This draft document is intended as a reference document within Foundry and YWHO to support service development and delivery. It is neither appropriate to or intended for publication.

Young people and substance use

Screening tools

Rapid Evidence Review | 2021

FOUNDRY
WHERE WELLNESS TAKES SHAPE

youth wellness hubs
ONTARIO

Qualifier for Rapid Evidence Reviews

This report is a rapid evidence review, i.e., an examination of empirical evidence that has a shortened time frame and a specified scope. The goal of such a review is to provide robust, accessible evidence in a timely and practical manner for busy decision makers. Rapid evidence reviews contain elements of comprehensive ("systematic") evidence reviews with modifications to processes such as timeline, literature searching, appraising and reporting.

In a rapid evidence review, the following modifications are typically made:

- The project timeline is short;
- One reviewer conducts the literature appraisal, rather than two or more reviewers;
- The reviewer queries one database (MEDLINE/PubMed), limited to English language articles only, with a search focused on recent publications; and
- The reviewer does not conduct a formal quality assessment of included materials.

Note that rapid reviews aim to accurately report what appears in the literature in an unbiased way. To this end, the information is uncensored and, to as great an extent possible, does not reflect interpretations flowing from author's or reviewers' opinions.

Foundry and Youth Wellness Hubs Ontario would like to acknowledge, with much gratitude, that our work takes place on the traditional and unceded territories of many First Nations and Métis peoples across the two provinces in which our initiatives operate, Ontario and British Columbia.

We would like to thank the young people advising the work of this partnership who provided invaluable feedback and input into the rapid review process and the final content of this document.

Production of this document has been made possible through a financial contribution from Health Canada, as part of the Substance Use and Addiction Program funding. The views expressed herein do not necessarily represent the views of Health Canada.

This document was created by Foundry (Providence Health Care) in partnership with Youth Wellness Hubs Ontario.

Executive Summary

Background

Lifelong behaviours are often established in adolescence and young adulthood, including substance use (SU). Alcohol is the most commonly used drug, followed by marijuana and tobacco, and polysubstance use is common. Screening for SU can identify those who may benefit from further care and can help guide service delivery planning. A number of screening tools exist on local, national and international levels. The tools seem to wax and wane in utility and popularity. An effective screening tool must be brief, easy to score, developmentally appropriate, cover all substances of interest and stratify risk levels.

Report objective

The report describes screening tools used in young people ages 12–24 to uncover SU plus related needs, issues, challenges and concerns (where reported).

Methods

An experienced medical information specialist conducted MEDLINE and grey literature searches in late March 2020. One author reviewed and selected the relevant material and prepared the report.

Findings

The primary focus of this report was the screening tools used to uncover SU by young people. There are some challenges in this field, for example: (a) the landscape with respect to SU tools appears to be in constant flux, with new tools being profiled and others appearing to lose favour; and (b) many tools appear to be local to particular hospitals or groups of experts with limited distribution.

For this report, seven tools for screening were mentioned more commonly in recent publications and 12 were mentioned less often, and there appear to be dozens of others that have been used at some point. This report provides detail on the seven with only brief mention of the 12.

The seven more common screening tools, each one either developed for young people specifically or validated in this population, covered alcohol and/or SU plus or minus mental health (MH) issues and included: ASSIST, AUDIT, BSTAD, CRAFFT, GAIN-SS, NIAAA and S2BI.

Although the main objective of this report was to describe tools used to screen young people for SU, there was a hope that tools could be identified that went beyond screening for SU to identifying a SU-involved young person's needs, issues, challenges and concerns. Unfortunately, limited information was available on tools to identify these aspects of the lives of young people.

Acronyms and Abbreviations

ASSIST	Alcohol, Smoking and Substance Involvement Screening Test (tool)
AUD	alcohol use disorder
AUDIT	Alcohol Use Disorders Identification Test (tool)
BSTAD	Brief Screener for Tobacco, Alcohol, and other Drugs (tool)
CADTH	Canadian Agency for Drugs and Technologies in Health
CAMH	Centre for Addiction and Mental Health (Ontario)
CRAFFT	Car, Relax, Alone, Forget, Friends, Trouble (tool)
CUD	cannabis use disorder
ED	emergency department
GAIN-SS	Global Appraisal of Individual Needs—Short Screener (tool)
MH	mental health
NIAAA	National Institute on Alcohol Abuse and Alcoholism (USA)
OSDUHS	Ontario Student Drug Use and Health Survey
PICO	population, interventions, comparators and outcomes
ROC	receiver operating characteristic
S2BI	Screening to Brief Intervention (tool)
SBIRT	screening, brief intervention, and referral to treatment
SU	substance use
SUD	substance use disorder
US/USA	United States of America
USPSTF	US Preventive Services Task Force
WHO	World Health Organization

Contents

1. Background

1.1. Young people and substance use

Substance use (SU)[1] in young people receives medical and public attention due to its potential for short- and long-term negative impacts on mental health (MH), social life, school and professional careers (Michaud et al 2020). Lifelong behaviours often become established in adolescence and young adulthood (Das et al 2016). During this time, many young people experiment with SU, but some do so in ways that are harmful to themselves and others (PHAC 2019). Some young people engage in SU to "have fun" and "be social," but a smaller group reports using substances to deal with stress or emotional pain, and this group is at greater risk of problematic use (PHAC 2019).

The longest running survey of SU in young people in Canada, the Ontario Student Drug Use and Health Survey (OSDUHS),[2] reported the following for 2019 (Table 1) (CAMH 2020):

Table 1: Selected 2019 OSDUHS results for SU in young people (CAMH 2020)
n=14,000 students in grades 7–12 in ~1,000 classes in 263 schools in 47 school boards

Substance*	% of students who used in past year
Alcohol	41.7
High caffeine energy drinks	32.6
E-cigarettes (vaping)	22.7
Cannabis	22.0
Binge drinking (5+ drinks past month)	14.8[3]
Prescription opioid pain relievers (nonmedical use)	11.0
Cough/cold medication (nonmedical use)	7.8
Tobacco cigarettes	5.0
Any drug use	20.3

*Excludes 13 substances whose use was reported by < 5% of students

1 In this document, SU includes tobacco, alcohol and drugs (both illicit and prescription drugs taken for nonmedical reasons).
2 The OSDUHS is the longest-running Canadian survey tracking trends in student SU and mental and physical health. Information is collected via anonymous self-administered surveys of grade 7–12 students at Ontario English and French public and Catholic schools. Starting in 1977, the survey has been conducted every two years (CAMH 2020).
3 Heavy drinking rates are higher in some population subgroups, e.g., young people who are Indigenous and living off-reserve report more frequent heavy drinking than those who are non-Indigenous; 33% of young people who are Métis ages 12–19 years report heavy drinking in the past month in BC; and 10% of young First Nations people ages 12–17 years living on-reserve report heavy drinking (PHAC 2019).

Health Canada's Youth Smoking Survey 2004-05 of Canadian adolescents in grades 5–9 indicated that the mean age for first use of alcohol was just over 11 years. Among grade 7–9 students (ages 12–14), the mean age for first use of cannabis was 12.6 years and 12.5% of these students reported ever using a substance other than alcohol, tobacco or cannabis. Comparative international data can be difficult to find, as there is much variation in survey methods (Leslie 2008).

Alcohol is the most commonly used drug by adolescents, followed by marijuana and tobacco. Polysubstance use is common, with more than a third of adolescents reporting recent use of both alcohol and marijuana or use of alcohol, marijuana and cigarettes. Among users of both substances, alcohol and marijuana are more likely to be used concurrently than alone. Concurrent use of tobacco, alcohol or other drugs is a concern because use of one influences consumption of the other and leads to negative health outcomes and reduced rates of cessation. Polysubstance use among adolescents is strongly associated with SU problems, including substance use disorder (SUD) diagnoses (all from Livingston et al 2018). Primary care providers and other suitable professionals can play a pivotal role for their young patients in screening for SU, providing advice and identifying those who may benefit from further interventions (Michaud et al 2020).

1.2. Screening for SU in young people

In general, health care screening aims to identify individuals or groups with or at risk of a disease or condition. As such, SU screening is a recommended component of routine health care for young people. SU screening tools generally provide information to answer the questions: (a) Is there a SU issue? and (b) What is the immediacy of the issue? (SAMHSA 2012a)

Adolescent SUDs are frequently missed in pediatric and adolescent medicine, making screening imperative (Beaton et al 2016). Screening tools may be administered alone or together with a global psychosocial assessment using strategies/mnemonics such as (Beaton et al 2016, Levy et al 2016a):

- HEADSS: home, education, activities, drugs/alcohol, sex, suicidality; and
- SSHADESS: strengths, school, home, activities, drug/substance use, emotions/depression, sexuality, safety.

The rates of SU screening in young people vary. A recent review noted that USA pediatricians' self-reported rates of routine SU screening in their patients ranged from less than 50% to 86%. Most relied on clinical impressions with few reporting use of a validated screening tool. The main barriers to screening were lack of time, insufficient training and lack of familiarity with standardized tools (Levy et al 2016a). One cited study found that when a screening tool was not used, only one-third of young people who drank to excess were identified (Levy et al 2016a citing NIAAA 2011).[4]

Self-reported data have been shown to be reliable when the assessment is confidential and less so when parents are present; therefore, screening should take place in a confidential setting. Adolescents may prefer paper or computerized screening over face-to-face interviews as they are more likely to answer SU questions honestly (Beaton et al 2016). SU screening of young people has also been advocated in emergency departments (EDs) where a visit may be an opportunity to capture those who are high-risk but missed in other settings, e.g., in the USA, nearly 1.5 million adolescents use the nation's EDs as their only source of care (Spirito et al 2019).

There is no formal age recommendation about when to begin SU screening, but a number of experts recommend screening during early adolescence. Interestingly, this position was not taken by the well-respected resource, the US Preventive Services Task Force (USPSTF). In particular, the USPSTF recommends screening for unhealthy alcohol use in primary care settings in adults 18 years or older and providing persons engaged in risky or hazardous drinking with brief behavioural counselling (O'Connor et al 2018, USPSTF 2018). However, for adolescents ages 12–17, the USPSTF concluded that the current evidence is insufficient to assess the balance of benefits and harms of screening and brief behavioural counselling interventions and assigned this an "I" for insufficient evidence. There does not appear to be any guidance on alcohol or SU in young people from the companion organization, the Canadian Task Force on Preventive Health Care.[5]

1.3. Screening tools for SU in young people

An effective SU screening tool must be brief, easy to score, developmentally appropriate, cover all of the substances of interest and stratify use into risk levels (Levy et al 2016a). The ideal SU screen in an ED should: (a) require minimal training and implementation time; (b) be incorporated into triage assessments; (c) accurately detect SU issues; and (d) be sensitive enough to detect patients who have SU issues while not over-identifying those with non-hazardous use (Spirito et al 2019).

4 The currently available NIAAA guide for practitioners is dated 2019 and is available at: niaaa.nih.gov/sites/default/files/publications/YouthGuide.pdf

5 canadiantaskforce.ca

Additional practical guidance about SU screening in young people can be found in a lengthy guide from the USA Substance Use and Mental Health Services Administration (SAMHSA) (SAMHSA 2012b).

Points of interest:

- The hallmarks of a screening program are its ability to be administered in 10–15 minutes and its broad applicability across diverse populations;
- A screen should be simple enough that a wide range of health professionals can administer it;
- A screen should focus on the young person's SU severity (consumption patterns) and a core group of associated factors such as legal problems, MH status, educational activity and living situation;
- A client's awareness of the problem, thoughts on it and motivation for changing behavior should also be solicited;
- A short screening procedure may be the only feasible strategy in facilities that process large numbers of young people at risk and where staff members are overburdened with other tasks (rather than conducting in-person screening interviews);
- Behavioral histories obtained using interactive computer software may be more accurate than those done by interview or written survey; and
- In short, "*a model screening instrument is short, simple, and appropriate to the youth's age. The instrument should give the "big picture" of the youth's situation, not a lot of specific, detailed information. However, the instrument should be of sufficient scope to cover the "red flag" areas of substance use disorders and psychosocial functioning.*"

According to the SAMHSA guide (SAMHSA 2012b), various community organizations (e.g., schools, health care delivery systems, the judiciary, vocational rehabilitation and religious organizations) and individuals associated with young people at risk must be able to screen and detect SU. This means that many health and judicial professionals should have screening expertise, including school counsellors, street youth workers, probation officers and pediatricians.

The SAMHSA guide goes on to suggest young people to screen include:

- Adolescent offenders (an at-risk population where the base rate of SU is sufficiently high to justify universal screening);
- All teens receiving MH assessment (high correlation between psychological difficulty and SUDs);
- High-risk populations such as those who are runaways (e.g., at shelters), teens entering the child welfare system, teens who dropped out of school (e.g., in vocational/job corps programs) and other high-risk populations (e.g., special education students);
- Young people who present with substantial behavioral changes or emergency medical services for trauma or who suddenly begin experiencing medical problems such as accidents, injury or gastrointestinal disturbance; and
- Students who show increased oppositional behavior, significant changes in grade point average and a great number of unexcused school absences.

Further, the SAMHSA guide includes a table of indicators for assessment (Table 2).

Table 2: SAMHSA's list of indicators for SU assessment of young people (SAMHSA 2012b)

Sud-related
Use of substances during childhood or early teenage years
SU before or during school
Peer involvement in SU
Daily use of one or more substances
Psychosocial
Physical or sexual abuse
Parental SU (including driving under the influence/driving while intoxicated)
Sudden downturns in school performance or attendance
Peer involvement in serious crime
Marked change in physical health
Involvement in serious delinquency or crimes
HIV high-risk activities (e.g., intravenous drug use, sex with intravenous drug user)
Indicators of serious psychological problems (e.g., suicidal ideation, severe depression)

In terms of use of screening tools, Gans et al (2010) performed an in-depth survey of the screening and assessment practices of highly regarded adolescent SU treatment programs in the USA by conducting telephone surveys with directors in 2005. For the 120 programs responding (of 138 contacted; 87% response rate), 77 tools developed by outside sources were used. (Note that this survey is older and only one tool appears to be

recognized now, a version of GAIN). Most programs also used tools developed in-house. Of the external tools, 87% had a published manual and 74% had been described in a peer-reviewed publication. Although this project focused on adolescent SU treatment programs, only 62% of screening tools were designed to be used with adolescents or adults and adolescents, while 19% were designed for adults only.

The authors concluded that, "*Although adolescent [SU] treatment programs recognized the importance of screening and assessment, the quality of such practices varied significantly. A large number of different tools were used by some of the most highly regarded programs in the country, and many used questionnaires developed in-house that may not have had high standards of reliability and validity. Furthermore, numerous programs were using assessment instruments that were not uniquely designed for adolescents.*" (Gans et al 2010)

1.4. Conducting a young-person-friendly assessment

New South Wales in Australia has developed a framework for young people and SU. This guide notes that a well-conducted assessment with a young person can increase engagement and itself be a therapeutic intervention. Specific suggestions are listed here in Table 3 (NSW 2014).

Table 3: Important overall considerations when assessing young people (NSW 2014)

Spend time engaging the young person
Negotiate to see the young person alone
Discuss confidentiality
Use communication appropriate to the developmental stage of the young person
Avoid medical jargon
Be sensitive to and respect cultural norms when seeing young people who are culturally and/or linguistically diverse
Adopt a non-judgemental and collaborative approach
Consult with the young person on the development of their management plan
Decide the issues to be discussed with a parent or guardian
Address parental concerns and involve them where possible

The Australian framework notes there are multiple tools for screening of SU and related problems for adults that are appropriate for young people and others designed specifically for young people, mentioning ASSIST, AUDIT and CRAFFT plus others (Drug Abuse Screening Test (DAST), Michigan Alcohol Screening Test (MAST) and Problem Oriented Screening Instrument for Teenagers (POSIT)) (NSW 2014).

2. Objective of this Report

The report describes screening tools used in young people (ages 12–24 years) to uncover SU plus (where available) related needs, issues, challenges and concerns. To guide this report, the population, interventions, comparators and outcomes (PICO) were defined in advance (Table 4).

Table 4: Project PICO (Population, Interventions, Comparators and Outcomes)

Population	Young people ages 12–24 with SU issues who have needs/issues/challenges/concerns
Interventions	Screening tools to uncover SU and to determine the nature of a young person's needs/issues/challenges/concerns NOTES: • Needs etc. go beyond health, e.g., housing, education, income; • Profiles of the young people are also of interest; and • Of additional interest where mentioned: measurement tools to quantitate the needs and tools that point to meeting the needs (treatment and prevention).
Comparators	Not applicable
Outcomes	For the identified tools: • What is measured? • How is it measured? • What is the test performance (reliability, validity, clinical utility) and how was it evaluated? I.e., impact of screening • Test fitness for purpose—designed for young people, i.e., developed and/or tested and found to be suitable in young people in Canada or one of Canada's comparator countries.
Search parameters	MEDLINE—English language, 2018 to present Grey literature and selective review of bibliographies

3. Methods

An experienced health information specialist used the PICO guidance to design an Ovid MEDLINE literature search run on March 25, 2020. The search strategy (Appendix A) used the National Library of Medicine's MeSH (Medical Subject Headings) controlled vocabulary, limited to the English language and 2018 forward.[6] A structured grey literature search[7] sought additional relevant materials using the Canadian Agency for Drugs and Technologies in Health (CADTH) *Grey Matters* checklist[8] and searching for materials released in the year 2015 forward. One author assessed the material and prepared the report.

6 Initially, the MEDLINE search extended back to 2010, but the volume of literature captured was very large for a rapid review (n=2,200 citations). Also, in an advancing field, older literature may not be helpful, particularly as new tools have emerged and older ones may have lost favour. In an effort to narrow the reference possibilities to the most recently published, the search was redefined as 2018 forward, although the grey literature search extended back five years to 2015.

7 Grey literature terms: (checklist OR instrument OR measure OR psychometric OR scale OR screening OR tool) (addiction OR meth OR cocaine OR alcohol OR e-cigarette OR cannabis OR crack OR drug OR hash OR heroin OR inhalant OR marijuana OR morphine OR narcotic OR nicotine OR opiate OR substance OR tobacco OR vaping) (youth OR young adult).

8 CADTH *Grey Matters* is available at: cadth.ca/sites/default/files/is/Grey%20Matters_EN-2019.doc

4. Results

The primary focus of this report was the screening tools used to uncover SU by young people and to determine their related needs, issues, challenges and concerns (where reported). Review of MEDLINE citations and abstracts plus grey literature led to selection of a large number of possibly relevant articles that included primary studies, systematic and narrative reviews and reports from government and others. Tools that go beyond screening are described in Appendix B.

An interesting challenge was the changing landscape with respect to SU tools as new tools are being developed and others appear to lose favour. Also, many tools appear to be local to particular hospitals or groups of experts. This makes older references potentially unhelpful. For example, in a 2012 compilation of SU screening and assessment tools by SAMHSA, 17 screening tools were described, of which only two were mentioned in more recently publications (AUDIT and CRAFFT); likewise, 10 tools for assessment were described, of which only one was even related to the tools detailed in our report (a version of GAIN) (SAMHSA 2012a).

4.1. Overview of SU screening tools for young people

An overarching approach is screening, brief Intervention, and referral to Treatment (SBIRT) that offers a practical, integrated model for addressing SU in primary care settings. A number of SBIRT tools for young people have been developed and tested (D'Souza-Li & Harris 2016).

Both under the SBIRT umbrella term, and separately, 19 SU screening tools used in young people were described in the literature—seven were mentioned more commonly and 12 were mentioned less often. This report provides detail on the former group (Table 5 on page 14) with only brief mention of the latter group (Table 6 on page 15). There were additional tools mentioned by some authors—generally in older publications—and these were not included in this report.

Table 5: SU Screening Tools for Young People—more commonly mentioned in the literature

Tool	Long name	Brief tool detail	Sample references
ASSIST	Alcohol, Smoking and Substance Involvement Screening Test	• Developed for the World Health Organization (WHO) by an international group of SU researchers; and • Designed to detect and manage SU and related problems in primary and general medical care settings.	Gryczynski et al (2015) WHO (2011) & (2020)
AUDIT	Alcohol Use Disorders Identification Test	• Assesses for risky drinking; and • Versions are AUDIT-C, US-AUDIT and US-AUDIT-C.	Kuitunen-Paul (2018) Liskola et al (2018) Madson et al (2018)
BSTAD	Brief Screener for Tobacco, Alcohol, and other Drugs	• For ages 12–17; • Identifies problematic tobacco, alcohol and marijuana use; and • Built on the NIAAA tool with added tobacco and drug questions.	Kelly et al (2014) D'Souza-Li & Harris (2016)
CRAFFT	Car, Relax, Alone, Forget, Friends, Trouble	• Quickly assesses for problems associated with SU; and • RAFFT is a version of the CRAFFT that excludes "Car" and can be useful in younger teens.	Beaton et al (2016) Noffsinger et la (2019) Tejedor-Cabrera et al (2019)
GAIN-SS	Global Appraisal of Individual Needs—Short Screener	• Three to five-minute screening tool for SU and MH; • Triages the problem and the kind of likely need along four dimensions (internalizing disorders, externalizing disorders, substance disorders and crime/violence); and • Based on the 60to 120-minute GAIN tool.	Dennis et al (2006) CAMH (2009)
NIAAA	Alcohol Screening and Brief Intervention for Youth	• Two-question alcohol screen; and • Screens for SU use by friends and for personal SU in children and adolescents ages 9 years and older.	Levy et al (2016b) Carswell et al (2019) Perast et al (2019)
S2BI	Screening to Brief Intervention	• Includes tobacco, alcohol, marijuana, illicit drugs and other drugs; • Discriminates among no use, no SUD, moderate SUD and severe SUD; and • To be used with the Adolescent SBIRT Toolkit for Providers.	Levy et al (2014) Boston Children's Hospital (2015) D'Souza-Li & Harris (2016)

Table 6: SU Screening Tools For Young People—less commonly mentioned (list is not exhaustive)

Tool	Long name	Brief tool detail	Sample references
ASCOS	Adolescent Smoking Curiosity Scale	• Seven questions answered via five-point Likert scores; • Developed at University of Texas to measure adolescent smoking curiosity; and • Covers cigarettes, cigars and hookah pipes.	Khalil et al 2018 (Texas)
eCHUG	eCHECKUP TO GO (Alcohol)	• Brief, anonymous, interactive assessment tool that provides individualized feedback regarding alcohol use and helps to identify any risk of harm associated with use; and • Developed in San Diego and used by ~400 colleges and universities across 42 states, plus in Canada and Australia.	Ganz et al 2018 (Germany)
Check Yourself	–	• Electronic tool developed in Seattle; • Focuses on alcohol and marijuana; • Motivational feedback on SU and summarizes results for providers; and • Requires a license and subscription.	McCarty et al 2019 (Washington state)
CHISPA	Means "spark" in Spanish	• Covers cocaine, heroin, IV drugs, pot and alcohol; and • Includes measures to identify substances used, frequency of use, signs of danger or addiction, recent grades, motivation to stop or reduce use and past attempts to stop or reduce use.	Ramos et al 2018 (New Mexico)
CONNECT	–	• A media campaign complimentary to a community-based intervention designed as part of a large-scale alcohol use prevention trial for high school students living in rural communities within the Oklahoma Cherokee Nation.	Livingston et al 2018 (Texas) Garrett et al 2019 (Oklahoma)
CUDIT-R	Cannabis Use Disorder Identification Test—Revised	• Eight-item screening instrument; and • Designed to identify problematic or harmful cannabis use within the past six months.	Schultz et al 2019 (Alabama)
DrinkThink	–	• An alcohol screening and brief intervention tool designed for use with young people with risky alcohol use; and • Flash cards with graphics showing drinking units, a body diagram showing alcohol impact and depictions of situations in which alcohol might pose a risk for young people.	Derges et al 2018 (UK)
METH-DBS	Methamphetamine Decisional Balance Scale	• Methamphetamine; • Scale used to determine pros and cons influencing use; and • Reveals areas in which to apply preventive interventions.	Khazaee-Pool et al 2018 (Iran)
RAPI	Rutgers Alcohol Problem Index	• Measures alcohol-related problems experienced by adolescents and young adults; • Has been modified to include marijuana and general drug use; and • Original version has 18 points—modified to 16.	Shono et al 2018 (Washington state)
SACS	Substances and Choices Scale	• Developed for alcohol and drug use; and • 23 check-box questions covering substances and state of well-being.	Werry Workforce 2019 (New Zealand)
SSLS:NV	Secondary Student Life Survey: Nevada	• Used for surveillance of SU trends among adolescents; and • Electronic platform survey study compared administration via personal smart phone versus supplied tablets or computers.	Riccio et al 2019 (Nevada)
YouthCHAT	Case-finding and Help Assessment Tool (Youth)	• Tablet-based composite psychosocial screener; and • A study compared it with face-to-face HEEADSSS assessments in 13year-olds. Comparable findings but twice as fast to administer (nine versus 18 minutes)—screening tools were equally acceptable to students.	Thabrew et al 2019 (New Zealand)

4.2. ASSIST

ASSIST	Alcohol, Smoking and Substance Involvement Screening Test	• Developed for the WHO by an international group of SU researchers; and • To detect and manage SU and related problems in primary and general medical care settings.	WHO (2011) & (2020) Gryczynski et al (2015)

ASSIST was developed in 1997 for the WHO, and it is currently in its fourth phase (WHO 2020). A 74-page manual for the use of ASSIST in primary care is available from the WHO website (WHO 2011). The eight-question ASSIST questionnaire has questions covering issues related to 10 types of substances: tobacco; alcohol; cannabis; cocaine; amphetamine-type stimulants; inhalants (e.g., glue, petrol); sedatives; hallucinogens; opioids; and other.

Issues of concern (risk of experiencing specific harms) are also explored in ASSIST, specific to each substance type, e.g., for alcohol, some of the choices are: (a) hangovers, aggressive and violent behaviour, accidents and injury and nausea and vomiting; (b) reduced sexual performance and premature ageing; and (d) anxiety and depression, relationship difficulties and financial and work problems (WHO 2011).

According to the ASSIST manual, a suitable time to start screening is in adolescence, since it is a critical milestone for SU problems and use generally commences during this time. "*The exact age at which it is appropriate to commence regular screening for substance use will vary depending on local prevalence and patterns of use. It is important to be aware of the legal age of consent in the jurisdiction where the instrument will be used and the legal requirements relating to screening and intervention with adolescents who are under such age*." (WHO 2011)

In terms of use in young people, ASSIST was tested among 525 primary care patients ages 12–17 at three clinics in Maryland. Results showed good internal consistency, good concurrent validity with a different tool (CRAFFT) and ability to discriminate between gradations of cannabis problem severity. In receiver operating characteristic (ROC) curve analysis of optimal clinical cut-points, the ASSIST accurately identified tobacco, alcohol and cannabis use disorders (CUDs) with sensitivities of 95–100%, specificities of 79–93% and area under the curve (AUC) of 0.90–0.94 but did so at minimally low cut-points indicative of any use in the past three months. The authors concluded that ASSIST was promising as a research and screening/brief assessment tool for young people but noted that revisions to clinical risk thresholds were warranted (Gryczynski et al 2015). Subsequent review authors noted that, because of its length, the ASSIST may not be a practical option for rapid triage (D'Souza-Li & Harris 2016).

4.3. AUDIT

AUDIT	Alcohol Use Disorders Identification Test	• Assesses for risky drinking; and • Versions are AUDIT-C, US-AUDIT and US-AUDIT-C.	Kuitunen-Paul (2018) Liskola et al (2018) Madson et al (2018)

The AUDIT has been described as a "gold standard" screening tool for detecting alcohol-related problems in primary care. It was designed by the WHO for use with adults but has also been tested and used with young people (adolescents and college students).

The AUDIT is composed of 10 questions that address the extent of alcohol use, its negative consequences and evidence that others have observed behaviours that suggest a drinking problem (Table 7—a more complete version is shown in Appendix C) (Pilowsky & Wu 2013). It involves self-report of past-year harmful and hazardous alcohol use and covers three conceptual domains: alcohol consumption (three items), alcohol-related problems (four items) and adverse psychological reactions (three items) (Villarosa-Hurlocker et al 2020). A score of eight or more is considered to indicate hazardous or harmful alcohol use (NIDA 2014).

Table 7: The audit questions

(The checkbox responses are not included here.)

1	How often do you have a drink containing alcohol?
2	How many drinks containing alcohol do you have on a typical day when you are drinking?
3	How often do you have six or more drinks on one occasion?
4	How often during the last year have you found that you were not able to stop drinking once you had started?
5	How often during the last year have you failed to do what was normally expected from you because of drinking?
6	How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
7	How often during the last year have you had a feeling of guilt or remorse after drinking?
8	How often during the last year have you been unable to remember what happened the night before because you had been drinking?
9	Have you or someone else been injured as a result of your drinking?
10	Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?

One set of psychometric values for AUDIT in young people (evaluated against a Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnosis of alcohol abuse or dependence in an adolescent sample) were: sensitivity = 0.94, specificity = 0.08, positive predictive value = 0.64, negative predictive value = 0.97 (Chung et al 2000).

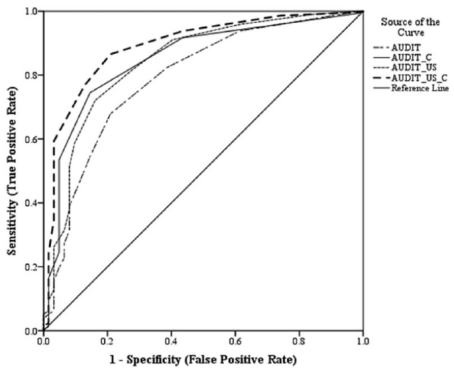
Use of the tool internationally can be challenging as countries differ in how they define a standard drink and risky drinking limits, generating concerns about the accuracy of identifying at-risk individuals in the country in which the AUDIT is used. Another challenge is that AUDIT has been used in detecting active AUD, a criterion that was not consistent with the tool's original purpose. There are instances where AUDIT did not perform well as a screening tool for identifying AUD among women and countries with low AUD prevalence (Villarosa-Hurlocker et al 2020).

Versions of the AUDIT include a consumption subscale (AUDIT-C) that assesses frequency of drinking, typical number of drinks consumed on a drinking day and frequency of binge drinking and modifications to reflect low-risk drinking guidelines as the US-AUDIT and US-AUDIT-C. For US-AUDIT, a standard drink is defined as 14 grams and US low-risk drinking limits are defined as no more than four/five drinks in one sitting (men) or seven drinks in one week (women). Also, the purpose of the US-AUDIT was clarified such that it screens for individuals along the spectrum of risky drinking patterns including potential, not active AUD (Villarosa-Hurlocker et al 2020).

Three studies were located that studied AUDIT variations in college students:[9]

- **Madson et al (2018):** The authors noted that the majority of college students drink and roughly half engage in hazardous drinking behaviors but they rarely seek help even when they experience negative consequences. Their study's purpose was to use ROC analysis to evaluate the AUDIT, AUDIT-C, US-AUDIT and US-AUDIT-C in 382 college students (mean age 20.2 years, 69% female, 65% White race) from the American South who had consumed alcohol at least once in the previous 30 days. The results provided evidence for the tests as valid screening tools, although the US-AUDIT consumption subscale (US-AUDIT-C) performed the best in predicting at-risk college drinkers, where a single cut-off score of four seemed to be the optimal and most parsimonious method of identifying at-risk college drinkers.

Figure 1: ROC curves for all versions of audit in Madson et al (2018)



9 The AUDIT is apparently the most published measure of hazardous drinking and alcohol-related negative consequences in the college student literature (Madson et al 2018).

- **Verhoog et al (2020):** Researchers from the Netherlands noted that students drink more than their peers who are not attending higher education, and alcohol use is the leading cause of injury and death among students. Further, binge drinking (five+ drinks on one occasion) is a highly prevalent risk behaviour that increases students' short-term risk of poor academic performance and college drop-out and their long-term risk of alcohol dependence and learning and memory impairments. They used cross-sectional data from health surveys from 5,400 university students (ages 17–25, 66% female) to examine the sensitivity and specificity of different AUDIT-C cut-off points for hazardous alcohol use.[10] Study results using AUDIT-C showed that 20% of students were hazardous and harmful drinkers. The area under the ROC curve was 0.922. At an AUDIT-C cut-off score of ≥7, sensitivity and specificity were both > 80%, while other cut-offs showed less balanced results. A cut-off of ≥8 performed better among males and ≥7 for females. AUDIT-C scores were compared with scores on the full AUDIT tool, and it was noted that important advantages of AUDIT-C were its brevity and its less intrusive nature, meaning it may have a lower risk of response bias and reporting bias.

- **Villarosa-Hurlocker et al (2020):** The American researchers involved in the Madson et al (2018) study explored use of AUDIT and US-AUDIT to predict potential AUDs in the same college sample described in the first bullet above. Results showed the AUDIT and US-AUDIT to be equal in detecting potential AUD. Recommended cut-off scores for detecting likely AUD with the US-AUDIT were 12 for males (sensitivity = 62.0%, specificity = 86.6%) and eight for females (sensitivity = 65.3%, specificity = 87.7%). In concluding, whereas their prior work supported the US-AUDIT-C to detect at-risk drinking (reported in Madson et al 2018), this study supported the AUDIT and US-AUDIT to detect potential AUD. They therefore recommended using the US-AUDIT in screening and brief interventions across college campuses.

10 In Europe, the continent with the highest per capita alcohol consumption, hazardous alcohol use is very prevalent among students. In the Netherlands, 24% of students ages 18–24 are hazardous drinkers (defined as six+ drinks for men and four+ drinks for women at least once a week). This is much higher than in the general adult population, where the proportion of hazardous drinkers is 10% (Verhoog et al 2020).

4.4. BSTAD

BSTAD	Brief Screener for Tobacco, Alcohol, and other Drugs	• For ages 12–17; • Identifies problematic tobacco, alcohol and marijuana use; and • Built on the NIAAA tool with added tobacco and drug questions.	Kelly et al (2014) D'Souza-Li & Harris (2016)

The BSTAD is modelled on the USA National Institute for Alcohol Abuse and Alcoholism (NIAAA) tool, but in addition to alcohol it also assesses the past-year number of days of use of tobacco, marijuana and other drugs using a numeric open-text response format (D'Souza & Harris 2016). The expansion of the NIAAA tool to the BSTAD was first reported by Kelly et al (2014).

The following is an overview of the Kelly et al (2014) study:

- In Baltimore in 2012–13, 525 teens ages 12–17 responded to screening questions that asked about use of tobacco, alcohol and drugs. The test was interviewer-administered or self-administered using an iPad, with the majority preferring the latter.
- The format followed the convention used in a tool developed by the NIAAA, i.e., 12 to 14-year-olds were asked questions about friends' use first as a less-threatening way to approach the SU topic, followed by personal use questions, with the order reversed for adolescents ages 15–17.
- Teens who reported personal use in any domain were asked additional questions using a separate tool to gauge frequency of use during the past 30, 90 and 365 days.
- The authors reported that optimal cut-points for identifying SUD were at least six days of past-year tobacco use (sensitivity = 0.95, specificity = 0.97), at least two days of alcohol use (sensitivity = 0.96, specificity = 0.85) and at least two days of marijuana use (sensitivity = 0.80, specificity = 0.93) (Kelly et al 2014).

4.5. CRAFFT

CRAFFT	Car, Relax, Alone, Forget, Friends, Trouble	• Quickly assesses for problems associated with substance use.	Beaton et al (2016) Harvard (2018) Noffsinger et la (2019) Tejedor-Cabrera et al (2019)

The CRAFFT tool was developed by Boston Children's Hospital/Harvard Medical School to discriminate between low- and high-risk SU among adolescents (ages 11–21) who reported any past-year use of alcohol or drugs (Harvard 2018). It is described as a validated screening questionnaire designed to detect adolescents at risk for SUDs and related harms and is the most extensively studied adolescent SU screening instrument, demonstrating reliability and validity in multiple languages and populations (Beaton et al 2016).

The CRAFFT screening tool consists of three preliminary questions: "*In the past year, did you (a) drink any alcohol (more than a few sips), (b) smoke any marijuana or hashish, (c) use anything else to get high?,*" followed by the six main CRAFFT questions (Table 8). If the respondent answers "yes" to any of the three opening questions, all six subsequent questions are asked; if they answer "no" to the opening questions, only the first of the six questions is administered. Each "yes" response on the CRAFFT receives one point. A CRAFFT score of two or more indicates risky SU and the need for further evaluation (Beaton et al 2016, Chappell 2016).

Table 8: The six CRAFFT questions

C	Have you ever ridden in a CAR driven by someone (including yourself) who was 'high' or had been using alcohol or drugs?
R	Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in?
A	Do you ever use alcohol or drugs while you are by yourself, or ALONE?
F	Do you ever FORGET things you did while using alcohol or drugs?
F	Do your family or FRIENDS ever tell that you should cut down on your drinking or drug use?
T	Have you ever gotten into TROUBLE while you were using alcohol or drugs?

NOTE: There is also a RAFFT tool without the first question that is particularly suitable for younger teens.

CRAFFT is available in versions suitable for clinician Interviews and for self-administration. The CRAFFT website recommends using the self-administered version as young people are more comfortable with it and it is quicker to administer, assuming protection of patient privacy and confidentiality. The current version of the tool, the CRAFFT 2.1, apparently includes revisions to increase the sensitivity and specificity of the tool and includes vaping as a method of administration for marijuana use. There is also a CRAFFT+N version with an extra question related to tobacco and nicotine use (CRAFFT website 2018). Versions of CRAFFT are copyright protected, but the developers from Boston Children's Hospital welcome reproductions of the tool without cost, as their goal is to make the tool widely available to qualified clinicians and researchers (Michaud et al 2020).

The 2009 CAMH document *Screening for Concurrent Substance Use and Mental Health Problems in Youth* has a useful table on screening tools that is reproduced here in part in Appendix D. The table includes the CRAFFT and RAFFT as screening tools for pre-teens and adolescents approximately ages 12–17 and assigns the following descriptions to CRAFFT: (a) screening stage = first (versus second); (b) quality of reporting = high (versus medium or low); (c) strength of reliability and validity = high (versus medium or low); and (d) stakeholder enthusiasm = high (versus medium or low). RAFFT received the same scorings with the exception of strength of reliability and validity where it scored medium.

Vancouver authors Dhalla et al (2011) performed a systematic review of the psychometric properties of the CRAFFT in adolescents, reporting on 11 studies on validity and six on reliability (publication dates 1999–2010). Populations examined were clinic patients including patients from hospital-based clinics, primary care, EDs and sexually transmitted diseases clinics, as well as Indigenous people, substance users, a general population group and military conscripts. Results showed that the CRAFFT was a good screening instrument for gradations of alcohol and SU. At optimal cut-points, sensitivities ranged from 0.61 to 1.00, and specificities ranged from 0.33 to 0.97. The CRAFFT showed modest to adequate internal consistency values ranging from 0.65 to 0.86 and high test-retest reliability. The authors noted that more studies were needed "*to further assess and improve generalizability to other populations…gender and ethnic differences also require further examination, as do versions that are adapted for different languages and cultures*."

Another literature review was performed by Americans Pilowsky and Wu (2013). They noted that the CRAFFT was the best studied instrument for SU and related problems (at the time) and was the only tool with data to support its use in medical settings. Further, they observed that other screening instruments (including RAFFT, AUDIT, CAGE and five others) required more testing/evaluation in more representative samples of adolescents in primary care settings.

4.6. GAIN-SS

GAIN-SS	Global Appraisal of Individual Needs—Short Screener	• For people presenting to SU treatment; • Validated in ages 10–17 as well as adults; • Three- to five-minute screening tool for SU and MH; and • Triages the problem and the kind of likely need along four dimensions.	Dennis et al (2006) CAMH (2009)

The GAIN-SS is part of the Global Appraisal of Individual Needs (GAIN) family of screening and assessment measures. It is made up of 20 items covered in four subscales (internalizing disorders, externalizing disorders, substance disorders and crime/violence). Published in 2006, it apparently attracted attention from policy-makers and program managers at the time due to its brevity, as well as its coverage of psychopathology (internalizing and externalizing disorders) and SU. According to a 2009 document from the Centre for Addition and Mental Health (CAMH) in Toronto, it has potential as a tool for both SU services (to screen for mental disorders) and MH services (to screen for SU disorders).

The response choices for each question are past month, 2–12 months ago, more than a year ago or never. The number of past-month symptoms is used as a measure of change, the number of past-year symptoms is used to indicate the probability of a current diagnosis and the number of lifetime symptoms is used as a measure of lifetime severity.

The GAIN-SS has been validated for adolescents ages 10–17 as well as adults. Completion time is 3–5 minutes, and it can be administered electronically or by a clinician. There is a licensing fee. It is not clear whether the tool is still available, although the tool is listed on the website of Chestnut Health Systems in Illinois with multiple Canadian sites shown at gaincc.org/canada

The 2009 CAMH document *Screening for Concurrent Substance Use and Mental Health Problems in Youth* has a useful table on screening tools that is reproduced here in part in Appendix D. As for the CRAFFT tool, the table includes the GAIN-SS as a screening tool for pre-teens and adolescents approximately ages 12–17 and assigns the following descriptions: (a) screening stage = first (versus second); (b) quality of reporting = high (versus medium or low); (c) strength of reliability and validity = medium (versus high or low); and (d) stakeholder enthusiasm = medium (versus high or low).

4.7. NIAAA tool

NIAAA*	Alcohol Screening and Brief Intervention for Youth	• Two-question alcohol screen; and • Screens for use by friends and for personal use in children and adolescents aged ≥9 years.	Carswell et al (2019) Levy et al (2016b) Levy et al (2014) Parast et al (2018)

NIAAA's tool for identifying young people at risk for alcohol-related problems, developed in 2011, consists of two questions—one asks about friends' drinking and the other about personal drinking frequency (Spirito et al 2016). The tool asks slightly different questions based on whether a teen is in middle or high school. On the basis of age and number of drinking days, the person is categorized as low, medium or high risk (D'Souza-Li & Harris 2016). A guide is available at NIAAA (2018).

The tool has been investigated in a range of settings including primary care and pediatric EDs. It has been found to be good at identifying adolescents with problematic drinking levels with good test-retest reliability and reasonably high sensitivity (0.88) for identifying adolescents with alcohol use disorder (AUD) (Parast et al 2018).

A 16-site study determined the psychometric properties of the NIAAA tool in pediatric EDs, enrolling ~5,000 adolescents ages 12–17. A subsample of 274 (with a 68% response rate) was re-screened a week later to assess test-retest reliability, which was shown to be moderate-to-good. Results showed that a classification of moderate risk or higher had the best combined sensitivity and specificity for determining a diagnosis of AUD. Any past-year drinking among middle school students increased the odds of an AUD diagnosis, whereas the optimal cut-off for high school ages was ≥3 drinking days in the past year. The authors concluded that the NIAAA tool is a brief, valid approach for alcohol screening in pediatric EDs with a positive screen suggesting referral for further evaluation (Spirito et al 2016).

Using the same study data, the NIAAA tool was used to examine associations with CUD, cigarette smoking or lifetime use of other drugs (Spirito et al 2019). Results showed that drinking in the past year was positively associated with a CUD, lifetime cigarette smoking and lifetime use of other drugs, holding true for both sexes and most ethnicities. Several practical points were made: (a) a screening tool must be brief, easy to administer, and require minimal staff training; and (b) adolescents may be more willing to admit to alcohol use versus marijuana, tobacco or other drug use, so being identified as being as being at risk for alcohol use may provide an opening for a staff person to probe further about tobacco and other drug use.

Some studies of the NIAAA tool:

- **Parast et al 2018:** Adolescents ages 12–18 (n=1,573, 27% black, 51% Hispanic) were screened using the tool. ROC analyses were used to identify the optimal cut-point, and this was found to depend on participants' age and grade. The study independently validated the NIAAA tool with the exception of screening for adolescents age 18, where it was determined that lower cut-points should be considered to increase sensitivity.

- **Levy et al 2016b:** Although the NIAAA tool was designed for general populations, it was validated in a population of young people with chronic medical conditions such as arthritis, asthma and diabetes. Results showed the tool to be highly efficient for detecting alcohol use and discriminating disordered use, making it feasible for use in specialty care.

- **Weitzman et al 2015:** An expanded version of the NIAAA tool that includes tobacco, cannabis and other drugs was tested in patients ages 9–18 with chronic disease in a Boston hospital. Results showed that SU prevalence rates were comparable with those of the general population of adolescent primary care patients, i.e., 36% reported any past-year alcohol use, 13% reported binge drinking and 20% reported marijuana use.

- **Carswell et al 2019:** Computerized web- and mobile-compatible formats of the NIAAA tool were tested, employing an iPad used by 80 adolescents ages 9–18. Results showed this modality to be feasible and well accepted by providers and patients. The authors noted the tool's utility for addressing alcohol misuse in primary care settings.

- **Shadel et al 2019:** The NIAAA tool was also explored to identify adolescents at risk for later cigarette smoking. It was able to identify a reasonable proportion of them (62%), but the authors noted that there are better tools for this purpose.

Researchers have explored whether the NIAAA tool cut-point should vary by gender, race/ethnicity, grade and/or age, and studies have suggested a need for different cut-points depending on the population being screened (Kelly et al 2014, Levy et al 2016b).

4.8. S2BI

S2BI	Screening to Brief Intervention	• Includes tobacco, alcohol, marijuana and other/illicit drug use; • Discriminates among no use, no SUD, moderate SUD and severe SUD; and • Recommended to be used with the Adolescent SBIRT Toolkit for Providers.	Levy et al (2014) Boston Children's Hospital (2015) D'Souza-Li & Harris (2016)

S2BI has been described as a rapid screener that can be used to place adolescents into risk categories to guide interventions. This screen has demonstrated high sensitivity and specificity for identifying SU disorders (Beaton et al 2016). First described by authors from Boston Children's Hospital (Levy et al 2014), the S2BI tool triages adolescents into four categories regarding their experience with non-tobacco substance use including eight types of drugs:[11] (a) no past-year alcohol or drug use; (b) past-year alcohol or drug use without a SUD; (c) mild or moderate SUD; and (d) severe SUD. The tool also has three categories for tobacco use: (a) no tobacco use; (b) tobacco use; and (c) nicotine dependence.

In the Levy et al (2014) study of 340 teens ages 12–17 who were invited to participate, 216 (64%) enrolled (mean age 16, 67% female, 32% each White or Black race, 56% two-parent home, 55% parent a college graduate). Results on the S2BI were compared with results using the Composite International Diagnostic Interview—Substance Abuse Module (CIDI-SAM) with modifications to include tobacco craving. Results showed that S2BI sensitivity and specificity were 100% and 84% (95%CI, 76–89%) for identifying non-tobacco SU, 90% (95%CI, 77–96%) and 94% (95%CI, 89–96%) for SUD, 100% and 94% (95%CI, 90–96%) for severe SUD and 75% (95%CI, 52–89%) and 98% (95%CI, 95–100%) for nicotine dependence. No significant differences were found in sensitivity or specificity between the full tool and the S2BI tool. According to the study authors, a unique quality of the S2BI is its ability to discriminate between mild or moderate and severe SUDs. Historically, physician acumen for identifying patients with severe SUDs has been poor, so many opportunities for referring adolescents to treatment are missed. "*A tool that can accurately identify adolescents who meet criteria for severe SUD could be a step toward improving the rates of referral to treatment for this underserved population*." (Levy et al 2014)

11 The drug categories in the S2BI are: tobacco products; alcohol; marijuana; Illegal drugs such as cocaine or Ecstasy; prescription drugs that were not prescribed for the patient (such as pain medication or Adderall); over-the-counter medications such as cough medicine for nonmedical reasons; inhalants such as nitrous oxide; and herbs or synthetic drugs such as salvia, K2, or bath salts (Levy et al 2014).

5. Summary / Discussion

The primary focus of this report was to identify and describe screening tools used to uncover SU by young people and to determine their related needs, issues, challenges and concerns. There are some interesting challenges in this field, for example: (a) the landscape with respect to SU tools appears to be in constant flux with new tools being profiled and others losing favour; and (b) many tools appear to be local with limited distribution—or at least limited mention in publications. An example is a 2012 compilation of SU screening and assessment tools by SAMHSA in which, of a total of 27 tools mentioned for SU screening and/or assessment, only two appear in recent literature (SAMHSA 2012a). It is also unclear whether some or all tools are considered forms of SBIRT (described as offering a practical, integrated model for addressing SU in primary care settings).

For this report, seven tools for screening (some reaching beyond just screening) were mentioned more commonly in recent publications and 12 were mentioned less often. This report provides detail on the seven with only brief mention of the 12. There were additional tools mentioned by some authors—generally in older publications—that were not included in this report.

The more common screening tools covering alcohol and/or SU plus or minus MH issues, each one either developed for young people specifically or validated in this population, included:

- ASSIST;
- AUDIT (including AUDIT-C, US-AUDIT, and US-AUDIT-C—specific to alcohol);
- BSTAD (a modification of NIAAA to add problematic tobacco, alcohol and marijuana use);
- CRAFFT (and RAFFT—a shorter version without “C” for cars);
- GAIN-SS (for SU and MH);
- NIAAA; and
- S2BI.

Details on each of these seven tools are included in the report, including representative references. In addition, 12 tools that were mentioned less often and that were generally restricted in setting (e.g., developed for the Cherokee Nation of Oklahoma) included: ASCOS, eCHUG, Check Yourself, CHISPA, CONNECT, CUDIT-R, DrinkThink, METH-DBS, RAPI, SACS, SSLS:NV and YouthCHAT. In Appendix B, two additional tools are described that delve into functional impairment (the Columbia Impairment Scale-Youth Version) or reducing alcohol use (Communities Mobilizing for Change on Alcohol (CMCA) and CONNECT).

Note that although the main objective of this report was to describe tools used to screen young people for SU, there was a hope at the outset that tools could be identified that went beyond screening for use to identifying their needs, issues, challenges and concerns. Unfortunately, limited information was available and this appears to be an area for further research.

6. References

Beaton A, Shubkin CD, Chapman S. Addressing substance misuse in adolescents: A review of the literature on the screening, brief intervention, and referral to treatment model. Curr Opin Pediatr. 2016 Apr;28(2):258-65.

Boston Children's Hospital. Screening to Brief Intervention (S2BI) Tool. 2015. Available at: www.mcpap.com/pdf/S2BI_postcard.pdf

Carswell SB, Mitchell SG, Gryczynski J, Lertch E. Computerizing NIAAA's best practices for youth screening and brief intervention: A proof-of-concept pilot study of an automated alcohol screening and intervention resource tool. J Drug Educ. 2019 Dec:47237919894960.

Centre for Addiction and Mental Health (CAMH). Screening for concurrent substance use and mental health problems in youth. 2009. Available at: https://www.porticonetwork.ca/documents/489955/494758/Screening+for+Concurrent+Substance+Use+and+Mental+Health+Problems+in+Youth+PDF/aa31224c-ff0e-41ff-aeb8-900075fd855c

Centre for Addition and Mental Health (CAMH). Ontario Student Drug Use and Health Survey (OSDUHS). 2020. Summary report available at: https://www.camh.ca/-/media/files/pdf—osduhs/summary_drugusereport_2019osduhs-pdf.pdf?la=en&hash=A3258092222364675C9640A442B86D430F474B20

Chappell E. Substance use best practice tool guide (Tennessee). 2016. Available at: https://www.tn.gov/content/dam/tn/mentalhealth/documents/FINAL_-_SU_Best_Practice_Tool_Guide.pdf

Chung T, Colby SM, Barnett NP, et al. Screening adolescents for problem drinking: performance of brief screens against DSM-IV alcohol diagnoses. J Stud Alcohol. 2000 Jul;61(4):579-87. [Abstract only]

Cleverley K, Brennenstuhl S, Henderson J. Measuring functional impairment: Preliminary psychometric properties of the Columbia Impairment Scale-Youth Version with youth accessing services at an outpatient substance use programme. Early Interv Psychiatry. 2019 Nov;26:26.

Coulton S, Alam MF, Boniface S, et al. Opportunistic screening for alcohol use problems in adolescents attending emergency departments: An evaluation of screening tools. J Public Health (Oxf). 2019 Mar;41(1):e53-e60. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6459356/pdf/fdy049.pdf

Das JK, Salam RA, Arshad A, et al. Interventions for adolescent substance abuse: An overview of systematic reviews. J Adolesc Health. 2016 Oct;59(4S):S61-S75. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5026681/pdf/main.pdf

Dennis ML, Chan YF, Funk RR. Development and validation of the GAIN Short Screener (GSS) for internalizing, externalizing and substance use disorders and crime/violence problems among adolescents and adults. Am J Addict. 2006;15 Suppl 1:80-91. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5933850/pdf/nihms961578.pdf

Derges J, Kidger J, Fox F, et al. 'DrinkThink' alcohol screening and brief intervention for young people: a qualitative evaluation of training and implementation. J Public Health (Oxf). 2018 Jun;40(2):381-8. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6053838/pdf/fdx090.pdf

Dhalla S, Zumbo BD, Poole G. A review f the psychometric properties of the CRAFFT instrument: 1999-2010. Curr Drug Abuse Rev. 2011 Mar;4(1):57-64.

D'Souza-Li L, Harris SK. The future of screening, brief intervention and referral to treatment in adolescent primary care: research directions and dissemination challenges. Curr Opin Pediatr. 2016 Aug;28(4):434-40. Available via Google Scholar.

Gans J, Falco M, Schackman BR, Winters KC. An in-depth survey of the screening and assessment practices of highly regarded adolescent substance abuse treatment programs. J Child Adolesc Subst Abuse. 2010 Jan;19(1):33-47. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2832184/pdf/nihms179800.pdf

Ganz T, Braun M, Laging M, et al. Effects of a stand-alone web-based electronic screening and brief intervention targeting alcohol use in university students of legal drinking age: A randomized controlled trial. Addict Behav. 2018 Feb;77:81-8. Available via Google Scholar.

Garrett BA, Komro KA, Merlo LJ, et al. CONNECT: Implementation of a school-based alcohol screening and brief intervention for youth in the Cherokee nation. J Sch Health. 2019 Nov;89(11):874-82.

George T, Vaccarino F. Substance abuse in Canada: The effects of cannabis use during adolescence. Ottawa, ON: Canadian Centre on Substance Abuse. 2015. Available at: https://www.ccsa.ca/sites/default/files/2019-04/CCSA-Effects-of-Cannabis-Use-during-Adolescence-Report-2015-en.pdf

Gryczynski J, Kelly SM, Mitchell SG, et al. Validation and performance of the alcohol, smoking and substance involvement screening test (assist) among adolescent primary care patients. Addiction. 2015 Feb;110(2):240-7. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4301997/pdf/nihms-634950.pdf

Harvard Medical School / Boston Children's Hospital. About the CRAFFT. 2018. Available at: http://crafft.org/about-the-crafft/

Kelly SM, Gryczynski J, Mitchell SG, Kirk A, O'Grady KE, Schwartz RP. Validity of brief screening instrument for adolescent tobacco, alcohol, and drug use. Pediatrics. 2014 May;133(5):819-26. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4006430/pdf/peds.2013-2346.pdf

Khalil GE, Calabro KS, Prokhorov AV. Development and initial testing of the brief adolescent smoking curiosity scale (ASCOS). Addict Behav. 2018 Mar;78:67-73. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5783772/pdf/nihms919106.pdf

Khazaee-Pool M, Jahangiry L, Pashaei T, et al. Development and psychometric properties of the methamphetamine decisional balance scale (METH-DBS) for young adults. Subst Abuse Treat Prev Policy. 2018 Oct;13(1):38. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5783772/pdf/nihms919106.pdf

Komro KA, Livingston MD, Wagenaar AC, et al. Multilevel prevention trial of alcohol use among American Indian and white high school students in the Cherokee Nation. Am J Public Health. 2017 Mar;107(3):453-9. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5296689/pdf/AJPH.2016.303603.pdf

Kuitunen-Paul S, Pfab S, Garbusow M, et al. Identification of heavy drinking in the 10-item AUDIT: Results from a prospective study among 18-21years old non-dependent German males. J Subst Abuse Treat. 2018;86:94-101.

Leslie K. Youth substance use and abuse: challenges and strategies for identification and intervention. CMAJ. 2008 Jan 15;178(2):145-8. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2175001/pdf/20080115s00015p145.pdf

Levy S, Weiss R, Sherritt L, et al. An electronic screen for triaging adolescent substance use by risk levels. JAMA Pediatr. 2014 Sep;168(9):822-8. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4270364/pdf/nihms636996.pdf

Levy SJ, Williams JF, AAP Committee on Substance Use and Prevention. Substance use screening, brief intervention, and referral to treatment. Pediatrics. 2016a;138(1):e20161211. Available at: https://pediatrics.aappublications.org/content/pediatrics/138/1/e20161211.full-text.pdf

Levy S, Dedeoglu F, Gaffin JM, et al. A screening tool for assessing alcohol use risk among medically vulnerable youth. PLoS One. 2016b;11(5):e0156240. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4882018/pdf/pone.0156240.pdf

Liskola J, Haravuori H, Lindberg N, et al. AUDIT and AUDIT-C as screening instruments for alcohol problem use in adolescents. Drug Alcohol Depend. 2018 Jul;188:266-73. Available via Google Scholar.

Livingston MD, Komro KA, Wagenaar AC, et al. Effects of alcohol interventions on other drug use in the Cherokee Nation. Am J Public Health. 2018 Feb;108(2):259-61. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5846594/pdf/AJPH.2017.304188.pdf

Madson MB, Schutts JW, Jordan HR, et al. Identifying at-risk college student drinkers with the AUDIT-US: a receiver operating characteristic curve analysis. Assessment. 2018 Aug:1073191118792091. Available via Google Scholar.

McCarty CA, Gersh E, Katzman K, et al. Screening and brief intervention with adolescents with risky alcohol use in school-based health centers: A randomized clinical trial of the Check Yourself tool. Substance Abuse. 2019;40(4):510-8.

Michaud PA, Belanger R, Mazur A, et al. How can primary care practitioners address substance use by adolescents? A position paper of the European academy of paediatrics. Eur J Pediatr. 2020 Feb;20:20.

National Institute on Alcohol Abuse and Alcoholism (NIAAA). Alcohol screening and brief intervention for youth: A practitioner's guide. 2019. Available at: https://www.niaaa.nih.gov/sites/default/files/publications/YouthGuide.pdf

National Institute for Drug Abuse (NIDA). AUDIT. 2014. Available at: https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/files/AUDIT.pdf

New South Wales Ministry of Health (Australia). Substance use and young people framework. 2014. Available at: https://www.health.nsw.gov.au/aod/professionals/Publications/substance-use-young-framework.pdf

Noffsinger DL, Wurster LA, Cooley J, et al. Alcohol and drug screening of adolescent trauma alert patients at a level 1 pediatric trauma center. Am J Emerg Med. 2019 Sep;37(9):1672-6.

O'Connor EA, Perdue LA, Senger CA, et al. Screening and behavioral counseling interventions to reduce unhealthy alcohol use in adolescents and adults: Updated evidence report and systematic review for the US Preventive Services Task Force. JAMA. 2018 Nov;320(18):1910-28. Available at: https://jamanetwork.com/journals/jama/fullarticle/2714536

Parast L, Meredith LS, Stein BD, Shadel WG, D'Amico EJ. Identifying adolescents with alcohol use disorder: Optimal screening using the National Institute on Alcohol Abuse and Alcoholism screening guide. Psychol Addict Behav. 2018 Aug;32(5):508-16. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6062465/pdf/nihms962931.pdf

Pilowsky DJ, Wu LT. Screening instruments for substance use and brief interventions targeting adolescents in primary care: a literature review. Addict Behav. 2013 May;38(5):2146-53. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3623552/pdf/nihms441989.pdf

Public Health Agency of Canada (PHAC). The Chief Public Health Officer's report on the state of public health in Canada 2018. 2019 Jan. Available at: https://www.canada.ca/content/dam/phac-aspc/documents/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/2018-preventing-problematic-substance-use-youth/2018-preventing-problematic-substance-use-youth.pdf

Ramos MM, Warner T, Rosero DV, Condon TP. A clinical instrument to guide brief interventions for adolescents with substance use concerns. Substance Abuse. 2018 Jan;39(1):110-5.

Riccio KK, Rawlins DB, Talbot JN, Boyd CJ. Demonstration of smartphones as viable tools for adolescent substance use surveillance. Subst Use Misuse. 2019 Dec:1-4.

Schultz NR, Bassett DT, Messina BG, Correia CJ. Evaluation of the psychometric properties of the cannabis use disorders identification test-revised among college students. Addict Behav. 2019 Aug;95:11-5.

Shadel WG, Seelam R, Parast L, et al. Is the National Institute on Alcohol Abuse and Alcoholism Screening Guide useful for identifying adolescents at risk for later cigarette smoking? A prospective study in primary care clinics. J Addict Med. 2019 Mar/Apr;13(2):119-22. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6417951/pdf/nihms-1506398.pdf

Shono Y, Ames SL, Edwards MC, Stacy AW. The Rutgers Alcohol Problem Index for Adolescent Alcohol and Drug Problems: A comprehensive modern psychometric study. J Stud Alcohol Drugs. 2018 Jul;79(4):658-63. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6090099/pdf/jsad.2018.79.658.pdf

Spirito A, Bromberg JR, Casper TC, et al. Reliability and validity of a two-question alcohol screen in the pediatric emergency department. Pediatrics. 2016 Dec;138(6):e20160691. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5127060/pdf/PEDS_20160691.pdf

Spirito A, Bromberg JR, Casper TC, et al. Screening for adolescent alcohol use in the emergency department: What does it tell us about cannabis, tobacco, and other drug use? Subst Use Misuse. 2019;54(6):1007-16. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6476662/pdf/nihms-1520294.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA). Screening tools: drug and alcohol use. 2012a. Appendix D. Examples of screening and assessment tools for substance use disorders. https://ncsacw.samhsa.gov/files/SAFERR_AppendixD.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA). TIP 31: Screening and assessing adolescents for substance use disorders. 2012b. Available at: https://store.samhsa.gov/sites/default/files/d7/priv/sma12-4079.pdf

Tejedor-Cabrera C, Cauli O. Alcohol and cannabis intake in nursing students. Medicina. 2019 Sep;55(10):24. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6843613/pdf/medicina-55-00628.pdf

Thabrew H, D'Silva S, Darragh M, et al. Comparison of YouthCHAT, an electronic composite psychosocial screener, with a clinician interview assessment for young people: Randomized controlled trial. J Med Internet Res. 2019 Dec;21(12):e13911. Available at: https://www.jmir.org/2019/12/e13911/pdf

United States Preventive Services Task Force (USPSTF). Screening and behavioral counseling interventions to reduce unhealthy alcohol use in adolescents and adults: US Preventive Services Task Force Recommendation Statement. Am Fam Physician.2019 Jun 15;99 (12). Available at: https://www.aafp.org/afp/2019/0615/od1.pdf

Verhoog S, Dopmeijer JM, de Jonge JM, et al. The use of the Alcohol Use Disorders Identification Test—Consumption as an indicator of hazardous alcohol use among university students. Eur Addict Res. 2020;26(1):1-9. Available via Google Scholar.

Villarosa-Hurlocker MC, Schutts JW, Madson MB, et al. Screening for alcohol use disorders in college student drinkers with the AUDIT and the US-AUDIT: a receiver operating characteristic curve analysis. Am J Drug Alcohol Abuse. 2020 Mar:1-15.

Weitzman ER, Ziemnik RE, Huang Q, Levy S. Alcohol and marijuana use and treatment nonadherence among medically vulnerable youth. Pediatrics. 2015 Sep;136(3):450-7. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4552090/pdf/peds.2015-0722.pdf

Werry Workforce (New Zealand). Substances and Choices Scale. 2019. Available at: https://werryworkforce.org

World Health Organization (WHO). The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST): Manual for use in primary care. 2011. Available at: https://apps.who.int/iris/rest/bitstreams/52736/retrieve

World Health Organization (WHO). The ASSIST project—Alcohol, Smoking and Substance Involvement Screening Test. 2020. Available at: https://www.who.int/management-of-substance-use/assist

Appendix A: MEDLINE Search Strategy

SEARCH: Database(s): Ovid MEDLINE(R) ALL 1946 to March 25, 2020

TERMS		# HITS
1	*Checklist/	2,621
2	*Health Status Indicators/	10,894
3	*Health Surveys/	11,690
4	*Psychometrics/	13,895
5	*"Surveys and Questionnaires"/	45,173
6	(checklist? or check-list? or index or instrument? or inventories or inventory or measure? or psychometr* or psycho-metr* or scale? or screening or tool?).ti,kf.	600,198
7	or/1-6	649,838
8	exp *Substance-Related Disorders/	208,894
9	exp *Smoking/	73,346
10	exp *"Tobacco Use"/	2,897
11	((alcohol* or cocaine* or ecigarette? or e-cigarette? or ecig? or e-cig? or cannabis* or cigarette? or crack or drug? or glue? or hash* or heroin or inhalant? or marijuana* or marihuana* or medication? or medicine? or morphine* or narcotic? or nicotine? or opiate* or opioid* or opium* or pharmaceutical* or phencyclidine? or prescription? or substance? or tobacco* or vape?) adj2 (abus* or addict* or dependen* or disorder? or misuse* or mis-use* or overdos* or over-dos* or smok* or use? or using)).ti,kf.	152,521
12	(addiction* or (binge? adj drinking) or ((co-occur* or concurrent) adj disorder?) or (substance? adj2 involvement) or vaping).ti,kf.	23,659
13	or/8-12	345,009
14	7 and 13	11,181
15	exp animals/	23,048,061
16	exp animal experimentation/ or exp animal experiment/	9,332
17	exp models animal/	559,576
18	exp vertebrate/ or exp vertebrates/	22,395,220
19	or/15-18	23,049,998
20	exp humans/	18,365,597
21	exp human experimentation/	12,422
22	or/20-21	18,366,251
23	19 not 22	4,684,371
24	14 not 23	11,032
25	limit 24 to ("child (6 to 12 years)" or "adolescent (13 to 18 years)" or "young adult (19 to 24 years)")	3,542
26	(adolescenc* or adolescent? or ((college* or undergraduate* or under-graduate* or universit*) adj5 (age? or student?)) or teen? or teenage* or teen-age* or (young* adj2 adult*) or youth?).ti.	244,028
27	(("12" or "13" or "14" or "15" or "16" or "17" or "18" or "19" or "20" or "21" or "22" or "23" or "24") adj3 year? adj old*).ti,ab.	163,984
28	or/26-27	390,500
29	24 and 28	1,093
30	25 or 29	3,741
31	limit 30 to (english language and yr="2018 -Current")	344

Appendix B: SU Tools Used for Purposes Beyond Screening in Young People

Scale and reference(s)	Notes
Columbia Impairment Scale-Youth Version (CIS-Y) Cleverley et al 2019 (Toronto)	• The CIS measures functional impairment. It is brief, easy to administer without additional training, psychometrically sound in both English and Spanish and has separate versions for parents and youth. • 13 items assess four domains: interpersonal relations, broad psychopathology, school/work and leisure time. • Research with adolescents (<18 years) has found that higher scores are correlated with increased mental health service use and more psychiatric symptoms. Consequently, this tool has become an important instrument for researchers and mental health programs for use in assessing functioning among adolescents and youth ages 16–24. It has recently been strongly recommended by the National Institute of Mental Health (NIMH) and the National Institute on Drug Abuse (NIDA) in the United States as a core measure to be included in all NIMH and NIDA funded studies with children and adolescents to encourage data harmonization across studies. • The Cleverley study tested CIS-Y use in 134 youth (mean age 19, range = 15–24) accessing a Toronto outpatient SU program. Results showed the scale had good internal consistency and discriminated between groups known to have lower and higher functioning.
Communities Mobilizing for Change on Alcohol (CMCA) and CONNECT Komro et al 2017 & Livingston et al 2018	• CMCA = an intervention designed to reduce youth alcohol access; it uses a community organizing approach to engage local citizens in working together to prevent or reduce alcohol use among teenagers. • CONNECT = an individual-level screening and brief intervention approach. • Both studies were carried out in Cherokee communities in Oklahoma. • Komro et al (2017) found that students exposed to CMCA, CONNECT and both showed a significant reduction in the probability over time of 30-day alcohol use (25%, 22% and 12% reduction, respectively) and heavy episodic drinking (24%, 19% and 13% reduction, respectively) compared with students in the control condition, with variation in magnitude of effects over the 2.5-year intervention period. • Livingston et al (2018) found significant reductions in drug use other than alcohol attributable to CMCA and CONNECT. CMCA was associated with a 35% reduction in chewing tobacco use, a 39% reduction in marijuana use and a 48% reduction in prescription drug misuse. CONNECT was associated with a 26% reduction in marijuana use and a 31% reduction in prescription drug misuse.

Appendix C: The Audit Tool

From the NIAAA Youth Guide: niaaa.nih.gov/YouthGuide

Patient: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential, so please be honest.

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

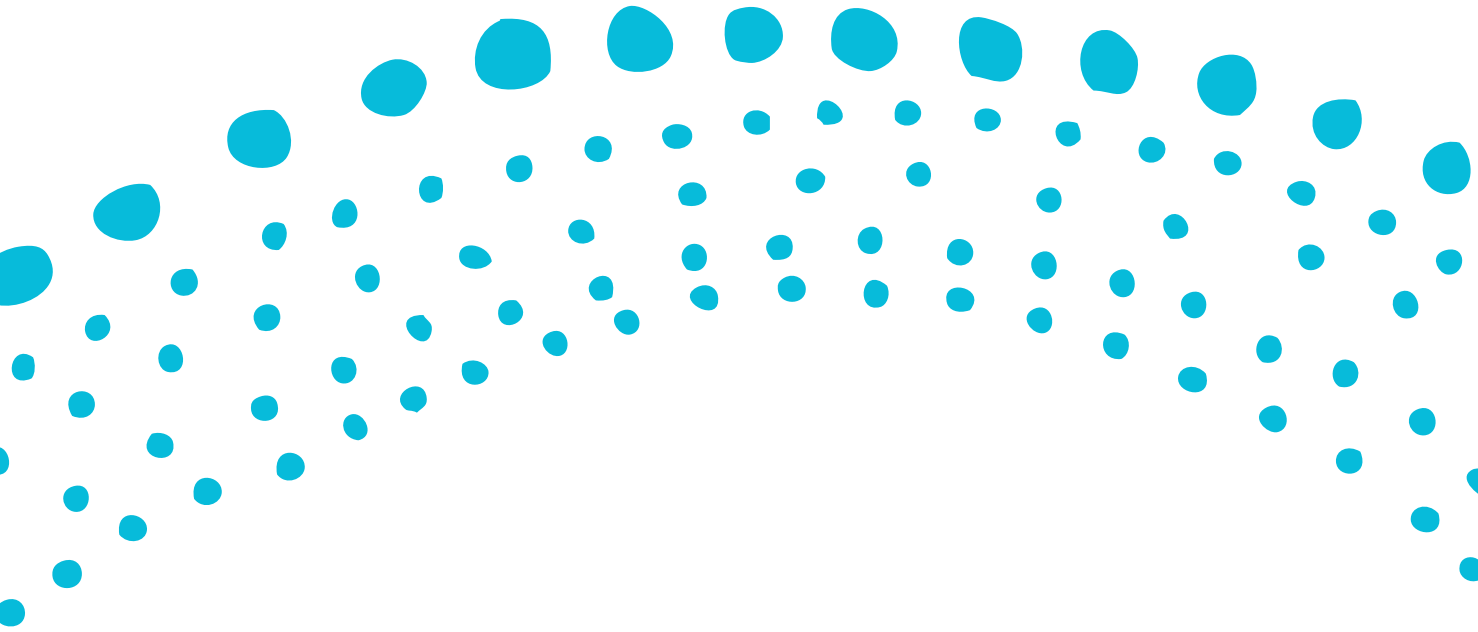
Questions		0	1	2	3	4	
1	**How often do you have a drink containing alcohol?**	Never	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	
2	**How many drinks containing alcohol do you have on a typical day when you are drinking?**	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3	**How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

Appendix D: CAMH Table of Screening Tools (2009)

From CAMH (2009) p. 23:*

Screening Tool	Screening Stage		Quality of Reporting			Strength of Reliability and Validity			Stakeholder Enthusiasm		
Substance Use Disorder but no other MH											
CRAFFT. Age 14–18	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
RAFFT. Age 13–18	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Drug Acknowledgement Scale (ACK). Age 14–18	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
Alcohol/Drug Problem Proneness Scale (PRO). Age 14–18	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
MacAndrew Alcoholism Scale-Revised (MAC-R). Age14–18	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
DEP-ADO. Age 14–19	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Rutgers Alcohol Problem Index (RAPI). Adolescents	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Both SUD and other MH											
Problem Oriented Screening Instrument for Teenagers (POSIT). 12–19	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
DISC Predictive Scales (DPS). Age 9–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
GAIN Short Screener (GSS). Age 10–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Drug Use Screening Inventory (DUSI) and (DUSI-R). 12+	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low

*Centre for Addiction and Mental Health (CAMH). Screening for concurrent substance use and mental health problems in youth. 2009. Available at: https://www.porticonetwork.ca/documents/489955/494758/Screening+for+Concurrent+Substance+Use+and+Mental+Health+Problems+in+Youth+PDF/aa31224c-ff0e-41ff-aeb8-900075fd855c



·FOUNDRY·
WHERE WELLNESS TAKES SHAPE

youth wellness hubs
ONTARIO

foundrybc.ca | youthhubs.ca