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.

DRAFT/INTERNAL

Emergency department services for young people with mental health and/or substance use challenges

Screening and assessment, treatment and referral to community services

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.

DRAFT/INTERNAL

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.

Content may not be reproduced, modified or shared in whole or in part, by photocopy or other means, without the prior written permission of Providence Health Care Society, carrying on activities under the name Foundry.

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

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.

Executive Summary

Background

In young people, challenges related to mental health (MH) and/or substance use (SU) are important to their current and future lives. These young people increasingly present to emergency departments (EDs) for care—in fact, ED presentation is the first time many have been seen for MH/SU challenges. The reasons for increasing use of the ED are likely multiple, i.e., the prevalence of the conditions could be increasing, there could be increased awareness or decreased stigma for care-seeking or there could be health system weaknesses such as a lack of outpatient (OP) community services.

Report objective

To assess the evidence related to ED screening, assessment and treatment for young people (ages 12–24) with MH and/or SU challenges.

Methods

An Ovid MEDLINE literature search and a formal grey literature search were run in mid-May, 2020. One author assessed the material and prepared the report.

Findings

With respect to ED tools to screen and assess young people with possible MH challenges, clinician-administered tools called HEARTSMAP and HEADS-ED seem to be favoured. Both were developed and tested in Canada for use in young people. The tools fulfill both screening and assessing functions to various degrees. In terms of SU, particularly alcohol, the recent literature primarily supports the CRAFFT, AUDIT and NIAAA tools. A recent Canadian systematic review recommended the HEADS-ED, ASQ and NIAAA tools for reporting on MH and/or SU challenges.

Regarding ED management of MH and/or SU challenges, there is great variation and surprisingly little detail, perhaps reflecting the broad range of patients and their presentations. In part, this could be due to the absence of a national, unifying child and youth MH policy framework to inform clinical care guidance. An ED clinical pathway for young people with MH conditions was developed by Ottawa researchers, including screening/assessing and treatment/disposition.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

This report also presents information on the importance of team care, aspects of management specific to SU, some treatment models and findings related to discharge instructions and follow-up OP care. Information on the last two topics was scant.

Summary

Young people are attending EDs in increasing numbers for issues related to MH and/or SU challenges, and a number of tools have been developed to screen and assess their status and needs. There is less guidance in the literature about ED management, perhaps because of wide patient variation. Most young people are not admitted and are discharged to the community, ideally connected to MH and/or SU services in follow-up. The system appears to have a number of weaknesses and a proportion of young people "fall through the cracks."

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Acronyms and Abbreviations

ADHD	attention deficit hyperactivity disorder
ASQ	Ask Suicide-Screening Questions (tool)
AUD	alcohol use disorder
AUDIT	Alcohol Use Disorders Identification Test (tool)
BC	British Columbia
CADTH	Canadian Agency for Drugs and Technologies in Health
CAMH	Centre for Addiction and Mental Health (Ontario)
CMHA	community child and youth mental health agency
CRAFFT	Car, Relax, Alone, Forget, Friends, Trouble (tool)
ED	emergency department
HEADS-ED	Home, Education and Employment, Activities and peers, Drugs and alcohol, Suicidality, Emotions, behaviours, thought disturbance and Discharge or current resources (tool)
HEARTSMAP	Home, Education and activities, Alcohol and drugs, Relationships and bullying, Thoughts and anxiety, Safety, Sexual health, Mood, Abuse and Professionals and resources
ICD	International Classification of Diseases
ICES	Institute for Clinical Evaluative Sciences (Ontario)
MH	mental health
MI	motivational interview(ing)
NACRS	National Ambulatory Care Reporting System (Canada)
NIAAA	National Institute on Alcohol Abuse and Alcoholism (USA)
OP	outpatient
OSDUHS	Ontario Student Drug Use and Health Survey
PICO	population, interventions, comparators and outcomes
RCT	randomized controlled trial
SBIRT	screening, brief intervention, and referral to treatment
SR	systematic review
SU	substance use
SUD	substance use disorder
US/USA	United States of America

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Contents

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

1. Background

Note about terminology: This project sought material related to young people with issues in the areas of mental health (MH), substance use (SU) and MH and SU combined. In the literature, MH and SU appeared both as a combination in one person and combined in reporting for populations, i.e., some references report on MH and SU as unique entities whereas others classify SU as a subset of MH issues. The International Classification of Diseases (ICD) codes SU under MH as "mental and behavioral disorders due to psychoactive substance use." (See Appendix A for the relevant ICD-10-CM codes.)

1.1. Young people and mental health challenges

MH disorders are characterized by alterations in thinking, mood or behaviour and are associated with significant distress and impaired functioning. The most serious psychiatric disorders affecting young people include anxiety disorders, depression, bipolar disorder and schizophrenia. Other common disorders are SU-related issues and behavioural disorders such as attention deficit hyperactivity disorder (ADHD) and eating disorders (CIHI 2015).

Regarding the prevalence of MH disorders in young people in British Columbia (BC), it was reported that about 13% of those ages 4–17 years have clinically significant disorders that require interventions (Waddell et al 2014).

USA data for children and adolescents show the following (Chun et al 2016):

- 21–23% have a diagnosable MH or SU disorder;
- Among ED patients, 70% screen positive for at least one MH disorder, 23% meet criteria for 2 or more MH concerns and 45% have a MH problem resulting in impaired psychosocial functioning; and
- In primary care settings, the prevalence of MH and behavioural disorders is 12–22%.

The prevalence of MH disorders (i.e., the number of cases present in the population at a given time) has remained relatively stable over the past few years in Canada and elsewhere, but the rates of health service use, emergency department (ED) visits and hospital admissions for MH challenges have increased (Gill et al 2017). For example, while overall ED visits increased by ~15% over the previous decade, Vancouver authors reported that MH ED visits for children and youth had nearly doubled. This was attributed to factors such as dissatisfaction with primary care and reduced inpatient and outpatient (OP) services (Koopmans et al 2019).

Ottawa researchers reported on the rates of MH disorders in young people ages 13–17 presenting to Ontario EDs over 14 years (Gardner et al 2019). The rates of visits for MH disorders doubled from about 12/1,000 in 2003 to 24/1,000 in 2017, with acceleration of the rate starting in 2009, particularly in girls. The authors wondered if social media

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

could be an influence. Study conclusions, "With these increasing rates of adolescents presenting to the ED…and the importance of ensuring that they receive good care, we need to find better ways to connect adolescents to mental health and social services during or following their visits."

In France, data for young people under age 18 (mean age 14) who were seen at a Paris tertiary care referral centre ED were compared over four time periods: 1981, 1992, 2002 and 2017 (Benarous et al 2019). Over the 16-year time span, the annual number of patients presenting quadrupled, particularly for anxiety and depression, although no rate differences were found for other disorders such as aggressive behaviours and suicidal attempts. The authors categorized the reasons for referral to ED into 12 possibilities, with the top five in 2017 being agitation and/or aggressive behaviour (24%), anxiety (21%), depressive mood (16%), suicide attempt (9%) and family crisis (6%). Over the time period, the source of referrals to the ED changed as well; the proportion of referrals from families rose from 29% to 58%, referrals from medical professionals fell from 25% to 14% and referrals from police fell from 13% to 1%.

In a USA study of national trends in psychiatric ED visits among young people ages 6¬–24, data from the 2011–2015 National Hospital Ambulatory Medical Care Survey were used, with psychiatric diagnoses identified using ICD-9 codes (Kalb et al 2019). Results showed that across the four-year time span there was a 28% overall increase in psychiatric ED visits for this patient group, from 31 to 40 per 1,000 people.

Research has shown that when young people present to an ED with MH issues, this is the first time many have been diagnosed with MH challenges (described as "first contact" ED visits). In Toronto, authors from the Institute for Clinical Evaluative Sciences (ICES) and the Hospital for Sick Children noted that, from 2010 to 2014, up to half of the ~120,000 Ontario children and youth (ages 10–24) who presented to the ED with MH issues had no previous psychiatric history or contact with the MH care system (Gill et al 2017). The likelihood of no prior MH care in this group was significantly associated with younger age (14–17 versus 22–24 years), rural residence; lowest versus highest income quintile and being a refugee/immigrant versus a non-immigrant. The authors noted that "first contact" behaviour suggested issues with access to timely OP MH care.

Reflecting on the increasing burden of psychiatric emergencies in young people, American pediatricians Chun et al (2019) suggested some possible reasons or factors for the increase:

- True increase in the incidence of MH problems;
- Heightened awareness of MH problems;
- Decreased stigma for seeking MH care;
- Lack of accessible community MH services, particularly acute care;
- Long waits for appointments;
- Lack of insight by clinicians as to appropriate treatment of MH problems in young people;
- Shortage of trained MH providers and specialized services; or
- Impact of social media or other societal factors.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

1.2. Young people and substance use challenges

Lifelong behaviours often become established in adolescence and young adulthood, so SU[1] in young people has potential short- and long-term negative impacts (Das et al 2016, Michaud et al 2020). Many young people experiment with SU, but some do so in ways that are harmful to themselves and others, i.e., some engage in SU to "have fun" and "be social," but a smaller group uses substances to deal with stress or emotional pain, and this group is at greater risk of problematic SU (PHAC 2019).

In terms of the various substances used, the longest running Canadian survey of SU in young people, 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 in Ontario

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

Another estimate of SU in young people came from a retrospective chart review based on 2009–2010 data for 641 youth (ages 10–16) who presented to the Edmonton pediatric hospital ED with complaints related to recreational drug use (Driedger et al 2015). Patient median age was 15 years, 56% were female, 6% were homeless and 21% were wards of the state. Pre-existing SU was present for 31% and a pre-existing MH disorder for 17%. The most frequent ingestions were ethanol (74%), marijuana (20%), ecstasy (19%) and medications (15%). Over one-third had ingested two or more substances.[4]

1 In this document, SU includes tobacco, alcohol and 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 English and French public and Catholic schools. Starting in 1977, the survey has been conducted every 2 years (CAMH 2020).
3 Heavy drinking rates are higher in some subgroups, e.g., young Indigenous people living off-reserve report more frequent heavy drinking than their non-Indigenous peers; 33% of Métis youth report heavy drinking in the past month in BC and 10% of First Nations youth living on-reserve report heavy drinking (PHAC 2019).
4 The authors concluded, "Youth who presented to the ED for [SU] represented a socially vulnerable population whose use of recreational substances resulted in high medical acuity and significant morbidity. Improved clinical identification of such high-risk youth and subsequent design of interventions to address problematic [SU] and social issues are urgently needed to complement the acute medical care that youth receive." (Driedger et al 2015)

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

Concurrent use of tobacco, alcohol or other drugs is a concern because use of one influences use of another, leading to negative health outcomes and reduced rates of cessation. Among adolescents, polysubstance use is strongly associated with SU problems, including substance use disorder (SUD) diagnoses (Livingston et al 2018). Primary care providers and other 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).

ED presentations can include intoxication, withdrawal, an interaction between substances and medications or an exacerbation of mental illness in the context of SU. A person's reaction to a drug depends on a number of factors such as: characteristics of the individual (e.g., age, size, gender, health state or mood); pharmacology/pharmacokinetics of the substance(s) used; substance dosage and route; and previous experience with the substances. When presenting for care, young people may conceal or deny SU, fearing potential parent/guardian responses, or they may have experienced trauma (Child Health BC 2019).

1.3. Young people and mental health and/or substance use challenges

This report section presents information on both young people with combined MH and SU challenges and studies that blend data on ED presentations for MH and SU.

A California study used USA national data (1997–2010) to analyze various aspects of ED visits by young people (ages 11–24) with issues related to MH and/or SU ("dual diagnosis"), reporting that 21% of SU visits were complicated by MH challenges (Fahimi et al 2015). The authors noted that young people with dual diagnosis can be among the most difficult to manage in the ED.

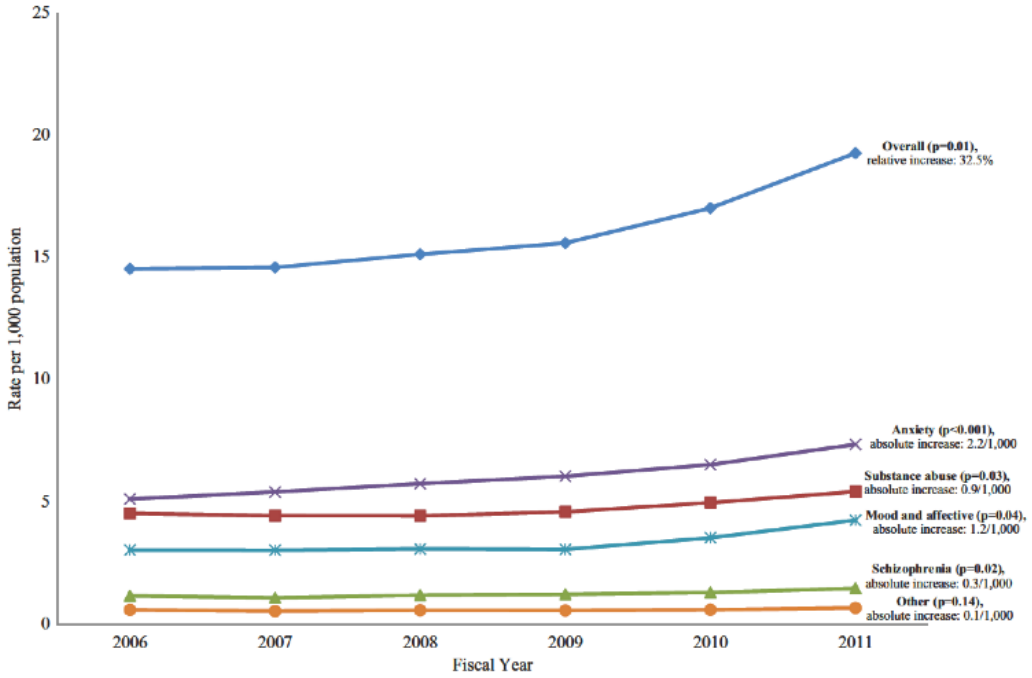
In terms of tracking the ED experience of young Canadians with MH and/or SU challenges, ICES in Toronto has played an active role.

- **Gandhi et al 2016:** ICES researchers studied the 2006–2011 trends in ED visits for MH and/or addictions for young Ontarians ages 10–24 using data from the National Ambulatory Care Reporting System (NACRS). Results showed an ED visit rate increase over the five years of 33%, with the most common reason for presentation being anxiety disorders (Figure 1 on page 11). The authors also measured the trend in use of OP services and found that these increased as well, but at a slower rate. They postulated that young people are accessing ED rather than community MH services due to poor access to the latter.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Figure 1: Age and sex standardized rates of ED visits for MH and addictions for Ontario youth ages 10–24 from 2006 to 2011 (Gandhi et al 2016)*



* Blue = overall, purple = anxiety, red = SU, teal = mood and affective, green = schizophrenia, orange = other

- A 2017 ICES "score card" report presented a large amount of 2006–2014 data (200+ pages) on youth with MH and/or SU challenges (ages 10–24) and their areas of service use including ED visits (MHASEF 2017). Some observations:
  - » ED visits for MH and/or SU challenges have been increasing over time for both sexes and across most age groups;
  - » ED visit rates were highest among females and those ages 18–21 years;
  - » For all ages, the most common reason for an ED visit was anxiety disorder. Visit rates for mood disorders and substance-related disorders also increased, while rates for schizophrenia, neurodevelopmental and other selected disorders and deliberate self-harm showed smaller increases over time; and
  - » Children and youth living in lower income neighbourhoods had higher visit rates versus those living in higher income neighbourhoods.

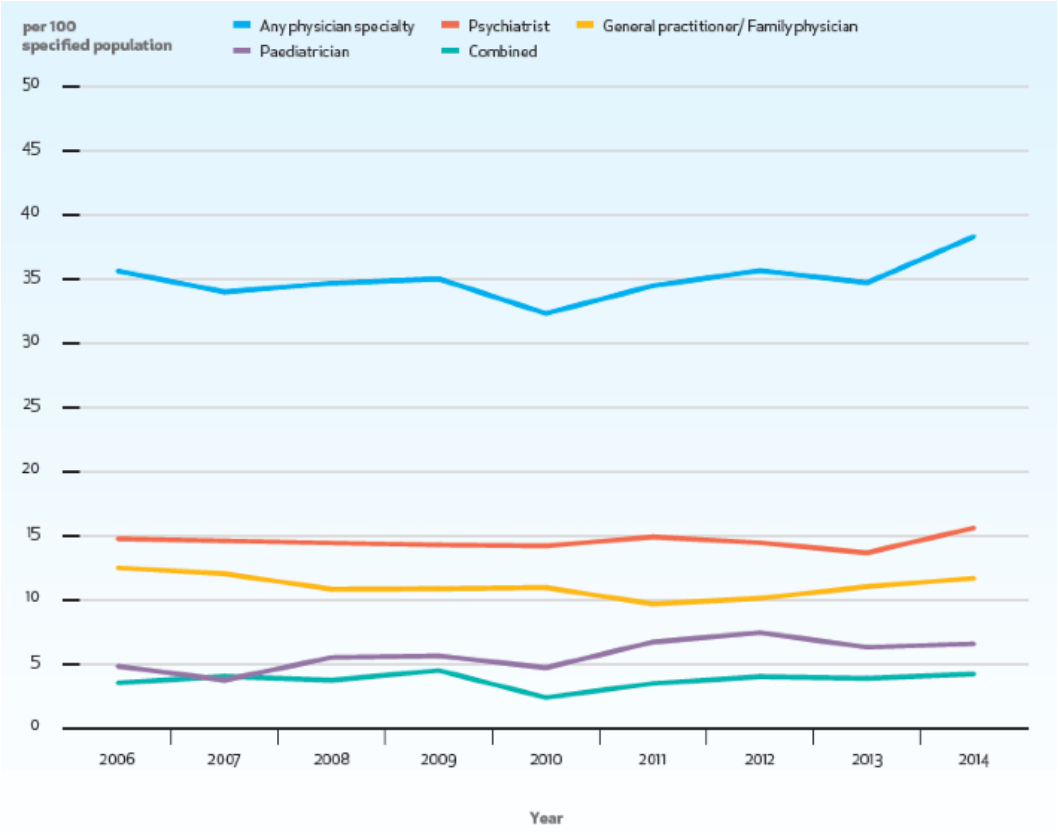
Authors' interpretation: The steady rise in ED visits for MH and/or SU challenges may reflect reduced stigma and thus an increase in the number of individuals seeking help. It may also reflect a true increase in the burden of MH and SU problems among young people. The increase indicates that greater efforts are needed to manage individuals through community-based MH/SU services or primary care services. A greater volume of care received from these services may help lessen the burden on the acute care system.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

This 2017 ICES report also presented data on the rate of OP visits within seven days of leaving the hospital after treatment for MH and addictions, although only for care provided by physicians (psychiatrists, pediatricians and family physicians). The rationale for the benefit of this physician follow-up was that it may encourage adherence to treatment, improve communication between care providers and patients and prevent hospital readmissions. Results showed that following a psychiatric hospital discharge, about one in three of the patients was seen by a physician in follow-up and overall rates did not increase substantially over time (Figure 2).

Figure 2: Ontario outpatient visits within 7 days of MH/SU discharge per 100 standard population by physician specialty, 2006–2014 (MHASEF 2017)



* Blue = any physician specialty, orange = psychiatrist, yellow = family physician, purple = pediatrician, teal = combined

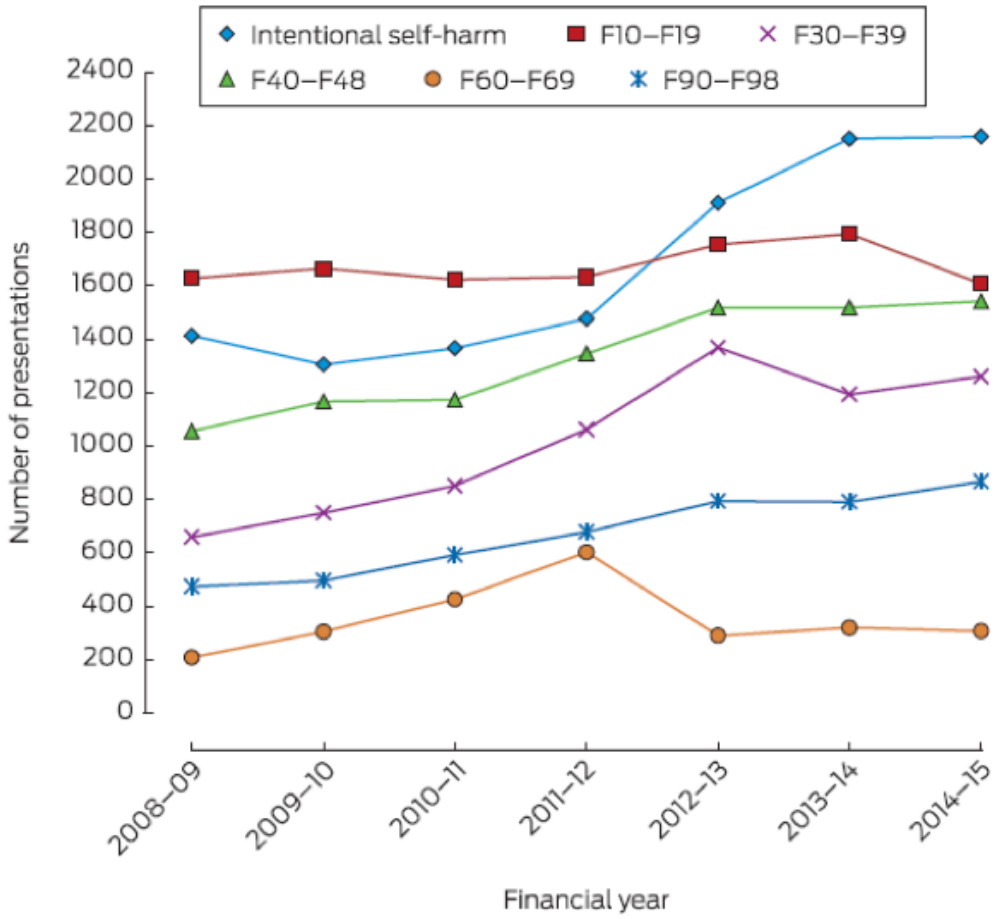
Finally, a study in the state of Victoria in southeastern Australia (population ~6.4 million), compared trends in ED presentations by children and adolescents ages 0–19 for MH (including SU) and physical health problems from 2008/09 to 2014/15 (Hiscock et al 2018). The seven years of data covered ~2.5 million ED visits. Results showed that the number of MH/SU presentations increased by 7% per year versus physical health presentations that increased at a rate of 2%. Stress-related, mood and behavioural and

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

emotional disorders together accounted for 40% of MH visits, followed by self-harm at 23% and psychoactive SU at 22%. The rates of presentations for stress-related, mood and behavioural and emotional disorders, as well as self-harm, increased markedly over the study period, but an increase was not seen for SU disorders and personality disorders (Figure 3). Patients presenting with MH problems were more likely than those with physical problems to be triaged as urgent, present outside business hours, stay longer in the ED and be admitted to hospital.

Figure 3: Presentations to ED by young people aged 0–19 years for MH problems (including SU) from 2008-09 to 2014-15 by ICD-10 code (Victoria, Australia; Hiscock et al 2018)



ICD-10-AM = International Classification of Diseases, revision 10, Australian modification. Broad category codes: psychoactive substance use-related (F10–F19), mood disorders (F30–F39), stress- and anxiety-related (F40–F48) adult personality disorders (F60–F69), and behavioural and emotional disorders (F90–F98). ◆

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

2. Objective of this Report

This report is specific to young people (ages 12–24) with MH and/or SU challenges who presented to an ED with issues related to these challenges. The report presents the literature on screening and assessment, as well as treatment. To guide the report, the population, interventions, comparators and outcomes (PICO) were defined in advance (Table 2).

Table 2: Project PICO (Population, Interventions, Comparators and Outcomes)

Population	Young people ages 12–24 with mental health and/or substance use challenges (MH and/or SU) who presented to an ED with issues related to these challenges
Interventions	(a) Screening, assessment and treatment in the ED (including referral): • Which tools are used to screen/assess young people in an ED for MH and/or SU challenges; and • What types of care are provided to these young people in the ED, including referral to community services. (b) Observed barriers and facilitators to care in the ED.
Comparators	Not applicable
Outcomes	Any
Search parameters	Ovid MEDLINE—English language, past 5 years Grey literature (primarily via CADTH *Grey Matters*) and selective review of bibliographies

3. Methods

An experienced health information specialist used the PICO guidance to design an Ovid MEDLINE literature search that was run on May 14, 2020. The search strategy (Appendix B) used the National Library of Medicine's MeSH (Medical Subject Headings) controlled vocabulary, limited to the English language from 2015 forward. A structured grey literature search[5] sought additional materials from 2015 forward using the Canadian Agency for Drugs and Technologies in Health (CADTH) *Grey Matters* checklist.[6] One author assessed the material and prepared the report.

5 Grey literature terms: (emergency OR "urgent care") ("mental health" OR addiction OR meth OR cocaine OR alcohol OR e-cigarette OR cannabis OR crack OR drug OR hash OR heroin OR inhalant OR intoxicate OR marijuana OR morphine OR narcotic OR nicotine OR opiate OR substance OR tobacco OR vaping) (adolescent OR child OR youth OR "young adult") (barrier OR facilitator OR "best practice" OR guideline)

6 CADTH *Grey Matters*: Grey literature includes government information and reports that are not published commercially and that may be inaccessible via bibliographic databases. The tool is available at: cadth.ca/sites/default/files/is/Grey%20Matters_EN-2019.doc

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

4. Results

Integral to this area of care is the presence of suitable ED providers and teams equipped to identify concerns, manage acute problems and provide referrals to ongoing care. For this to occur, EDs and hospital systems must view MH and/or SU care as an integral part of their mission and work toward building teams to meet patients' needs (Chun et al 2019).

This report summarizes the literature on the screening and assessment as well as treatment in the ED (including referral) for young people with MH and/or SU challenges.

In particular:

- How are young people screened and assessed for MH and/or SU challenges in EDs?
- What approaches to and types of care do these young people receive in the ED?
- Details about referral from an ED to community OP services.

4.1. Screening and assessing young people in the ED

4.1.1. Screening and assessing for MH issues

The recent literature mainly focussed on two MH (or "psychosocial") screening and assessment tools for young people: HEARTSMAP and HEADS-ED. Both were developed in Canada.

A. HEARTSMAP

This tool, a modification of the well-known HEADSS tool used for adolescent psychosocial history taking, was developed in Vancouver (Gill et al 2018). An online resource,[7] the HEARTSMAP is used by clinicians to conduct a 15- to 20-minute MH screening and assessment exercise in young people across 10 variables of psychosocial health with three to six questions per variable: **H**ome, **E**ducation and activities, **A**lcohol and drugs, **R**elationships and bullying, **T**houghts and anxiety, **S**afety, **S**exual health, **M**ood, **A**buse and **P**rofessionals and resources (HEARTSMAP 2020). Scores feed into an algorithm that distinguishes between types of needs (social, behavioural and psychiatric) and the acuity of the needs. The tool puts the screening and assessment information through an algorithm and recommends management decisions, including issuing a report that can be integrated into a patient's medical record. Table 3 on page 16 displays basic detail from five HEARTSMAP studies, all from Vancouver researchers (Koopmans et al 2019, Gill et al 2018, Virk et al 2018, Lee et al 2019, Doan et al 2020).

7 The HEARTSMAP tool is available at: heartsmap.bcchr.ca/ords/heartsmap/r/143/files/static/v40/pdf/HEARTSMAP-Guide_10Feb2020.pdf

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

Table 3: Studies of HEARTSMAP

Lead (year)	Study details	Findings
Gill (2018)	Review of 400 charts at four large ED sites in three regions to assess inter-rater agreement on HEARTSMAP assessments; patients up to age 17.	Agreement levels were high among clinicians, although documentation was variable. Authors' conclusions: The tool can be reliably used across a diverse range of EDs.
Virk (2018)	Tool evaluation by 16 clinicians from diverse BC ED settings using a set of 50 fictional clinical vignettes.	High levels of agreement among clinicians for all psychosocial sections of the tool and acceptable agreement across tool-triggered recommendations. Authors' conclusions: HEARTSMAP may be reliably used by ED clinicians in assessing MH issues among young people.
Koopmans (2019)	Evaluation of tool dissemination to 52 BC EDs with education of 475 clinicians. Information was drawn from session evaluation forms and online tool data.	96% of attendees noted that the tool increased their comfort in conducting psychosocial assessments and confidence in disposition planning. The main barriers to tool use were unclear processes and lack of local resources. 1/3 said they were willing to use the tool and 27% accessed the online tool within the following year.
Lee (2019)	Testing of inter-user reliability of HEARTSMAP including impact of implementing it at the BC Children's Hospital ED. Two study phases: tool validation using a retrospective cohort and implementation using a prospective cohort.	Phase 1: sensitivity 76%, specificity 65%. Phase 2 (n=62 patients): 74% of cases triggered a recommendation for ED psychiatry assessment, 63% were evaluated by psychiatry and 21% were admitted. At follow-up, all had accessed community resources. Conclusions: HEARTSMAP had strong inter-rater reliability and high rates of OP resource connectivity. It can provide ED clinicians with reliable and comprehensive assessment and management strategies.
Doan (2020)	Assessing myHEARTSMAP (a mobile device self-assessment and management guiding tool) in ~800 youth 10–17 years who presented to EDs with non-MH-related presentations—versus a standardized clinical MH assessment.	Mobile tool sensitivity 93%, specificity 99% (responses from young people or guardians). Although presenting to the ED for a non-MH-related complaint, 36% of young people self-identified psychosocial issues in at least one psychosocial domain that warranted further follow-up (38% of these already had resources in place). 33% were advised to contact MH supports. NOTE: Loss to follow-up was high at 28%.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

B. HEADS-ED

Developed in Ottawa, HEADS-ED is an ED MH screening and assessment tool for young people. Seven domains are covered: Home, Education and Employment, Activities and peers, Drugs and alcohol, Suicidality, Emotions, behaviours, thought disturbance and Discharge or current resources. The clinical severity and scoring system aids in decision making for next step of care. Three ordinal categories are used to indicate level of action required: no action needed (0); action needed but not immediately (1); and immediate action required (2). Higher total score meant a need for immediate action (Clark et al 2019). Table 4 displays details from four HEADS-ED publications from Ontario and Nova Scotia (Cappelli et al 2012, Jabbour et al 2018, Clark et al 2019, Cappelli et al 2020).

Table 4: Publications about HEADS-ED

Lead (year)	Study details	Findings
Cappelli (2012)	Clinicians in Ottawa completed the HEADS-ED for 313 young patients (median age 15) presenting to ED with MH concerns. A second rater participated in 20% of cases.	The overall inter-rater reliability analysis indicated strong agreement between raters (r = 0.785). Predictive accuracy for admission to hospital or discharge to the community was good (sensitivity 82%, specificity 87%). Authors' conclusions: HEADS-ED shows promise as a screening tool and provides potential for use as a decision tool to determine referral for psychiatric consultation, admission decisions and guidance in the selection of community services.
Jabbour (2018)	Ontario experts developed a clinical pathway to guide and support the ED care of young people with MH concerns and to integrate OP follow-up services.	100 potentially relevant screening tools were identified at the outset. HEADS-ED and ASQ were chosen as most suitable for the pathway, to be administered by an ED physician or MH clinician (based in part on an SR by Newton et al 2017a).
Clark (2019)	Evaluated HEADS-ED when used in a hospital-based centralized MH referral telephone intake process (at the children's hospital in Halifax) for 674 young people ages 3–19 (mean age 12 years).	Tool uptake was 100% by telephone navigators over four months. Decision validity indicated that 86% of initial referrals matched treatments that were actually received. Inter-rater reliability indicated strong agreement between raters. Authors' conclusions: The findings support the use of the HEADS-ED tool in a telephone-based MH intake system to help guide initial assessment and inform decision making about fit of next step in care, both within the health center-based MH system and in the community.
Cappelli (2020)	ED physicians in Ottawa used the HEADS-ED to guide assessment and identify areas of MH need in 639 patients (mean age 15 years) who presented to a tertiary care ED with MH concerns.	HEADS-ED guided consultation to psychiatry/ crisis, with 86% receiving a recommended consult. The HEADS-ED mean score was significantly higher for those who received a consult versus those who did not. Also, the mean score for those admitted was significantly higher versus those discharged. Agreement on needs requiring action between ED physicians and crisis intervention workers was obtained for a subset of 140 patients and ranged from 62% to 93%.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Comparison of the HEADS-ED versus HEARTSMAP tools: Both tools are administered by a clinician and assess a young person's state of MH functioning in a number of important areas using an ordinal scale of 0 (no concerns or action needed) to 2 (major concerns in HEARTSMAP) or 3 (immediate action needed/severe functional impairment in HEADS-ED). The 10 categories covered by HEARTSMAP—versus seven for HEADS-ED—include sexual health and abuse, as well as separating the "emotions, behaviours and thought disturbance" section into "thoughts and anxiety" and "mood and behaviour." HEARTSMAP also includes a separate short section under each topic for the assessor to indicate whether resources are required or already in place. For example, under "Home," the resources box allows for indication of: (a) social supports neither requested nor initiated; or (b) social supports involved (resource requested and services initiated). According to Lee et al (2019), a shortcoming of HEADS-ED versus HEARTSMAP is its lack of guidance as to the types or urgency of services required, and it does not distinguish psychiatric from social or behavioural needs.

Table 5 shows the areas covered by the HEARTSMAP and HEADS-ED tools

Table 5: Similarities and differences between HEARTSMAP and HEADS-ED domain areas

Domain covered by questions	HEARTSMAP	HEADS-ED
Home, e.g., conflict, relationships, environment	x	x
Education and activities, e.g., difficulties at school, fun activities	x	Described as education and employment
Alcohol and drugs (including marijuana), e.g., frequency	x	x
Relationships and bullying, e.g., close people, sexual identity	x	Described as activity/peers, e.g., relationships, conflict, withdrawing
Thoughts and anxiety, worrying, panic, feeling of safety	x	Described as emotions, behaviours, thought disturbances
Mood, e.g., rating of mood, depressed or happy feeling lately	x	
Safety/suicidality	x	x
Sexual health, e.g., sexual activity, contraception, STDs	x	–
Abuse, e.g., physical, emotional or sexual	x	–
Professionals and resources, e.g., people available to help	x	Described as discharge or current resources

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

4.1.2. Screening and assessing for SU issues

Two narrative reviews[8] reported on tools available to screen for SU in young people: Pilowsky et al (2013) from New York and Pianca et al (2017) from Brazil. Pilowsky et al concluded that the CRAFFT tool developed for ages 12–21 was the best studied instrument for screening for alcohol/drug use and related problems. Pianca et al suggested that CRAFFT and AUDIT (Alcohol Use Disorders Identification Test) are the tools with the best performance. In particular, CRAFFT assesses consumption of multiple drugs with moderate sensitivity and specificity, whereas AUDIT shows the highest sensitivity and specificity for alcohol issues (95% and 77%).

Two primary studies assessed use of ED SU screening tools, both focusing on alcohol:

- Spirito et al (2016) from the USA assessed the two-question[9] alcohol screening tool from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) in ~5,000 young people. They concluded that the two-question NIAAA tool is a quick and valid approach for alcohol screening and that a positive screen suggests referral for further evaluation for an AUD.

- In the United Kingdom, Coulton et al (2019) explored use of the 10-item AUDIT tool and the shorter (three-item) AUDIT-Consumption tool (AUDIT-C) to identify various aspects of at-risk alcohol consumption in ~5,400 adolescents (ages 10–18) attending 10 English EDs. AUDIT-C was more effective for at-risk alcohol use (sensitivity 87%, specificity 97%), heavy episodic use (76%, 98%) and alcohol abuse (91%, 90%). AUDIT was more effective at identifying alcohol dependence (96%, 94%). The authors concluded that routine alcohol screening of young people should be considered by using the available short screening tools.

4.1.3. Screening and assessing for MH and/or SU issues

The most comprehensive examination of screening tools for a combination of MH and SU challenges among young ED patients came from a systematic review (SR) from the University of Alberta (Newton et al 2017a). At the outset it was noted that specialized instruments to screen for and diagnose MH problems in this age group are not yet standard components of clinical assessments in the ED. The background to the review noted that theoretical use of screening tools is supported by a number of professional bodies; however, their actual use among ED physicians is less than 10%.

8 Narrative reviews are based on the literature plus expert opinion rather than following systematic review processes focused on being comprehensive and reducing bias.

9 The questions differ for middle school and high school students, as do the cut-off values for number of drinks.

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

To perform the SR, the authors searched seven electronic databases and the grey literature for studies that assessed any instrument to screen for or diagnose mental illness, emotional or behavioural problems or SUDs, including alcohol use disorders (AUDs). The cut-off date for literature was October 2015. Studies were required to include children and adolescents with MH presentations or positive screens for SU.

Fourteen studies met inclusion criteria, evaluating 18 instruments for suicide risk (n=6), AUD (n=6), mood disorders (n=1) and ED decision making (n=1). Age ranges varied but were generally 12–18 years. More than a dozen screening tools were assessed.

Overall results:

- **MH problems:** The HEADS-ED instrument had good inter-rater reliability for identifying general MH problems and modest evidence for ruling in patients requiring admission. Sensitivity was cited at 0.82 and specificity at 0.87.
- **Suicide risk:** The Ask Suicide-Screening Questions (ASQ) was highly sensitive, with strong evidence for ruling out risk of suicide. Sensitivity and specificity were 98% and 66% for the pediatric psychiatric population and 99% and 88% for the general pediatric ED population.
- **AUD:** Internal consistency was high for the consumption subscale of the AUDIT and the Adolescent Drinking Index, with both showing sound internal validity. Diagnostically, a two-item instrument based on Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria (NIAAA) was the most accurate in identifying patients with AUD with modest evidence for ruling in and out risk.

The authors recommended that ED clinicians should use: (a) the HEADS-ED to rule in ED admission among pediatric patients with visits for MH care; (b) the ASQ to rule out suicide risk among pediatric patients with any visit type; and (c) the NIAAA tool to rule in/rule out AUD among pediatric patients currently using alcohol. An advantage to these instruments is that they require minimal training and time commitment.

4.1.4. Summary of tools for screening and assessing for MH and/or SU challenges

Two MH screening and assessment tools for young people dominated the recent literature: HEARTSMAP and HEADS-ED. Both tools were developed in Canada and both have advocates. Traditionally administered by clinicians, the tools consist of a list of questions in important topic areas and are similar, although HEARTSMAP includes several additional topic areas (abuse and sexual health) and also includes a box under each topic to indicate whether social services are needed or already involved. A digital version of HEARTSMAP for completion by a patient and/or guardian has been successfully piloted (myHEARTSMAP, Doan et al 2020). In terms of screening for SU, the utility of three tools (CRAFFT, AUDIT/AUDIT-C and the 2-question NIAAA tool) was supported by two reviews of the various tools available (Pilowsky et al 2013, Pianca et al 2017) and two primary studies (Spirito et al 2016, Coulton et al 2019). A Canadian SR of tools for MH and/or SU recommended HEADS-ED, AUDIT and ASQ (Newton et al 2017a).

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

4.2. Treating MH and/or SU challenges in the ED

4.2.1. Early days for treatment guidance

There appears to be little guidance and great variation with respect to the specifics of how to treat young people presenting to EDs with MH and/or SU challenges (Chun et al 2016).[10] Of course, there are myriad and complex presentations among these patients. As a baseline, general management principles for young people presenting with acute intoxication and withdrawal or toxicity have been laid out by Child Health BC (2019) (Appendix C).

The range of emergency MH services provided during ED visits varies considerably because models of care for pediatric MH emergencies are few and clinical practice guidelines for general clinical management do not exist, i.e., "Most children and youth presenting to the ED with a MH emergency are discharged home. Research suggests that 32% to 48% of youth do not receive discharge instructions, and between 21% and 46% of patients return to the ED after their initial visit for additional crisis care which is not always due to increasing clinical acuity…many discharged youth do not receive urgent outpatient MH care or physician-based outpatient care within 60 days following their ED visit." (Cappelli et al 2019)

It has been noted that a key barrier to pediatric MH care in Canada is the absence of a national, unifying child and youth MH policy framework to inform clinical care guidance (Leon et al 2013). To explore this deficiency, Canada's 15 tertiary pediatric centres were surveyed in 2009–10 as to their protocols, guidelines and processes related to emergency MH care (Leon et al 2013). The survey response rate was 100%, with the most common respondent being an ED physician leader. Key observations:

- Only four centres reported that their ED used an evidence-based guideline, tool or policy for emergency MH care.
- The ED-based MH resources reported across the 15 EDs included a crisis intervention team (n=5), an MH nurse (n=6) and a social worker (n=5).
- 13 sites provided consultation with child psychiatry and six reported urgent follow-up as an adjunct service to ED care.
- Conclusions were that there is wide variation in practices, with formalized guidance needed.

(Note that this information came from Canada's tertiary pediatric hospital EDs, so its applicability to community hospitals is unknown.)

10 Underlying the lack of formal guidance could be the fact that ED physicians often cite their lack of training and confidence in their abilities as barriers to caring for patients with MH emergencies. A study of pediatric emergency medicine training programs found that formal training in psychiatric problems is not required nor offered by most programs (Chun et al 2016).

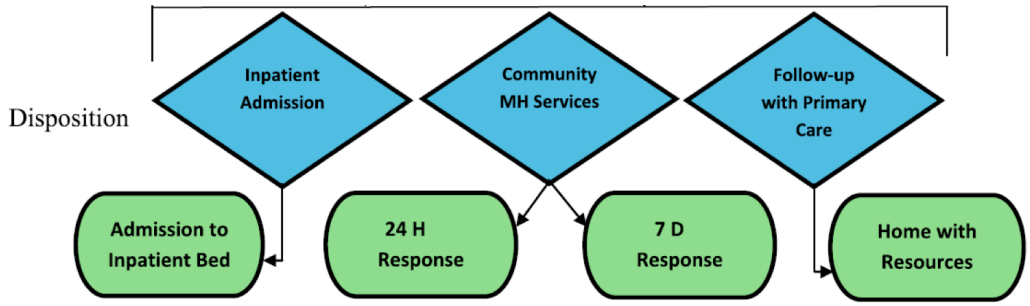
©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

4.2.2. An ED pathway developed in Ottawa

An ED clinical pathway for young people with MH conditions was developed by Ottawa researchers (Jabbour et al 2018). After screening/assessing using HEADS-ED, the pathway moves on to treatment/disposition (Figure 4).

Figure 4: ED MH clinical pathway—excerpt following screening (Jabbour et al 2018)



Pilot implementation of the pathway was conducted in five Ontario regions. An evaluation report of the Toronto-area implementation at three sites (Hospital for Sick Children, St. Joseph's Health Centre and Toronto East General Hospital), partnering with seven community child and youth mental health agencies (CMHAs), is available. In brief, the evaluation reported (Barwick et al 2015):

- The ED Pathway for young people with MH conditions formalized linkages between hospitals and CMHAs. It benefited the referral process by identifying the presenting problem and associated contextual issues; allowed for knowledge sharing between hospitals and CMHAs (e.g., regarding waitlist and screening processes) and, in some cases, increased access to hospital psychiatrists.
- Aspects of the implementation process viewed as helpful were: regular and clear communication from project management teams; learning about services offered at all sites through collaborative meetings; available training; team meetings; and open, flexible, responsive and committed implementation teams.
- Hospital staff reported improved patient and professional experiences emerging from the ED pathway process that was more formalized and streamlined, which in turn improved staff awareness of role responsibilities. CMHA staff felt the pathway was a positive experience for patients and families as well as a warmer transition and handover of patients to CMHAs.
- An overview of the CMHA metrics showed variable completeness of the referral packages (49–91% of forms) with most patients put on waitlists for CMHA service when there was no walk-in service; however, it was observed that only 4–14% of patients were referred from ED to partnered CMHAs, as many arrived at the ED with pre-existing linkages in place.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

- The evaluators felt the timeline was too short to allow for adequate assessment of impact on provision of care. Other system level metrics, including ED length of stay, admissions, dispositions and revisits, showed no statistically significant change when compared to the same metrics a year earlier.
- At the time of the evaluation, two of the three sites were carrying on to full implementation but the third reverted to a previous ED process. The lack of pathway adoption at the third site may have occurred because pilot sites were initially selected based on high representation of child and youth MH cases in the ED rather than in consideration of organizational readiness to change ED practices.
- The authors concluded that their study drew attention to the varied composition of the interdisciplinary teams that provide pediatric MH services; however, the effect of team composition and location on health outcomes and use patterns remained unknown.

4.2.3. The importance of team care

Effective management relies on a team equipped to offer MH support, and the following considerations have been offered (Doupnik et al 2018):[11]

- ED physicians may require additional training as many feel they have inadequate skills:[12]
- A clinical team's effectiveness can be increased via strategic investment in MH and behaviour specialists such as social workers and psychologists.
- Where specialists are not available at the point of care, possibilities include telephone support or technology-based solutions such as psychological therapies delivered via video interface or smart phone applications.
- To facilitate direct communication with OP resources, clinicians must be familiar with the local primary care practices, schools, MH service agencies and child protective services.
- Hospitals can build partnerships with community groups to exchange expertise and develop integrated systems for efficient MH care. An individual ED staff member or professional group like a social work team can be a liaison to community clinicians.

11 NOTE: This advice comes from an American tertiary level children's hospital and its utility in the Canadian health care system is unknown, particularly for a community hospital.

12 Programs are available to help with suitable skills development, e.g., "Positive Behavioral Intervention and Support," "Trauma Informed Care" and "Crisis Prevention Institute." Leveraging such training programs requires a commitment from health system leaders to incorporate MH care into a system's mission and could involve protected time, in-house training events, etc. (Doupnik et al 2018)

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

To respond to the challenges of young people presenting to EDs with MH and behavioural issues, there have been innovations in staff roles and duties. For example, Lelonek et al (2018) described initiatives in place in several US pediatric EDs (Table 6).

Table 6: Examples of team approaches to behavioural issues in the ED (Lelonek et al 2018)

Team type; example	Team role	Team members	Other
Behavioural response team Boston Children's Hospital	Improve staff confidence, address behavioural emergencies early, decrease restraint use, lessen workplace violence, reduce calls to security.	Five nurses and one milieu counsellor available days and evenings.	Operates independently but in close collaboration with all departments including psychiatry, medical teams, security and child life.
Security safety monitoring and interventions Connecticut Children's Medical Center, Hartford	Addresses the ED behavioural health population—trained through observation and video surveillance to recognize early signs of agitation and initiate verbal de-escalation efforts.	Initially a five-member behavioural health ED security division and then expanded to 30 officers trained across multiple locations—joint education program with local police.	Has decreased use of restraints and lowered staff injuries, as well as increasing feelings of staff preparedness, comfort and safety when working with agitated patients.
Child life specialists Cohen Children's Medical Center, NYC	Focus is to increase a young person's understanding of the hospital experience and support adaptive coping skills by offering developmentally appropriate information, encouraging questions and emotional expression and forming a trusting relationship with a provider.	Child life specialists: bachelor's degree with suitable course training plus certification issued by the Association of Child Life Professionals: www.cacll.org/cls.html	Provide support for various stages of ED evaluation, e.g., during medical clearance or interventions.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

4.2.4. Treatment models reported

As mentioned above, there is great variation in the young people with MH and/or SU issues who attend an ED, so a single treatment paradigm is not practical. However, relevant publications describing examples of management are described below (most recent to oldest):

Cappelli et al (2019)

A key Canadian study assessed the management of 373 young people (ages 6–18, mean age 15) who presented to pediatric hospitals in Edmonton, Halifax and Ottawa plus a large general hospital ED in Edmonton. The presentations were MH crises, primarily mood disorders, suicide risk and/or parent-child relational problems. At the time of presentation, 63% of the young people were already connected to existing MH resources.[13] During the ED visit, patients were seen primarily by a crisis worker (73%), ED physician (11%), ED physician and MH professional (9%) or psychiatrist (5%). Acute medical care (e.g., suturing, medical observation, treatment for overdose) was also required for 22%. A psychiatrist was consulted for 41% of patients, about half by phone and half in person. Stabilization through admission as an inpatient was required for 19%.

Subsequent care was of particular interest to the authors of this study. One-month data showed that 84% of patients had received follow-up services including: individual, group or family therapy; overnight treatment; school services; or parent counselling. Follow-up service recommendations were secondary care providers (e.g., psychologist, psychiatrist); home/community care; provision of information; primary care; and tertiary care (although, as noted above, 63% were already connected to existing MH resources). Patient or caregiver ratings of service recommendations were generally positive, as 61% of patients obtained the recommended follow-up care and 14% were waitlisted.

The study authors noted, "ED clinicians can play an important role in educating patients and their caregivers about accessing appropriate resources, including crisis lines, MH walk-in clinics, and urgent follow-up with existing MH providers. Tools to quickly and easily access information about local resources should also be available in the ED so that providers can direct patients to appropriate community resources." In concluding, they observed that differences in clinical management across the four study sites pointed to a need for standardization including: (a) clinical pathways using evidence-based standards to facilitate the management and transition of care from EDs to OP and community resources; and (b) an integrated system linking EDs, primary care and community MH agencies. Further, research should investigate the barriers to community care that encourage patients to continue using the ED as a point of access to MH care.

13 In terms of connection to existing MH resources, Cappelli et al (2019) noted that the current literature identifies the ED as the first point of contact between many young people and the MH system. However, the study's reported connection rate of 63% was consistent with literature from the USA with a range of 61% to 83%. They noted, "*It appears that the ED plays an important role in the continuum of care for pediatric patients and their caregivers*."

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

DRAFT/INTERNAL

Newton et al (2017b)

Alberta researchers performed an SR of seven studies (published up to January 2017) covering management strategies for MH care in EDs for young people up to age 18. Although the evidence was scant and generally of low quality, the authors concluded that "specialised care models" can reduce hospitalization, return ED visits and length of ED stay. Information from the four studies that provided detail about the specialized ED care models (two from each of Canada and the USA) is contained in Table 7. In conclusion, the authors noted, "It is difficult to synthesise the literature on ED-based paediatric [MH] care due to the small number of studies and the large variability across studies in interventions and outcomes. Providing overall generalizations and conclusions in this context is difficult."

Table 7: Specialized models of ED care for children with MH issues (from Newton et al 2017b)

Description	Detail
Behavioural health unit	Staffed by RNs, MH technician, social workers, ED physicians. Camera-monitored rooms with recessed and muted lighting, hospital beds with easily removable chairs, door hinges to allow examination room doors to swing in or out, television behind shatterproof glass, mobile equipment, no sinks, bathroom with safety features and alert button instead of pull cord.
Child guidance model	Referral to child guidance team (psychiatric social worker and child psychiatrist) for disposition decision making.
Rapid response model	Immediate consultation with child psychiatrist or resident, or urgent consultation (reserved appointments), education.
ED follow-up team	Patient seen by clinical nurse specialist and child psychiatrist after assessment by ED psychiatric staff, family and psychodynamically oriented treatment.

Leon et al (2013)

From this survey of MH care at Canada's 15 tertiary pediatric centre EDs, details about the clinical care models are shown in Table 8.

Table 8: Models for pediatric MH care available in 5 Canadian EDs (Leon et al 2013)

IN THE ED (Hours of coverage vary with some being 24/7, others daytime plus on call)

• Clinical care begins following triage.
• Triage determines if patient is to be seen by a MH professional (nurse, social worker) or ED physician (if medical stabilization required).
• If an MH professional is seen, the care includes:
  • Model 1: Problem-focused care to diffuse the crisis in addition to assessment and referrals, disposition recommendation and admission/discharge.
  • Model 2: MH assessment, risk assessment, recommendations (referrals, disposition, admission/ discharge).
• A psychiatrist or psychologist is consulted when necessary.

OUTSIDE OF ED
Responsibilities: Divided among urgent follow-up clinics, EDs and inpatient units.
Team: Psychiatrist, child/youth counsellor, nurse practitioner, social worker

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

4.2.5. ED management specific to SU

Six publications addressed ED management of young people with SU issues—all focused exclusively on alcohol. Detailed below is the most recent literature including: (a) an SR on motivational interviewing (MI), a "brief intervention" (Merz et al 2015); and (b) a Canadian survey of the use of screening, brief intervention, and referral to treatment (SBIRT) in the ED (Jun et al 2019).

- **Merz et al (2015):** An SR of four randomized controlled trials (RCTs) (n=618 patients) was conducted by Swiss researchers to assess the effectiveness of MI in the ED in young adults (18–24 years) following alcohol intoxication. Across the RCTs, the intervention was MI compared with usual care, personalized feedback or an educational brochure. Results showed that MI was significantly associated with subsequent reduced alcohol use in two of the four studies. Successful interventions were either delivered a few days after the event or included additional sessions. Overall, the evidence was deemed to be inconclusive, although the observation was made that effective interventions included at least one therapeutic contact several days after the event.

- **Jun et al (2019):** Based on the assertion that SBIRT is the recommended (but underused) approach to identifying and treating adolescent alcohol-related concerns, Canadian researchers surveyed[14] 245 pediatric ED physicians[15] in late 2016 to determine their perceptions of adolescent (age not defined) drinking/treatment and SBIRT practices. The survey response rate was 68%. Results showed that 73% felt comfortable discussing alcohol use with adolescents and also recognized the need (65%) and responsibility (86%) to address adolescent alcohol problems in the ED. However, 75% felt their knowledge was low and 62% lacked the confidence to conduct SBIRT. Of the 125 who reported ever conducting SBIRT, 60% had performed screening (though only 40% of those who screened used a validated tool), 58% had provided brief intervention and 51% had made referrals to treatment. For the ED physicians, more alcohol education and counselling experience was associated with higher SBIRT use, but physicians generally reported minimal training in this area.

14 The survey included 35 questions over five domains: demographics (7), training (3), attitudes and beliefs about adolescent drinking and treatment (7), SBIRT practices (7) and technology acceptance (11). The survey was tested for content and face validity.

15 54% of the respondents were female, mean age 44, mean years of professional experience 14 years, 83% held clinical appointments as pediatric ED physicians, 65% had completed pediatric ED fellowships and 43% personally knew a family relation with an alcohol problem.

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

4.3. Discharge instructions

The issue of ED discharge instructions for young people with MH challenges was explored in a scoping review by Nova Scotians Murphy et al (2018). Their review included 25 relevant articles covering the following diagnostic areas: suicide or self-harm (n=9), MH in general (n=6) and SU including alcohol, tobacco and SU in general (n=10). The most commonly reported interventions were educational. The authors concluded that the available literature is focused on specific content areas like self-injurious behaviours and SU, with more work required in the chronic MH disorders that make up a significant proportion of ED visits. Further, "research that extends beyond education, with theoretical underpinnings to explain how and why various interventions work, would be useful for clinicians, policy-makers, and other researchers."

Researchers from across Canada (including those from Nova Scotia cited above) collaborated on a broader SR about discharge communication practices following all types of emergency care for young people under age 19 (Curran et al 2019). The impetus for the research came from the observation that parents should leave the ED with the knowledge and skills to manage care at home, although it appears that information transfer is generally poor.[16] Although only three of the 44 included intervention studies in the SR pertained to MH care, the findings and conclusions could be relevant. In particular, education was the most common intervention, with most studies targeting parent knowledge or behaviour,[17] i.e., few attempted to change provider knowledge or behaviour. The authors noted that important factors for improving discharge communication practices were assessing barriers to implementation, identifying relevant ED contextual factors and understanding provider and patient attitudes and beliefs about discharge communication.

4.4. Follow-up care after ED visits

There was little information specific to follow-up care after ED visits. Two Canadian studies reported on follow-up of specific types of MH challenges: anxiety/stress (Newton et al 2016) and first presentation of psychosis (Kozloff et al 2018). Brief study details are shown in Table 9 on page 29.

16 Following ED discharge, many caregivers and patients are unable to specify their diagnosis, list medications they received, outline post-ED care or identify when to seek further medical attention.

17 The educational interventions in the studies appeared to assume that imparting information improves knowledge and subsequently changes behaviours—the authors queried whether this was a reasonable assumption (Curran et al 2019).

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

Table 9: ED management of specific MH diagnoses

Lead (year)	Study patient population	Outcomes
Newton (2016); Alberta	n=10,215 young people age < 18 who visited one of 104 Alberta EDs for anxiety; 23% of families were receiving government support; 12% were First Nations	• 7 days post-ED visit, 30% of young people had a follow-up visit with a physician (mostly FPs = 44%); 63% of visits were for MH concerns. At 30 days, 61% of physician follow-up visits were made by those ages 15–17. • Median time to physician follow-up for First Nations children was 32 days versus 23 days for families not receiving government subsidies versus 19 days for children from families receiving government subsidies. • Conclusions: Adolescents had high ED use and physician follow-up versus First Nations children and those from families receiving subsidies (all ages) who had high ED use and low physician follow-up.
Kozloff (2018); Ontario	n=2,874; ages 16–24; 74% male; first presentation to an ED with psychosis	• 72% were admitted and 28% discharged to the community. • Primary study outcome was rate of OP MH care within 30 days of ED. Only 60% received care (i.e., 40% did not)—associated with younger age, higher income neighborhood, urban residence and MH care from a psychiatrist in the previous year. At one year, 13% had not had OP MH care.

4.5. Alternatives to treatment in an ED, primarily OP care

For many young people with MH challenges, the ED is a suboptimal environment during times of crisis, although they or their families may seek ED care as a first point of entry into the MH system. However, these patients may need care and resources beyond the capacity of most EDs. In addition, EDs are highly stimulating environments that can lead to deterioration and exacerbation of symptoms, especially for patients with complicated illness (Roman et al 2018).

Publications from the USA provided thoughtful alternatives to care in an ED:

- **Sowar et al (2018):** These researchers noted that standard EDs are often under-resourced with respect to meeting the needs of young people with MH challenges, particularly when it comes to providing adequate psychiatric evaluation, stabilization and discharge planning. They proposed that community needs might be better served by "thinking outside the box" to consider a continuum of crisis care services, e.g., mobile crisis services, phone triage lines and observation and brief residential services. Key to such services is coordination with community stakeholders, leverage and collaboration with existing agencies, assessment and application for funding sources, evaluation and education around staffing needs and continued quality improvement.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

- **Chun et al (2019):** Innovative approaches to alternatives to EDs for young people with MH/SU challenges were suggested (Table 10).

Table 10: Alternatives to ED for young people with MH and/or SU challenges (Chun et al 2019)

Diversion by prehospital providers to appropriate community MH resources
Next-day or other timely MH evaluations
Embedding of child psychiatry services in EDs
Dedicated evaluation and stabilization units adjacent to EDs
Mobile MH crisis units to respond to primary care offices, schools, homes and EDs with limited MH resources
Telepsychiatry and/or formal agreements for sharing of community MH resources in areas with minimal MH resources
Co-locating MH resources in schools, clinics, first responder and primary care settings

4.6. Limitations to providing ED care to young people with MH and/or SU issues

Observations about barriers and limitations were found in several publications:

- **An SR of barriers to implementing alcohol-related SBIRT (Johnson et al 2011):** The SR assessed 47 publications, although only six addressed SBIRT in the ED (three each from the UK and the USA), i.e., most publications focused on primary care offices. Identified limitations included lack of financial and administrative support, lack of time, clinical inertia and a sense that an ED was not a suitable venue for implementing SBIRT.

- **From the evaluation of the Toronto clinical pathway pilots (Barwick et al 2015):** The implementation challenges encountered by the pilot sites are common to implementation initiatives generally, including data collection, managing change, ensuring ongoing training, gaps in knowledge and managing external events. Tensions emerged in relation to unanticipated competing priorities (Ebola, measles, influenza) and tight evaluation timelines.

- **Regarding HEADS-ED implementation in Nova Scotia and Ontario (MacWilliams et al 2017):** These authors focused on barriers to implementing the HEADS-ED tool in EDs in the two provinces. Information was gathered via focus groups comprised primarily ED physicians (n=25) plus two crisis workers. Issues arose in a number of domains (Table 11 on page 31).

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Table 11: Limitations to implementing HEADS-ED (MacWilliams et al 2017)

Domain	Detail
Knowledge	There are issues with ED physicians' lack of awareness of the tool, as well as limited knowledge about available MH resources. Also, ED physicians tended to rely on other health care professionals to manage MH presentations, particularly if they are on site.
Skills	ED physicians did not feel they had the necessary skills beyond assessing for acute risks.
Professional role & identity	ED physicians tended to see themselves as providing acute care—not delving into time-consuming areas that were seen as more suitable for social work or primary care.
Beliefs about capabilities	ED physicians did not find it practical to add another step to the assessment process because time constraints could inhibit full completion of the tool.
Beliefs about consequences	There was concern about the time required for assessment disrupting patient flow in the ED and, ironically, resulting in some needy young people leaving before being seen. Duplication of documentation was also a potential issue with both charting and completion of HEADS-ED documents being required.
Accessibility & distractions	The ED environment involves chaos and constant distractions that divert attention or inhibit a physician's use of the HEADS-ED tool.
Environmental context & resources	Leaving the bedside to access the tool on a computer was a dominant barrier to using the assessment tool as were system constraints such as ED overcrowding and limitations in human resources and time.
Departmental implementation	The way in which the tool was implemented in the department could be a barrier or an incentive to adopting the practice.

- **Falcon et al (2018):** The aim of this Spanish study was to identify perceived barriers for providers in implementing an ED protocol for SBIRT for adolescents (age range not defined). Three hospitals were involved, including two large urban sites and one smaller rural hospital. Brief intervention appeared to be loosely defined as practical counselling because providers (physicians/physician assistants/nurse practitioners) were not familiar with MI—they were also not familiar with any screening tools such as AUDIT or CRAFFT. Providers generally referred patients/parents to primary care follow-up as they were not allowed to refer to MH care in the hospital. Focus groups with 24 providers revealed the following barriers to SBIRT uptake in the ED: lack of time; work overload; trust issues between patients and providers (including providers' mistrust in the sincerity of patients' answers); lack of validated and simple screening tools; lack of training/awareness; and legal concerns about informed consent and confidentiality. Suggested next steps were to: (a) improve the organization of time allocated for medical consultations; (b) avoid limiting ED resources, to motivate staff including appropriate training; and (c) establish referral options.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

5. Summary

The primary focus of this report was to review screening/assessment and treatment of young people with MH and/or SU challenges when they present to an ED.

In screening and assessment, of particular interest were tools that are practical for ED staff to use, i.e., rapid and easy to administer without much or any training. In the MH sphere, recent literature supports tools called HEARTSMAP (Koopmans et al 2019, Gill et al 2018, Virk et al 2018, Lee et al 2019, Doan et al 2020) and HEADS-ED (Cappelli et al 2012, Jabbour et al 2018, Clark et al 2019, Cappelli et al 2020). The tools assess a young person's state of MH functioning in a number of important areas and are administered by a clinician, although a patient-administered mobile device version has been successfully trialed. Both tools fulfill the screening and assessing functions to various degrees. HEARTSMAP includes a separate short section under each variable for the assessor to indicate whether resources are required or already in place and HEADS-ED is scored based on urgency of need from zero to immediate. Both tools were developed and tested in Canada for use in young people.

In terms of screening and assessing for SU, particularly alcohol, two reviews contributed information. An American review recommended the CRAFFT tool (Pilowsky et al 2013), whereas a Brazilian review suggested that CRAFFT and AUDIT (the latter specific to alcohol) are the tools with the best performance (Pianca et al 2017). In addition, two primary studies assessed tool use, both focusing on alcohol, with the recommended tools being a two-question alcohol screening tool from NIAAA in an American study (Spirito et al 2016) and AUDIT and AUDIT-C in a study from the UK (Coulton et al 2019).

The most comprehensive examination of screening tools for a combination of MH and SU challenges came from a Canadian SR (Newton et al 2017a). Recommended tools were: (a) the HEADS-ED to rule in ED admission among pediatric patients with visits for MH care; (b) the ASQ to rule out suicide risk among pediatric patients with any visit type; and (c) the NIAAA tool to rule in/rule out AUD among pediatric patients currently using alcohol.

Regarding ED management of MH and/or SU challenges, there is surprisingly little detail and great variation, presumably reflecting the broad range of patients and their presentations. This could be due to the absence of a national, unifying child and youth MH policy framework to inform clinical care guidance (Leon et al 2013). An ED clinical pathway for young people with MH conditions has been developed by Ottawa researchers, including screening/assessing and treatment/disposition (Jabbour et al 2018) and, although the pathway was piloted in at least Ontario, it is unclear how extensive the uptake has been (Barwick et al 2015).

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Team care for management of MH and SU challenges was emphasized and detailed by several groups of experts, including presentation of models at some Canadian and American children's hospitals (Newton et al 2017b, Doupnik et al 2018, Lelonek et al 2018, Cappelli et al 2019). This was complimented by information from a survey of MH care at Canada's 15 tertiary pediatric centre EDs (Leon et al 2013).

With respect to discharge instructions for young people who were not admitted, researchers from across Canada collaborated on a broader systematic review about discharge communication practices following all types of emergency care for children and adolescents (Curran et al 2019). Education was the most common intervention, with most studies targeting parent knowledge or behaviour. Important factors for improving discharge communication practices were assessing barriers to implementation, identifying relevant ED contextual factors and understanding provider and patient attitudes and beliefs about discharge communication.

Experts consistently noted that the ED is a suboptimal environment during times of crisis for many young people with MH and/or SU challenges, even though it is increasingly used as a first point of entry into the MH system. Alternatives suggested were resources such as telepsychiatry, mobile crisis services, phone triage lines, observation and brief residential services, timely evaluations, dedicated evaluation and stabilization units adjacent to EDs—all with linkages to community stakeholders/existing agencies as needed (Sower et al 2018, Chun et al 2019).

Finally, a number of limitations to the delivery of ED care to young people with MH and/or SU challenges were identified, often via focus groups (Johnson et al 2011, Barwick et al 2015, MacWilliams et al 2017, Falcon et al 2018). The limitations should come as no surprise and include, for example, lack of provider skills/knowledge, lack of time (particularly in a hyper-acute care environment), lack of financial and administrative support and a sense on the part of some ED staff (e.g., physicians) that the ED is not the ideal environment for screening, assessment and treatment of MH and/or SU challenges to be managed.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

References

Barwick M, Boydell KM, Horning J, et al. Evaluation of Ontario's emergency department clinical pathway for children and youth with mental health conditions. Toronto: The Hospital for Sick Children; 2015. Available at: https://www.researchgate.net/profile/Katherine_Boydell/publication/278849494_Evaluation_of_Ontario's_Emergency_Department_Clinical_Pathway_for_Children_and_Youth_with_Mental_Health_Conditions/links/55874fb608ae7bc2f44d3547/Evaluation-of-Ontarios-Emergency-Department-Clinical-Pathway-for-Children-and-Youth-with-Mental-Health-Conditions.pdf

Benarous X, Milhiet V, Oppetit A, et al. Changes in the use of emergency care for the youth with mental health problems over decades: A repeated cross sectional study. Front Psychiatr. 2019;10:26. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6372506/pdf/fpsyt-10-00026.pdf

Canadian Institute for Health Information (CIHI). Care for children and youth with mental disorders. 2015 May. Available at: https://secure.cihi.ca/free_products/CIHI%20CYMH%20Final%20for%20pubs_EN_web.pdf

Cappelli M, Gray C, Zemek R, et al. The HEADS-ED: A rapid mental health screening tool for pediatric patients in the emergency department. Pediatrics. 2012 Aug;130(2):e321-7. Available at: https://pediatrics.aappublications.org/content/pediatrics/130/2/e321.full-text.pdf

Cappelli M, Cloutier P, Newton AS, et al. Evaluating mental health service use during and after emergency department visits in a multisite cohort of Canadian children and youth. CJEM. 2019 Jan;21(1):75-86. Available at: https://www.cambridge.org/core/services/aop-cambridge-core/content/view/FF7FE6A3F96DAE9AC8DFEB533105CF20/S148180351700416Xa.pdf/evaluating_mental_health_service_use_during_and_after_emergency_department_visits_in_a_multisite_cohort_of_canadian_children_and_youth.pdf

Cappelli M, Zemek R, Polihronis C, et al. The HEADS-ED: Evaluating the clinical use of a brief, action-oriented, pediatric mental health screening tool. Pediatr Emerg Care. 2020 Jan;36(1):9-15.

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.

Child Health BC. Provincial substance intoxication and withdrawal guideline (ages 0-19 years less a day): Initial management in emergent/urgent care settings. Background & evidence. 2019. Available at: https://www.childhealthbc.ca/sites/default/files/child-health-bc-provincial-substance-intoxication-and-withdrawal-guidelines-part-one-background-and-evidence.pdf

Chun TH, Mace SE, Katz ER, et al. Evaluation and management of children and adolescents with acute mental health or behavioral problems. Part I: Common clinical challenges of patients with mental health and/or behavioral emergencies. Pediatrics. 2016 Sep;138(3):e20161570. Available at: https://pediatrics.aappublications.org/content/138/3/e20161570.long

Chun TH, Duffy SJ, Grupp-Phelan J. The increasing burden of psychiatric emergencies: A call to action. Pediatrics. 2019 Apr;143(4):e20190251. Available at: https://pediatrics.aappublications.org/content/pediatrics/143/4/e20190251.full-text.pdf

Clark SE, Cloutier P, Polihronis C, Cappelli M. Evaluating the HEADS-ED screening tool in a hospital-based mental health and addictions central referral intake system: A prospective cohort study. Hosp Pediatr. 2019 Feb;9(2):107-14. Available at: https://hosppeds.aappublications.org/content/hosppeds/9/2/107.full-text.pdf

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

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Curran JA, Gallant AJ, Zemek R, et al. Discharge communication practices in pediatric emergency care: A systematic review and narrative synthesis. Syst Rev. 2019 Apr 3;8(1):83. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6446263/pdf/13643_2019_Article_995.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

Doan Q, Wright B, Atwal A, et al. Utility of MyHEARTSMAP for universal psychosocial screening in the emergency department. J Pediatr. 2020 Apr;219:54-61.

Doupnik SK, Esposito J, Lavelle J. Beyond mental health crisis stabilization in emergency departments and acute care hospitals. Pediatrics. 2018 05;141(5):e20173059. Available at: https://pediatrics.aappublications.org/content/pediatrics/141/5/e20173059.full-text.pdf

Driedger GE, Dong KA, Newton AS, et al. What are kids getting into these days? A retrospective chart review of substance use presentations to a Canadian pediatric emergency department. CJEM. 2015 Jul;17(4):345-52. Available at: https://www.cambridge.org/core/services/aop-cambridge-core/content/view/9229330508208267813CA08DCFEF1A88/S1481803515000135a.pdf/what_are_kids_getting_into_these_days_a_retrospective_chart_review_of_substance_use_presentations_to_a_canadian_pediatric_emergency_department.pdf

Fahimi J, Aurrecoechea A, Anderson E, et al. Substance abuse and mental health visits among adolescents presenting to US emergency departments. Pediatr Emerg Care. 2015 May;31(5):331-8. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4417003/pdf/nihms-665512.pdf

Falcon M, Navarro-Zaragoza J, Garcia-Rodriguez RM, et al. Perceived barriers to implementing screening and brief intervention for alcohol consumption by adolescents in hospital emergency department in Spain. Adicciones. 2018 Jul 12;30(3):189-96. Available at: http://adicciones.es/index.php/adicciones/article/download/896/894

Gandhi S, Chiu M, Lam K, et al. Mental health service use among children and youth in Ontario: Population-based trends over time. Can J Psychiatry. 2016 Feb;61(2):119-24. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4784237/pdf/10.1177_0706743715621254.pdf

Gardner W, Pajer K, Cloutier P, et al. Changing rates of self-harm and mental disorders by sex in youths presenting to Ontario emergency departments: Repeated cross-sectional study. Can J Psychiatry. 2019;64(11):789-97. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6882075/pdf/10.1177_0706743719854070.pdf

Gill PJ, Saunders N, Gandhi S, et al. Emergency department as a first contact for mental health problems in children and youth. J Am Acad Child Adolesc Psychiatry. 2017 Jun;56(6):475-82. https://jaacap.org/article/S0890-8567(17)30151-X/pdf

Gill C, Arnold B, Nugent S, et al. Reliability of HEARTSMAP as a tool for evaluating psychosocial assessment documentation practices in emergency departments for pediatric mental health complaints. Acad Emerg Med. 2018 Dec;25(12):1375-84. Available from Google Scholar.

HEARTSMAP. HEARTSMAP paper guide. 2020. Available at: https://heartsmap.bcchr.ca/ords/heartsmap/r/143/files/static/v40/pdf/HEARTSMAP-Guide_10Feb2020.pdf

Hiscock H, Neely RJ, Lei S, Freed G. Paediatric mental and physical health presentations to emergency departments, Victoria, 2008-15. Med J Aust. 2018 05 07;208(8):343-8. Available at: https://deepblue.lib.umich.edu/bitstream/handle/2027.42/146599/mja2343.pdf?sequence=1&isAllowed=y

Jabbour M, Hawkins J, Day D, et al. An emergency department clinical pathway for children and youth with mental health conditions. Child Adolesc Psychiatr Clin N Am. 2018 07;27(3):413-25.

Johnson M, Jackson R, Guillaume L, et al. Barriers and facilitators to implementing screening and brief intervention for alcohol misuse: A systematic review of qualitative evidence. J Public Health (Oxf). 2011 Sep;33(3):412-21. Available at: https://academic.oup.com/jpubhealth/article-lookup/doi/10.1093/pubmed/fdq095

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Jun S, Plint AC, Curtis S, Newton AS. Screening, brief intervention, and referral to treatment for adolescent alcohol use in Canadian pediatric emergency departments: A national survey of pediatric emergency physicians. CJEM. 2019 Jan;21(1):97-102. Available from Google Scholar

Kalb LG , Stapp EK, Ballard ED, et al. Trends in psychiatric emergency department visits among youth and young adults in the US. Pediatrics. 2019 Apr;143(4):e20182192. Available at: https://pediatrics.aappublications.org/content/pediatrics/143/4/e20182192.full-text.pdf

Kohler S, Hofmann A. Can motivational interviewing in emergency care reduce alcohol consumption in young people? A systematic review and meta-analysis. Alcohol Alcohol. 2015 Mar;50(2):107-17. Available at: https://academic.oup.com/alcalc/article-pdf/50/2/107/17152034/agu098.pdf

Koopmans E, Black T, Newton A, et al. Provincial dissemination of HEARTSMAP, an emergency department psychosocial assessment and disposition decision tool for children and youth. Paediatr Child Health. 2019 Sep;24(6):359-65.

Kozloff N, Jacob B, Voineskos AN, Kurdyak P. Care of youth in their first emergency presentation for psychotic disorder: A population-based retrospective cohort study. J Clin Psychiatry. 2018 Nov 6;79(6):17m11947.

Lee A, Deevska M, Stillwell K, et al. A psychosocial assessment and management tool for children and youth in crisis. CJEM. 2019 Jan;21(1):87-96. Available via Google Scholar.

Lelonek G, Crook D, Tully M, et al. Multidisciplinary approach to enhancing safety and care for pediatric behavioral health patients in acute medical settings. Child Adolesc Psychiatr Clin N Am. 2018 Jul;27(3):491-500.

Leon SL, Cappelli M, Ali S, et al.; for Pediatric Emergency Research Canada. The current state of mental health services in Canada's paediatric emergency departments. Paediatr Child Health. 2013 Feb;18(2):81-5. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3567901/pdf/pch18081.pdf

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

MacWilliams K, Curran J, Racek J, et al. Barriers and facilitators to implementing the HEADS-ED: A rapid screening tool for pediatric patients in emergency departments. Pediatr Emerg Care. 2017 Dec;33(12):774-80.

Mental Health and Addictions Scorecard and Evaluation Framework (MHASEF) Research Team. The Mental Health of Children and Youth in Ontario: 2017 Scorecard. Chart Pack. Toronto, ON: Institute for Clinical Evaluative Sciences; 2017. Available at: https://www.ices.on.ca/~/media/Files/Atlases-Reports/2017/MHASEF/Chart-Pack.ashx?la=en-CA

Merz V, Baptista J, Haller DM. Brief interventions to prevent recurrence and alcohol-related problems in young adults admitted to the emergency ward following an alcohol-related event: A systematic review. J Epidemiol Community Health. 2015 Sep;69(9):912-7. Available via Google Scholar

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.

Murphy AL, Curran J, Newton AS, et al. A scoping review of emergency department discharge instructions for children and adolescents with mental disorders. Pediatr Emerg Care. 2018 Oct;34(10):711-22.

Newton AS, Rosychuk RJ, Niu X, et al. Emergency department use and post visit care for anxiety and stress disorders among children: A population-based cohort study in Alberta, Canada. Pediatr Emerg Care. 2016 Oct;32(10):658-63. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5068196/pdf/pec-32-658.pdf

Newton AS, Soleimani A, Kirkland SW, Gokiert RJ. A systematic review of instruments to identify mental health and substance use problems among children in the emergency department. Acad Emerg Med. 2017a;24(5):552-68. Available via Google Scholar

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Newton AS, Hartling L, Soleimani A, et al. A systematic review of management strategies for children's mental health care in the emergency department: Update on evidence and recommendations for clinical practice and research. Emerg Med J. 2017b;34(6):376-84. Available via Google Scholar

Pianca TG, Sordi AO, Hartmann TC, von Diemen L. Identification and initial management of intoxication by alcohol and other drugs in the pediatric emergency room. J Pediatr (Rio J). 2017;93(s1):46-52. Available at: https://www.sciencedirect.com/science/article/pii/S0021755717304217/pdfft?isDTMRedir=true&download=true

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

Roman SB, Matthews-Wilson A, Dickinson P, et al. Current pediatric emergency department innovative programs to improve the care of psychiatric patients. Child Adolesc Psychiatr Clin N Am. 2018 07;27(3):441-54.

Sowar K, Thurber D, Vanderploeg JJ, Haldane EC. Psychiatric community crisis services for youth. Child Adolesc Psychiatr Clin N Am. 2018 07;27(3):479-90.

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

Virk P, Rob Stenstrom R, Doan Q. Reliability testing of the HEARTSMAP psychosocial assessment tool for multidisciplinary use and in diverse emergency settings. Paediatr Child Health. 2018 Dec;23(8):503-8. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6242031/pdf/pxy017.pdf

Waddell C, Shepherd C, Schwartz C. Child and youth mental disorders: Prevalence and evidence-based interventions—A research report for the British Columbia Ministry of Children and Family Development. June 2014. Available at: http://childhealthpolicy.ca/wp-content/uploads/2014/06/14-06-17-Waddell-Report-2014.06.16.pdf

Wilson MP, Seupaul RA. Are there tools to screen children and adolescents in the emergency department with mental health and substance abuse issues? Ann Emerg Med. 2018 Feb;71(2):233-5.

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

Appendix A: ICD-10-CM Codes for MH Disorders

Mental health

(Chapter 5—Mental, behavioral & neurodevelopmental disorders [F01-99])[18]

F01-F09	Mental disorders due to known physiological conditions
F10-F19	**Mental and behavioral disorders due to psychoactive substance use**
F20-F29	Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
F30-F39	Mood [affective] disorders
F40-F48	Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders
F50-F59	Behavioral syndromes associated with physiological disturbances and physical factors
F60-F69	Disorders of adult personality and behavior
F70-F79	Mild intellectual disabilities
F80-F89	Pervasive and specific developmental disorders
F90-F98	Behavioral and emotional disorders with onset usually occurring in childhood and adolescence

Subdivisions of F10-19

(Mental and behavioral disorders due to [substance])[19]

F10	Alcohol
F11	Opioids
F12	Cannabis
F13	Sedatives, hypnotics, anxiolytics
F14	Cocaine
F15	Other stimulants, including caffeine
F16	Hallucinogens
F17	Nicotine
F18	Inhalants
F19	Other psychoactive substances and multiple drug use

18 From ICD-10 Code Lookup at: icdcodelookup.com/icd-10/codes. The ICD-10-CM is an adaption created by the USA National Center for Health Statistics and used in assigning diagnostic and procedure codes associated with inpatient, outpatient and physician office utilization in the USA

19 American Psychological Association: Substance use disorders and ICD-10-CM coding: apaservices.org/practice/update/2015/09-10/substance-disorders

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

Appendix B: MEDLINE Search Strategy

SEARCH: Database(s): Ovid MEDLINE(R) 1946 to May 14, 2020

TERMS		# HITS
1	exp *Substance-Related Disorders/	210104
2	exp *Smoking/	73881
3	exp *"Tobacco Use"/	3123
4	*Mental Health/	22151
5	exp *Mental Disorders/	1028433
6	((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.	153800
7	(addiction* or (binge? adj drinking) or ((co-occur* or concurrent) adj disorder?) or (substance? adj2 involvement) or vaping).ti,kf.	23970
8	((mental* or psychiatr* or psycholog*) adj2 (disease* or disorder* or effect? or health* or ill*)).ti,kf.	118207
9	(depressi* or MDD or anxiet* or GAD).ti,kf.	199841
10	or/1-9	1339257
11	*Emergencies/	12801
12	exp *Emergency Medicine/	10345
13	exp *Emergency Service, Hospital/	45080
14	*Emergency Services, Psychiatric/	1847
15	((emergenc* adj2 (department? or medicine or room? or service? or unit? or ward?)) or (trauma adj (centre? or center?))).ti,kf.	56131
16	or/11-15	94550
17	exp animals/	23164004
18	exp animal experimentation/ or exp animal experiment/	9379
19	exp models animal/	563398
20	exp vertebrate/ or exp vertebrates/	22507600
21	or/17-20	23165944
22	exp humans/	18465514
23	exp human experimentation/	12438
24	or/22-23	18466168
25	21 not 24	4700400
26	10 and 16	6056
27	26 not 25	6056
28	limit 27 to ("child (6 to 12 years)" or "adolescent (13 to 18 years)" or "young adult (19 to 24 years)")	1978
29	(adolescenc* or adolescent? or ((college* or highschool* or high-school* or middle school* 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,kf.	281321
30	(("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*).tw.	165433
31	29 or 30	427235
32	27 and 31	434
33	28 or 32	2055
34	limit 33 to (english language and yr="2015 -Current")	783

DRAFT/INTERNAL

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL

Appendix C: General Management Principles

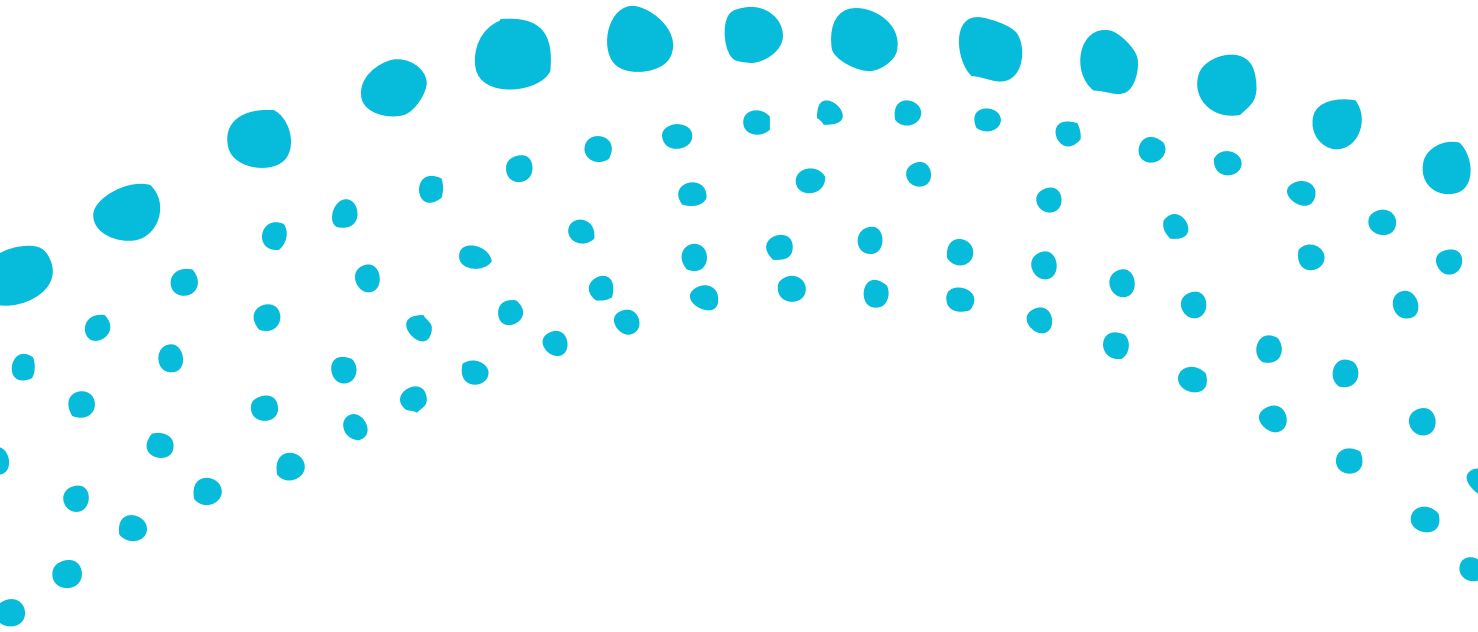
General management principles for young people presenting with acute intoxication and withdrawal or toxicity

(Child Health BC, 2019)

1. Create a simple, quiet, and safe environment—remove unnecessary equipment.
2. Always treat the patient with respect.
3. Approach in a quiet, calm and confident manner.
4. Speak clearly and slowly.
5. Ask the young person what they prefer to be called and their preferred pronoun.
6. Always explain who you are and what you are doing.
7. Acknowledge the patient's feelings and concerns.
8. Provide frequent reassurance—brief and frequent attendances will assist with this and may avoid unnecessary agitation.
9. Protect the patient from accidental harm, e.g., do not leave them unattended on a bed without safety guards and lower the bed as close to the floor as possible.
10. Ensure the young person's physical and psychological needs are met.
11. Provide comfort items such as: fidgets, ear plugs, warm drink, sleep masks, aromatherapy mist, Kleenex, lip balm, paper and pencils, snacks, books, comic books, relaxation techniques on cue cards, playing cards, greeting cards, blanket, stuffed animal, etc.
12. Sensory modulation (arts and crafts, music or sound therapy, e.g., iPods, DVDs) can be helpful.
13. Encourage walking, talking, writing, resting, crying, deep breathing. Time alone and/or spiritual practice may be helpful.
14. Minimize the number of staff attending the patient.
15. For the confused/disoriented patient, keep an object familiar to them in view, e.g., a bag or an item of clothing.
16. Correct perceptual errors and tell the patient what is real in a respectful manner.
17. Accompany the person to and from places, e.g., the toilet.

©2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.

DRAFT/INTERNAL



·FOUNDRY·
WHERE WELLNESS TAKES SHAPE

youth
wellness
hubs
ONTARIO

foundrybc.ca | youthhubs.ca

© 2021, Providence Health Care Society d.b.a. Foundry. All rights reserved.