)	0.7 (0.1, 1.9)	768
Other	4.4 (2.8, 6.4)	4,945
If patient is interviewed, who administers the screening? ^a		
Physician, nurse practitioner, physician assistant	57.3 (52.3, 62.1)	64,783
Nurse, excluding nurse practitioner	6.5 (4.3, 9.4)	7,378
Medical assistant	12.3 (9.3, 16.0)	13,939
Administrative staff /other	0.7 (0.2, 1.7)	753
Unknown (no response)	23.2 (19.3, 27.5)	26,254
Among patients who screen positive for risky alcohol use, how often are brief interventions conducted? ^{a,b}		
Never	7.4 (5.2, 10.1)	8,317
Sometimes	26.3 (22.0, 30.9)	29,702
Often	27.3 (23.0, 32.0)	30,889
Always	38.0 (33.1, 43.0)	42,940

Source: NCHS, National Ambulatory Medical Care Survey, 2015–2016. *Note:* Except for *How do you screen for alcohol misuse? (enter all that apply)*, all variables had mutually exclusive response categories, and percent distributions are displayed. For questions with mutually exclusive categories, and percentage distributions may not add up to the total owing to rounding and missingness and obstetrics and gynecology (primary care); PCPs include those who identified their specialty as falling into one of the following American Medical Association groups: general and family practice, internal medicine, and pediatrics (primary care); The same denominator was used for all estimates, unweighted $n=631$.

^aSignificant differences were not calculated for *how do you screen for alcohol misuse (enter all that apply)?* because the differences were not mutually exclusive. For all other questions, significant differences were found in how often you screen for alcohol misuse (significant differences among all categories), how screening questions are administered (significant differences among all categories), who administers the screening (significant differences among all categories), and how often brief interventions are conducted (significant differences among all categories except for often versus sometimes).

^bPopulation count does not equal the total count of PCPs who screen for alcohol misuse owing to missing data.

AUDIT, Alcohol Use Disorders Identification Test; CAGE, Cut-down, Annoy, Guilt, Eye-opener measure; CRAFFT, adolescent screening tool of substance use disorders behaviors – Car, Relax, Alone, Forget, Family/friends, and Trouble; NCHS, National Center for Health Statistics; PCPs, primary care physician; SBI, screening and brief intervention; T-ACE, Tolerance, Annoyance, Cut-down, and Eye-opener; TWEAK, Tolerance, Worried, Eye-opener, Amnesia, and Cut-down.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2.

Office-Based PCPs Who Reported Screening for Alcohol Misuse, by Characteristics: U.S., 2015–2016

Physician characteristics	% (95% CI)	Population count
All primary care physicians who reported screening	71.7 (67.7, 75.3)	113,108
Sex		
Female	74.6 (68.6, 79.9)	47,417
Male	69.7 (64.3, 74.7)	65,690
Age, years		
<45	69.6 (61.4, 76.9)	27,950
45–54	70.9 (63.7, 77.4)	32,164
55–64	75.4 (67.6, 82.2)	33,072
65	70.0 (59.6, 79.0)	19,921
Race ^a		
White only	71.6 (67.0, 75.8)	84,989
Asian only	75.4 (64.3, 84.5)	18,186
Other (includes 2 races)	77.1 (63.0, 87.8)	7,856
Primary specialty ^{b,c}		
General and family practice	76.5 (70.2, 82.2)	48,376
Internal medicine	73.4 (63.9, 81.6)	27,230
Pediatrics	67.4 (58.5, 75.4)	21,268
Obstetrics and gynecology	62.5 (53.5, 70.9)	16,234
Single/multispecialty practice ^{a,c}		
Solo and single-specialty office	71.1 (66.4, 75.5)	79,575
Multispecialty	79.6 (72.7, 85.3)	33,533
Medical school location ^a		
Foreign	69.1 (60.6, 76.8)	30,010
U.S.	71.9 (67.0, 76.4)	73,397
Urbanicity		
Metropolitan statistical area	71.5 (67.3, 75.4)	102,287
Nonmetropolitan statistical area	73.4 (59.7, 84.5)	10,820
U.S. region ^c		
Northeast	76.4 (67.9, 83.5)	23,128
Midwest	78.9 (71.0, 85.5)	27,740
South	64.8 (57.6, 71.5)	33,474
West	70.6 (59.8, 79.9)	28,765
Survey year		
2015	74.3 (69.1, 79.1)	59,207
2016	68.9 (62.6, 74.8)	53,901

Source: NCHS, National Ambulatory Medical Care Survey, 2015–2016. *Note:* Percentages are calculated by including 8.8% (weighted) of PCPs for which alcohol screening data were missing blank. Unweighted $n=876$. U.S. Census Bureau definitions are used for regions and are listed elsewhere (ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NAMCS/doc2016.pdf).

^aPopulation count for this variable does not equal the total count of PCPs who screen for alcohol misuse owing to missing data.

^bGeneral and family practice specialty groups include adolescent medicine (family practice), adolescent medicine (internal medicine), emergency medicine/family practice, family medicine/preventive medicine, family practice, geriatric medicine (family practice), general practice, hospice and palliative medicine (family medicine), internal medicine/family practice, geriatric medicine (internal medicine), internal medicine/preventive medicine. Internal medicine specialty group includes internal medicine. Pediatric specialty group includes adolescent medicine (pediatrics), internal medicine/pediatrics, pediatrics, and pediatric sports medicine. Obstetrics and gynecology specialty group include gynecology, obstetrics and gynecology, and obstetrics.

^cSignificant differences (all $p<0.05$; 2-tailed): primary specialty (between general/family practice and obstetrics and gynecology), and between solo and single and multispecialty; and for U.S. region (between South and Northeast and South and Midwest).

NCHS, *National Center for Health Statistics*; POP, primary care physician.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript