Prepared for:

The Office of the National Coordinator for Health Information Technology (ONC) and The Substance Abuse and Mental Health Services Administration (SAMHSA)

ONC-SAMHSA Behavioral Health Clinical Quality Measure Initiative

Technical Expert Panel Results for Behavioral Health Domain – *Alcohol Use*

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by The MITRE Corporation

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Executive Summary

Background

The Office of the National Coordinator for Health Information Technology (ONC) and The Substance Abuse and Mental Health Services Administration (SAMHSA) engaged The MITRE Corporation to support the development of a portfolio of Behavioral Health (BH) Clinical Quality Measures (CQMs). This portfolio of BH CQMs are under consideration for future stages of the Centers for Medicare & Medicaid Services (CMS) Incentive Program for the Meaningful Use of Health Information Technology ("Meaningful Use"), which is part of the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009. This engagement was comprised of two phases:

1. Electronic specification (eSpecification) of prioritized BH CQMs under consideration for future stages of the Meaningful Use (MU) program
2. Development and facilitation of a Technical Expert Panel (TEP) of public and private BH specialists for the purpose of identifying and prioritizing recommendations for future development of BH related CQMs

This report presents results of the BH CQM Project Phase 2 (TEP Phase 1) effort for the Alcohol Use BH domain.

Process

A TEP composed of public and private sector BH experts, representing the clinical domains of Alcohol Use, Autism, Depression, Drug Use, Suicide, and Trauma, was recruited, assembled, and facilitated over a 4-month period named "TEP Phase 1" from April through July 2012. Through the course of deliberations, the TEP was briefed on the MU program requirements and informed of the CQM development process, including clinical research, measure logic development, National Quality Forum (NQF) endorsement, and eSpecification creation. In a three-meeting weekly rotating cycle, each clinical domain was evaluated for the existence of CQMs included in the MU Stage 1 Final Rule, the MU Stage 2 Notice of Proposed Rulemaking (NPRM) and MU Stage 2 Final Rule, and those eSpecified as part of Project Phase 1. Additionally, the TEP reviewed results of environmental scans for the existence of measures not endorsed by the NQF and clinical literature searches for evidence warranting new measure development.

A "TEP Phase 2" focused for an additional three months from July through September 2012 on the topics of Depression Trended Outcome measurement and Drug Use/Prescription Drug Misuse (PDM) measures.

Results

Table 1 provides an overview of the ONC-SAMHSA BH TEP's research activities and recommendations related to developing BH CQMs for the Alcohol Use domain.

Table 1. Behavioral Health Domain: *Alcohol Use*

Source	Result
Domain specific NQF endorsed measures	One endorsed measure and two candidate measures were prioritized from Phase 1 of the BH CQM project
Meaningful Use Stage 1—Final Rule	One measure related to this clinical domain
Meaningful Use Stage 2—Final Rule	Two measures related to this clinical domain
NQF endorsed measures – future consideration	Two measures related to this clinical domain
Non-endorsed Measures (Agency for Healthcare Research and Quality [AHRQ] Database)	Six measure related to this clinical domain were reviewed by TEP, four were recommended
Clinical Evidence	79 articles covering five broad areas:* • General Screening, Brief Intervention, and Referral to Treatment (SBIRT) results in primary care • Implementation • Screening tools • Youth • Medication and technology-assisted treatment

* Citations were repeated when findings applied to more than one topic area.

Recommendations

Based on the TEP findings, the Alcohol Use subgroup recommends:

- Adoption of the following CQMs Measures in future stages of MU
  - NQF Endorsed:
    - NQF 1406—Risky Behavior Assessment or Counseling by Age 13 Years
    - NQF 1507—Risky Behavior Assessment or Counseling by Age 18 Years
  - NQF Candidate:
    - NQF 1661—SUB-1 Alcohol Use Screening
    - NQF 1663—SUB-2 Alcohol Use Brief Intervention Provided or Offered and SUB-2a Alcohol Use Brief Intervention
  - Non-endorsed:
    - National Quality Measures Clearinghouse (NQMC) 004458 (Physician Consortium for Performance Improvement [PCPI]) — Screening and brief counseling for patients 18 and older
    - National Quality Measures Clearinghouse (NQMC) 004007 (American Pyschiatric Association [APA]/National Committee for Quality Assurance [NCQA]/ Physicians Consortium for Performance Improvement [PCPI])- Substance use disorders: percentage of patients aged 18 years and older with a diagnosis of current alcohol dependence who were counseled regarding psychosocial AND pharmacologic treatment options for alcohol dependence within the 12 month reporting period
- Future development of Clinical Quality Measures for
  - Early screening of youth
  - Treatment outcomes
  - Patient-administered screening tools

The following report provides details concerning the ONC-SAMHSA BH TEP activities and recommendations for the Alcohol Use BH clinical domain.

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1 Background

Through the American Recovery and Reinvestment Act of 2009 (ARRA) Health Information Technology for Economic and Clinical Health (HITECH) Act, the Centers for Medicare & Medicaid Services (CMS) is authorized to provide reimbursement incentives for eligible professionals and hospitals for the Meaningful Use (MU) of certified Electronic Health Record (EHR) technology. The Office of the National Coordinator for Health Information Technology (ONC), through an agreement with CMS, has been tasked with developing a portfolio of Clinical Quality Measures (CQM) that capitalizes on the clinical data captured through EHRs for inclusion in the CMS EHR MU Incentive Program.

The Behavioral Health Coordinating Committee at the U.S. Department of Health and Human Services (DHHS), with support from the Office of National Drug Control Policy (ONDCP) Demand Reduction Interagency Workgroup EHR subcommittee, submitted consensus recommendations to the ONC, for behavioral health-relevant clinical quality measures to be included in Stage 2 of the MU incentive program. In July 2011, the ONC Federal Advisory Health Information Technology Policy Committee (HITPC) recommended to ONC that these measures be further developed.

SAMHSA and ONC jointly sponsored this project to follow up on these recommendations by developing and electronically specifying (eSpecification) BH CQMs to be added to the current EHR CQM portfolio of measures. The principal audience for these measures is primary care MU Eligible Professionals and Eligible Hospitals, although they may also be applicable to a broader range of BH professionals. The scope of the resulting BH eMeasure (BHeM) effort included strategic, technical, facilitation, coordination, clinical, and project management support for the development of a portfolio of electronically specified BH CQMs for potential inclusion in future stages of the CMS EHR MU Incentive Program.

BH CQMs for this project are focused in the clinical domains of:

- Alcohol Use
- Autism
- Depression
- Drug Use
- Suicide
- Trauma

This report presents results of the Project Phase 2 Technical Expert Panel (TEP) effort for the Alcohol Use BH domain.

2 Project Overview

The ONC and SAMHSA engaged The MITRE Corporation to support the development of a portfolio of BH CQMs suitable for inclusion in future stages of the CMS Incentive Program for the Meaningful Use of Health Information Technology (“Meaningful Use”), which is part of the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH). This engagement included two phases:

Phase 1 - eSpecification of BH CQMs suitable for future stages of the MU program. 10 BH CQMs were eSpecified through this project and include:

- National Committee for Quality Assurance (NCQA)
  1. NQF #0576, Follow-Up After Hospitalization for Mental Illness
  2. NQF #1401, Maternal Depression Screening
  3. NQF #1406, Risky Behavior Assessment or Counseling by Age 13
  4. NQF #1507, Risky Behavior Assessment or Counseling by Age 18
- The Joint Commission (TJC):
  5. NQF #1661, SUB-1 Alcohol Use Screening
  6. NQF #1663, SUB-2 Alcohol Use Brief Intervention Provided
- Center for Quality Assessment and Improvement in Mental Health (CQAIMH):
  7. NQF #0109, Bipolar Disorder and Major Depression: Assessment for Manic or Hypomanic Behaviors
  8. NQF#0110, Bipolar Disorder and Major Depression: Appraisal for Alcohol or Chemical Substance Use
  9. NQF #0111, Bipolar Disorder: Appraisal for Risk of Suicide
- Resolution Health, Inc. (RHI)
  10. NQF # 0580, Bipolar Antimanic Agent

Note: CQMs NQF #0110 and #1401 were included in MU Stage 2 Final Rule

Phase 2 - Development and facilitation of a TEP of public and private BH specialists for the purpose of identifying and prioritizing recommendations for potential new measures for future development.

2.1 Technical Expert Panel

A TEP composed of public and private sector BH experts, representing the clinical domains of Alcohol Use, Autism, Depression, Drug Use, Suicide, and Trauma, was recruited, assembled, and facilitated over a 4-month period named "TEP Phase 1" from April through July 2012. Through the course of deliberations, the TEP was briefed on the MU program requirements and informed of the CQM development process, including clinical research, measure logic development, National Quality Forum (NQF) endorsement, and eSpecification creation. In a three-meeting weekly rotating cycle, each clinical domain was evaluated for the existence of CQMs included in the MU Stage 1 Final Rule, the MU Stage 2 Notice of Proposed Rulemaking (NPRM), and those eSpecified as part of Project Phase 1. Additionally, the TEP reviewed results of environmental scans for the existence of measures not endorsed by the NQF and clinical literature searches for evidence warranting measure development.

A "TEP Phase 2" focused for an additional three months from July through September 2012 on the topics of Depression Trended Outcome and Drug Use/Prescription Drug Misuse measures.

A list of all TEP members is included in Appendix A.

2.2 Purpose and Activities of the TEP

The purpose of the ONC-SAMHSA BH TEP was to:

- Recommend BH clinical quality measures for widespread adoption and use in future stages of the EHR Meaningful Use Incentive Program
- Recommend future measure development needs by evaluating available clinical research
- Provide private sector input regarding the feasibility of measure implementation

Over the course of the project the TEP completed a comprehensive review of existing BH-relevant CQMs including measures that are NQF endorsed, community measures in the AHRQ measure clearinghouse, and measures that were under development through similar federal initiatives. In addition, for each domain, the TEP reviewed the clinical literature to evaluate the state of the field of measure development and to make recommendations on the next steps for measure development.

A listing of all scheduled meetings and topics is included in Appendix B.

Copies of the environmental scans are included in Appendix C.

SAMHSA is currently developing a National Behavioral Health Quality Framework. The framework is aligned with the National Quality Strategy and will prioritize six goals; (1) evidence-based prevention, treatment and recovery, (2) person and family-centered care, (3) coordination of behavioral health and other health care, (4) health living, (5) safe care, and (6) accessible and affordable care. The recommendations from the Technical Expert Panel are focused on measure recommendations for the Meaningful Use EHR incentive program and are primarily applicable to primary care and general hospital settings. These recommendations will be considered in the broad portfolio of SAMHSA quality work, including development of the framework and future measure development activities.

2.3 Common Themes in CQM Development for Behavioral Health

Many common themes emerged in the TEP discussions across the six domains. The United States (US) healthcare system is evolving rapidly. The widespread use of standardized data captured in EHRs has profound potential to improve quality measurement in both healthcare and research contexts. Our discussions highlighted some principles related to BH quality measures development for consideration in efforts to realize this potential.

Standardized, Validated Screening and Assessment Tools

Significant discussion focused on the use of valid tools for screening, assessment, and outcome monitoring for BH diagnoses. Many standardized assessment tools exist for any given BH condition. There is often no ‘gold standard’ assessment tool for a given purpose. As a result, measure developers often specify the use of ‘a valid instrument’. This can create complications for the e-specification of the measure and for data comparison across sites. However, while standards may be useful for exchanging data, mandating the use of a specific instrument may limit a provider’s ability to select tools that they prefer, or develop new, innovative approaches to screening and assessment. Development of standards for the endorsement of validated tools, as well as standard processes for calibrating tools to a standard scale would be incredibly

valuable for improving the quality and interoperability of data while allowing the field to evolve with the state of the science.

Comprehensive Measure Sets

For each of the six domains TEP members discussed the long range goal of developing measure sets that support evidence based practices across the full continuum of care. For most BH disorders addressed in primary care settings this includes prevention, screening, follow up assessments, screening for co-morbid conditions, primary care based intervention, referral management, care coordination, and outcome tracking. For many of the domains addressed in this project the state of the research does not yet support the development of CQMs for each of these purposes. However, it was useful to consider the current state of measure development within this context to make recommendations for the next stages of measure development.

Implementation in Real World Settings

TEP discussions also highlighted the need to consider measure development in the context of real world healthcare settings. Our national healthcare system is rapidly evolving and health reform is putting significant pressure on primary care providers. The efficacy of primary care based interventions for behavioral disorders is highly dependent on implementation which can be influenced by acceptability to providers, ability to integrate best practices into their workflow, provider attitudes and comfort level with the intervention, etc. The TEP highlighted the need for additional research to address the implementation barriers that exist in busy practices, including technologies that reduce patient and provider burden, to identify methods for addressing patients with multiple behavioral health co-morbidities, and to determine how clinical decision support can be tied to CQMs in EHR systems.

3 Domain-Specific Results: *Alcohol Use*

3.1 Environmental Scan Results

MITRE engaged The Cloudburst Group as the subcontractor for the clinical literature review process based on their expertise in completing and analyzing clinical literature research in the six key domains of Alcohol, Substance Abuse, Depression, Suicide, Trauma and Autism. The Cloudburst Group deliverables were aligned with the goals of each TEP meeting (see Table 2).

Table 2. TEP Goals and Literature Reviews

TEP Phase 1 – Goal (All 6 Domains)	Literature Review Deliverables
Meeting 1 – Orientation and Familiarity with Current Measures	TEP participation and orientation if available
Meeting 2 - Non-Endorsed Measures Recommendations/Lit Search Question Formation	Delivery of Phase 1 environmental scan literature review domain-specific search questions for all 6 domains and participation in weekly TEPs
Meeting 3 - Select Promising Clinical Research	Delivery of final results from Phase 1 environmental scan of all 6 domains and participation in weekly TEPs

The Cloudburst Group provided literature search questions for review with the TEP at each domain Phase 1, Meeting 2 discussion. These questions were based on a preliminary review of ongoing research that could inform the development or retooling of each proposed measure or the creation of new measures. The answers to these questions and additional comments from the TEP members in the Meeting 2 discussions were used to generate the search criteria for the environmental scans. The results of these scans were then summarized and presented to each TEP in an executive summary (Table 3). The most appropriate articles were then collated for each domain and presented in a literature matrix (see Appendix C).

Recommended Search Terms for Alcohol Literature Scan

- Alcohol screening, primary care
- Alcohol screening, primary care, youth
- Alcohol screening, primary care, treatment
- Alcohol brief intervention, primary care, follow up
- Alcohol assessment primary care
- Pharmacotherapy, brief intervention, alcohol, primary care
- Medication, brief intervention, alcohol, primary care
- Medication-assisted treatment

Below is a high-level of the 79 total results divided under 5 broad areas. The full matrix including summaries of each of the citations is available in Appendix C of this paper.

Table 3. Literature Search Results and Findings

Topics/Search Focus Area	Summary of Findings
General SBIRT results in primary care	• Several reviews on SBIRT in primary care demonstrate effectiveness in reducing alcohol consumption • Patients with risky drinking and mental health comorbidity may not be effectively helped by SBIRT • Gender studies show SBIRT effectiveness in men; evidence for effectiveness in women is weaker • Longer duration of counseling probably has little additional effect
Implementation	• Wide range of rates of SBIRT implementation in primary care • Owing to wide practice workflow/preference variations, a range of options should be included in recommended screening procedures • Implementation likely to be successful when proposed routines and practices are adapted to provider workflow and settings
Screening Tools	• AUDIT is the gold standard for detecting alcohol-related problems in primary care setting • AUDIT shortened versions (AUDIT-C, AUDIT-3 and AUDIT-QF) have been found to perform nearly as well • Single item: “How many times in the past year have you had X or more drinks in a day?” X = 5 for men, 4 for women, with >1 is considered positive
Youth	• 2012 review: Unclear whether SBIRT is effective for risky alcohol use among adolescent patients in acute care • Valid screens for youth: CRAFFT, FAST, AUDIT-C • Modified cut-off points make screening with the AUDIT more accurate for adolescent populations

Topics/Search Focus Area	Summary of Findings
Medication and technology-assisted treatment	• In clinical literature, "Medical management" appears equivalent to "brief intervention" • Compliance-enhancement therapy led to high rates of medication compliance • Medically trained clinicians with minimal dependence specialty training able to deliver a brief effective medication management intervention • Interactive voice response (IVR) is a feasible technology for behavioral self-monitoring in primary care clinics • Trauma patients (92%) found computer-assisted intervention easy and comfortable to use (87%)

3.2 Measure Recommendations

Table 4 provides an overview of current alcohol use related measures included in the Meaningful Use program. Table 5 includes an overview of the ONC-SAMHSA BH TEP's recommendations related to developing a BH CQM for the Alcohol Use domain.

Table 4. Behavioral Health Domain: Alcohol Use - *CURRENT POLICY*

Source	Result
Meaningful Use Stage 1—Final Rule	One measure related to this clinical domain • NQF 0004—Initiation and Engagement of Alcohol and Other Drug Dependence Treatment: (a) Initiation, (b) Engagement
Meaningful Use Stage 2 —Final Rule	Two measures related to this clinical domain included: • NQF 0004—Initiation and Engagement of Alcohol and Other Drug Dependence Treatment: (a) Initiation, (b) Engagement • NQF 0110—Bipolar Disorder and Major Depression: Appraisal for Alcohol or Chemical Substance Use

Table 5. Behavioral Health Domain: Alcohol Use - *FUTURE RECOMMENDATIONS*

Source	Recommendations
NQF endorsed Measures – for future consideration	Two measures related to this clinical domain • NQF 1406—Risky Behavior Assessment or Counseling by Age 13 Years • NQF 1507—Risky Behavior Assessment or Counseling by Age 18 Years
Non-endorsed Measures (Agency for Healthcare Research and Quality [AHRQ] Database)	Four measures related to this clinical domain • NQMC 004458 (PCPI) - Preventive care and screening: percentage of patients aged 18 years and older who were screened for unhealthy alcohol use at least once during the two-year measurement period using a systematic screening method AND who received brief counseling if identified as an unhealthy alcohol user • NQF Candidate 1661—SUB-1 Alcohol Use Screening • NQF Candidate 1663—SUB-2 Alcohol Use Brief Intervention Provided or Offered and SUB-2a Alcohol Use Brief Intervention • NQMC 004007 (APA/NCQA/PCPI)- Substance use disorders: percentage of patients aged 18 years and older with a diagnosis of current alcohol dependence who were counseled regarding psychosocial AND pharmacologic treatment options for alcohol dependence within the 12 month reporting period
Clinical Evidence	Recommendations for additional research focused on: • Alcohol screening and brief follow-up measures for youth • Outcome measure development

The two alcohol related CQMs that are currently included in the MU program, NQF 0004—Initiation and Engagement of Alcohol and Other Drug Dependence Treatment and NQF 0110—Bipolar Disorder and Major Depression: Appraisal for Alcohol or Chemical Substance Use, both focus on the treatment of alcohol use after a behavioral health diagnosis

The U.S. Preventive Services Task Force recommends population based screening and behavioral counseling interventions to reduce alcohol misuse by adults in primary care settings. However, there are currently no NQF endorsed CQMs for population based screening for alcohol misuse in adults. Therefore, a top priority for the Alcohol domain is the development and implementation of CQMs that meet this need. Significant efforts have been ongoing in this area. The Joint Commission (TJC) has developed a series of four linked measures addressing substance use in the hospital setting:

- NQF 1661—SUB-1 Alcohol Use Screening
- NQF 1663—SUB-2 Alcohol Use Brief Intervention Provided or Offered and SUB-2a Alcohol Use Brief Intervention
- NQF 1664—SUB-3 Alcohol and Other Drug Use Disorder Treatment Provided or Offered at Discharge and SUB-3a Alcohol and Other Drug Use Disorder Treatment at Discharge
- NQF 1665—SUB-4- Alcohol and Drug Use: Assessing status after discharge

These measures have been submitted to the NQF and are under review for endorsement. In addition, the American Medical Association's Physician Consortium for Performance Improvement (AMA-PCPI) is currently developing a measure for preventive care screening and brief counseling for the ambulatory care setting. They are scheduled to submit the measure for NQF endorsement as part of the NQF Call for Behavioral Health Measures in Fall, 2012.

The TEP expressed strong support for alcohol screening and brief counseling measures for both the ambulatory and inpatient settings and recommended the inclusion of the AMA-PCPI measure (NQMC 004458) and TJC measures (NQF Candidate measures 1661 and 1663) in future stages of MU.

The two additional measures under development by TJC, NQF Candidate measures 1664 and 1665 were also noted to be of value for effective discharge education and treatment of patients screening positive for alcohol abuse. However, the TEP focused its recommendations on those measures that are most critical for this domain.

- **Screening for youth—Early identification.** The TEP also highlighted the importance of early identification of alcohol use as critical to effective intervention. The TEP identified measures NQF 1406 and 1507 as useful for alcohol screening of youth and recommended inclusion in future stages of MU.
- **Medication Assisted Treatment.** The TEP also discussed the need for additional CQMs for medication assisted treatment (MAT) of alcohol dependence and abuse. MAT has been shown to be effective in reducing alcohol use and improving patient outcomes, however, numerous barriers including funding and regulatory obstacles, physician training and certification, and staff and client resistance, have prevented widespread use. Therefore, the TEP strongly supports the inclusion of NQMC 004007 (Substance use disorders: percentage of patients aged 18 years and older with a diagnosis of current alcohol dependence who were

counseled regarding psychosocial AND pharmacologic treatment options for alcohol dependence within the 12 month reporting period) in future stages of meaningful use.

4 Future Recommendations

While the focus of this project is to recommend CQMs for the HITECH MU program, the TEP was also asked to make recommendations for additional research and development needed to support the next phases of measure development for this domain.

Screening for Youth

Two measures described above, NQF 1406 and 1507, for risky behavior assessment or counseling by ages 13 and 18 are useful preventive care measures that document the provision of preventive education and counseling services. However, these measures do not involve screening, brief intervention and or clinical diagnostic services. In addition, the adolescent period between age 13 and 18 is associated with a significant increases in the number of adolescents trying alcohol for the first time. The TEP discussed the need for additional measures that focus on screening and brief intervention or counseling in the adolescent population.

As of 2004, The United States Preventive Services Task Force (USPSTF) found that there was insufficient evidence to support population based screening for alcohol use in adolescents. However, alcohol use is prevalent among youth and increases with age from 7% among 12 year olds to nearly 70% in 18 year olds. Importantly, alcohol use in adolescence is associated with short-term adverse outcomes including academic problems and increased injuries as well as increased risk of alcohol dependence in later life. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the American Association of Pediatrics (AAP) recommend screening and brief intervention for alcohol use in adolescents 9-18 years of age, and jointly released a practitioner's guide in 2011.

The TEP reviewed the literature and recommended additional research to support the development of a screening measure for youth or expansion of the existing screening measures to include youth. While the existing research is promising, additional randomized clinical trials are needed to evaluate the efficacy of screening and brief counseling in both primary care and emergency department settings.

Development of Outcome Measures

The TEP also emphasized the importance of the development of outcome measures to assess the efficacy of treatment of alcohol misuse and dependence. The currently existing measures identified by the TEP as relevant to this domain are all process measures. These represent an important first step for ensuring that appropriate processes are in place for the identification and treatment of individuals with alcohol misuse or dependence. However, it is also critical to incorporate measures that assess the effects of quality improvement efforts on treatment outcomes. These metrics are useful for both patients to track their own progress, and providers to assess the efficacy of their interventions. In the depression domain, the Patient Health Questionnaire 9 (PHQ-9) is used to track severity and response to treatment; there is strong consensus in the field on the value of this standardized instrument for use in ambulatory care. However, no such consensus exists for standard metrics for assessing response to treatment for

alcohol misuse or dependence. Therefore, the TEP recommended more clinical research be focused on measuring the response to treatment in ambulatory care settings. Prospective measurement tools include:

- AUDIT-C scores
- Weekly average drinking pattern (as used in NIAAA's pocket guide for Alcohol Screening and Brief Intervention)
- Number of heavy drinking days
- Days at work or school over days scheduled to be at work or school
- Number of missed appointments for addiction treatment

Patient Entered Data—Self-Administered Screening and Assessment

The TEP members also noted the need to move toward a documentation model that includes patient-reported data for self-administered screening tools. A review of existing assessment tools is included in the clinical research evidence (appendix C.3). Self-administered screening tools will help to minimize the burden of screening on the healthcare system and the patient. Future research should focus on screening and assessment tools that are practical for use in already overburdened ambulatory care settings.

5 Conclusion

The ONC-SAMHSA Behavioral Health CQM TEP, Alcohol Use domain subgroup, recommended six CQMs for prevention, identification and treatment of alcohol misuse for the HITECH Meaningful Use of Health IT Incentive program. Four of the recommended measures have not yet completed review by the NQF but represent opportunities to advance quality reporting for this domain. In addition, the TEP highlighted the need for additional research to support the development of measures for screening and brief intervention or counseling for adolescents, the development of outcome measures for alcohol abuse treatment, and the validation of self-administered screening and assessment tools for alcohol use.

Appendix A TEP Member List

COMMUNITY MEMBERS

Gavin Bart*, MD FACP FASAM, Director, Division of Addiction Medicine, Hennepin County Medical Center

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* delineates member with specific domain expertise in Alcohol Use

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Appendix B Meeting Schedule

BH CQM TEP Schedule and Topics – Revised 7/6/12		
Week #	**Week of:**	**Topic**
1	4/9-4/13	KICK-OFF – OPTION 1: 4/9: 1:00P-3:00P OPTION 2: 4/12: 12:30P–2:30P
2	4/16 3-4:30pm Eastern	Suicide/Trauma – Week 1
3	4/23 3-4:30pm Eastern	Autism – Week 1
4	4/30 3-4:30pm Eastern	Depression – Week 1
5	5/7 3-4:30pm Eastern	Drugs/Alcohol – Week 1
6	5/14 3-4:30pm Eastern	Suicide/Trauma – Week 2
7	5/21 3-4:30pm Eastern	Autism – Week 2
8	5/29 3-4:30pm Eastern	Depression – Week 2
9	6/4 3-4:30pm Eastern	Drugs/Alcohol – Week 2
10	6/11 3-4:30pm Eastern	Suicide/Trauma – Week 3
11	6/22 3-4:30pm Eastern	Autism – Week 3
12	6/25 3-4:30pm Eastern	Depression – Week 3
13	7/2 3-4:30pm Eastern	CANCELLED
14	7/9 3-4:30pm Eastern	Drugs/Alcohol – Week 3
TEP PHASE II		
15	7/16 3-4:30pm Eastern	Depression – Week 1
16	7/23 3-4:30pm Eastern	Drug Use/PDM – Week 1
17	7/30 3-4:30pm Eastern	Depression – Week 2 *
18	8/6 3-4:30pm Eastern	Drug Use/PDM – Week 2 *
ADDED	8/9 All day event	In person and Webinar
19	8/13 3-4:30pm Eastern	Depression – Week 3 *
20	8/20 3-4:30pm Eastern	Drug Use/PDM – Week 3 *
21	8/27 3-4:30pm Eastern	Depression – Week 4 *
22	9/3 3-4:30pm Eastern	Drug Use/PDM – Week 4 *
23	9/10 3-4:30pm Eastern	Depression – Week 5 *
24	9/17 3-4:30pm Eastern	Drug Use/PDM – Week 5 *
		*if needed

Appendix C Environmental Scans

C.1 NQF-Endorsed Measures

C.2 AHRQ Measures (Non-NQF-Endorsed)

C.3 Clinical Literature Search Matrix

C.4 Clinical Literature Search Summary

High Priority ALCOHOL USE Clinical Quality Measures for Meaningful Use (Federal Subgroup – 12/15/11)

NQF #	Measure Title	Measure Description	Numerator Statement	Denominator Statement	Measure Steward	Link to NQF website
NQF # 0110 EP Currently defined for EP Setting MUC#76	Bipolar Disorder and Major Depression: Appraisal for alcohol or chemical substance use	Percentage of patients with depression or bipolar disorder with evidence of an initial assessment that includes an appraisal for alcohol or chemical substance use	Documented assessment for use of alcohol and chemical substance use; to include at least one of the following: •Clinician documentation regarding presence or absence of alcohol and chemical substance use •Patient completed history/assessment form that addresses alcohol and chemical substance use that is documented as being acknowledged by clinician performing the assessment •Use of screening tools that address alcohol and chemical substance use AND 2 Timeframe for chart documentation of the assessment for alcohol/chemical substance use must be present prior to, or concurrent with, the visit where the treatment plan is documented as being initiated	UNIPOLAR DEPRESSION Patients 18 years of age or older with an initial diagnosis or new presentation/episode of depression AND Documentation of a diagnosis of depression; to include at least one of the following: • Codes 296.2x; 296.3x. 300.4 or 311 (ICD9CM or DSM-IV-TR) documented in body of chart, such as a pre-printed form completed by a clinician and/or codes documented in chart notes/forms such as a problem list. OR Diagnosis or Impression or working diagnosis documented in chart indicating depression OR Use of a screening/assessment tool for depression with a score or conclusion that patient is depressed and documentation that this information is used to establish or substantiate the diagnosis BIPOLAR DISORDER Patients 18 years of age or older with an initial or new episode of bipolar disorder AND Documentation of a diagnosis of bipolar disorder; to include at least one of the	Center for Quality Assessment and Improvement in Mental Health (CQAIMH)	http://www.qualityforum.org/MeasureDetails.aspx?actid=0&SubmissionId=1241#k=110&e=1&st=&sd=&mt=&cs=&ss=&s=n&so=a&p=1

NQF #	Measure Title	Measure Description	Numerator Statement	Denominator Statement	Measure Steward	Link to NQF website
				following: • Codes 296.0x; 296.1x; 296.4x; 296.5x; 296.6x; 296.7; 296.80; 296.81; 296.82; 296.89; 301.13 documented in body of chart, such as a pre-printed form completed by a clinician and/or codes documented in chart notes/forms OR 3 • Diagnosis or Impression or "working diagnosis" documented in chart indicating bipolar disorder OR • Use of a screening/assessment tool for bipolar disorder with a score or conclusion that patient has bipolar disorder and documentation that this information is used to establish or substantiate the diagnosis		
Not yet NQF endorsed Ref#1661-EH MUC#029 Currently defined for EH setting	SUB-1 Alcohol Use Screening	Hospitalized patients 18 years of age and older who are screened during the hospital stay using a validated screening questionnaire for unhealthy alcohol use. This measure is intended to be used as part of a set of 4	The number of patients who were screened for alcohol use using a validated screening questionnaire for unhealthy drinking.	The number of hospitalized inpatients 18 years of age and older	The Joint Commission (TJC)	N/A

NQF #	Measure Title	Measure Description	Numerator Statement	Denominator Statement	Measure Steward	Link to NQF website
		linked measures addressing Substance Use (SUB-1 Alcohol Use Screening ; SUB-2 Alcohol Use Brief Intervention Provided or Offered; SUB-3 Alcohol and Other Drug Use Disorder Treatment Provided or Offered at Discharge; SUB-4 Alcohol and Drug Use: Assessing Status after Discharge).				
Not yet NQF endorsed Ref#1663-EH MUC#030 Currently defined for EH setting	SUB-2 Alcohol Use Brief Intervention Provided or Offered and SUB-2a Alcohol Use Brief Intervention	The measure is reported as an overall rate which includes all hospitalized patients 18 years of age and older to whom a brief intervention was provided, or offered and refused, and a second rate, a subset of the first, which includes only those patients who received a brief intervention. The Provided or Offered rate (SUB-2), describes patients who screened positive for unhealthy alcohol use who received or refused a brief	SUB-2 The number of patients who received or refused a brief intervention. SUB-2a The number of patients who received a brief intervention.	The number of hospitalized inpatients 18 years of age and older who screen positive for unhealthy alcohol use or an alcohol use disorder (alcohol abuse or alcohol dependence).	The Joint Commission (TJC)	N/A

NQF #	Measure Title	Measure Description	Numerator Statement	Denominator Statement	Measure Steward	Link to NQF website
		intervention during the hospital stay. The Alcohol Use Brief Intervention (SUB-2a) rate describes only those who received the brief intervention during the hospital stay. Those who refused are not included. These measures are intended to be used as part of a set of 4 linked measures addressing Substance Use (SUB-1 Alcohol Use Screening ; SUB-2 Alcohol Use Brief Intervention Provided or Offered; SUB-3 Alcohol and Other Drug Use Disorder Treatment Provided or Offered at Discharge; SUB-4 Alcohol and Drug Use: Assessing Status after Discharge).				

Domain: Substance Use (Keyword: Alcohol Abuse) – Environmental Scan

Search Criteria: Alcohol Abuse and Ambulatory Setting

- **36 results initially identified**
  - 18 removed (NQF endorsed)
- **Final pool = 18 results for review**

Full List of Original Results*

(*includes NQF endorsed measures)

Click Here

Search Criteria: Alcohol Abuse and Hospitals Setting

- **15 results initially identified**
  - 4 removed (NQF endorsed)
- **Final pool = 11 results for review**

Full List of Original Results*

(*includes NQF endorsed measures)

Click Here

Domain: Substance Use (Keyword: Alcohol Abuse, Ambulatory) – Top Results

	Measure Review (M= Maybe, X=No, Y = yes)	Prioritized Result Summary
1	M	Behavioral health: percent of patients screened for alcohol misuse with AUDIT-C who meet or exceed a threshold score of 5 who have timely brief alcohol counseling. 2010 Oct. NQMC:006015 Veterans Health Administration - Federal Government Agency [U.S.].
2	Y	Preventive care and screening: percentage of patients aged 18 years and older who were screened for unhealthy alcohol use at least once during the two-year measurement period using a systematic screening method AND who received brief counseling if identified as an unhealthy alcohol user. 2008 Sep. NQMC:004458 Physician Consortium for Performance Improvement® - Clinical Specialty Collaboration.
3	M	Preventive care and screening: percentage of patients aged 18 years and older who were screened for unhealthy alcohol use at least once during the two-year measurement period using a systematic screening method. 2008 Sep. NQMC:004463 Physician Consortium for Performance Improvement® - Clinical Specialty Collaboration.
4	M	Substance use disorders: percentage of patients aged 18 years and older with a diagnosis of current alcohol dependence who were counseled regarding psychosocial AND pharmacologic treatment options for alcohol dependence within the 12 month reporting period. 2008 Jul. NQMC:004007 American Psychiatric Association - Medical Specialty Society; National Committee for Quality Assurance - Health Care Accreditation Organization; Physician Consortium for Performance Improvement® - Clinical Specialty Collaboration.

Domain: Substance Use (Keyword: Alcohol Abuse, Hospitals) – Top Results

	Measure Review (M= Maybe, X=No, Y = yes)	Prioritized Result Summary
1	M	**Behavioral health: percent of patients screened for alcohol misuse with AUDIT-C who meet or exceed a threshold score of 5 who have timely brief alcohol counseling.** 2010 Oct. NQMC:006015 Veterans Health Administration - Federal Government Agency [U.S.].
2	X	**Behavioral health: percent of eligible patients screened annually for alcohol misuse with AUDIT-C.** 2010 Oct. NQMC:006014 Veterans Health Administration - Federal Government Agency [U.S.].

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
Alcohol Screening and Brief Intervention in Primary Care													
Review Studies													
1	Kaner, E. (2010). NICE work if you can get it: Development of national guidance incorporating screening and brief intervention to prevent hazardous and harmful drinking in England. Drug and Alcohol Review, 29(6), 589-595.	2010	National guidelines on using SBI National Institute for Health and Clinical Excellence (NICE)						Evidence from the alcohol field and other clinical areas indicates that national prioritisation of brief alcohol intervention activity, by a body, such as NICE, is likely to be a key driver of implementation by practitioners.	This paper summarises a suite of complementary system-level and practice recommendations and considers their likely impact on screening and brief alcohol interventions.	H3		
2	Kaner, E. F. S., Brown, N., & Jackson, K. (2011). A systematic review of the impact of brief interventions on substance use and co-morbid physical and mental health conditions. Mental Health and Substance Use, 4(1), 38-61.	2011	BI in patients with comorbidity						Meta-analysis was not possible, because it was not possible to quantitatively pool the trial outcome data. There were generally positive outcomes of brief intervention targeting substance use and co-morbid physical health conditions but the evidence for comorbidity with other substance abuse or mental health issue was equivocal.	The evidence of positive brief intervention effects in patients with substance use and mental health problems or dual substance use was not convincing.	H1		
3	Solberg, L. I., Maciosek, M. V., & Edwards, N. M. (2008). Primary care intervention to reduce alcohol misuse ranking its health impact and cost effectiveness. Am J Prev Med, 34(2), 143-152.	2008	Impact of SBIRT						Screening and brief counseling was cost-saving from the societal perspective and had a cost-effectiveness ratio of $1755/QALY saved from the health-system perspective. Sensitivity analysis indicates that from both perspectives the service is very cost effective and may be cost saving.	These results make alcohol screening and counseling one of the highest-ranking preventive services among the 25 effective services evaluated using standardized methods.		M1	
4	Mulia, N., Schmidt, L. A., Ye, Y., & Greenfield, T. K. (2011). Preventing Disparities in Alcohol Screening and Brief Intervention: The Need to Move Beyond Primary Care. Alcoholism: Clinical and Experimental Research, 35(9), 1557-1560.	2011	Disparities in use of primary care						National data show significant racial/ethnic and socioeconomic differences in the rates at which at-risk drinkers and persons with alcohol use disorders come into contact with primary care providers.	Implementing SBI in mostly primary care settings could inadvertently widen the gap in alcohol-related health disparities.	H3		

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
5	Kaner, E. F. S., Dickinson, H. O., Beyer, F., Pienaar, E., Schlesinger, C., Campbell, F., et al. (2009). The effectiveness of brief alcohol interventions in primary care settings: A systematic review. Drug and Alcohol Review, 28(3), 301-323.	2009	Review	Multiple		Varies (Adult)	PC (24 trials), ED (5 trials)	>5800	At 1 year follow up, patients receiving brief intervention had a significant reduction in alcohol consumption compared with controls [mean difference: −38 g week−1, 95%CI (confidence interval): −54 to −23], although there was substantial heterogeneity between trials. Extended intervention was associated with a non-significantly increased reduction in alcohol consumption compared with brief intervention.	BI effective at reducing alcohol consumption in men, effects remained at 1 year follow-up, not enough evidence for effectiveness in women.	H1		
6	Saitz, R. (2010). "Alcohol screening and brief intervention in primary care: Absence of evidence for efficacy in people with dependence or very heavy drinking." Drug Alcohol Rev 29(6): 631-640.	2010	Meta-analysis of studies with dependence or very heavy drinking						Only 2 studies out of 16 included patients with heavy use or dependence- Meta-analysis is of 2 studies, total n = 199	Heavy drinkers/ dependent patients have been excluded from SBI.		M1	
7	Kaner EF, Dickinson HO, Beyer FR, Campbell F, Schlesinger C, Heather N, Saunders JB, Burnand B, Pienaar ED. Effectiveness of brief alcohol interventions in primary care populations. Cochrane Database of Systematic Reviews 2007, Issue 2. Art. No.: CD004148. DOI: 10.1002/14651858.CD004148.pub3	2007	Review of effectivness of BI in PC						Meta-analysis of 22 RCTs (enrolling 7,619 participants) showed that participants receiving brief intervention had lower alcohol consumption than the control group after follow-up of one year or longer (mean difference: -38 grams/week, 95% CI: -54 to -23),	Based on this 2007 review, when data were available by gender, the effect was clear in men at one year of follow up, but not in women.	H1		
8	Guth, S., Lindberg, S. A., Badger, G. J., Thomas, C. S., Rose, G. L., & Helzer, J. E. (2008). Brief intervention in alcohol-dependent versus nondependent individuals. J Stud Alcohol Drugs, 69(2), 243-250.	2008	Compare BI for alcohol dependent patients with others	CAGE			PC	326 (222 alcohol-dependent)	Similar decreases from before BI were observed in both groups through 6 months, although dependent participants drank on fewer days and significantly more on days on which they drank than did nondependent participants.	Alcohol-dependent patients also benefit from BI.	H2		

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
9	Wilson, G. B., Heather, N., & Kaner, E. F. (2011). New developments in brief interventions to treat problem drinking in nonspecialty health care settings. Curr Psychiatry Rep, 13(5), 422-429.	2011	Review of BI in multiple healthcare settings						Inconclusive results in hospitals and little evidence of long-term effects in this setting. Limited suggests effectiveness with young patients not admitted as a consequence of alcohol, dependent patients, and binge drinkers.	Influential BI components include high-quality change plans and provider characteristics.		M1	
10	Lavoie, D. (2010). Alcohol identification and brief advice in England: A major plank in alcohol harm reduction policy. Drug Alcohol Rev, 29(6), 608-611.	2010	BI policy in England				PC in England		Details efforts to implement SBIRT, including recent incentive packages that have been put in place to encourage primary care to implement these interventions. It describes the Screening and Intervention Programme for Sensible Drinking research program that is underway to clarify tools and methods to introduce and support these interventions	The English Department of Health views SBI as one of the most effective and cost-effective interventions that can be implemented among the range of available alcohol interventions for preventing harm.	H1		
11	Sullivan, L. E., Tetrault, J. M., Braithwaite, R. S., Turner, B. J., & Fiellin, D. A. (2011). A meta-analysis of the efficacy of nonphysician brief interventions for unhealthy alcohol use: implications for the patient-centered medical home. Am J Addict, 20(4), 343-356.	2011	BI by nonphysicians				PC	2,633	Excluding the one study that increased heterogeneity, the effect was smaller but reached statistical significance; nonphysician counseling was associated with 1.4 (95% CI = .3- 2.4) fewer standard drinks per week compared to control (p = .012).	Nonphysician brief interventions are modestly effective at reducing drinking in primary care patients with unhealthy alcohol use.	H1		
12	Jepson, R., Harris, F., Platt, S., & Tannahill, C. (2010). The effectiveness of interventions to change six health behaviours: a review of reviews. BMC Public Health, 10(1), 1-16.	2010	Review of interventions including alcohol misuse intervention						There is evidence of a small positive effect of brief behavioural counselling interventions in reducing alcohol intake. The most recent Cochrane review [98] of brief interventions delivered to people attending primary care (1-4 sessions) found that, overall, such interventions lower alcohol consumption.	When data were available by gender, the effect was clear in men at one year of follow up, but not in women. In addition, the authors concluded that longer duration of counselling probably has little additional effect.		M1	

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
13	Freedy, J. R., & Ryan, K. (2011). Alcohol Use Screening and Case Finding: Screening Tools, Clinical Clues, and Making the Diagnosis. Primary Care: Clinics in Office Practice, 38(1), 91-103.	2011	Discussion of 2-stage screening	Multiple	None	AD and adolescent	PC	N/A	Table of sensitivity, specificty for CAGE, TWEAK, AUDIT,T-ACE,MAST-G,HSS	Using a 2-stage approach to screening (sensitivity, >90% for stage 1; sensitivity/ specificity, 80%/80% for stage 2), time saving can be demonstrated for providers, staff, and patients.	H3		
Individual Studies													
14	Kypri, K., Langley, J. D., Saunders, J. B., Cashell-Smith, M. L., & Herbison, P. (2008). Randomized controlled trial of web-based alcohol screening and brief intervention in primary care. Arch Intern Med, 168(5), 530-536.	2008	Web-based SBI	Web-based SBI		17-29	University Primary care	975 College students	Relative to the control group, the single-dose e-SBI group at 6 months reported a lower frequency of drinking , less total consumption , and fewer academic problems . At 12 months, statistically significant differences in total consumption [equivalent to 3.5 standard drinks per week]) and in academic problems remained, and the AUDIT scores were 2.17 (95% CI, -1.10 to -3.24) points lower.	Web-based BI effective in college students, results remained at 6 and 12-month follow-up.	H2		
15	Madras, B. K., Compton, W. M., Avula, D., Stegbauer, T., Stein, J. B., & Clark, H. W. (2009). Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: comparison at intake and 6 months later. Drug Alcohol Depend, 99(1-3), 280-295.	2009	SBIRT effectiveness	DAST, AUDIT, CAGE, CRAFFT	SBIRT	Adult, adolescents	wide variety of medical settings	459,599 diverse patient population (Alaska Natives, American Indians, African-Americans, Caucasians, Hispanics),	Among persons recommended for brief treatment or referral to specialty treatment, self-reported improvements in general health (p<0.001), mental health (p<0.001), employment (p<0.001), housing status (p<0.001), and criminal behavior (p<0.001) were found	SBIRT was feasible to implement and the self-reported patient status at 6 months indicated significant improvements over baseline, for illicit drug use and heavy alcohol use, with functional domains improved, across a range of health care settings and a range of patients.	H2		

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
16	Daeppen, J. B., Bertholet, N., & Gaume, J. (2010). What process research tells us about brief intervention efficacy. Drug Alcohol Rev, 29(6), 612-616.	2010	BI trial at the emergency department				ED	987 at-risk drinkers	The overall results demonstrated a general decrease in alcohol use with no differences across groups.	BI should focus on the general MI attitude of counsellors who are capable of eliciting beneficial change talk from patients.			L3
17	Grothues, J. M., Bischof, G., Reinhardt, S., Meyer, C., John, U., & Rumpf, H. J. (2008). Effectiveness of brief alcohol interventions for general practice patients with problematic drinking behavior and comorbid anxiety or depressive disorders. Drug Alcohol Depend, 94(1-3), 214-220.	2008	BI in patients with comorbidity				PC	408	BI were significantly related to reduction of drinking in the non-comorbid (-2.64 g/alcohol vs. -8.61 g/alcohol; p=.03) but not in the comorbid subsample (-22.06 g/alcohol vs. -22.09 g/alcohol; p=.76).	BI did not significantly reduce drinking in patients with comorbid anxiety or depression.	H2		
18	Kaner, E., Bland, M., Cassidy, P., Coulton, S., Deluca, P., Drummond, C., et al. (2009). Screening and brief interventions for hazardous and harmful alcohol use in primary care: a cluster randomised controlled trial protocol. BMC Public Health, 9, 287.	2009	Protocol for RCT	modified single item (M-SASQ) or FAST screening tool			PC in the UK	minimum 744	The trial will evaluate the impact of screening and brief alcohol intervention in routine practice; thus its findings will be highly relevant to clinicians working in primary care in the UK.			M2	
19	Saitz, R., Horton, N. J., Cheng, D. M., & Samet, J. H. (2008). Alcohol counseling reflects higher quality of primary care. J Gen Intern Med, 23(9), 1482-1486.	2008	View of patients on SBI	Time line follow back	Brief counseling		PC	288 patients with unhealthy alcohol use	Alcohol counseling was significantly associated with higher quality of primary care in the areas of communication (adjusted mean PCAS scale scores: 85 vs. 76) and whole-person knowledge (67 vs. 59).	Although quality of primary care may not necessarily affect drinking, brief counseling for unhealthy alcohol use may enhance the quality of primary care.		M2	
20	Charbonney, E., McFarlan, A., Haas, B., Gentilello, L., & Ahmed, N. (2010). Alcohol, drugs and trauma: consequences, screening and intervention in 2009. Trauma, 12(1), 5-12.	2010	SBI in trauma care				Trauma centers and ED		The American College of Surgeons, Committee on Trauma had mandated a screening and subsequent intervention strategy for all Level I centres, and there is good evidence to support the efficacy of such programmes.	Clinicians can play a key role in reducing injury related to alcohol use through their participation in SBIRT.		M2	

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
21	Tariq, L., van den Berg, M., Hoogenveen, R. T., & van Baal, P. H. M. (2009). Cost-Effectiveness of an Opportunistic Screening Programme and Brief Intervention for Excessive Alcohol Use in Primary Care. PLoS ONE, 4(5), e5696.	2009	Cost-effectivness of SBI in PC	AUDIT 8+/no AUD			PC	Dutch	Extrapolated from decreased alcohol consumption to effects on health care costs and Quality Adjusted Life Years (QALYs) gained.In total, 56,000 QALYs were gained at an additional cost of J298,000,000 due to providing alcohol SBI in the target population, resulting in a cost-effectiveness ratio of J5,400 per QALY gained.	SBI is cost-effective in PC			L3
	Implementation												
	Review studies												
22	Williams, E. C., M. L. Johnson, et al. (2011). "Strategies to implement alcohol screening and brief intervention in primary care settings: a structured literature review." Psychol Addict Behav 25(2): 206-214.	2011	Implementation of SBI	Multiple	Varied		PC	533,903	Wide variation in rates of screening and BI (2-93% for screening and 0.9-73.1% for BI) Describe programs that implement SBI and investigate possible reasons for varying rates of screening and BI	Strategies to increase implementation			L1
23	Heather, N. (2010). Breaking new ground in the study and practice of alcohol brief interventions. Drug and Alcohol Review, 29(6), 584-588.	2010	Overview of brief intervention						This has a very nice overview of brief intervention - What does it mean? What have the research results shown? What settings? Generalizability?		H3		
24	Nilsen, P. (2010). Brief alcohol intervention--where to from here? Challenges remain for research and practice. Addiction, 105(6), 954-959.	2010	BI in different settings						More widespread implementation of BI will require many different interventions (efforts, actions, initiatives, etc.) at different interlinked levels, from implementation interventions targeting individual health professionals' knowledge, skills, attitudes and behaviours concerning alcohol issues, BI and behaviour change counselling to efforts at the organizational and societal levels that influence the conditions for delivering BI as part of routine health care.	To increase implementation, interventions need to target individual health professionals' knowledge, skills, attitudes and behaviours concerning alcohol issues			L3

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
25	McCormick, R., Docherty, B., Segura, L., Colom, J., Gual, A., Cassidy, P., et al. (2010). The research translation problem: Alcohol screening and brief intervention in primary care - Real world evidence supports theory. [Article]. Drugs: Education, Prevention & Policy, 17(6), 732-748.	2010	Reviews a few case studies of implementation of SBI	Multiple	Multiple	Adult	PC	England, New Zealand and Catalonia	Owing to considerable variation between practice preferences, a range of options should be included in recommended screening procedures; however AUDIT should be gold standard; AUDIT-C and FAST good for short screens	Should allow for different types of screening and interventions that match the culture of the practice	H3		
	Individual studies												
26	Aspy, C. B., Mold, J. W., Thompson, D. M., Blondell, R. D., Landers, P. S., Reilly, K. E., et al. (2008). Integrating screening and interventions for unhealthy behaviors into primary care practices. Am J Prev Med, 35(5 Suppl), S373-380.	2008	Methods to increase implementation in PC						Of 30 clinicians invited, nine agreed to participate (30%). Implementation: Average screening and brief-intervention rates increased 25 and 10.8 percentage points, respectively, for all behaviors. However, the addition of more than two behaviors was generally unsuccessful.	Barriers to implementation in PC		M3	
27	Nilsen, P., Wahlin, S., & Heather, N. (2011). Implementing brief interventions in health care: lessons learned from the Swedish Risk Drinking Project. Int J Environ Res Public Health, 8(9), 3609-3627.	2011	National implementation endeavour in Sweden						The Risk Drinking Project applied a multifaceted approach to target various barriers to BI implementation.Multifaceted approaches tend to be more effective than single interventions because they address multiple barriers to implementation.	Implementation was successful because proposed routines and practices were contextually adapted to the everyday reality of the health care providers and to the settings in question.	H2		
28	van Beurden, I., Anderson, P., Akkermans, R. P., Grol, R. P., Wensing, M., & Laurant, M. G. (2012). Involvement of general practitioners in managing alcohol problems: a randomized controlled trial of a tailored improvement programme. Addiction, epub ahead of print.	2012	Implementation of SBI		Education and training of PC physicians		PC	6318 patiets, 765 at risk	The quality improvement programme enhanced the initial improvement in behaviour and it tempered waning (intervention group), compared to our control condition, resulting in average improvement rates of 5% (screening) and 2% (advice-giving) at 12-month follow-up (not significant).	A tailored, multi-faceted programme aimed at improving general practitioner management of alcohol consumption in their patients failed to show an effect and proved difficult to implement.			L2

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
29	Shin, S. S., Livchits, V., Nelson, A. K., Lastimoso, C. S., Yanova, G. V., Yanov, S. A., et al. (2012). Implementing Evidence-Based Alcohol Interventions in a Resource-Limited Setting: Novel Delivery Strategies in Tomsk, Russia. Harvard Review of Psychiatry, 20(1), 58-67.	2012	Implementation of SBI						We report the innovations and challenges to intervention design, training, and delivery of both pharmacologic and behavioral alcohol interventions within programmatic tuberculosis treatment services.	Implementation in resource-limited situation.		M2	
30	Amaral, M. B., Ronzani, T. M., & Souza-Formigoni, M. L. O. (2010). Process evaluation of the implementation of a screening and brief intervention program for alcohol risk in primary health care: An experience in Brazil. Drug and Alcohol Review, 29(2), 162-168.	2010	International implementation	AUDIT		Adult	two PHC settings at the Brazilian city of Juiz de Fora		The barriers and facilitators were related to two main factors: organisational culture and personal attitudes.	SBI faces significant challenges before it can be implemented as a routine procedure in PHC settings in Brazil.			L3
31	Rose, H. L., Miller, P. M., Nemeth, L. S., Jenkins, R. G., Nietert, P. J., Wessell, A. M., et al. (2008). Alcohol screening and brief counseling in a primary care hypertensive population: a quality improvement intervention. Addiction, 103(8), 1271-1280.	2008	Implementation of SBI						Primary care practices receiving an alcohol-focused intervention over 2 years improved rates of alcohol screening for their hypertensive population.	Increased implementation of alcohol counseling for high-risk drinking, alcohol abuse or alcohol dependence led to changes in patient blood pressures.			L2
32	Robinson, R. L. (2010). The Advanced Practice Nurse Role in Instituting Screening, Brief Intervention, and Referral to Treatment Program at The Children's Hospital of Philadelphia. Journal of Trauma Nursing, 17(2), 74-79 10.1097/JTN.1090b1013e3181e73717.	2010	Implementation of SBI in Trauma						This article summarizes the role of trauma advanced practice nurses in establishing an SBIRT program.	Nonphysicians can be instrumental in SBIRT			L2
33	Peltzer, K., Matseke, G., & Azwihangwisi, M. (2008). Evaluation of alcohol screening and brief intervention in routine practice of primary care nurses in Vhembe district, South Africa. Croat Med J, 49(3), 392-401.	2008	BI implementation				18 primary health care services in Vhembe district, South Africa	n=2670	Factors discriminating the clinics with good or poor SBI implementation included the percentage of nurses trained in SBI, support visits, clinical workload, competing priorities, team work, innovation adoption curve, perceived complexity of innovation, compatibility beliefs, trialability, and observability of SBI.	To improve SBI implementation as a routine practice, more attention should be paid to training modalities, clinic organization, and changes in the attitudes of nurses.			L3

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
AUDIT-C													
Review Studies													
34	Meneses-Gaya, C. d., Zuardi, A. W., Loureiro, S. R., & Crippa, J. A. S. (2009). Alcohol Use Disorders Identification Test (AUDIT): an updated systematic review of psychometric properties. Psychology & Neuroscience, 2, 83-97.	2000	AUDIT						The studies confirmed the validity and efficiency of the AUDIT in the identification of harmful use, abuse, and dependence of alcohol, both in the original version and in modified ones.	The results also showed that the reduced versions have satisfactory psychometric qualities, sometimes with sensitivity values higher than those of the AUDIT itself.	H1		
Individual Studies													
35	Dawson, D. A., Grant, B. F., Stinson, F. S., & Zhou, Y. (2005). Effectiveness of the derived Alcohol Use Disorders Identification Test (AUDIT-C) in screening for alcohol use disorders and risk drinking in the US general population. Alcohol Clin Exp Res, 29(5), 844-854.	2005	AUDIT-C	AUDIT-C		Adult	National Sample	NESARC	High sensitivity and specificty for alcohol dependence and for risk drinking	AUDIT-C a valid screen.	H2		
36	Kaarne, T., Aalto, M., Kuokkanen, M., & SeppÄ, K. (2010). AUDIT-C, AUDIT-3 and AUDIT-QF in screening risky drinking among Finnish occupational health-care patients. Drug and Alcohol Review, 29(5), 563-567.	2010	Comparison	AUDIT, AUDIT-C, AUDIT-3, AUDIT-QF		Adult	Occupational health	759	Short questionnaires perform almost as well as the whole AUDIT screening risky drinking among men and women.	Need different cut-offs for men and women		M2	
37	Krenek, M., Maisto, S. A., Funderburk, J. S., & Drayer, R. (2011). Severity of alcohol problems and readiness to change alcohol use in primary care. Addictive Behaviors, 36(5), 512-515.	2011	AUDIT-C and AUDIT as predictors of readiness to change	AUDIT-C, AUDIT		mean age 56	VA	114	The AUDIT, both AUDIT-C scores, and number of dependence symptoms significantly predicted readiness to change independent of demographic variables. The AUDIT accounted for the greatest percentage of variance in readiness to change (19%).	Readiness to change may be clinically useful for providers identifying patients for brief alcohol interventions.			L2

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
38	Frank, D., DeBenedetti, A. F., Volk, R. J., Williams, E. C., Kivlahan, D. R., & Bradley, K. A. (2008). Effectiveness of the AUDIT-C as a screening test for alcohol misuse in three race/ethnic groups. J Gen Intern Med, 23(6), 781-787.	2008	AUDIT-C in 3 Race groups	AUDIT-C, CAGE, compared against DSM-IV diagnosis (Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS))		Adult	PC	906 women 386 men	AUDIT-C effective in men and women in White, African-American and Hispanic groups	The overall performance of the AUDIT-C was excellent in all 3 racial/ethnic groups.	H2		
Other AUD Screens													
	Review Studies												
39	Pilowsky, D. J. and L. T. Wu (2012). "Screening for alcohol and drug use disorders among adults in primary care: a review." Subst Abuse Rehabil 3(1): 25-34.	2012	Review		AUDIT, AUDIT-C, CAGE	Adult	PC, ED	Review: Multiple (CAGE, single-item, AUDIT, AUDIT-C)	Much higher rates of AUDs in PC setting than in national sample. Provides sensitivity/specificity for some common screens	Screening, brief intervention, and referral for treatment are feasible and effective in primary care settings, provided that funding for screening is available, along with brief interventions and treatment facilities to which patients can be referred and treated promptly.	H1		
	Individual studies												

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
40	Dawson, D. A., Pulay, A. J., & Grant, B. F. (2010). A comparison of two single-item screeners for hazardous drinking and alcohol use disorder. Alcohol Clin Exp Res, 34(2), 364-374.	2010	Comparison	4-5 , maximum drinks in year		Adult	National sample	NESARC	At the optimal cutpoints for the total population, the sensitivity and specificity of maximum drinks were 89% and 82% for dependence at > or =5 drinks, 90% and 79% for any AUD at > or =4 drinks, and 90% and 96% for any AUD or hazardous drinking at > or =4 drinks. Comparable values of sensitivity and specificity for 5+/4+ frequency were 90% and 83% at > or =3 times a year, 87% and 82% at > or =once a year, and 88% and 100% at > or =once a year, respectively	Results supported a past-year reference period for frequency of 5+/4+ drinks and substantiated gender- and age-specific thresholds for defining risk drinking	H2		
40	Saitz, R., Cheng, D. M., Allensworth-Davies, D., Winter, M., & Smith, P. C. (2012). THE ABILITY OF SINGLE SCREENING QUESTIONS FOR UNHEALTHYALCOHOL AND OTHER DRUG USE TO IDENTIFY SUBSTANCE DEPENDENCE IN PRIMARY CARE J. Gen. Internal Medicine, 27, S329.	2012	Single item screen	4-5 , maximum drinks in year			PC	286	Compare Single item with DAST, and AUDIT-C SSQs can identify alcohol and other drug dependence, with test characteristics similar to, or in the case of alcohol, possibly better than longer screening tools (based on positive likelihood ratio CIs).	SSQs may be useful for both screening and for severity assessment (to identify substance dependence), providing information needed and overcoming a barrier (lengthy questionnaires) to dissemination of screening and brief intervention in primary care settings.	H2		
42	Lee, J. D., Delbanco, B., Wu, E., & Gourevitch, M. N. (2011). Substance Use Prevalence and Screening Instrument Comparisons in Urban Primary Care. Substance Abuse, 32(3), 128-134.	2011	Comparison screening instruments	ASSIST, TICS, single item, EMR		Adult	Urban PC	236	The NIAAA single item correlated closely with alcohol ASSIST. TICS and EMR were less sensitive for any nontobacco substance use.	Single-item screen valid in urban primary care.		M2	

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
43	Smith, P. C., S. M. Schmidt, et al. (2009). "Primary care validation of a single-question alcohol screening test." J Gen Intern Med 24(7): 783-788.	2009		"How many times in the past year have you had X or more drinks in a day?", where X is 5 for men and 4 for women, and a response of >1 is considered positive.		Adult	PC	286	The single-question screen was 81.8% sensitive and 79.3% specific for the detection of unhealthy alcohol use. It was slightly more sensitive (87.9%,) but was less specific (66.8%) for the detection of a current alcohol use disorder.	These findings support the use of this brief screen in primary care.	H2		
44	Wu, L. T., D. G. Blazer, et al. (2012). "Alcohol and drug dependence symptom items as brief screeners for substance use disorders: results from the Clinical Trials Network." J Psychiatr Res 46(3): 360-369.	2012			Dependence items from DSM-IV	Adult	OT	Clinical trials network n =920	The iems "larger amounts" and "inabilty to cut down" were good indicators of problems Clinical trial network, n -=920	Early stage of developing screen			L3
Youth													
	Review studies												
45	Newton, A. S., Gokiert, R., Mabood, N., Ata, N., Dong, K., Ali, S., et al. (2011). Instruments to detect alcohol and other drug misuse in the emergency department: a systematic review. Pediatrics, 128(1), e180-192.	2011	Review of screening for youth in ED			<=21	ED		Of the 1545 references initially identified, 6 studies met inclusion criteria; these studies evaluated 11 instruments for universal or targeted screening of alcohol misuse. Instruments based on diagnostic criteria for AOD disorders were effective in detecting alcohol abuse and dependence (sensitivity: 0.88; specificity: 0.90; LR(+): 8.80)	On the basis of the current evidence, recommend emergency care clinicians use a 2-question instrument for detecting youth alcohol misuse			
46	Yuma-Guerrero, P. J., Lawson, K. A., Velasquez, M. M., von Sternberg, K., Maxson, T., & Garcia, N. (2012). Screening, Brief Intervention, and Referral for Alcohol Use in Adolescents: A Systematic Review. Pediatrics.	2012	Review of SBIRT for adolescents				Acute care		Four of the 7 studies reviewed demonstrated a significant intervention effect; however, no one intervention reduced both alcohol consumption and alcohol-related consequences. Two of these 4 studies only included patients ages 18 and older.	Based on existing evidence, it is not clear whether SBIRT is an effective approach to risky alcohol use among adolescent patients in acute care.	H1		

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						Age Range	Setting	Sample			High	Med	Low
47	Feinstein, E. C., Richter, L., & Foster, S. E. (2012). Addressing the critical health problem of adolescent substance use through health care, research, and public policy. J Adolesc Health, 50(5), 431-436.	2012	Overview of adolescent substanced use						The National Center on Addiction and Substance Abuse at Columbia University (CASA Columbia) undertook a study to explore how adolescent brain development relates to the risk of substance use and addiction; the cultural influences that create an environment in which substance use is considered normative behavior; individual factors that make some teens more disposed to substance use and addiction; and evidence-based prevention and treatment strategies for addressing this problem.	Addiction can be treated and managed effectively within routine health care practice and specialty care.		M3	
48	Saitz R, N. T. S. (2010). Adolescent alcohol use and violence: Are brief interventions the answer? JAMA: The Journal of the American Medical Association, 304(5), 575-577.	2010	Review of BI in youth						3 randomized trials have tested brief intervention after screening in emergency departments among young people, and results have been inconsistent	No evidence BI for youth	H1		
49	Fernandez-Hermida, J. R., Calafat, A., Becoña, E., Tsertsvadze, A., & Foxcroft, D. R. (2012). Assessment of generalizability, applicability and predictability (GAP) for evaluating external validity in studies of universal family-based prevention of alcohol misuse in young people: systematic methodological review of randomized controlled trials. Addiction.	2012	Review	Multiple	Multiple	<= 18			Studies evaluating the benefits of family-based prevention of alcohol misuse in young people are generally inadequate at reporting information relevant to generalizability of the findings or implications for health or social outcomes. Researchers, study authors, peer reviewers, journal editors and scientific societies should take steps to improve the reporting of information relevant to external validity in prevention trials	More evidence based on well-designed studies are needed.			L1
	Individual studies												
50	Harris, S. K., Csémy, L., Sherritt, L., Starostova, O., Van Hook, S., Johnson, J., et al. (2012). Computer-Facilitated Substance Use Screening and Brief Advice for Teens in Primary Care: An International Trial. PEDIATRICS, 129(6), 1072-1082.	2012			Computer-assisted SBI, based on CRAFFT	12-18	PC	19 medical offices	Decreased alcohol use by teens, remained 3 months and 12 months after intervention	Computer-assisted SBI found effective for youth	H2		

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
51	Neighbors, C. J., Barnett, N. P., Rohsenow, D. J., Colby, S. M., & Monti, P. M. (2010). Cost-effectiveness of a motivational intervention for alcohol-involved youth in a hospital emergency department. J Stud Alcohol Drugs, 71(3), 384-394.	2010	cost-effectiveness		MI	18-19	ED	94	The cost-effectiveness ratios for motivational interviewing were more favorable than standard care across all study outcomes and better for men than women.	Motivational interviewing has higher cost-effectiveness than standard care for alcohol-involved youth		M2	
52	Hingson, R. W., Heeren, T., Edwards, E. M., & Saitz, R. (2012). Young adults at risk for excess alcohol consumption are often not asked or counseled about drinking alcohol. J Gen Intern Med, 27(2), 179-184.	2012	Implementation			18-39	random digit dial	3409	Of respondents, 67% saw a physician in the past year, but only 14% of those exceeding guidelines were asked and advised about risky drinking patterns. Persons 18-25 were the most likely to exceed guidelines (68% vs. 56%, p<0.001) but were least often asked about drinking (34% vs. 54%, p<0.001).	Despite practice guidelines, few young adults are asked and advised by physicians about excessive alcohol consumption.	H2		
53	Santis, R., Garmendia, M. L., Acuña, G., Alvarado, M. E., & Arteaga, O. (2009). The Alcohol Use Disorders Identification Test (AUDIT) as a screening instrument for adolescents. Drug and Alcohol Dependence, 103(3), 155-158.	2009	AUDIT for screening adolescents	AUDIT		Mean age 15.9		Chilean adolescents 42 female and 53 male	The AUDIT is a reliable and valid tool for identifying adolescents engaged in hazardous, harmful, and dependent alcohol use. Internal consistency, test–retest reliability, sensitivity, and specificity were satisfactory.	The suggested cut-off points make screening with the AUDIT more accurate for adolescent populations.			L2
54	Spijkerman, R., Roek, M. A., Vermulst, A., Lemmers, L., Huiberts, A., & Engels, R. C. (2010). Effectiveness of a web-based brief alcohol intervention and added value of normative feedback in reducing underage drinking: a randomized controlled trial. J Med Internet Res, 12(5), e65.	2010	RCT testing effectiveness of web-based intervention		(1) Web-based brief alcohol intervention without normative feedback, (2) Web-based brief alcohol intervention with normative feedback,	15-20	No	575 online volunteers	Main effects of the intervention were found only in the multiple imputed dataset for the original sample suggesting that the intervention without normative feedback reduced weekly drinking in the total group both 1 and 3 months after the intervention . Furthermore, the intervention with normative feedback reduced weekly drinking only at 1 month after the intervention There was also a marginally significant trend of the intervention without normative feedback on responsible drinking at the 3-month follow-up implying a small increase in moderate drinking at the 3-month follow-up.	Web-based intervention is effective for youth			L2

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
55	Kelly, T. M., Donovan, J. E., Chung, T., Bukstein, O. G., & Cornelius, J. R. (2009). Brief screens for detecting alcohol use disorder among 18-20 year old young adults in emergency departments: Comparing AUDIT-C, CRAFFT, RAPS4-QF, FAST, RUFT-Cut, and DSM-IV 2-Item Scale. Addictive Behaviors, 34(8), 668-674.	2009	Compare screens for young adults	AUDIT-C, CRAFFT, RAPS4-QF, FAST, RUFT-Cut, DSM-IV 2-item scale		18-20	ED	181	Of these instruments, the DSM-IV 2-Item Scale performed best for identifying AUD (88% sensitivity and 90% specificity), followed by the FAST and the AUDIT-C.	Brief screens effective for youth		M2	
56	Bernstein, J., Heeren, T., Edward, E., Dorfman, D., Bliss, C., Winter, M., et al. (2010). A Brief Motivational Interview in a Pediatric Emergency Department, Plus 10-day Telephone Follow-up, Increases Attempts to Quit Drinking Among Youth and Young Adults Who Screen Positive for Problematic Drinking. Academic Emergency Medicine, 17(8), 890-902.	2010	Randomized trial of BMI youth in ED	AUDIT	The I group received a peer-conducted motivational intervention, referral to community resources and treatment if indicated, and a 10-day booster in addition to assessment.	14-21	ED	853	Brief motivational intervention resulted in significant efforts to change behavior (quit drinking and be careful about situations while drinking) but did not alter consumption or consequences.	No changes in youth drinking or consequences following motivational interviewing with telephone followup		M2	
57	Clark, D. B., & Moss, H. B. (2010). Providing alcohol-related screening and brief interventions to adolescents through health care systems: obstacles and solutions. PLoS medicine, 7(3), e1000214.	2010	Overview of SBI for adolescents						SBIRT goals for adolescent patients need to be expanded from an exclusive focus on AUD to alcohol abstinence promotion and binge drinking prevention. Screening and assessment methods applicable in typical clinical practice settings need to be developed and validated.	SBIRT goals for adolescent patients need to be expanded from an exclusive focus on AUD to alcohol abstinence promotion and binge drinking prevention.		M3	

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
58	Fleming, M. F., Balousek, S. L., Grossberg, P. M., Mundt, M. P., Brown, D., Wiegel, J. R., et al. (2010). Brief physician advice for heavy drinking college students: a randomized controlled trial in college health clinics. J Stud Alcohol Drugs, 71(1), 23-31.	2010	RCT of SBI in college students	health screening survey	Two 15-minute visits with the physician were scheduled 1 month apart (brief-intervention and reinforcement session). Each patient received a follow-up phone call or email from the primary care interventionist at 2 weeks after the fi rst visit and 1 month after the second visit.	College, 18+	Health clinic	control (n = 493) or intervention (n = 493)	At 12 months, the experimental subjects reduced their 28-day drinking totals by 27.2%, and the control group reduced their totals by 21%. There was no difference on the other outcome measures of interest, such as frequency of excessive heavy drinking, health care utilization, injuries, drunk driving, depression, or tobacco use.	Drinking was significantly lower in the group of college students given brief intervention. No differences on other outcome measures.		M2	
59	Committee on Substance Abuse Williams, J. F., Ammerman, S. D., Levy, S. J. L., Sims, T. H., Smith, V. C., & Wunsch, M. J. (2011). POLICY STATEMENT Substance Use Screening, Brief Intervention, and Referral to Treatment for Pediatricians. PEDIATRICS, 128(5), E1330-E1340.	2011	SBIRT Recommendations to pediatricians	CRAFFT	SBIRT	Adolescence	Pediatrician		This statement addresses practitioner challenges posed by the spectrum of pediatric substance use and presents an algorithmbased approach to augment the pediatrician's confidence and abilities related to substance use screening, brief intervention, and referral to treatment in the primary care setting.	This statement addresses practitioner challenges posed by the spectrum of pediatric substance use.		M3	
60	Sterling, S. A., Weisner, C. M., Hessel, A. N., & Duhe, J. (2010). Screening for youth alcohol and drug use in primary care: predictors and implications for practice. Alcoholism-clinical and experimental research, 34(8), 119A-119A.	2010	Implementation			Adolescent	Pediatric primary care		Findings suggest that organizational factors and lack of training and comfort with screening impact screening and intervention with adolescents with AOD problems, with implications for PCP training and practice.	Need to increase training and comfort with SBIRT for youth			L2

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
61	Walton M., C. S. T. S. J. T., & et al. (2010). Effects of a brief intervention for reducing violence and alcohol misuse among adolescents: A randomized controlled trial. JAMA: The Journal of the American Medical Association, 304(5), 527-535.	2010	BI for violence and alcohol use in adolescents			14-18	ED	3338	At 6 months, participants in the therapist intervention showed self-reported reductions in alcohol consequences (therapist, −32.2%; control, −17.7%; odds ratio, 0.56; 95% CI, 0.34-0.91) compared with controls; participants in the computer intervention also showed self-reported reductions in alcohol consequences (computer, −29.1%; control, −17.7%	Evidence of effective BI for adolescents	H2		
62	Amaro, H., Reed, E., Rowe, E., Picci, J., Mantella, P., & Prado, G. (2010). Brief screening and intervention for alcohol and drug use in a college student health clinic: feasibility, implementation, and outcomes. Journal of American college health : J of ACH, 58(4), 357-364.	2010	BSI in college health clinic	CRAFFT	The BASICS intervention consisted of 2 sessions (45 to 60 minutes in length each),	College, 18+	College health clinic	449 undergrads	Drinking and drug use decreased between baseline and 6 months	2 sessions of intervention lasting 45-60 minutes were found successful in decreasing drinking in college students.			L2
63	Cunningham, R. M., Chermack, S. T., Zimmerman, M. A., Shope, J. T., Bingham, C. R., Blow, F. C., et al. (2012). Brief Motivational Interviewing Intervention for Peer Violence and Alcohol Use in Teens: One-Year Follow-up. Pediatrics, 129(6), 1083-1090.	2012	Follow-up of BMI in teens	alcohol and violence	BI delivered by a computer or therapist assisted by a computer	14-18	ED	3338	In comparison with the control group, the therapist assisted by a computer group showed significant reductions in peer aggression and peer victimization at 12 months. BI and control groups did not differ on alcohol-related variables at 12 months.	Computer assistance may be effective		M2	
Medication-assisted treatment													
	Review studies												
	Individual studies												
64	Kahan, M., Wilson, L., Midmer, D., Ordean, A., & Lim, H. (2009). Short-term outcomes in patients attending a primary care-based addiction shared care program. Can Fam Physician, 55(11), 1108-1109 e1105.				Brief counseling, planned outpatient medical detoxification, pharmacotherapy, and referral to treatment programs		Primary care-based shared care program		Among 33 problem drinkers, the mean number of standard drinks consumed per week declined from 32.9 at baseline to 9.6 at follow-up (P < .0005)	Shared care is a promising new strategy for delivering addiction intervention. Further evaluation is warranted, with more complete follow-up and objective outcome measures.			L2

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						Age Range	Setting	Sample			High	Med	Low
65	Heffner, J. L., Tran, G. Q., Johnson, C. S., Barrett, S. W., Blom, T. J., Thompson, R. D., et al. (2010). Combining motivational interviewing with compliance enhancement therapy (MI-CET): development and preliminary evaluation of a new, manual-guided psychosocial adjunct to alcohol-dependence pharmacotherapy. J Stud Alcohol Drugs, 71(1), 61-70.	2010	RCT of medication +		motivational interviewing and compliance enhancement therapy (MI-CET) +pharmacotherapy			121 treatment-seeking adults	High rates of medication adherence (79% of citalopram and 91% of placebo completers took > or = 80% of doses), session attendance (average of 90% for citalopram and 93% for placebo groups), and study completion (81% for citalopram and 88% for placebo groups) were obtained in the present study using MI-CET	Medication-assisted therapy is enhanced with compliance enhancement therapy			L2
66	Ernst, D. B., Pettinati, H. M., Weiss, R. D., Donovan, D. M., & Longabaugh, R. (2008). An Intervention for Treating Alcohol Dependence: Relating Elements of Medical Management to Patient Outcomes With Implications for Primary Care. The Annals of Family Medicine, 6(5), 435-440.	2008	RCT testing interventions and medications		naltrexone and acamprosate, with Medical Management, with or without specialty alcohol treatment				More Medical Management visits attended and less total time spent in Medical Management treatment was associated with more days of abstinence from alcohol, reductions in heavy alcohol drinking, and a higher likelihood of clinical improvement.	Medically trained clinicians with minimal specialty training in alcohol dependence treatments were able to deliver a brief and effective medication management intervention that was designed to be consistent with primary care practice.	H2		
67	Lee, J. D., Grossman, E., DiRocco, D., Truncali, A., Hanley, K., Stevens, D., et al. (2010). Extended-release naltrexone for treatment of alcohol dependence in primary care. J Subst Abuse Treat, 39(1), 14-21.	2010	Medication-assisted treatment	timeline followback	Medical management and 3 naltrexone injections	Adult	PC	Adults seeking treatment	median drinks per day decreased from 4.1 (95% confidence interval = 2.9-6) at baseline to 0.5 (0-1.7) during Month 3.	Extended-release naltrexone delivered in a primary care MM model appears a feasible and acceptable treatment for alcohol dependence.		M2	
Technological aids													

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
68	Rose, G., MacLean, C., Skelly, J., Badger, G., Ferraro, T., & Helzer, J. (2010). Interactive Voice Response Technology Can Deliver Alcohol Screening and Brief Intervention in Primary Care. Journal of General Internal Medicine, 25(4), 340-344.	2010	IVR SBI	Exceed 5 (4) drinks per occasion? Do you feel you drink too much?	(1) Ask about use; (2) Assess problems; (3)Tailored Advice and Assistance for change, and (4) Follow up for continued support.	mean=43	PC	n=30	About 40% of subjects indicated IVR-BI had motivated them to change. About half of the patients had discussed drinking with their provider at the visit.On average, a 25% reduction in alcohol use was reported two weeks after the clinic visit	IVR is a possible alternative to physician brief intervention			L2
69	Helzer, J. E., Rose, G. L., Badger, G. J., Searles, J. S., Thomas, C. S., Lindberg, S. A., et al. (2008). Using interactive voice response to enhance brief alcohol intervention in primary care settings. J Stud Alcohol Drugs, 69(2), 251-258.	2008	IVR SBI		BI , BI+IVR, BI+IVR+monthly feedback to patient	21+	15 primary care clinics	372	Of those invited to use the IVR, 90% initiated use and made 95% of the calls while they remained engaged with the system; increased drinking awareness . Overall, the IVR groups reported higher consumption on the Timeline Followback (TLFB). May have been confound with increased drinking awareness	IVR is a feasible technology for behavioral self-monitoring in primary care clinics. IVR with regular feedback may be an effective therapeutic enhancement to BI.		M2	
70	Lotfipour, S., Cisneros, V., Chakravarthy, B., Barrios, C., Anderson, C. L., Fox, J. C., et al. (2012). Assessment of readiness to change and relationship to AUDIT score in a trauma population utilizing computerized alcohol screening and brief intervention. Substance Abuse.	2012	Readiness to change and feasibility of computer-assisted SBI	AUDIT	Computer-assisted SBI		Trauma	1145 trauma patients	A high percentage of trauma patients (92%) found CASI easy and a comfort in use (87%).	Bilingual computerized technology for trauma patients is feasible, acceptable, and an innovative approach to alcohol screening, brief intervention and referral to treatment in a tertiary care university		M2	
71	Williams, E. C., Achtmeyer, C. E., Kivlahan, D. R., Greenberg, D., Merrill, J. O., Wickizer, T. M., et al. (2010). Evaluation of an electronic clinical reminder to facilitate brief alcohol-counseling interventions in primary care. J Stud Alcohol Drugs, 71(5), 720-725.	2010	Electronic reminder for BI in PC	AUDIT-C	clinical reminder	Adult	Veterans Affairs general medicine clinic	N= 22,863	Access to the clinical reminder was not significantly associated with resolution of unhealthy drinking in 1,358 patients in the outcomes cohort.	More active implementation efforts may be needed to get brief interventions onto the agenda of busy primary care providers.		M3	

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
72	Choo, E. K., Ranney, M. L., Aggarwal, N., & Boudreaux, E. D. (2012). A Systematic Review of Emergency Department Technology-based Behavioral Health Interventions. Academic Emergency Medicine, 19(3), 318-328.	2012	Technology-based intervention				ED		The greatest number of studies targeted alcohol/substance use (n = 8, 40%).Overall, studies showed high acceptability and feasibility of individual computer innovations, although study quality varied greatly. Evidence for clinical efficacy across health behaviors was modest, with few studies addressing meaningful clinical outcomes.	Potential to use computer-assisted SBIRT		M1	
73	Vaca, F. E., Winn, D., Anderson, C. L., Kim, D., & Arcila, M. (2011). Six-Month Follow-Up of Computerized Alcohol Screening, Brief Intervention, and Referral to Treatment in the Emergency Department. Substance Abuse, 32(3), 144-152.	2011	Computerized SBI	AUDIT	Computerized brief intervention		ED	385 ED patients	Forty-seven percent of the study sample of at-risk patients were no longer drinking over the National Institute on Alcohol Abuse and Alcoholism (NIAAA)-recommended limits. Reductions were greater for patients with Alcohol Use Disorders Identification Test (AUDIT) scores of 1 to 7. Readiness to change was a good predictor of drinking below the recommended limits.	The use of computerized ED-SBIRT with integrated personalized messaging and brief negotiated interview holds promise as a viable screening and intervention modality for a wide range of emergency department patients.		M2	
74	Kapoor, A., Kraemer, K. L., Smith, K. J., Roberts, M. S., & Saitz, R. (2009). Cost-effectiveness of screening for unhealthy alcohol use with % carbohydrate deficient transferrin: results from a literature-based decision analytic computer model. Alcohol Clin Exp Res, 33(8), 1440-1449.	2009	Literature-based cost-efficiency analysis of lab-assisted screening	%CDT			PC		In the base case, the ICER for the Questionnaire-%CDT strategy was $15,500/QALY compared with the Questionnaire Only strategy. Other strategies were dominated. When the prevalence of unhealthy alcohol use exceeded 15% and screening age was <60 years, the Questionnaire-%CDT strategy costs less than $50,000/QALY compared to the Questionnaire Only strategy.	Screening with %CDT should be considered for adults up to the age of 60 when the prevalence of unhealthy alcohol use is 15% or more and screening questionnaires are negative.		M2	
	Miscellaneous												
75	Heather, N. (2011). Developing, evaluating and implementing alcohol brief interventions in Europe. Drug and Alcohol Review, 30(2), 138-147.	2011	History of brief intervention development in Europe						Summary of history of BI implementation and research			M3	

	Citation	Year of Pub	Topic	Screening Tool or	Intervention	Target Population/Setting			Results/Summary notes	Implications for primary care	Weighted Relevance		
						Age Range	Setting	Sample			High	Med	Low
76	Saitz, R. (2010). Candidate performance measures for screening for, assessing, and treating unhealthy substance use in hospitals: advocacy or evidence-based practice? Ann Intern Med, 153(1), 40-43.	2010					Hospital		The evidence base for SBI in the hospital is too limited for the implementation of performance measures assessing this care.				L3
77	Loeb, J. M., Watt, A. E., & Lawler, N. K. (2011). Candidate performance measures for screening for, assessing, and treating unhealthy substance use in hospitals. Ann Intern Med, 154(1), 72; author reply 73-74.	2011	Comments on Saitz 2010				Hospital		Multiple points of view on implementation of SBI in hospital setting				L3
78	Madras, B. K. (2011). Candidate performance measures for screening for, assessing, and treating unhealthy substance use in hospitals. Ann Intern Med, 154(1), 72-73; author reply 73-74.	2011	Performance measures for substance use in hospitals				Hospital		Implementation of SBI in hospital setting				L3
79	Mertens, J. R., Flisher, A. J., Satre, D. D., & Weisner, C. M. (2008). The role of medical conditions and primary care services in 5-year substance use outcomes among chemical dependency treatment patients. Drug and Alcohol Dependence, 98(1–2), 45-53.	2008	General primary care visits and substance outcomes				PC	598 patients in PC	Receipt of primary care increased remission 3-fold for those with medical conditions related to substance use	Chemical dependency treatment may benefit from a disease management approach similar to that recommended for other chronic medical problems: specialty care when the condition is severe followed by services in primary care when the condition is stabilized.		M2	

Summary Comments: Alcohol Domain

The Alcohol literature scan focused on the following key terms for searches: Alcohol screening, primary care; Alcohol screening, primary care, youth; alcohol brief intervention, primary care, follow up; alcohol assessment primary care; pharmacotherapy, brief intervention, alcohol, primary care; Medication, brief intervention, alcohol, primary care. Articles included in the matrix were scanned for references that were also added into the matrix.

The Alcohol Literature Scan falls into the following categories:

1) Alcohol Screening and Brief Intervention in Primary Care
2) Implementation
3) AUDIT-C
4) Other AUD screens
5) Youth
6) Medication-assisted treatment
7) Technological aids
8) Miscellaneous

Each citation was rated as having High, Medium or Low relevancy for the development of clinical behavioral health measures for primary care settings. Chart below defines each score level.

H1 – Highly relevant, systematic review of studies, provides current direction for measure development process	M1 - Moderately relevant review of studies in relation to measure development process	L1 – Low relevance review of studies but some guidance in relation to measure development process
H2 – Highly relevant, robust single study, provides current direction for measure development process	M2 - Moderately relevant single study in relation to measure development process (based on topic relevance or strength of study)	L2 - Low relevance study but some guidance in relation to measure development process (based on topic relevance or strength of study)
H3 – Highly relevant to the domain/field	M3 – Moderately relevant to domain/field	L3 – Low relevance but some guidance for domain/field

General results on screening, brief intervention and referral to treatment in primary care

- Several reviews on screening, brief intervention and referral to treatment (SBIRT) in primary care have shown that it is effective in reducing alcohol consumptions
- Alcohol screening and counseling one of the highest-ranking preventive services among 25 effective services evaluated using standardized methods.
- Patients with risky drinking as well as comorbidity with other mental health problems may not be effectively helped by SBIRT
- Progress in Europe has aimed at increasing implementation of SBIRT in primary care
- The English Department of Health views SBI as one of the most effective and cost-effective interventions that can be implemented among the range of available alcohol interventions
- Gender studies show that SBIRT is effective in men, the evidence for effectiveness in women is weaker
- Implementing SBI in mostly primary care settings could inadvertently widen the gap in alcohol-related health disparities.
- Heavy drinkers and those with alcohol dependence have generally been excluded from SBI
- In some studies, alcohol dependent patients also benefited from SBI
- Nonphysician brief interventions are modestly effective at reducing drinking in primary care patients with unhealthy alcohol use.
- Longer duration of counseling probably has little additional effect.
- Brief counseling for unhealthy alcohol use may enhance the patient's perceived quality of primary care.

Implementation

- Wide range of rates of SBIRT implementation in primary care
- Owing to considerable variation between practice preferences, a range of options should be included in recommended screening procedures
- Various strategies are discussed to increase implementation
- Implementation likely to be successful when proposed routines and practices are contextually adapted to the everyday reality of the healthcare providers and to the settings in question.
- In several studies with multi-faceted attempts to provide support for training and implementation, little effect in increased provision of SBIRT was achieved

Screens

- The AUDIT is the gold standard for detecting alcohol-related problems in primary care settings
- Various shortened versions of the AUDIT (AUDIT-C, AUDIT-3 and AUDIT-QF) have been tested and found to perform nearly as well as the AUDIT
- AUDIT-C effective in men and women in White, African-American, and Hispanic groups
- A single-item screen assessing binge drinking has also been found to perform nearly as well as the AUDIT

- Single item: “How many times in the past year have you had X or more drinks in a day?”, where X is 5 for men and 4 for women, and a response of >1 is considered positive.
- Single-item screen was tested and found valid in urban primary care setting.

Youth

- Based on existing evidence from a 2012 review, it is not clear whether SBIRT is an effective approach to risky alcohol use among adolescent patients in acute care.
- Few young adults are asked and advised by physicians about excessive alcohol consumption.
- Youth are at high risk of problematic use
- Valid screens for youth : CRAFFT, FAST, AUDIT-C
- Computerized and web-based interventions have been found to be effective for youth
- Motivational interviewing has higher cost-effectiveness than standard care for alcohol-involved youth
- Modified cut-off points make screening with the AUDIT more accurate for adolescent populations.

Medication-assisted treatment

- In clinical literature, the term “Medical management” - seems to be equivalent to “brief intervention”
- Compliance-enhancement therapy led to high rates of medication compliance
- Medically trained clinicians with minimal specialty training in alcohol dependence treatments were able to deliver a brief and effective medication management intervention that was designed to be consistent with primary care practice.
- There are very few studies of medication-assisted brief intervention in primary care
- Extended-release naltrexone delivered in a primary care medication management model appears a feasible and acceptable treatment for alcohol dependence.

Technological aids

- Interactive voice response (IVR) is a feasible technology for behavioral self-monitoring in primary care clinics.
- IVR with regular feedback may be an effective therapeutic enhancement to BI.
- In one study, those using IVR reported higher levels of drinking, may be due to increased awareness
- Computer-assisted brief intervention also feasible
- A high percentage of trauma patients (92%) found computer-assisted intervention easy and comfortable to use (87%).
- Screening with %CDT should be considered

Acronyms

AHRQ	Agency for Healthcare Research and Quality
APA	American Pyschiatric Association
BH	Behavioral Health
BHeM	Behavioral Health eMeasures
CDC	Centers for Disease Control and Prevention
CEO	Chief Executive Officer
CQAIMH	Center for Quality Assessment and Improvement in Mental Health
CQM	Clinical Quality Measure
CMS	Centers for Medicare and Medicaid Services
FACP	Fellow, American College of Physicians
FASAM	Fellow, American Society of Addiction Medicine
EDC	Education Development Center
EHR	Electronic Health Record
HITECH	Health Information Technology for Economic and Clinical Health Act of 2009
HITPC	Health Information Technology Policy Committee
HRSA	Health Resources and Services Administration
IHS	Indian Health Service
ICSI	Institute for Clinical Systems Improvement
IT	Information Technology
MD	Medical Doctor
MPH	Masters in Public Health
MSW	Masters in Social Work
NCQA	National Committee for Quality Assurance
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NICHD	National Institute of Child Health and Health Development
NIDA	National Institute on Drug Abuse
NIH	National Institutes of Health

NIMH	National Institute of Mental Health
NINR	National Institute of Nursing Research
NIST	National Institute of Standards and Technology
NCBDDD	National Center on Birth Defects and Developmental Disabilities
NORC	National Organization for Research at the University of Chicago
NQMC	National Quality Measures Clearinghouse
NPRM	Notice of Proposed Rulemaking
NQF	National Quality Forum
ONC	Office of the National Coordinator for Health Information Technology
ONDIEH	Office of Noncommunicable Disease, Injury and Environmental Health
PhD	Philosophaie Doctorate
PCPI	Physician Consortium for Performance Improvement
PRO	Patient Recorded Outcome
PROMIS	Patient Reported Outcomes Measurement Information System
PsyD	Doctor of Psychology
SAMHSA	Substance Abuse and Mental Health Services Administration
RHI	Resolution Health, Inc.
ScD	Doctor of Science
TEP	Technical Evaluation Panel
TJC	The Joint Commission
US	United States of America
USPSTF	United States Preventive Services Task Force
VA	Department of Veterans Affairs
VHA	Veterans Health Administration
VP	Vice President