Implementing Evidence-Based Screening and Counseling for Unhealthy Alcohol Use With Epic-Based Electronic Health Record Tools

A Guide for Clinics and Health Systems, Developed as Part of a Pilot Dissemination Project

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The information in this report is intended to help health care decisionmakers—patients and clinicians, health system leaders, and policymakers, among others—make well-informed decisions and thereby improve the quality of health care services. This report is not intended to be a substitute for the application of clinical judgment. Anyone who makes decisions concerning the provision of clinical care should consider this report in the same way as any medical reference and in conjunction with all other pertinent information, i.e., in the context of available resources and circumstances presented by individual patients.

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Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies and strategies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

To improve the scientific rigor of these evidence reports, AHRQ supports empiric research by the EPCs to help understand or improve complex methodologic issues in systematic reviews. These methods research projects are intended to contribute to the research base in and be used to improve the science of systematic reviews. They are not intended to be guidance to the EPC program, although may be considered by EPCs along with other scientific research when determining EPC program methods guidance.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the health care system as a whole by providing important information to help improve health care quality. The reports undergo peer review prior to their release as a final report.

If you have comments on this Methods Research Project they may be sent by mail to the Task Order Officer named below at: Agency for Healthcare Research and Quality, 5600 Fishers Lane, Rockville, MD 20857, or by email to epc@ahrq.hhs.gov.

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Introduction

Sound clinical practice in primary care, at the level of the health care system or organization as well as the individual provider, is grounded in services supported by the findings of well-designed research. Various guideline-producing bodies, including the U.S. Preventive Services Task Force, aim to improve the health of all Americans by providing recommendations informed by rigorous review and synthesis of existing scientific evidence. However, uptake of these recommended practices may be less widespread or successful than desirable, with implementation hampered by obstacles related to resources, structural barriers, lack of knowledge, and competing priorities.

The following document describes how a team at University of North Carolina at Chapel Hill implemented, in the General Internal Medicine clinic, findings from an Evidence-based Practice Center report on screening and counseling in primary care for unhealthy alcohol use. The package, drawing on lessons learned and challenges faced in the implementation process, is intended to offer a practical roadmap to the process of integrating these evidence-based services into a clinic's work; the target audience includes representatives of health systems in a position to make decisions about implementation of services into primary care, such as medical directors. More information about the development of the package can be found in the separately posted report, Development of a Primary Care Guide for Implementing Evidence-based Screening and Counseling for Unhealthy Alcohol Use with Epic-based Electronic Health Record Tools: A Pilot Dissemination Project. [1]

The material presented in this guide is based on the experience of one team at a single clinic, in an academic health care system, using Epic electronic health care records to implement a particular service. Components of the implementation process are summarized below as an overview of the general steps, which are applicable to implementation of many evidence-based services. These components are described further in the body of the document, with details from our clinic's implementation of screening and counseling for unhealthy alcohol use.

Overview

Preliminary Steps

Identify a Rationale for Implementation

This step will derive primarily from the evidence base, though competing demands and the prospects for sustainability are important considerations.

Create a Visual Map of the Process

Developing a process flow diagram is an essential step toward understanding the impact that staffing and competing demands will have on implementation.

Implementation Steps

Build a Team

Recruiting a multidisciplinary team for the implementation process requires staffing flexibility and will be facilitated if support from leadership and dedicated resources can be secured.

Develop and Test Processes

The need to employ quality improvement processes will vary according to an organization's readiness, which itself depends on staffing and experience with implementation or improvement initiatives in general, as well as activities related to the specific evidence-based service.

Use Validated Screening Instruments

Use of validated screening questionnaires (or other tests/instruments with known accuracy and reliability) is key for appropriate implementation of evidence-based services. This approach facilitates provider and staff buy-in as well as optimizing service coverage by insurance.

Assess After Positive Initial Screen

Implementation of an evidence-based practice often involves the provision of multiple services; the results of a screening test, for example, can lead to a cascade of further assessments and interventions. Assessment after a positive test must be supported by a credible evidence base and will guide the type of intervention most appropriate for the patient.

Offer Evidence-Based Interventions

Interventions also must be supported by a credible evidence base, are offered based on assessment results, and require development of supporting materials and training for those who will administer them.

Develop EHR Tools for Sustainability

EHR tools such as visit-based reminders, though they can contribute to a program's sustainment, require tech team staffing and lead time for development; alert fatigue may affect whether they elicit desired actions.

Train Nurses and Providers

Training, drawing on material from the evidence base, and familiarizing nurses and providers with new protocols and tools all help increase buy-in and can address discomfort related to screening and intervention for behavioral topics.

Collect Data and Track Progress

In the initial period of implementation, tracking a selection of measures provides a tool for evaluating and improving the process. Ongoing data collection provides support for sustainment but requires staffing.

Facilitators and Barriers

Barriers and facilitators generally are related to the organization's financial and leadership resources, staff and provider familiarity and agreement with the rationale and tools for implementation, the presence of competing priorities, and patient factors. Conditions at various sites, as well as characteristics of the service being implemented, will determine which are the most important. Health systems vary widely in resources, culture, patient population, and institutional support for change; although some facilitators and barriers will be unique and evident only to those within the organization, there are also categories which are likely to be broadly relevant.

Preliminary Steps

Identify a Rationale for Implementation

With the proliferation of recommended preventive services in primary care, healthcare systems must prioritize those for which (1) the burden of disease in the system's patient population is substantial, (2) the evidence base clearly shows that benefits outweigh harms, and (3) resources are available for implementation.[2-5] Screening and counseling for unhealthy alcohol use met these 3 criteria at our site.

We undertook an initial quality improvement project to implement screening and intervention for unhealthy alcohol use based on the findings of an Evidence-based Practice Center (EPC) report on the topic[2, 3] and a subsequent USPSTF recommendation statement.[5] Over 20 percent of primary care patients in the United States drink alcoholic beverages in excess of the recommended limits.[6] The National Institute on Alcohol Abuse and Alcoholism recommends no more than 4 drinks per day and 14 drinks per week for men under the age of 65. For women and those over age 65, the recommended limits are 3 drinks or fewer per day and no more than 7 drinks per week.[7] **Figures 1 and 2** show U.S. prevalence of 2 measures of unhealthy alcohol use, by state.

Figure 1. Binge drinking among U.S. adults, 2016: >4 drinks per occasion for men or >3 drinks per occasion for women
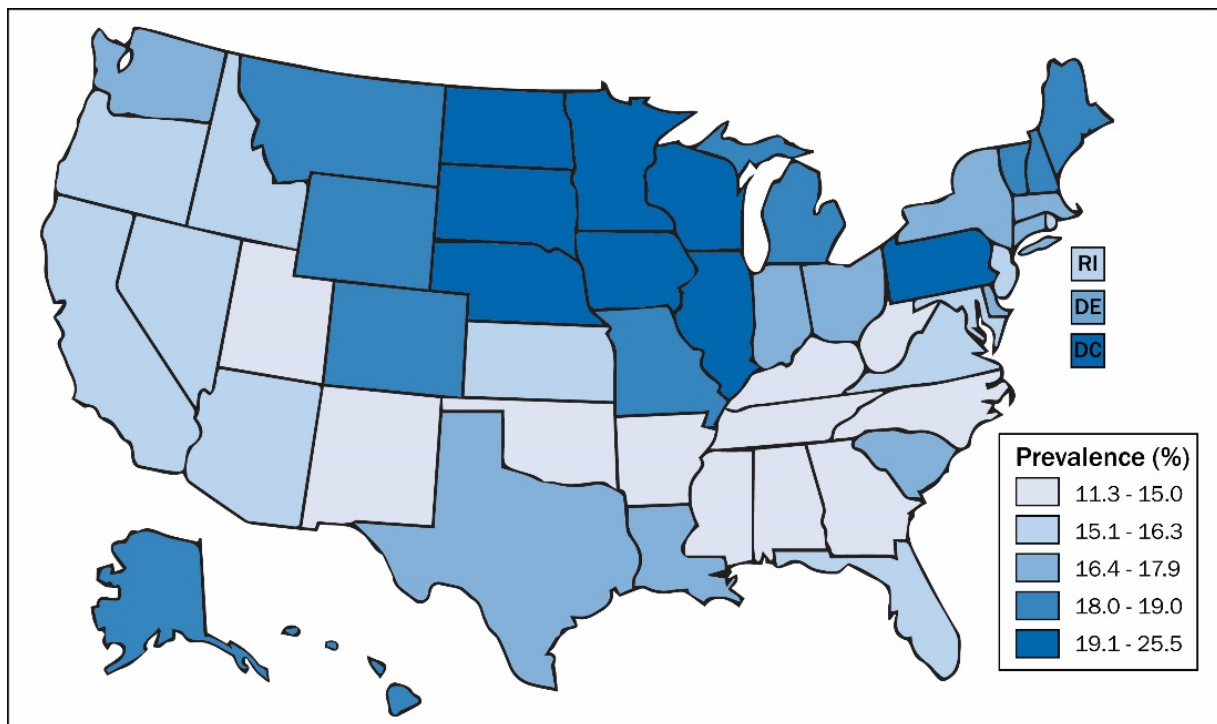
Source: Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention

Figure 2. Heavy drinking among U.S. adults, 2016: >14 drinks per week for men or >7 drinks per week for women

Source: Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention

Unhealthy alcohol use is an overarching term that includes risky drinking (consumption of alcohol above the recommended amounts) as well as alcohol use disorder (AUD), a pattern of alcohol use that involves problems controlling drinking, preoccupation with alcohol, continuing to use alcohol despite associated problems, drinking more to get the same effect, or withdrawal symptoms upon rapidly cutting back on or stopping alcohol use.[8] Risky drinking, even without an AUD, increases the risk of adverse health outcomes, and unhealthy alcohol use is the third leading cause of preventable deaths in the U.S.[4, 9]

Based on a systematic review of the evidence, the U.S. Preventive Services Task Force (USPSTF) recommends that clinicians screen adults for unhealthy alcohol use and provide persons engaged in risky drinking with brief behavioral counseling interventions.[2, 3, 5] The evidence report supported the effectiveness of counseling interventions in reducing alcohol consumption, with numbers needed to treat (NNT) of less than 10 for some drinking-related outcomes.[2, 3] Yet, less than a third of those who visit general medical providers are asked about alcohol use, and less than 20% of U.S. adults report ever discussing alcohol use with a health professional.[10, 11] Barriers to screening and counseling include competing priorities, lack of provider training, misconceptions about patient comfort with discussing alcohol, and lack of appropriate infrastructure and protocols. Implementing screening and counseling for unhealthy alcohol use requires formal protocols, staffing (e.g., multidisciplinary team-based care), support systems, and additional provider and staff training.[2, 3]

Before the outset of our project, the implementation site lacked a process for screening and subsequent delivery of appropriate interventions for unhealthy alcohol use among primary care patients.

Create a Map for the Process

Early adoption of a process flow diagram is a helpful step toward understanding the impact that staffing and competing demands will have on implementation. Following the screening approach endorsed by the NIAAA[7] we developed a map of the workflow (Figure 3). We shaped the workflow to resemble our site's established process for depression screening and interventions (a process that also involves a brief initial screening, followed by a longer questionnaire if the initial screen is positive). The existing depression screening process provided a general template for our process map and facilitated the learning curve for staff and providers during implementation.

Figure 3. Workflow for alcohol screening and interventions at UNC General Internal Medicine clinic
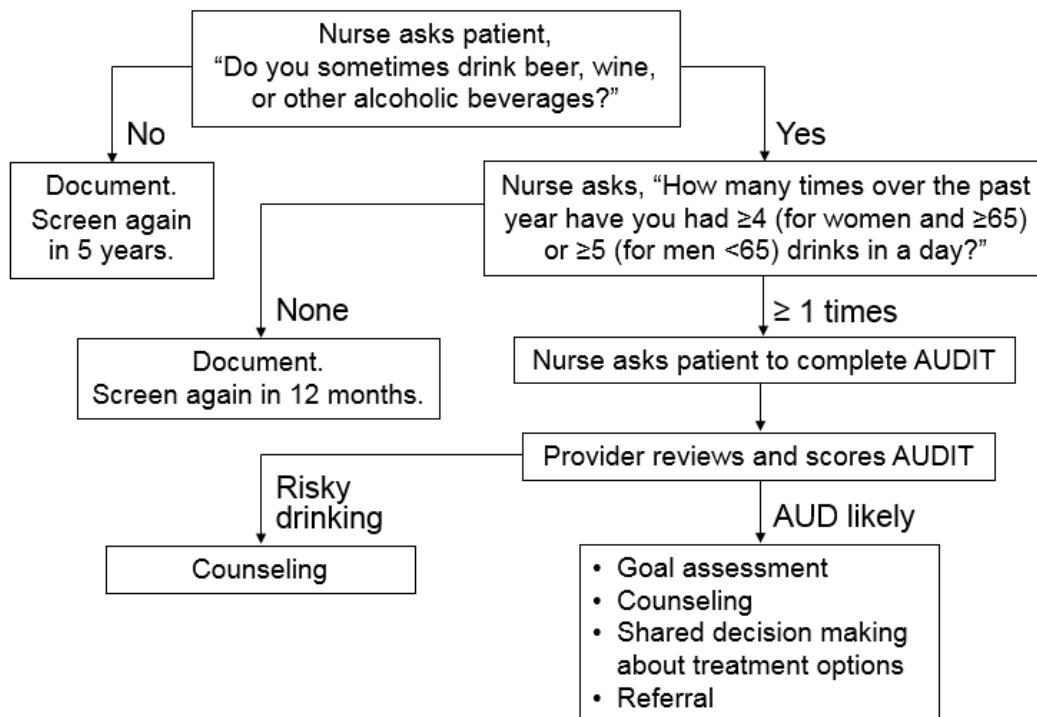
Implementation Steps

Build a Team

A strong, multidisciplinary team can make the difference between success and failure when implementing evidence-based practices. Recruiting a team for the implementation process requires staffing flexibility—identifying individuals whose skill sets correspond to one or more roles and who can commit the needed effort during the initial period in particular—and will be facilitated if dedicated resources (which may involve the health care system providing social workers or nurses, in addition to or instead of funding) can be secured. Team members may include medical directors, primary care providers, nurses, social workers, and counselors. The key roles on our team were filled by individuals who combined quality improvement (QI) training, expertise in unhealthy alcohol use, and/or experience in clinical or project management. The team included:

- Project Lead: experienced primary care clinician and researcher
- Clinic Medical Director: experienced primary care clinician with QI and practice innovation expertise; facilitated implementation in the clinic
- Project Coordinator: administrative management of the project
- Clinic Project Assistant: assisted with data collection, tracking, and developing new processes
- Nurse Manager: provided nursing perspective regarding protocols, training, and workflow planning
- Social Workers/Counselors: provided input on role of social work, counselors, motivational interviewing, and available services for those with AUD
- Patient/family advisor

Develop and Test Processes

Clinics will vary in their current state of readiness when preparing to implement a new process. Depending on provider and staff awareness of the evidence-based practice, previous experience with related clinical initiatives, and comfort/familiarity with the EHR, it may be advisable to begin by trying low-tech approaches, such as those described below, to develop and test protocols. On the other hand, clinic environments with more experience in related implementation or improvement initiatives may be able to implement the process without needing to use low-tech approaches for process development and improvement.

Our implementation site's history of ongoing improvement initiatives and receptivity to innovation favored the use of established QI methods to quickly develop, test, and modify components of the process. We conducted repeated, rapid Plan, Do, Study, Act (PDSA) cycles[12] in a limited number of providers and staff to optimize protocols, tools, and training procedures before implementing and testing them more widely across the clinic. In addition, we streamlined development and built on familiar processes by modeling our approach after existing clinic protocols—e.g., our clinic had an established depression screening process that was similar to what we intended to develop for alcohol screening. Key features of our development process included:

- Testing low-tech tools and protocols before launching permanent EHR-based clinical support tools

- o At outset, manually flagging a limited number of eligible patients in the clinic schedule before expanding to all eligible patients
- o Starting with a few providers and nurses before gradually expanding to all providers
- o Developing a temporary user editable tool to facilitate screening by allowing nurses to easily insert text into a chart. In Epic EHR, these are SmartPhrases; by typing the Smartphrase name preceded by a period the nurse can link directly to a data entry Flowsheet to document responses
- o Developing paper-based decision support tools and user editable tools (SmartPhrases in Epic) for providers to guide assessment, counseling, or referral of patients with positive screens
- Develop visit-based reminders and final EHR tools using what we learned from the previous steps
- Collecting data and tracking progress

Use Validated Screening Instruments

Recommendations for evidence-based practices generally stipulate the use of well-validated instruments for screening, whether assays for biomarkers that have good sensitivity and specificity, or questionnaires that effectively identify behavioral risks or mental health issues. This approach facilitates provider and staff buy-in as well as optimizing service. We used the initial screening questions (Exhibit 1) recommended by the National Institute on Alcohol Abuse and Alcoholism (NIAAA),[7] which have demonstrated sensitivity and specificity roughly comparable to those reported for longer questionaires,[3] followed by the 10-question Alcohol Use Disorders Identification Test[7] (AUDIT, Exhibit 2; Appendix A) for those with positive screens. The AUDIT can be completed in 5 minutes or less and has been tested extensively in primary care settings.[3] In initial testing cycles nurses administered a paper version which was then incorporated into a nurse SmartPhrase and finally a visit-based reminder.

Exhibit 1. Initial screening questions for unhealthy alcohol use administered by nursing staff

Men 64 and younger	Yes	No	Number of times
Do you sometimes drink beer, wine, or other alcoholic beverages? (If No, stop here)			
How many times in the past year have you had 5 or more drinks in a day?			
If 1 or more, did you give the patient the AUDIT?*			

Women of any age, and men 65 and older	Yes	No	Number of times
Do you sometimes drink beer, wine, or other alcoholic beverages? (If No, stop here)			
How many times in the past year have you had 4 or more drinks in a day?			
If 1 or more, did you give the patient the AUDIT?*			

*Reminder to the nurse, for internal use only

Assess After Positive Initial Screen

Implementation of an evidence-based practice often involves the provision of multiple services; generally, the results of a screening test, for example, can lead to a cascade of further assessments and interventions. Even in a health system with a fully adopted EHR, the use of a paper form as part of a workflow process can serve as a prompt for providers, increasing fidelity to process, though clinics should solicit stakeholder feedback about the desirability of paper forms versus direct entry into EHR.

In our alcohol screening process, we stocked all clinic exam rooms with AUDIT forms on orange paper. Nurses ask patients with positive initial screens to complete the AUDIT, which then serves as a visual cue for the provider to review it and calculate the score, and is then used to help distinguish patients with an AUD from those with risky drinking. The table in Exhibit 3, from the back of our printed version of the AUDIT, summarizes how AUDIT scores can be used to help with screening-related assessment, showing the scores that indicate whether an AUD is likely.

Since the Epic build (i.e., the process of modifying Epic to incorporate screening) will require an electronic version of the AUDIT (i.e., a "flowsheet" in Epic) for data entry into the EHR after the paper forms are collected, staff and providers also have the option of conducting the assessment itself in Epic, entering the patient's AUDIT responses directly into the AUDIT Flowsheet. Although using that approach eliminates the visual cue to providers, it has the benefit of eliminating the need for staff to collect the AUDIT paper forms, and subsequent data entry time.

Exhibit 2. Alcohol Use Disorders Identification Test (AUDIT)

AUDIT Alcohol Use Screener

Attach label here

Patient name:_____

MRN:_____ Date:_____

Please circle your answer for each question: Points per response

		0	1	2	3	4
1.	How often do you have a drink containing alcohol?	Never	Monthly	2 to 4 times a month	2 to 3 times a week	4 or more times a week
2.	How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3.	How often do you have 5 or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4.	How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5.	How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6.	How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7.	How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8.	How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9.	Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10.	Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year

--------------------------------PATIENTS STOP HERE--------------------------------

STAFF add subtotal for each column. Subtotals:				
STAFF add subtotals and enter TOTAL SCORE:				

Exhibit 3. Using AUDIT scores to help determine likelihood of AUD

--FOR CLINIC STAFF--		
Men	Women	Review the score from the AUDIT. Use the scale below to help determine disorder vs. risky behavior
<6	<4	Alcohol use disorder unlikely. Proceed with counseling for risky drinking.
6-14	4-12	Review questions 4-6: If score <2, proceed with counseling for risky drinking. If score ≥2, alcohol use disorder likely. Consider referral.
≥15	≥13	Alcohol use disorder likely. Consider referral.

Offer Evidence-Based Interventions

Effective evidence-based interventions must be available for a screening program to be recommended. As in the case of the selection of services to be implemented, healthcare system decision makers and clinical directors should familiarize themselves with the reports and recommendation statements pertaining to topics of interest. Our implementation of screening and brief interventions for unhealthy alcohol use was based on the findings of a systematic review[2, 3] on the topic and the resulting U.S. Preventive Services Task Force recommendation statement.[5]

As described in the previous section, the provider reviews the completed AUDIT during clinical encounters and uses the scores to determine which patients have risky drinking behavior (but not an AUD) and are candidates for brief counseling interventions in primary care versus those whose scores indicate a likely AUD. The back of the printed AUDIT form (Appendix B) summarizes the suggested intervention for risky drinking, and provides a list of resources for patients with AUD.

Interventions for People With Risky Drinking Without AUD

Behavioral counseling interventions for risky drinkers aim to moderate a patient's alcohol consumption to sensible levels and to reduce or eliminate risky drinking. The systematic review conducted for the USPSTF found that best evidence for improving drinking outcomes was for brief (10-15 min) multi-contact (≥2 visits) interventions.[2, 3]

Providers offer counseling using techniques from motivational interviewing, an evidence-based behavioral counseling approach that uses a patient-centered, guiding (rather than directing) style to elicit behavior change by helping patients to explore and resolve ambivalence, and identify their personal motivations for change.[13, 14] Paper-based pamphlets for providers are available to support clinicians (Appendix C), organized using a 5 A's approach: Assess, Advise, Assist, Agree, and Arrange follow up, with motivational interviewing techniques corresponding to each step. A paper pamphlet for patients titled *Rethinking Drinking* contains information about health risks, recommended drinking limits, definitions of standard drinks, a menu of options/goals for reducing risky drinking, and a diary to record alcohol consumption (Appendix D). Both the *Provider Guide* and *Rethinking Drinking* pamphlet include portions of publicly available materials developed by the NIAAA.[7]

Interventions for People With AUD

If providers identify an AUD, they conduct brief motivational interviewing to determine whether the patient is willing to set a goal of abstinence or not, and then engage in shared decision making regarding options for more intensive treatment, referring to the list of available resources organized both by type of service (e.g., detoxification, intensive outpatient programs, residential programs, individual therapy) and by county.

Using Epic Tools To Support Delivery of Interventions

Team members created and disseminated several user editable tools (Epic SmartPhrases) specifically for use by providers. Entering the appropriate SmartPhrase can expedite documentation of the AUDIT score and provider response in the chart; guide the provider through an initial or follow-up counseling session; provide access to the current list of treatment and referral resources; or insert the Rethinking Drinking content in the after-visit summary, which can be printed and given to the patient.

Train Nurses and Providers

Selecting a new service for implementation will be based at least in part on the strength of the evidence supporting it, and the rationale for providing the service should be conveyed during training, along with the relationship of the service to existing prevention efforts in the health system, importance of validated instruments, specific protocols, and EHR tool use. Some of this material may be best imparted during presentations; protocols and tool use can be detailed in user guides and tip sheets that are distributed in the clinic and made available in the EHR.

Among the **nursing staff,** our PDSA cycles revealed several points that required reinforcement in training sessions, materials, and one-on-one conversations. We emphasized the importance of using the correct, validated language; if the first question in the initial screen is not read as written ("Do you sometimes drink beer, wine, or other alcoholic beverages?") patients may misinterpret the question. For example, if only asked whether they "…sometimes drink alcohol", patients commonly think the question refers only to spirits (hard liquor) and does not include beer and wine. Correct completion of the Smartphrase in the patient chart was revisited when necessary to ensure familiarity with pull-down options for age/gender groups, navigating through the phrase, remembering that the screening question is correctly answered as "number of times" not "number of drinks", and being sure to select an answer (even when it is N/A) to all questions. Nurses were instructed in administering the AUDIT appropriately; nurse feedback was solicited as part of the weekly PDSA cycle and in two 15- to 30-minute structured training sessions, with food and coffee provided, that were incorporated into the weekly nurse meeting. Our team also sought to increase buy-in and to provide positive reinforcement with acknowledgment of the top 2 screening nurses (based on percentage of eligible patients screened) on the clinic's visual management/nurse appreciation board.

Provider training took place during the fall and spring pre-clinic conferences for residents, for which we developed content on rationale for screening, motivational interviewing, and hypothetical cases. We refreshed existing knowledge and demonstrated new protocols and tool use in presentations during Grand Rounds and General Internal Medicine Division Meetings, which were reinforced with emails from the Medical Director and Chief Resident.

Rates of interventions offered and documentation in the EHR were lower than our goal during the project period. To address this, as part of provider training, the Care Assistant manually flagged upcoming appointments for patients not counseled after an earlier positive screen and sent a reminder to providers when they did not document or turn in a patient's AUDIT. Sustainability efforts will continue to focus on ways to increase provider action on positive screens; the team distributed sticky notes and pens with alcohol counseling information to serve as reminders in the clinic.

Exhibit 4. Items distributed in clinic for physician reminders

Develop EHR Tools for Sustainability

Although an evidence-based practice implementation may involve low-tech approaches at the outset, streamlining and automating the screening and intervention process can help to ensure its sustainability after the end of the initial implementation period when staffing capacity for manual flagging of eligible visits or data entry of screening results may diminish. We worked with the institution's Epic development team to build and launch several visit-based reminders to automatically trigger the process and encourage its completion. Our implementation team took advantage of prior EHR tool builds for other services, whose similar workflow and EHR functionality helped the development team fast track our project's tool development. The features and functionality of the tools described below are summarized in Table 1.

Initial Alcohol Screen Best Practice Alert (BPA)

This visit-based reminder triggers nurses to conduct alcohol screening. It appears in the patient chart during office visit encounters with eligible General Internal Medicine patients (e.g., with no previous diagnoses of AUD, have not been screened for unhealthy alcohol use in the past year).

The nurse clicks on a link to open a document in the chart containing the screening questions, and then enters the patient's responses directly into it. If the initial screening questions are positive (i.e., a "1 or more" response to 2nd question), the nurse should provide the AUDIT to the patient. If screening cannot be completed during the encounter, the BPA has 3 buttons that allow it to be suppressed (prevent it from firing) for pre-determined amounts of time.

Incomplete Screen Best Practice Alert (BPA)

This visit-based reminder appears if a patient answered "1 or more" to question 2 on the initial screen but the 10-question AUDIT has not been entered into the EHR.

Alcohol Screen Positive Best Practice Alert (BPA)

This visit-based reminder appears to providers at subsequent visits if a patient had an AUDIT score indicating unhealthy alcohol use and there has been no documentation in EPIC using one

of the provider alcohol SmartPhrases to show that unhealthy alcohol use was addressed. The BPA includes information about why it fired and suggests appropriate actions. The provider can add a problem to the patient medical record, or open a SmartSet to order medications, referrals, document the assessment, or record a follow-up timeframe.

Table 1. Best Practice Alerts (BPAs): Screening and interventions for unhealthy alcohol use

BPA name	BPA Trigger	Users	Instructions	Links	Actions/Buttons
Initial Alcohol Screen	No initial alcohol screen or AUDIT documented in the past year	Nurses	Click DocFlowsheet to administer screen and document results	• DocFlowsheet: Initial Alcohol Screening • Printable Initial Alcohol Screen	• Delay—Other clinical priorities (suppresses for 6 weeks) • Patient declines (suppresses for 1 year) • Initial Alcohol Screen Complete (suppresses for 72 hours for reporting purposes if responses entered in flowsheet)
Alcohol Incomplete Screen	No AUDIT documented after patient screened positive on initial screen	Nurses	Provide paper AUDIT and document results	• DocFlowsheet: AUDIT • Printable AUDIT	• Delay—Other clinical priorities (suppresses for 6 weeks) • Patient declines (suppresses for 1 year) • AUDIT completed
Alcohol Screen Positive	No documentation of brief intervention, counseling, or referral after positive initial screen	Providers	Provide appropriate intervention and documentation by using system dotphrase	None	• Open Smartset (Alcohol screen positive) • Add Problem (Excessive drinking of alcohol [without alcohol use disorder]) • Add Problem (Alcohol consumption binge drinking) • Add Problem (Alcohol use disorder (RAF-HCC) • Delay—Other clinical priorities (suppresses for 6 weeks) • Patient declines (suppresses for 1 year) • Shared decision (suppresses for 1 year)

Collect Data and Track Progress

Even the most robust evidence base means little unless a service is successfully implemented in a real-world setting. Formulating a measurement approach is the first step to assessing the intervention's site-specific reach and effectiveness. Exactly what outcomes are relevant will depend on the aims of the service itself, but teams will want to capture, at the very least, data on numbers and characteristics of patients receiving a service and nursing staff/provider completion of protocols. If resources are available for longitudinal follow-up, outcomes related to participant health, health behavior, and healthcare use are valuable and provide support for sustainment. Table 2 shows the measures collected during alcohol screening implementation in the UNC General Internal Medicine clinic.

Table 2. Measures: Implementation of Screening and Interventions for Unhealthy Alcohol Use

Measure Name	Measure Calculation	Data Source
Patients screened	**Numerator**: Number of patients completing the single-question screen **Denominator:** All patients seen in GIM clinic without an exclusion	Electronic Health Records
Proportion of eligible visits in which initial screening was completed	**Numerator**: Number of visits in which screening was completed **Denominator:** Visits flagged for alcohol screening	Electronic Health Records
Patients with positive screens who complete the AUDIT	**Numerator**: Patients with AUDIT documented in EHR **Denominator**: Patients with positive single-question screens	Electronic Health Records
Documentation of whether patients likely have an AUD	**Numerator:** Number with documentation of whether screening-related assessment indicates an AUD **Denominator:** Patients completing the AUDIT	Electronic Health Records; chart review
Patients appropriately offered counseling for risky drinking	**Numerator:** Patients offered counseling in primary care **Denominator**: Patients who engage in risky drinking but do not have an AUD	Electronic Health Records; chart review
Patients appropriately offered referral or treatment for an AUD	**Numerator:** Patients offered referral or treatment for AUD **Denominator:** Patients with newly identified AUDs based on AUDIT and screening-related assessment	Electronic Health Records; chart review
Best Practice Advisory (BPA) Use	**Numerator:** BPAs opened and completed by clinical team **Denominator:** Visits for screening eligible patients in which BPA is deployed	Electronic Health Records

Run charts are a tool for tracking progress during a QI initiative or implementation effort; they allow a quick visual assessment of whether goals (e.g. for number of patients screened) are being met and whether specific changes to protocols have led to improvements and allow for assessment of variation over time. A selection of run charts from our team's alcohol screening implementation are shown in Appendix E.

Facilitators and Barriers

Conditions at other sites, as well as characteristics of the service being implemented, will generate their own set of facilitators and barriers, but these generally are related to the organization's financial and leadership resources, staff and provider familiarity and agreement with the rationale and tools for implementation, the presence of competing priorities, and patient factors. Here we note some that we encountered during alcohol screening and implementation at our clinic.

- Funding provided by the University's Institute for Healthcare Quality Improvement permitted us to assemble a team with dedicated time for the initial implementation and QI project.
- The Division of General Internal Medicine, where the project took place, has a history of hosting and supporting many quality improvement initiatives.
- All team members received training in QI methods which facilitated development and testing.
- We modeled our screening and assessment protocols on the clinic's existing depression screening process; the similarity to a familiar process facilitated nurse uptake.
- Staffing issues, especially a high proportion of float nurses on occasion, created gaps in training and compliance. Float nurses, in particular, sometimes gave all patients the AUDIT instead of starting with the initial screening questions.
- Although paper forms may serve as useful prompts in the screening, assessment, and intervention cascade, collecting them and entering the responses in the EHR can pose a challenge. Our team put a labeled box for completed AUDITs in each provider's room and sent reminders to providers when they did not document anything demonstrating follow-up on a positive initial screen.
- Ensuring that resources were available for the various possible outcomes required time and effort from our multidisciplinary team but saved time and enhanced value once launched. The list of available local resources for patients whose screening and assessment indicates a likely AUD has received much positive feedback from both patients and providers. It had the unintended positive consequence of providing a very useful clinic resource for all of our patients with known AUD, not just those newly identified by our screening process.
  Competing priorities and lack of time pose the most substantial barrier. The initial screening itself can be quickly done, but providers required an estimated 5 to 10 minutes to perform the screening-related assessment when a patient has positive screening results. Additional time and visits are required for delivery of the behavioral counseling interventions to those with risky drinking behaviors.

References

1. Barclay C, Viswanathan M, Jonas DE. Development of a Primary Care Guide for Implementing Evidence-based Screening and Counseling for Unhealthy Alcohol Use with Epic-based Electronic Health Record Tools: A Pilot Dissemination Project. (Prepared by the RTI International–University of North Carolina Evidence-based Practice Center under Contract No. 290-2015-00011-I.) AHRQ Publication No. 18-EHC020-EF Rockville, MD: Agency for Healthcare Research and Quality; 2018.

2. 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 Nov 6;157(9):645-54. PMID: 23007881. DOI: 10.7326/0003-4819-157-9-201211060-00544

3. Jonas DE, Garbutt JC, Brown JM, et al. Screening, Behavioral Counseling, and Referral in Primary Care to Reduce Alcohol Misuse. Comparative Effectiveness Review No. 64. (Prepared by the RTI International–University of North Carolina Evidence-based Practice Center under Contract No. 290 2007 10056 I). AHRQ Publication No. 12-EHC055-EF. . Rockville, MD: Agency for Healthcare Research and Quality; 2012.

4. Mokdad AH, Marks JS, Stroup DF, et al. Actual causes of death in the United States, 2000. Jama. 2004 Mar 10;291(10):1238-45. PMID: 15010446. DOI: 10.1001/jama.291.10.1238

5. Moyer VA, Preventive Services Task Force. Screening and behavioral counseling interventions in primary care to reduce alcohol misuse: U.S. preventive services task force recommendation statement. Ann Intern Med. 2013 Aug 6;159(3):210-8. PMID: 23698791. DOI: 10.7326/0003-4819-159-3-201308060-00652

6. Vinson DC, Manning BK, Galliher JM, et al. Alcohol and sleep problems in primary care patients: a report from the AAFP National Research Network. Ann Fam Med. 2010 Nov-Dec;8(6):484-92. PMID: 21060117. DOI: 10.1370/afm.1175

7. National Institute on Alcohol Abuse and Alcoholism. Helping Patients Who Drink Too Much: A Clinician's Guide. Rockville, MD; Updated 2005 ed. http://pubs.niaaa.nih.gov/publications/Practitione r/CliniciansGuide2005/guide.pdf. Accessed on March 4 2015.

8. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing; 2013.

9. Centers for Disease Control and Prevention. FastStats: Alcohol Use. Atlanta; 2013. http://www.cdc.gov/nchs/fastats/alcohol.htm. Accessed on March 4 2015.

10. D'Amico EJ, Paddock SM, Burnam A, et al. Identification of and guidance for problem drinking by general medical providers: results from a national survey. Med Care. 2005 Mar;43(3):229-36. PMID: 15725979.

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(01):16-22. PMID: 24402468.

12. Institute for Healthcare Improvement. Science of Improvement: Testing Changes. 2018. http://www.ihi.org/resources/Pages/HowtoImpro ve/ScienceofImprovementTestingChanges.aspx. Accessed on May 16 2018.

13. Miller WR, Rollnick SR. Motivational interviewing: preparing people to change behavior. New York: Guilford Press; 1991.

14. Rollnick S, Butler CC, Kinnersley P, et al. Motivational interviewing. BMJ. 2010;340:c1900. PMID: 20423957. 10.1136/bmj.c1900

Appendix *A*. Alcohol Use Disorders Identification Test (AUDIT)

AUDIT Alcohol Use Screener

UNC
HEALTH CARE
GENERAL INTERNAL MEDICINE

Attach label here

Patient name:_____

MRN:_____ Date:_____

Please circle your answer for each question: **Points per response**

		0	1	2	3	4
1.	How often do you have a drink containing alcohol?	Never	Monthly	2 to 4 times a month	2 to 3 times a week	4 or more times a week
2.	How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3.	How often do you have 5 or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4.	How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5.	How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6.	How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7.	How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8.	How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9.	Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10.	Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year
--*PATIENTS STOP HERE*--						
	<u>STAFF</u> add subtotal for each column. **Subtotals:**					
	<u>STAFF</u> add subtotals and enter **TOTAL SCORE:**					

Revised 11/01/2016

Appendix B. Provider Support Information Included on the Back Side of Our Printed AUDIT Form

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--FOR CLINIC STAFF--

Men	Women	Review the score from the AUDIT. Use the scale below to help determine disorder vs. risky behavior
<6	<4	Alcohol use disorder unlikely. Proceed with counseling for risky drinking.
6-14	4-12	Review questions 4-6: If score <2, proceed with counseling for risky drinking. If score ≥2, alcohol use disorder likely. Consider referral.
≥15	≥13	Alcohol use disorder likely. Consider referral.

Counseling – use dot phrases below or in-room pamphlets (Provider Guide and Patient Guide) as needed for support

.ALCOHOLPOSITIVE	Brief version with minimum documentation requirements.	The dot phrases below are more detailed options to walk you through the counseling process:	
.ALCOHOLAVS	Information for the AVS; can be used during all visits. Includes drinking diary.	.IMCALCOHOLINITIAL	For initial visit
		.IMCALCOHOLFU1	For first follow-up
		.IMCALCOHOLFU2	For other follow-ups

Counseling — Abbreviated outline of 5 A's approach used in dot phrases and Provider Guide

Step 1:	**Assess**
	Would you mind if we talked for a few minutes about drinking and your health?
	How does drinking fit into your life?
	What do you know about drinking and your health?

Step 2:	**Advise (on healthy levels of alcohol use)**
	Discuss health problems associated with risky drinking.
	Describe what counts as a standard drink.
	Counsel patient about recommended drinking limits.
	• For healthy men <65: ≤4 drinks in a day AND ≤14 drinks in a week.
	• For healthy women and healthy men ≥65: ≤3 drinks in a day AND ≤7 drinks in a week.
	Ask patient to keep a log of drinking for 1 month (use dot phrase for AVS or pamphlet in room).

Step 3:	**Assist (in exploring reasons for change)**
	How important is it to you to change the amount of alcohol you drink?
	How confident are you that you could change the amount of alcohol you drink?

Step 4:	**Agree (on options for risk reduction)**
	Are you ready to think about making a change in your drinking?
	Would you be interested in seeing a list of things that other patients have tried?

Step 5:	**Arrange follow up in 1 month**

Referral Options (see .ALCOHOLRESOURCES for complete list by service type and county)

IMC social worker: consider involving Julia George while the patient is in clinic.

ASAP: UNC outpatient Alcohol and Substance Abuse Program (all counties). Counseling; can connect with psychiatry for medications. Accepts Charity Care/Medicare/Medicaid. Send Epic message to Britta Starke or call 984-974-6320.

Freedom House: Short-term detox for patients (all counties). Outpatient available for some counties. 919-442-1844

Managed Care Organizations (MCOs): Monitor substance use/addiction services for uninsured and low income residents. For more info, use dot phrase **.ALCOHOLRESOURCES**
- Cardinal Innovations (Orange, Chatham, Alamance and many more) 1-800-939-5911
- Alliance Behavioral (Durham, Cumberland, Johnston and Wake) 1-800-510-9132
- Residential Treatment Services (RTS) (Alamance)
- El Futuro (Durham, Chatham) 919-688-7101 x600. Bilingual staff (Spanish/English)

Alcoholics Anonymous: Hotline 888-237-3235 (Orange, Chatham, Alamance); 919-783-6144 (Wake); 919-286-9499 (Durham). **Al-Anon:** 1-888-425-2666

For medical detox, long-term detox or other information: send a staff message to the Care Management pool: "P UNC INTERNAL MEDICINE ACC CARE MANAGEMENT."

Document AUDIT scores and counseling in your note; place AUDIT in AUDIT box (Care Ass't room) or your PHQ9 box.

Revised 5/23/17

Appendix C. Provider Guide for Addressing Unhealthy Alcohol Use
(cover)

A PROVIDER GUIDE FOR

Addressing Unhealthy Alcohol Use

The 5 A's Approach to Reducing Alcohol Use

- **Assess** current drinking behaviors
- **Advise** on healthy levels of daily alcohol use
- **Assist** in exploring reasons for change
- **Agree** on options for risk reduction
- **Arrange** follow up

Appendix C (*cont'd.*): Provider Guide for Addressing Unhealthy Alcohol Use (pages 1-2)

STEP 1 ASSESS

Review the score from the AUDIT. Use the scale below to assess drinking risk level.

SCORE

MEN	WOMEN	
<6	<4	Alcohol dependence unlikely. Proceed with counseling.
6-14	4-12	Review questions 4-6. If score < 2 proceed with counseling. If score ≥ 2 Alcohol dependence likely. Consider referral.
≥15	≥13	Alcohol dependence likely. Consider referral.

Would you mind if we talked for a few minutes about your drinking and your health?

How does drinking fit into your life?

What do you know about drinking and your health?

So what I hear you say is …

STEP 2 ADVISE

Would you like to know more about safe drinking levels?

For healthy men up to age 65:
- No more than 4 drinks in a day AND no more than 14 drinks in a week

For healthy women, and healthy men over age 65:
- No more than 3 drinks in a day AND no more than 7 drinks in a week

STEP 2 ADVISE

Review drinking patterns and risk.

What is your reaction to this information?

Would you be willing to come back for another visit to talk more about your alcohol use?

Would you be willing to keep a record of your drinking in preparation for that visit?

NEXT VISIT

Since your last visit, have you been able to keep a diary?

What was it like to complete the diary?

Tell me your thoughts about how much you drank.

Tell me about areas that concern you, if any.

Help me to understand a few things about your drinking.
- For you, what are the good things about drinking?
- What are the bad things?

Would it be helpful to compare your drinking over the past month with healthy drinking levels?

Review drinking diary and drinking patterns.

What is your reaction to hearing this information?

What do you know about the health risks of drinking?

Would it be ok if I told you a little more?

Review health risks.

What do you think about this information?

Appendix C (*cont'd.*): Provider Guide for Addressing Unhealthy Alcohol Use (pages 3-4)

STEP 3 ASSIST	DRINKING PATTERNS

STEP 3 — ASSIST

How important is it to you to change the amount of alcohol you drink?

> 0 1 2 3 4 5 6 7 8 9 10
> Not at all   Very

Why didn't you rate yourself LOWER?
(Why is it important?)

Why didn't you rate yourself HIGHER?
(What doubts do you have?)

So what I heard you say . . .

How confident are you that you could change the amount of alcohol you drink?

> 0 1 2 3 4 5 6 7 8 9 10
> Not at all   Very

Why didn't you rate yourself LOWER?
(What are your sources of confidence?)

Why didn't you rate yourself HIGHER?
(What are the barriers?)

So what I heard you say . . .

DRINKING PATTERNS

WHAT'S YOUR DRINKING PATTERN?	HOW COMMON IS THIS PATTERN?	HOW COMMON ARE ALCOHOL DISORDERS IN DRINKERS WITH THIS PATTERN?
DAILY LIMITS Men – 4 drinks Women – 3 drinks **WEEKLY LIMITS** Men – 14 drinks Woman – 7 drinks	Percentage of adults	Number with alcohol disorders
Never exceed the daily or weekly limits	72%	Less than 1 in 100
Exceed only the daily limit	16%	1 in 5
Exceed both daily and weekly limits	10%	Almost 1 in 2

You probably know that alcohol can cause liver disease, but you may not realize it can also cause other health problems.

- Risky drinking is associated with:
  - Cancers of the mouth, throat, esophagus, colon, liver, and breast
  - Liver disease
  - Stroke
  - Heart disease
  - Pancreatitis
  - Injuries and accidents
  - Miscarriages / still births
  - Depression and suicide
- Alcohol misuse is the third leading cause of preventable death in the United States.
- Alcohol is responsible for 85,000 deaths a year in the US.

WHAT'S A STANDARD DRINK?

Below are standard drink equivalents as well as the number of standard drinks in different container sizes for each beverage. These are approximate, since different brands and types of beverages vary in their actual alcohol content.

STANDARD DRINK EQUIVALENTS	APPROXIMATE NUMBER OF STANDARD DRINKS IN:
BEER or WINE COOLER	
12 oz. 5% alcohol	• 12 oz. = 1 • 16 oz. = 1.3 • 22 oz. = 2 • 40 oz. = 3.3
MALT LIQUOR / MICROBREWS	
8–9 oz. 7% alcohol	• 12 oz. = 1.5 • 16 oz. = 2 • 22 oz. = 2.5 • 40 oz. = 4.5
TABLE WINE	
5 oz. 12% alcohol	• a 750-mL (25-oz.) bottle = 5
80-PROOF SPIRITS (hard liquor)	
1.5 oz. 40% alcohol	• a mixed drink = 1 or more* • a pint (16 oz.) = 11 • a fifth (25 oz.) = 17 • 1.75 L (59 oz.) = 39 ***Note**: Depending on factors such as the type of spirits and the recipe, one mixed drink can contain from one to three standard drinks.

STEP 4
AGREE

Are you ready to think about making a change in your drinking?

If **YES**:

- What ideas have you thought of to address your drinking?
- Would you be interested in seeing a list of things that other patients have tried?
- What do think about these options?

If **NO**:

- It can be difficult to change.
- There could be risks involved with continuing your current level of drinking.
- Recommendations are to stay with safe drinking levels.
- We are available to talk with you further about ways you could be healthier.

Appendix C (*cont'd.):* Provider Guide for Addressing Unhealthy Alcohol Use (pages 7-8)

MENU OF OPTIONS FOR REDUCING RISK	MENU OF OPTIONS FOR REDUCING RISK

KEEP TRACK OF MY DRINKING
- ☐ Keep a diary of the number of drinks I have daily.
- ☐ Know the standard drink sizes.
- ☐ Measure drinks when I make them at home.
- ☐ Ask servers not to "top off" a partially filled wine glass.

MANAGE MY URGES TO DRINK
- ☐ Avoid visiting places that make me feel like drinking.
- ☐ Avoid people who may encourage me to drink when I don't want to.
- ☐ Schedule activities to occupy me during times of the day that make me feel like drinking.
- ☐ Avoid activities that give me the urge to drink.
- ☐ Keep little or no alcohol in the home.

PACE MYSELF
- ☐ Sip all drinks slowly.
- ☐ Don't drink on an empty stomach.
- ☐ Drink a few glasses of water before drinking alcoholic beverages.
- ☐ Only have one alcoholic drink an hour.
- ☐ Alternate non-alcoholic drinks with alcohol containing drinks.
- ☐ Bring only a set amount of cash to the bar. Leave the ATM/credits cards at home.

MAKE PLANS
- ☐ Make a list of goals for changing my drinking habits.
- ☐ Share my drinking goals with my spouse and friends.
- ☐ Plan in advance how many days per week to drink and how many drinks I'll have on those days.
  - Healthy men up to age 65: no more than 4 drinks/day AND no more than 14 drinks/week
  - Healthy women, and men over age 65: no more than 3 drinks/day AND no more than 7 drinks/weeks
- ☐ Schedule days in which I do not drink at all.
- ☐ Practice polite but firm strategies for saying "no thanks" before I go out to drink.

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Appendix C (*cont'd.):* Provider Guide for Addressing Unhealthy Alcohol Use (page 8)

STEP 5
ARRANGE FOLLOW UP

Arrange follow up appointment in one month.

Were you able to make the changes we talked about at your last visit?

NO

YES

NO branch:

What changes did you have trouble making? Why?

What changes worked? Why?

Would you like to try setting some new goals today?

- Acknowledge that change is difficult.
- Support positive change and address barriers.
- Renegotiate goal and plan; consider a trial of abstinence.
- Consider engaging significant others.
- Reassess diagnosis if patient is unable to either cut down or abstain.

YES branch:

What changes did you find most helpful? What was the most difficult part of cutting back?

- Reinforce and support continued adherence to recommendations.
- Renegotiate drinking goals as indicated (e.g., if the medical condition changes or if an abstaining patient wishes to resume drinking).
- Encourage to return if unable to maintain adherence.
- Rescreen at least annually.

Appendix D. Rethinking Drinking Pamphlet for Patients
(cover)

RETHINKING DRINKING

Alcohol and Your Health

Take a path to safe drinking

Appendix D (*cont'd.):* "Rethinking Drinking" Pamphlet for Patients (pages1-2)

MENU OF OPTIONS FOR REDUCING RISK

KEEP TRACK OF MY DRINKING

☐ Keep a diary of the number of drinks I have daily.

☐ Know the standard drink sizes.

☐ Measure drinks when I make them at home.

☐ Ask servers not to "top off" a partially filled wine glass.

MANAGE MY URGES TO DRINK

☐ Avoid visiting places that make me feel like drinking.

☐ Avoid people who may encourage me to drink when I don't want to.

☐ Schedule activities to occupy me during times of the day that make me feel like drinking.

☐ Avoid activities that give me the urge to drink.

☐ Keep little or no alcohol in the home.

PACE MYSELF

☐ Sip all drinks slowly.

☐ Don't drink on an empty stomach.

☐ Drink a few glasses of water before drinking alcoholic beverages.

☐ Only have one alcoholic drink an hour.

☐ Alternate non-alcoholic drinks with alcohol containing drinks.

☐ Bring only a set amount of cash to the bar. Leave the ATM/credits cards at home.

MAKE PLANS

☐ Make a list of goals for changing my drinking habits.

☐ Share my drinking goals with my spouse and friends.

☐ Plan in advance how many days per week to drink and how many drinks I'll have on those days.
- Healthy men up to age 65: no more than 4 drinks/day AND no more than 14 drinks/week
- Healthy women, and men over age 65: no more than 3 drinks/day AND no more than 7 drinks/weeks

☐ Schedule days in which I do not drink at all.

☐ Practice polite but firm strategies for saying "no thanks" before I go out to drink.

OTHER

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Appendix D (*cont'd.):* "Rethinking Drinking" Pamphlet for Patients (pages 3-4)

DRINKING PATTERNS

WHAT'S YOUR DRINKING PATTERN?	HOW COMMON IS THIS PATTERN?	HOW COMMON ARE ALCOHOL DISORDERS IN DRINKERS WITH THIS PATTERN?
DAILY LIMITS Men – 4 drinks Women – 3 drinks **WEEKLY LIMITS** Men – 14 drinks Woman – 7 drinks	Percentage of adults	Number with alcohol disorders
Never exceed the daily or weekly limits	72%	Less than 1 in 100
Exceed only the daily limit	16%	1 in 5
Exceed both daily and weekly limits	10%	Almost 1 in 2

You probably know that alcohol can cause liver disease, but you may not realize it can also cause other health problems.

- Risky drinking is associated with:
  - Cancers of the mouth, throat, esophagus, colon, liver, and breast
  - Liver disease
  - Stroke
  - Heart disease
  - Pancreatitis
  - Injuries and accidents
  - Miscarriages / still births
  - Depression and suicide
- Alcohol misuse is the third leading cause of preventable death in the United States.
- Alcohol is responsible for 85,000 deaths a year in the US.

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BEER or WINE COOLER	
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MALT LIQUOR / MICROBREWS	
8–9 oz. 7% alcohol	• 12 oz. = 1.5 • 16 oz. = 2 • 22 oz. = 2.5 • 40 oz. = 4.5
TABLE WINE	
5 oz. 12% alcohol	• a 750-mL (25-oz.) bottle = 5
80-PROOF SPIRITS (hard liquor)	
1.5 oz. 40% alcohol	• a mixed drink = 1 or more* • a pint (16 oz.) = 11 • a fifth (25 oz.) = 17 • 1.75 L (59 oz.) = 39 *Note: Depending on factors such as the type of spirits and the recipe, one mixed drink can contain from one to three standard drinks.

Appendix D (*cont'd.):* "Rethinking Drinking" Pamphlet for Patients (page 5)

DIARY					
DATE	WINE	BEER	STRONG BEER	LIQUOR	TOTAL # DRINKS
				WEEKLY TOTAL	
				WEEKLY TOTAL	
				WEEKLY TOTAL	
				WEEKLY TOTAL	
				WEEKLY TOTAL	

Appendix E. Training Materials From Residents' Pre-Clinic Conference

Screening for Unhealthy Alcohol Use

EDUCATIONAL OBJECTIVES:
1. Describe recommended alcohol limits.
2. Describe categories of unhealthy alcohol use.
3. Become familiar with screening methods.

CASE ONE:
Mrs. Skyy is a 41-year-old female with a PMH of mild asthma, hyperlipidemia and GERD who presents to clinic today for a general checkup. She is married and works in hospitality. After taking a social history, you learn that she drinks several mixed drinks each night she takes clients out or goes to social functions.

1. **How common is unhealthy alcohol use? What are the recommended alcohol limits for Mrs. Skyy? What are the different recommended limits for men, women, and those over age 65?**

Twenty to thirty percent of U.S. adults drink alcohol in excess of recommended drinking limits, putting them at risk for adverse health consequences (NIAAA, 2007). In the U.S., over 85,000 deaths each year are due to alcohol. Both the World Health Organization and the National Institute on Alcohol Abuse and Alcoholism recommend no more than 4 drinks per day and 14 drinks per week for men under the age of 65. For women and anyone 65 and older, they recommend no more than 3 drinks per day and 7 drinks per week. However, individual responses to alcohol vary, and drinking at lower levels can be problematic depending on many factors, such as age, co-existing conditions, and use of certain medications. The Surgeon General urges abstinence for women who are or may become pregnant.

What's a standard drink? [see pamphlets in clinic rooms or the AVS dotphrase]

2. What are the categories of unhealthy alcohol use? Describe each.

Unhealthy alcohol use includes *risky drinking* and *alcohol use disorder (AUD)*. Risky drinking is defined as drinking in excess of the recommended limits; consumption levels that increase the risk for health consequences. Most people who engage in risky drinking behavior do not have AUD, but some do (about to 1 in 4).

AUD is defined by DSM-5 criteria. In general, it is a maladaptive pattern of drinking leading to clinically significant impairment or distress that often involves failure to fulfill major obligations, recurrent alcohol use in situations where it is physically hazardous, craving, or continued use despite social or personal problems caused by alcohol. The diagnosis requires at least 2 of the 11 criteria below. AUD is categorized based on the number of criteria as mild (2-3), moderate (4-5), or severe (≥6).
1. Alcohol is often taken in larger amounts or over a longer period than was intended
2. Persistent desire or unsuccessful efforts to cut down or control alcohol use
3. Great deal of time spent in activities necessary to obtain, use, or recover from its effects
4. Craving, or a strong desire or urge to use alcohol

5. Recurrent use resulting in failure to fulfill major role obligations at work, school, or home
6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol
7. Important social, occupational, or recreational activities are given up or reduced because of use
8. Recurrent alcohol use in situations in which it is physically hazardous
9. Use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol
10. Tolerance, as defined by either of the following:
    a. Need for markedly increased amounts of alcohol to achieve intoxication or desired effect
    b. Markedly diminished effect with continued use of the same amount of alcohol
11. Withdrawal, as manifested by characteristic withdrawal syndrome, which can be relieved or avoided with alcohol (or a closely related substance, such as a benzodiazepine)

(In DSM-5, AUD replaced the DSM-IV diagnoses of "Alcohol Dependence" and "Alcohol Abuse". Those terms should no longer be used clinically, although they are common in older literature).

3. What are some health problems associated with unhealthy alcohol use that Ms. Skyy has an increased risk for?

Unhealthy alcohol use increases the risk for many health problems. According to the National Commission on Prevention Priorities, screening for unhealthy alcohol use is ranked as the 4th best clinical preventative service—based on preventable burden of disease and cost-effectiveness. (it was ranked higher than colon, cervical, and breast cancer screening). Unhealthy alcohol use is associated with an increased risk of many adverse health outcomes, including cancers (oral cavity, esophagus, larynx, colon, rectum, liver, and breast), gastrointestinal problems (e.g., liver cirrhosis, pancreatitis, ulcers), cardiovascular problems (e.g., heart disease, hypertension, cardiomyopathy, stroke), mental health problems (e.g., depression, suicide, anxiety, cognitive impairment), preterm birth complications, fetal alcohol syndrome, motor vehicle accidents, and injuries and violence.

4. What single screening question can be used to screen for unhealthy alcohol use?

"How many times in the past year have you had X or more drinks in a day?" (where X is 5 for men aged 18-64 and 4 for women aged ≥ 18 and men ≥ 65, and a response of ≥ 1 is considered positive). The single-question screen is 82% sensitive and 79% specific for the detection of unhealthy alcohol use.

CASE ONE CONTINUED:
Mrs. Skyy answers that she has up to 5 mixed vodka drinks in a day at least 2-3 days a week. She has never had any medical or social troubles due to her alcohol use.

5. What further screening test would help to better characterize Mrs. Sky's drinking habits?

The AUDIT (Alcohol Use Disorders Identification Test). It consists of 10 questions. Each are scored 0 to 4. The scores on the AUDIT are very useful for screening-related assessment, to determine whether patients have AUD or risky drinking (without AUD). A score ≥15 for men and ≥13 for women have a specificity of 100% for AUD.

6. Mrs. Skyy's AUDIT form is below. Use the UNC Internal Medicine Clinic's "A Provider Guide for Addressing Unhealthy Alcohol Use" (or the back side of the paper AUDIT) to determine which unhealthy alcohol use category she falls into based on her AUDIT score.

Because alcohol use can affect your health, we want to ask you some questions about your use of alcohol.

Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never or less	Monthly	2 to 4 times a month	2 to 3 times a week ✓	4 or more times a week	3
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6 ✓	7 to 9	10 or more	2
3. How often do you have 5 or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly ✓	Daily or almost daily	3
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never ✓	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never ✓	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never ✓	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never ✓	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never ✓	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No ✓		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No ✓		Yes, but not in the last year		Yes, during the last year	
					Total	8

Mrs. Skyy scores an 8 on the AUDIT and she has no points from questions 4-6. She most likely has risky drinking behavior without AUD. (If questions 4-6 had contributed 2 or more points to her total score, then she would most likely have had AUD.)

7. What intervention should you provide for Mrs. Skyy?
Behavioral counseling in primary care is the appropriate intervention. Brief (about 10 minutes) multi-contact (2 or more visits) interventions have the best evidence of effectiveness. (if she had AUD, referral to more intensive services would be indicated).

8. Are counseling interventions effective after patients screen positive for unhealthy alcohol use?

Yes, a systemic review and meta-analysis conducted for the U.S. Preventive Services Task Force (USPSTF) included 23 randomized-controlled trials that examined counseling interventions in adults with unhealthy alcohol use identified by screening in primary care settings. Interventions included brief advice, feedback, or motivational interviewing. Brief (about 10 minutes) multi-contact (2 or more visits) interventions had the best evidence of effectiveness.

Primary References:

1. National Institute on Alcohol Abuse and Alcoholism. Helping Patients Who Drink Too Much: A Clinician's Guide. Washington, DC: U.S. Department of Health and Human Services; 2005. pubs.niaaa.nih.gov/publications/ practitioner/ cliniciansguide2005/guide.pdf. Accessed June 27, 2011.

2. Jonas, D. et al, "Behavioral Counseling After Screening for Alcohol Misuse in Primary Care : A Systemic Review and Meta-Analysis for the U.S. Preventative Services Task Force" *Ann of Intern Med* (2012); 157: 645=654

3. The Provider Guide for Addressing Unhealthy Alcohol Use

Secondary References:
4. Smith PC, Schmidt SM, Allensworth-Davies D, et al. Primary care validation of a single- question alcohol screening test. J Gen Intern Med. 2009 Jul; 24(7):783-8. PMID: 19247718.

5. Maciosek, M. " Prioritizing Clinical Preventative Services: A Review and Framework with Implications for Community Preventative Services" Annu. Rev. Public Health (2009) 30: 341-55

6. Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual Causes of Death in the United States, 2000. JAMA. 2004;291(10):1238-1245

7. National Institute on Alcohol Abuse and Alcoholism. Helping Patients Who Drink Too Much: A Clinician's Guide. Washington, DC: U.S. Department of Health and Human Services; 2005. pubs.niaaa.nih.gov/publications/ practitioner/ cliniciansguide2005/guide.pdf. Accessed June 27, 2011.

Appendix E *(cont'd.)*: Training Materials from Residents' Pre-Clinic Conference

<u>Motivational Interviewing</u>

Educational Objectives:
1. Become more familiar with clinic alcohol screening methods
2. Address unhealthy alcohol use
3. Use motivational interviewing

Case 1:
Mr. Daniels is a 61 year old male veteran with a PMH of depression, hypertension and diabetes. He presents to your clinic today for routine follow up. The nurse provides him with the alcohol screening prompt and he answers "20" to "How many times in the past year have you had more than 5 drinks a day?" The nurse then provides him with the AUDIT (Alcohol Use Disorders Identification Test) form. You enter the room and calculate his score to be 10. His answers for questions 4-6 are 0.

1. How would you characterize his drinking behavior? Review the Appendix materials that describe clinic procedures for alcohol screening.
Mr. Daniels has risky drinking behavior. Refer to the back of the AUDIT for how to interpret the AUDIT score (or the Provider Guide pamphlet). A score of 10 indicates risky drinking; however alcohol use disorder (AUD) could be present. Scores for questions 4-6 are then tallied to determine whether an AUD is likely. If 2 or more points come from questions 4-6, AUD is likely.

2. How would you approach the topic of his unhealthy alcohol use? What information regarding safe drinking levels and health risks would you provide him with? You can use the "Provider Guide for Addressing Unhealthy Alcohol Use" (pamphlet in rooms) or the AVS dot phrase in EPIC (Appendix) to help you.
Preceptors may have them practice dialogue with fellow residents or use this as an example if desired.
RESIDENT: Mr. Daniels, I am concerned you may be drinking at unhealthy levels. Would it be alright if we talked more about your drinking?
PATIENT: I guess.
RESIDENT: What do you know about safe drinking levels and the risks of drinking to your health?
PATIENT: I did not really think I was drinking all that much or at an unsafe level. It seems like everyone drinks that much.
RESIDENT: Actually, the recommended alcohol limits for a male your age are no more than 4 drinks a day and 14 drinks a week. About 20 to 30% of the U.S. population engages in risky drinking behavior. Drinking above these levels significantly increases your risk of health problems. Specifically, it increases the risk for several types of cancer, include cancer of the head and neck, colon, liver, and breast. It also increases the risk of stroke, heart attack, high blood pressure, liver cirrhosis, depression, suicide, injuries, and violence.

3. Would an intervention be appropriate at this time? If so, what?
Yes, the patient has unhealthy alcohol use (risky drinking behaviors, but not AUD). A systemic review and meta-analysis of 23 randomized-controlled trials showed that behavioral counseling was effective in improving drinking behavior outcomes. The patient would benefit from a brief intervention using motivational interviewing. **Note that the back of the paper AUDIT has a brief outline of the 5 A's approach to counseling about unhealthy alcohol use**

4. What is Motivational interviewing?
Motivational interviewing (MI) was developed by William Miller in 1983 and further developed by Stephen Rollick. It is a theory of behavior changed focused on a guiding style rather than directive advising. It helps patients to clarify their strengths and evoke their own motivation for change. Simply giving advice to patients is often ineffective. MI was found to be more effective than advice-giving in 80% of studies according to a systemic review of 72 studies (of MI for a variety of health-related behaviors; not limited to alcohol). The clinician practices motivational interviewing with five general principles in mind:
1. Expressing empathy through reflective listening.
2. Developing discrepancy between clients' goals or values and their current behavior.
3. Avoiding arguments and direct confrontation.
4. Adjusting to client resistance rather than opposing it directly. "Rolling with resistance"
5. Supporting self-efficacy and optimism.

Continued… Mr. Daniels states he often drinks 4-5 beers at night after work. If he has a particularly stressful day, he may have 1 or 2 whiskey drinks before bed. He denies being addicted to alcohol and has never tried to cut down in the past. He seems surprised that his drinking is at an unhealthy level.

5. **Mr. Daniels would like to work on cutting back on his alcohol use. What further information would you want to gather from him? Practice this interaction with your fellow resident.**
It would be helpful to talk about the pros and cons of his drinking to help him motivate himself.

RESIDENT: I would like to understand how drinking fits into your life. What are the things that you like about drinking alcohol?
PATIENT: I like drinking. It helps me to relax after work. Also, when I go out with some of the guys after work, we go get drinks. I am not sure what I would do if I did not do this.
RESIDENT: Is there anything that you don't like about drinking or any ways that it causes problems for you?
PATIENT: The health problems from drinking would be the bad side. Maybe it is driving my blood pressure up. Also, I would not want to have liver failure. My uncle had cirrhosis, so I know what that is like.
RESIDENT: USE REFLECTIVE LISTENING. So it sounds like you enjoy drinking to help unwind and drinking socially with friends. On the other hand, you are concerned about the effects it could have on your health.

6. How would you assess his readiness for behavior change?

At this point, it would be helpful to assess his importance and confidence. An example of using a rating scale is below. [Preceptors may choose to have residents practice the conversation with each other.]

RESIDENT*: On a scale from 0-10, how confident are you that you could make a change in the amount of alcohol you drink?*
PAITENT: *I think a 5.*
RESIDENT: *Why not higher?*
PATIENT: *It feels like part of my schedule and I would be so much more stressed if I did not drink. I would not be able to go out with my friends because they would want to drink.*
RESIDENT: *A 5 is not all that confident. How could you shift your goal to make it more possible for you to achieve?*
PATIENT*: I suppose I could go to the gym with my old friends who don't drink as much on 1 or 2 of the nights I would normally go out to relax. That might make me feel less stressed too. I think I could give that an 8 out of 10 on the 0 to 10 scale. And I could maybe drink a beer or two less when I do go out.*
RESIDENT: *That's great. I'm glad to hear you set this goal. Research shows that there is a high likelihood for patients to succeed with goals they set if their confidence score is 8 or above. If you find it is lower, consider setting an easier goal. If you are able to meet or even exceed this goal it will help you to make more changes that could help your health in the future. Let's write this goal down and follow up on it when I see you next time (type the goal in the AVS).*

[if the patient is having trouble setting a goal, it can be useful to ask "Would it be helpful to see a list of options that others have used to reduce their risk of health problems from drinking?" If yes, then share the Menu of Options for Reducing Risk in the Provider Guide pamphlet or within the AVS dotphrase].

You and Mr. Daniels decide it would be helpful to keep a drinking diary. You provide him with a drinking diary which is located in all the exam rooms ("Rethinking Drinking" pamphlet) or in the dotphrase you can put in the AVS (.ALCOHOLAVS). Both also contain a list of helpful strategies to use when cutting back. He agrees to come back in one month to follow up on his progress and discuss any possible challenges. Document that you've provided counseling with a dotphrase in your note (.ALCOHOLPOSITIVE if you want the most brief version with the minimum documentation requirements; other options that help to walk through the 5 A's are also available and are listed on the back of the paper AUDIT.

CASE 2:
Mrs. Smith is a morbidly obese female with sleep apnea and depression who comes into to clinic for a general checkup. Her BMI is 47. You have discussed diet and exercise changes at most of her visits, though she has not been successful in making changes. She would like to talk to you about her increasing weight.

7. Would motivational interviewing be appropriate for Mrs. Smith?
Yes! Motivational interviewing can be helpful in a variety of settings in addition to risky drinking including weight loss, smoking, lack of exercise, and unhealthy diet.

PRIMARY REFERENCES:

1. UNC Internal Medcine Clinic "Provider Guide for Addressing Unhealthy Alcohol Use"

2. Rollnick, Stephen. "Motivational Interviewing" *BMJ*. (2010) 340: 1242-1245.

SECONDARY REFERENCES:

3. Cole, Stephen. "Motivational Interviewing and Psychiatry: Use in Addiction Treatment, Risky Drinking and Routine Practice." *FOCUS*. (2011). Vol IX. No. 1.

4. Jonas, D. et al, "Behavioral Counseling After Screening for Alcohol Misuse in Primary Care : A Systemic Review and Meta-Analysis for the U.S. Preventative Services Task Force" *Ann of Intern Med* (2012); 157: 645-65

Appendix F. Run Charts From Initial Implementation Period

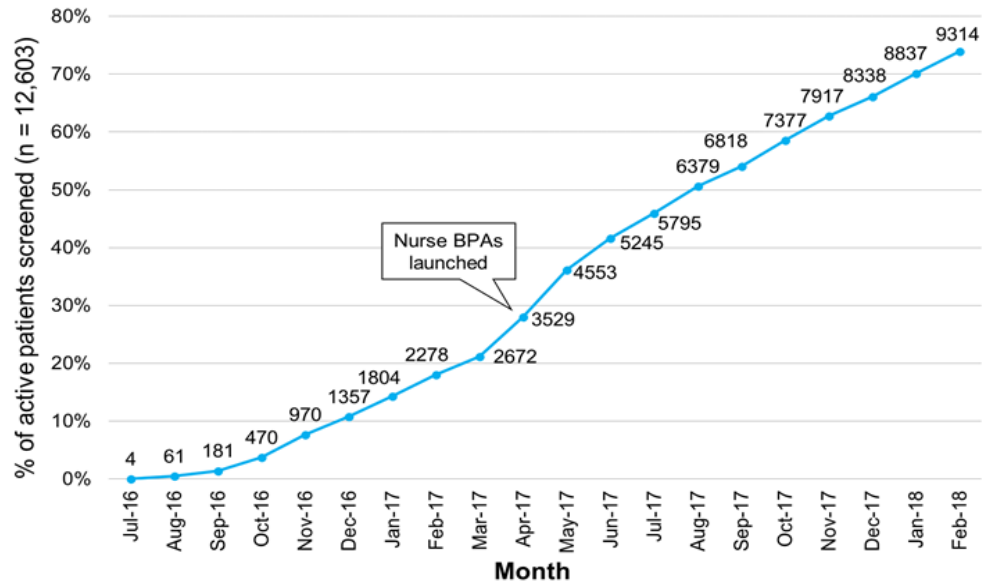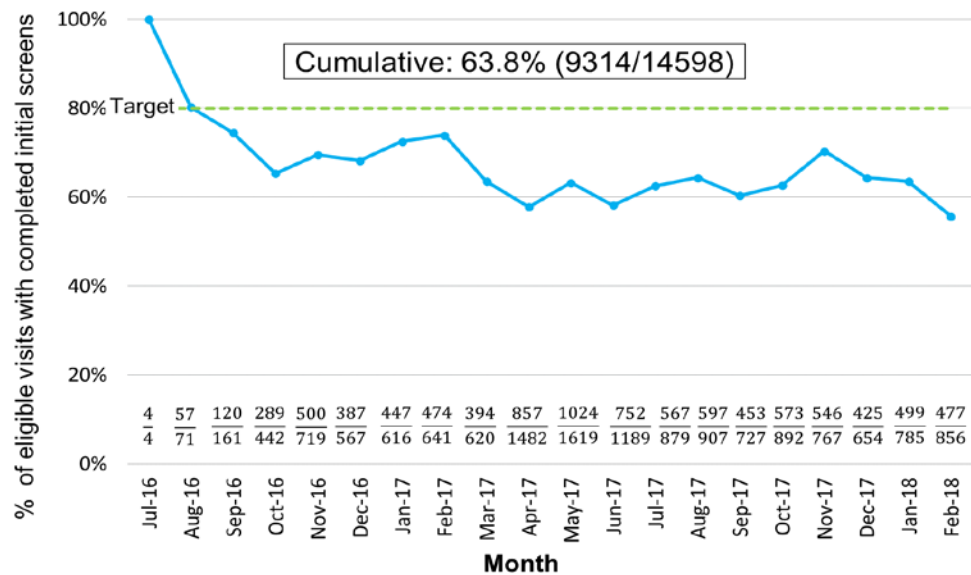**Figure F1. Total patients screened for unhealthy alcohol use**

Figure F2. Proportion of eligible patient visits in which initial screen for unhealthy alcohol use was completed

Appendix F *(cont'd.):* Run Charts

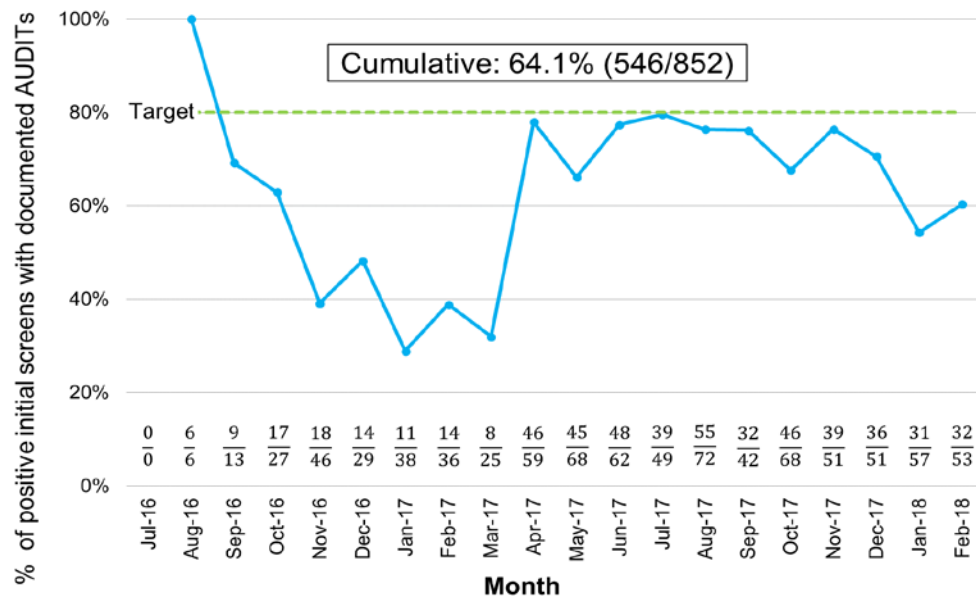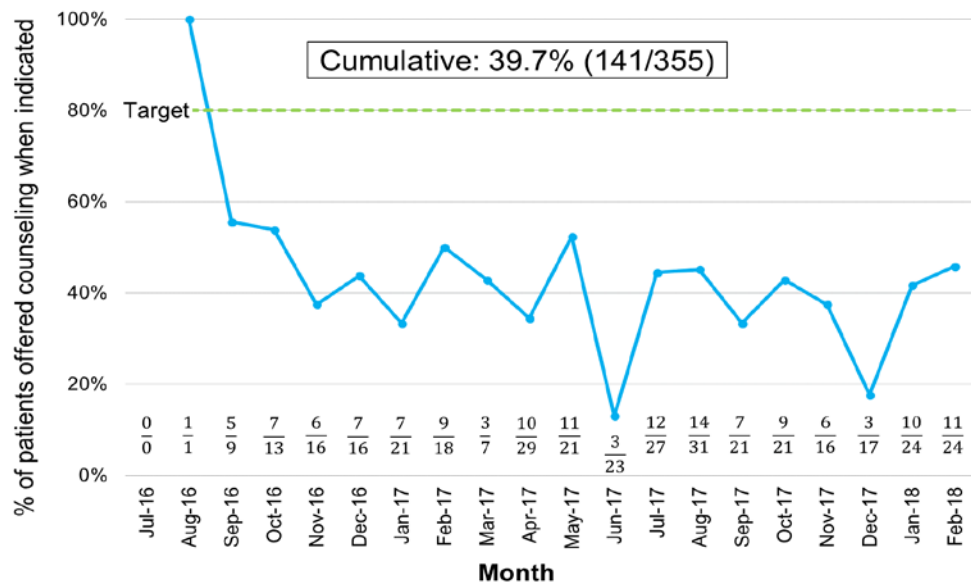**Figure F3. Proportion of patients with positive initial screen who had AUDIT results documented**

Cumulative: 64.1% (546/852)

Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
$\frac{0}{0}$	$\frac{6}{6}$	$\frac{9}{13}$	$\frac{17}{27}$	$\frac{18}{46}$	$\frac{14}{29}$	$\frac{11}{38}$	$\frac{14}{36}$	$\frac{8}{25}$	$\frac{46}{59}$	$\frac{45}{68}$	$\frac{48}{62}$	$\frac{39}{49}$	$\frac{55}{72}$	$\frac{32}{42}$	$\frac{46}{68}$	$\frac{39}{51}$	$\frac{36}{51}$	$\frac{31}{57}$	$\frac{32}{53}$

Figure F4. Patients offered counseling for risky drinking when indicated* on day of screening

Cumulative: 39.7% (141/355)

Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
$\frac{0}{0}$	$\frac{1}{1}$	$\frac{5}{9}$	$\frac{7}{13}$	$\frac{6}{16}$	$\frac{7}{16}$	$\frac{7}{21}$	$\frac{9}{18}$	$\frac{3}{7}$	$\frac{10}{29}$	$\frac{11}{21}$	$\frac{3}{23}$	$\frac{12}{27}$	$\frac{14}{31}$	$\frac{7}{21}$	$\frac{9}{21}$	$\frac{6}{16}$	$\frac{3}{17}$	$\frac{10}{24}$	$\frac{11}{24}$

*Counseling is indicated for male patients with AUDIT scores 5-14 and female patients with AUDIT scores 4-12