Addiction and Substance Abuse: Working with Patients and Their Families

Alison Arnot, MD
Suzanne D. Turner, MD, MBS, CCFP

The Working With Families Institute, Department of Family & Community Medicine, University of Toronto
In today’s world, families are under increasing stress, from financial and time constraints, to family breakdown, substance abuse, and threats of violence. Family physicians are seeing an increase in psychosocial issues such as anxiety and stress-related disorders, often co-existing with and complicating medical problems such as diabetes or pneumonia. The psychosocial issues are often more difficult to diagnose and manage than are the medical problems—and all take place in the family context. Very often, the family is the key to dealing effectively with the whole spectrum of complaints, requiring a psychosocial assessment. In the crowded family medicine curriculum, this vital area of knowledge and skill is often ignored in favour of more clear-cut procedural skills.

To educate family physicians about dealing with families, a group of family medicine educators, practitioners and mental health professionals affiliated with the Department of Family and Community Medicine at the University Of Toronto founded the Working with Families Institute (WWFI) in 1985. The WWFI has developed various training experiences for trainees and practising physicians.

Goals
The goal of these modules is to provide a learning resource for physicians dealing with common medical and psychosocial issues that have an impact on families. The modules seek to bridge the gap between current and best practice, and provide opportunities for physicians to enhance or change their approach to a particular clinical problem.

The modules have been written by a multidisciplinary team from the Faculty of Medicine, University of Toronto. Each module has been peer-reviewed by external reviewers from academic family medicine centres across Canada. The approach is systemic, emphasizing the interconnectedness of family and personal issues and how these factors may help or hinder the medical problems. The topics range from postpartum adjustment to the dying patient, using a problem-based style and real case scenarios that pose questions to the reader. The cases are followed by an information section based on the latest evidence, case commentaries, references and resources.

How to Use the Modules
The modules are designed for either individual learning or small group discussion. We recommend that readers attempt to answer the questions in the case scenarios before reviewing the case commentaries or reading the information section.

The editors welcome feedback on these modules and suggestions for other modules. Feedback can be directed to Dr. Watson at dfcm.wwfi@utoronto.ca.

Acknowledgements
The WWFI is grateful to the Counselling Foundation of Canada for its generous educational grant in support of this project. The editors also thank Iveta Lewis (Librarian-DFCM) Brian Da Silva (IT consultant-DFCM), and Danielle Wintrip (Communications Coordinator-DFCM) for their valuable contributions to this project.

In addition, we thank our editorial advisory group including Ian Waters, MSW, Peter Selby MD, Margaret McCaffery, and William Watson, MD.

We also acknowledge the work of the Practice-based Small Group Learning Program of the Foundation for Medical Practice Education, on which these modules are modelled.

Bill Watson
Margaret McCaffery
Toronto, 2014
Addiction and Substance Abuse: Working with Patients and Their Families

Authors:

Alison Arnot, MD  
Medical Director, Health and Counselling Centre  
University of Toronto (Mississauga)  
Mississauga, ON

Suzanne D. Turner, MD, MBS, CCFP  
Staff Family Physician, Family and Community Medicine and Addiction Medicine Service, St. Michael’s Hospital  
Lecturer, University of Toronto, Toronto, ON

Reviewer:

Hannah Kaufman, MSS, MHSc, BA  
Assistant Professor, University Health Network and University of Toronto  
Joint Centre for Bioethics  
University of Toronto, Toronto, ON

Editors:

William J. Watson, MD, CCFP, FCFP  
Margaret McCaffery, Canterbury Communications

Working With Families Institute, 2014

Chair: William J. Watson, MD, CCFP, FCFP  
Associate Professor, Department of Family & Community Medicine and Dalla Lana School of Public Health, University of Toronto
CONTENTS

SUMMARY ....................................................................................................................... 6

OBJECTIVES .................................................................................................................. 6

Key Features .................................................................................................................. 7

Core Competencies ....................................................................................................... 7

INTRODUCTION

CASE STUDIES ............................................................................................................... 8

INFORMATION POINTS ................................................................................................. 10

Introduction to Addiction ............................................................................................... 11

Definition of Addiction .................................................................................................. 11

The Cost of Addiction .................................................................................................... 11

Etiology of Addiction ..................................................................................................... 11

Risk Factors for Addiction ............................................................................................ 11

Health Care for Patients with Substance Use Disorders ............................................... 13

Substance Use in Canada: Epidemiology ..................................................................... 13

Alcohol Use Disorders ................................................................................................ 14

Epidemiology–adults ...................................................................................................... 14

Epidemiology–adolescents ............................................................................................ 14

Screening–adults ........................................................................................................... 14

Screening–adolescents ................................................................................................. 15

Screening–women ......................................................................................................... 15

Screening–follow-up ..................................................................................................... 16

Diagnosing alcohol use disorders ............................................................................... 16

Motivational interviewing ............................................................................................. 17

Rapport and relationship building ............................................................................... 17

Stages of change ........................................................................................................... 18

Treatments for Alcohol Use Disorders ........................................................................ 18

Treat withdrawal .......................................................................................................... 18

Reduce consumption and craving ............................................................................... 19

Prevent relapse ............................................................................................................. 20

Treat concurrent disorders .......................................................................................... 21

Nicotine Use Disorders (Tobacco/Smoking) .................................................................. 21

Nicotine–epidemiology ................................................................................................. 21

Screening ....................................................................................................................... 21

Diagnosis–nicotine dependence .................................................................................... 22

Treatments for Nicotine Use Disorders ....................................................................... 22

Nicotine replacement therapy ..................................................................................... 22

Bupropion ...................................................................................................................... 22

Varenicline .................................................................................................................... 23

Treatment–pregnant women ......................................................................................... 23

Cannabis Use Disorders ............................................................................................... 23

Cannabis–epidemiology ................................................................................................. 23
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening and diagnosis</td>
<td>24</td>
</tr>
<tr>
<td>Treatments for Cannabis Use Disorders</td>
<td>24</td>
</tr>
<tr>
<td>Harm reduction</td>
<td>24</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>24</td>
</tr>
<tr>
<td>Psychosocial intervention</td>
<td>24</td>
</tr>
<tr>
<td>Opioid Use Disorders</td>
<td>25</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>25</td>
</tr>
<tr>
<td>Screening</td>
<td>25</td>
</tr>
<tr>
<td>Treatment</td>
<td>25</td>
</tr>
<tr>
<td>CASE COMMENTARIES</td>
<td>26</td>
</tr>
<tr>
<td>RESOURCES</td>
<td>31</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>34</td>
</tr>
</tbody>
</table>
SUMMARY

Addiction is a chronic, relapsing disease, which is most likely to manifest when a person with a genetic predisposition is raised in an environment that fails to meet his or her need for connection and safety.\(^1\) It often co-arises with major mental illness and should be a red flag alerting the physician to a history of trauma and/or adverse childhood experiences. Children who grow up in families plagued by addiction often experience difficulties with self-regulation and in their relationships with others. They tend to form traumatic attachments, which perpetuate the cycle from one generation to the next. Effective treatment must therefore include the family, not just the affected individual.

Unfortunately, many people with addictions report negative experiences in health care settings, including in primary care. These negative experiences can lead them to stop using health care services. On the other hand, patients state that the most important determinant of a successful treatment outcome is a strong and supportive relationship with their primary caregiver, who can advocate for and assist them as they navigate the health care system.\(^2\)

Family physicians (FPs) are in an ideal position to provide integrated care for patients with mental health and addiction problems because they are accessible, they are experts at managing chronic disease, they have longitudinal relationships with patients, and they look after families.

OBJECTIVES

After completing this module, you will be able to:
1. be able to identify which substances are the most commonly abused in Canada.
2. be familiar with the findings of the Adverse Childhood Experiences (ACE) study and the link between multiple ACEs, addiction and mental health problems later in life.
3. be familiar with simple age-appropriate screening tools and when to use them.
4. be familiar with the 2011 low-risk drinking guidelines and the lower-risk cannabis use guidelines.
5. understand the importance of early intervention for adolescents.
6. be familiar with common concurrent mental health/addiction disorders.
7. be familiar with the stages of change model and the principles of motivational interviewing.
8. know about the drugs used to manage alcohol, nicotine and narcotic dependence.
9. understand the importance of treating nicotine addiction in the mental health and addiction population.
10. know where to send patients for help.
Key Features
1. Addictions are common in family practice and cause considerable suffering and loss of productivity for individuals, families, and society at large.
2. Effective management requires a compassionate, nonjudgmental approach and the application of commonly used diagnostic tools and community resources.

Core Competencies
The core competencies addressed are related to the FP’s roles as a communicator, a family medicine expert, and a manager. They include:

1. Displaying effective, professional, and nonjudgmental communication skills
2. Establishing therapeutic relationships with patients and families
3. Adopting a patient-centred approach
4. Understanding the importance of an attuned therapeutic relationship
5. Generating a climate of safety without judgment, as well as health equity, in office practices and in the clinical encounter by adopting a curious and compassionate stance with patients
6. Detecting and diagnosing addiction early
7. Being knowledgeable about the disease and treatment
8. Providing brief interventions for people with less severe illness
9. Providing referrals and coordinating care for patients with more severe disability
10. Providing long-term monitoring and follow-up care
Case Study

Case 1: Alex, aged 13
Alex is brought to your office by his father to have sutures removed from a facial laceration. One week ago, he was assaulted while walking in a park close to his home in a middle-class neighbourhood. In addition to the facial laceration, he sustained a maxillary fracture that required surgical repair. He offers no explanation for what happened, other than stating the assailants stole his money and leather jacket.

You have cared for Alex’s family since his parents were first married. You have never had a reason to suspect problems at home.

A few months later, you receive a copy of an emergency department record, which shows Alex was treated for acute alcohol intoxication and referred to a pediatrician for further assessment. The pediatrician documented that Alex was smoking cigarettes and cannabis, as well as snorting cocaine. You wonder if the assault was connected to Alex’s drug use.

You begin to explore the family history more deeply. Alex’s older brother became acutely anxious when he was in Grade 8. He refused to go to school or to attend psychiatric appointments. He derailed plans for a family holiday by refusing to get out of the car at the airport. His symptoms improved after several months of treatment with low-dose bupropion and brief supportive therapy. The older brother denied ever abusing substances, but one of his friends introduced Alex to marijuana.

At a later appointment, Alex’s father discloses that his nephew also refused to go to school when he was Alex’s age. The father’s sister suffers from anxiety, as does his wife’s brother; both have been diagnosed with bipolar disorder. You consider that Alex might also have a mood disorder.

- If Alex suffers from a mood disorder, in what ways might it have increased his vulnerability to substance abuse?
- What long-term approach do you take to help Alex?

Case 2: Barbara, aged 32
Barbara is married, articulate, and middle class. She has two children under age five. She is a stay-at-home mother who seems well supported by her husband, who is the father of her children.

Barbara has a history of anxiety and smokes half a pack of cigarettes a day. Her mother suffered from anxiety and depression. Barbara asks you for medication because she can’t sleep and is having frequent panic attacks. You diagnose panic disorder and write a prescription for paroxetine and clonazepam, for Barbara to use as needed to help her sleep. Her symptoms seem to improve with pharmacotherapy.
Several months later, Barbara returns to the office for a physical examination, which has been mandated by an in-patient treatment program for a severe alcohol use disorder. You are stunned. She did not fit your idea of someone with an addiction to alcohol.

- What did you forget to ask before forming your initial diagnosis and treatment plan?
- Why might the patient have decided not to disclose her addiction to alcohol?
- Why is addiction screening particularly important for women in the reproductive years?

**Case 3: Nora, aged 45**

Nora visits your office as a new patient. She is a married stay-at-home mother with two teenaged sons. Her presenting complaint is asthma. She has come for a renewal of her prescription for inhalers.

Her dyspnea worsens over the next few months and she is discovered to be profoundly anemic (hemoglobin 60). She is admitted to hospital for investigations, which reveal that the cause of the anemia is blood loss from esophageal varices and hemorrhoids. She does not experience alcohol withdrawal symptoms in the hospital. She is also referred to a psychiatrist because of what is perceived to be “indifference” to her health. Her family has a difficult time accepting that she has end-stage liver disease because of alcohol use, as they have never seen her drunk.

She tells you at a follow-up visit that she had been scheduled for colonoscopy years earlier for investigation of rectal bleeding. However, she never had the colonoscopy. As she lay half-naked on the gurney in the endoscopy suite, awaiting her turn for the procedure, she began to worry that the gastroenterologist would be able to tell, just by looking, that her husband had been sexually abusing her via anal intercourse. This was not a safe place to have her worst secret discovered. She quickly got dressed and left. She used alcohol to cope with the sexual abuse in her marriage. Sipping on 12 to 14 beers a day has kept her silent and numb.

- How do you approach the management of Nora’s care at this point?

**Case 4, Larry, aged 51**

You become the physician most responsible for Larry, who is married with adult children. Larry has been admitted to hospital because of a stroke. He smokes one pack of cigarettes a day and has a history of hypertension. Before the stroke, he was a high-powered executive at a mining company. Entertaining clients was a big part of his job.

Larry becomes restless and agitated within 24 hours of admission. His presentation is compatible with acute alcohol withdrawal along with nicotine withdrawal, but he denies drinking to excess. Obtaining a corroborating history is difficult because his family rarely visits. You agree to accept him as a new
patient to your practice after he is discharged from hospital, because he does not have an FP.

Larry’s blood pressure remains poorly controlled despite the use of three antihypertensive drugs. He is not ready to consider smoking cessation. His wife smokes and he has little confidence in his ability to abstain as long as they are living together. You ask again about his use of alcohol, and he denies that he has a problem. He asks you repeatedly to write a letter to the ministry of transportation, recommending the reinstatement of his driver’s licence, which was revoked at the time of his stroke.

- How do you handle the patient’s requests for the letter?
- How do you manage his nicotine withdrawal?
INFORMATION POINTS

Introduction to Addiction

1. **Definition of Addiction:** The American Society of Addiction Medicine characterizes addiction as a “primary, chronic disease of brain reward, motivation, memory and related circuitry … Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one’s behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.”

2. **The Cost of Addiction:** Addiction is the cause of untold suffering for individuals, families, and society at large. The cost to Canada in lost productivity, increased health spending and legal proceedings was estimated at $39.8 billion in 2002. Approximately 10% of the Canadian population is addicted to substances, with alcohol, cannabis, nicotine, and narcotics being the most common. Behavioural or process addictions such as eating, shopping, gambling, work, internet use, and sex often coexist and interact with addictive substances.

3. **Etiology of Addiction:** Addiction is influenced by the interaction between the individual risk factors, the individual’s environment and the substance of abuse. An individual’s risk factors for addiction include a family history of addiction, concurrent psychiatric disorder, past history of trauma (sexual abuse is a strong correlate), age, and gender. The availability of a substance, the price, legal status and culture surrounding a drug all play into the environment surrounding substance use. Substances with high addictive potential have several characteristics in common. Specifically, highly addictive substances tend to have rapid absorption (leading to a rapid “high”) and they tend to be metabolized and eliminated quickly (leading to the need for frequent use of the substance). Addictive drugs exert their effect by increasing the availability of dopamine in the emotional/motivational or “reward” circuits of the brain. Dopamine provides the thrust for activities that enhance survival of both the individual and the species. Mammalian motivational systems include fear, food and shelter, seeking, attachment, sociability, caretaking, sexuality, and play. Unfortunately, the reward from substance use far exceeds that of these “natural reinforcers”. Repeated exposure induces long-lasting structural changes in the brain, which manifest as compulsive drug-seeking behaviour. The addicted person’s brain tells him or her to “use this or you’ll die.” This happens at a level below awareness, which is why people who are addicted will make “choices” that endanger their lives and compromise their ability to care for friends and loved ones.

4. **Risk Factors for Addiction – Childhood Trauma:** A history of childhood trauma was identified as a significant risk factor for substance use in a 1998 study by Felitti et al. In this study, adverse childhood experiences (ACE)
were measured and correlated with risk for later substance use. This study demonstrated that that children who grow up in families with abuse, neglect, and household dysfunction, or children who have witnessed societal violence such as that in war zones, are at increased risk for early alcohol, drug, and nicotine abuse, as well as risky sexual behaviour. The risk for addiction, depression, suicide, and other chronic health problems increases exponentially with an ACE score of 4 or above. In the ACE Study, abuse was defined as: emotional threats or humiliation, physical beating and/or sexual abuse. Each of these abusive events would have been given a score of 1 and would have been used to calculate the overall ACE Score. Neglect was characterized as being physical or emotional. Household dysfunction included spousal abuse, addiction, incarceration, chronic mental illness and not raised by both biological parents. Neglect is more damaging than abuse to a child’s emerging sense of self. An abused child still engages with his or her caregiver, albeit in an unhealthy way. A neglected child has little or no engagement with others.

**Social and Economic Disadvantage:** Drug use is both a response to social breakdown and an important factor in the worsening of resulting inequalities in health.\(^7\) Alcohol use disorders, illicit drug use, and cigarette smoking are all closely associated with markers of social and economic disadvantage. For example, social deprivation—whether measured by poor housing, low income, lone parenthood, unemployment, or homelessness—is associated with high rates of smoking and very low rates of quitting.\(^8\)

**Gender:** A strong correlation with male sex has been noted for almost all substance use disorders but particularly alcohol (where men are twice as likely as women to suffer from an alcohol use disorder) and cannabis. A history of sexual abuse in women seems to correlate with higher risk of both alcohol use and opioid use disorders.\(^9\)

**Family History:** Twin studies and familial linkage studies imply a possible genetic relationship for alcohol use disorders; however, it is known that environment also plays an important role in the development of this disorder. Evidence exists for genetic liability for other substances including: nicotine, cannabis, cocaine, hallucinogens, simulants, and opioids.\(^9\)

**Age—Adolescents:** The prefrontal cortex, which is responsible for executive functions like fear extinction, emotional balance, attuned communication, bodily regulation, response flexibility, insight, empathy, intuition, and moral awareness undergoes extensive remodelling from ages 14 to 25. Exposure to alcohol and drugs during this period of increased vulnerability can negatively affect adult prefrontal function.\(^10\)

**Concurrent Disorders—Adolescents:** Up to 50% of teenagers who present with a substance use disorder have concurrent mental health diagnoses, the most common of which are anxiety disorders (post-traumatic stress disorder in girls), bipolar affective disorder, depression, and schizophrenia. There is some controversy about whether or not attention deficit-hyperactivity disorder is a risk factor.\(^11\) Early treatment with
stimulants and psychosocial support seems to decrease risk as long as no concurrent conduct disorder exists.

**Concurrent Disorders—Adults:** Patients with psychiatric diagnoses are three times more likely to have substance use disorders compared to those without a psychiatric diagnosis. Those with a substance use disorder (other than alcohol) are 4.5 times more likely to develop another psychiatric illness compared to those without substance use disorders. As a result, any psychiatric diagnosis is considered a risk factor for future or current diagnosis with a substance use disorder.  

5. **Health Care for Patients with Substance Use Disorders:** People with addictions are often marginalized, experiencing inequities and discrimination in health care experiences, education, employment, income, and housing. Research has shown that people who use alcohol or other drugs are among the most stigmatized groups in our society. For example, a study by the World Health Organization indicated that illicit drug addiction ranked as the most stigmatized health condition, while addiction to alcohol ranked fourth. Systemic types of discrimination experienced by people with substance use issues include reduced access to housing, employment, and health care. A comparison of health care providers’ attitudes toward people with diverse medical and mental health conditions revealed that the most severe judgments and the highest rate of rejection were for people with substance use issues.

Infectious diseases such as HIV and Hepatitis C are more common amongst those who use injection drugs. It is estimated that 13% of those who use injection drugs are positive for HIV and approximately 66% currently have or have had hepatitis C. In 2011, 16% of new HIV infections were attributed to injection drug use. Hepatitis B and C worsen outcomes for patients with alcohol addiction, largely due to a greater risk of progression to liver cirrhosis. As a result, all patients with a substance use disorder should be screened for these infectious diseases, offered immunizations for hepatitis A and B, and given information about preventing infectious diseases.

6. **Substance Use in Canada—Epidemiology:** The 2013 Ontario Drug Use Among Students Survey was conducted by the Centre for Addiction and Mental Health among students in grades 7 to 12 in publicly funded schools; 49.5% had more than a sip of alcohol, 23% had more than a puff of cannabis, 12.4% used prescription opioids, and 8.5% smoked cigarettes. Fewer than 6% of students used other drugs, including inhalants, hallucinogenic mushrooms, ecstasy, crystal meth, and dextromethorphan. The peak incidence of use was reported by students in Grade 11 and the average age of initiation to drug use was 14. Seven percent of students admitted to drinking and driving and 12% drove under the influence of cannabis. This is significant because accidents, including those involving motor vehicles, are the leading cause of death of Canadian youth aged 15 to 24.
Alcohol Use Disorders

7. Epidemiology—Adults: According to the 2011 Canadian Alcohol and Drug Use Survey, 89.7% of the population has had alcohol in their lifetime, 78% in the previous year. Among drinkers, 18.7% regularly exceed the low-risk guidelines (two drinks per day, maximum 10 drinks per week for women and three drinks per day, maximum of 15 drinks per week for men), which were updated in 2011 and are available at http://www.sbir-diba.ca.22,23

8. Epidemiology—Adolescents: The 2013 Ontario Drug Use Among Students Survey was conducted by the Centre for Addiction and Mental Health among students in grades 7 to 12 in publicly funded schools; 49.5% had more than a sip of alcohol. Those who start drinking between 11 and 14 have four to eight times the risk of developing an alcohol use disorder (addiction) in adulthood compared to those adolescents who start at age 19 or above. In young people who consume alcohol, binge drinking is very common (defined as four or more drinks on a single occasion for boys and three or more for girl).21 In the Ontario Drug Use Among Students Survey, approximately 20% of youth reported binge drinking at least once in the past year. Binge drinking increases the risk of physical injury, as well as unwanted and unsafe sexual experiences. Teenagers who abuse alcohol have been shown to have long-term memory impairments.

9. Screening—Adults: All adults should be screened for alcohol abuse at least once a year. Screening can be as simple as asking the question “Has your use of alcohol ever caused problems in your life?” A “yes” answer should prompt more questions. The CAGE questionnaire is a simple, proven way to identify problem drinkers.24

C—Have you ever thought about cutting down your use?
A—Are you annoyed when a friend or loved one comments on your drinking?
G—Have you ever felt guilty about your drinking?
E—Have you ever needed an eye-opener to steady your nerves or treat a hangover?

If the patient answers “yes” to any question, ask if this occurred in the past year.
For improved diagnostic predictability, ask the following two questions:

• On a typical day, how many drinks do you have?
• On average, how many days a week do you drink?

Patients may be at risk for alcohol-related problems if they answer “yes” to any CAGE questions about the past year and if they drink above the low-risk drinking guidelines. The low risk drinking guidelines for women are no more than two standard alcoholic drinks per day and no more than ten drinks per week. Men should drink no more than three standard alcoholic drinks per day and no more than 15 drinks per week.23
The low-risk drinking site at http://www.sbir-diba.ca includes a three-step clinical resource for managing patient alcohol consumption, which was developed by the Canadian Centre on Substance Abuse and the College of Family Physicians of Canada.

10. Screening—Adolescents: When Should Screening Begin for Adolescents?
The transition from elementary to junior high school (grades 6 to 8) is the time to start screening because a natural turning away from family toward the peer group occurs at this point. The pressure to belong is intense and the consequences of not belonging are devastating. Rejection stress is processed by the same neural circuits (anterior cingulate circuits) as physical pain. It increases the risk for depression dramatically. (These adolescents also are at increased risk for substance abuse.) Be especially concerned about children raised in families with marital conflict, loss due to separation, divorce, or death, or parents who suffer from addiction or mental health problems. As previously stated, the ACE study indicated that these kinds of adverse events increase the risk of substance use problems in adolescents.  

Ask the adolescent “Do any of your friends drink alcohol, smoke weed or cigarettes, or abuse other drugs?” If the answer is “yes,” ask about the friend(s) and the frequency of use. The more often adolescents use substances, the greater the risk for addiction and adverse consequences. Heavy use equals harm.

Another option is to use a questionnaire. The CRAFFT questionnaire has been validated for use in adolescents, is recommended by the American Academy of Pediatrics' Committee on Substance Abuse and consists of six questions that can be asked during an encounter or handed to the patient to fill out. A yes to any question should prompt a further discussion and questioning aligned with the DSMV criteria for substance use disorders.

- Have you ever ridden in a CAR driven by someone (including yourself) who was "high" or had been using alcohol or drugs?
- Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in?
- Do you ever use alcohol/drugs while you are by yourself, ALONE?
- Do you ever FORGET things you did while using alcohol or drugs?
- Do your family or FRIENDS ever tell you that you should cut down on your drinking or drug use?
- Have you gotten into TROUBLE while you were using alcohol or drugs?

11. Screening—Women: Substance abuse screening should be offered to all women, especially during periods of high stress and relationship loss. The childbearing years and menopause are times of increased vulnerability for mood and addiction disorders in women. Both are characterized by the stress of fluctuating hormone levels, sleep deprivation, uncertainty, and a diminished sense of control.

The T-ACE screening test is appropriate and validated for pregnant women. It is similar to CAGE testing, but less likely to induce guilt:
• **T** is for **tolerance**: How many drinks does it take to make you feel high? Score 2 if the answer is three or more.

• **A** is for **annoy**: Does it annoy you when people comment on your drinking or drug use? Score 1 for “yes.”

• **C** is for unsuccessful attempts to **cut** down or control use. Score 1 for “yes.”

• **E** is for **eye-opener**. Score 1 for “yes.”

A total score of two or more indicates problematic use.

The T-ACE should be used to screen all pregnant women in the first trimester of pregnancy as part of comprehensive antepartum care.

12. **Screening–Follow-up**: Rescreen adolescents and adults at least annually. Pregnant women should be screened at least once in every pregnancy. However, if you identify a person who is using substances and may be at risk, use subsequent visits for any reason to ask about use. Scheduling regular appointments with patients who are using substances will help facilitate management. The frequency of these appointments will vary depending on individual circumstances, but likely should be at least monthly.

13. **Diagnosing Alcohol Use Disorders**: The DSM-V has eliminated the term “addiction” and “dependence/abuse” in favour of “substance use disorder,” which is defined as the maladaptive pattern of substance use leading to clinically significant impairment or distress manifested by two or more of the following criteria:

- **Q** – Increase in **quantity**
- **U** – **Unable** to control
- **I** – Use **interferes** with function
- **T** – Spending more **time**
- **C** – **Craving**
- **H** – Use in **Hazardous** situations (driving, operating heavy machinery)
- **O** – **Ongoing** use despite harm
- **P** – Interpersonal **Problems** that result from use (arguments or fights)
- **N** – Need more for same effect (tolerance)
- **O** – **Other** aspects of life affected
- **W** – **Withdrawal** symptoms if fail to use or use to manage withdrawal

The severity is moderate if two to three criteria are positive, and severe if four or more are positive. The physician should specify whether physiological dependence (tolerance or withdrawal) is present or not. The course of recovery is rated as early partial remission, early full remission, sustained partial remission, sustained full remission, and receiving agonist therapy.27
14. **Motivational Interviewing**: Motivational interviewing is a collaborative, person-centred form of guiding to elicit and strengthen motivation for change, which can be used to address problematic substance abuse or behaviours.\(^{28}\) It was specifically developed as a structured intervention to treat alcohol and substance use disorders.\(^{29}\)

The key points of motivational interviewing can be summarized by the acronym **OARS**:

- **Open-ended questions**: Listen for “change talk”—the desire to, ability to, reasons to, or need to statements.
- **Affirmation**: Change is hard because it always involves loss. Assess the person’s strengths and challenges.
- **Reflective listening**: Make sure you understand what you heard.
- **Summarizing**: Make sure you have correctly understood the person’s situation and her or his ambivalence about change.

Congratulate nonusers, provide education about the risks of using substances; **ask permission** to give information about risks to those who use. Your goal is not necessarily to convince the adolescent or adult to stop, but to **attempt to shift his or her perception of risk**. Focusing on the brain effects of alcohol abuse may be the most effective strategy for adolescents. The risk of bone marrow suppression, gait instability, cognitive changes and cirrhosis may be risks you wish to discuss with adults. Above all, keep the conversation going. Try to make your office a lecture-free zone. However, always remind young people not to ride in a car being driven by someone who has been drinking or using drugs. Documenting the risks discussed in the chart can help follow the patient’s perspective of risk over time.

15. **Rapport and Relationship-building**: Strain has stated that “the prevailing medical paradigm has no capacity to incorporate the concept that a relationship is [a] physiologic process as real and as potent as any pill or surgical procedure”.\(^{30}\) Relationship is the context in which healing from addiction occurs, but it needs to be attuned to the patient’s needs. Attuned relationships are characterized by availability, responsiveness, and engagement. Attunement is at the heart of therapeutic “presence”; it is what makes a clinical encounter safe. Patients can tell if they are safe by looking at the care provider’s eyes and listening to the tone and prosody of his or her voice. This process, which Porges has called neuroception, is mediated by the myelinated branch of the vagal nerve, which is unique to social mammals.\(^{31}\) It happens within one tenth of a second, and, just like addictive urges, occurs below the level of awareness. When people feel safe, the amygdala—which scans for danger, alarms the person if it is present, and then motivates him or her to fight, flee, or freeze—is down-regulated by the action of oxytocin and vasopressin. This allows proximity to the “other” without fear. Safety is critical for activation of the social engagement system. When the social engagement system is working, the ears tune preferentially to the sound frequencies of human speech, the head turns to allow face-to-face and eye-to-eye contact, and the hippocampus, responsible for memory integration, is fully operational. This allows prosocial behaviour and memorable, meaningful interactions with other
people. Our body’s response to the “other” determines whether or not that person can help us. As a result, building a therapeutic relationship is the foundation on which psychosocial interventions in addiction medicine take place. Motivational interviewing is considered a gold-standard practice in addiction medicine, but multiple studies have shown that the development of a therapeutic alliance is of greater importance in terms of outcomes and is independent of the therapeutic strategy used.32,33,34

16. Stages of Change: Identify where the person is on the readiness-to-change continuum, which progresses from precontemplation (doesn’t believe he or she has a problem and is not interested in help) to contemplation (believes that perhaps there’s a problem, but is ambivalent about doing something about it) to preparation (a sense of needing to do something about this problem) through action (doing something about it now) and maintenance (preventing relapse). Tailor your intervention to the patient’s readiness to change.35 Again, it is important to document the stage of change as it can help track a patient’s progress over time and help to identify visits where strategies need to be tailored to a new stage on the continuum.

Treatments for Alcohol Use Disorders

17. Treat Withdrawal: The motivation to use alcohol changes from desiring a certain effect (to feel better or forget) to avoiding the pain of withdrawal as the disease of addiction progresses. Many patients have ruefully noted that they don’t enjoy alcohol anymore; they drink just to feel normal. We therefore must help those who want to stop but “need” to drink.

Withdrawal symptoms can vary from mild tremulousness to hallucinations and seizures if alcohol intake is stopped abruptly. Patients who wish to stop drinking on their own should be advised to decrease their consumption by 5-10% a day. This should not be suggested if the patient has had a history of delirium tremens or withdrawal seizures in the context of reduced consumption. If they develop disabling withdrawal symptoms, they may need pharmacological help. If the patient is willing and a facility exists, you can suggest a brief admission to a detoxification centre, where treatment staff will monitor and support the withdrawal process. Patients with good family support may be able to undergo detoxification at home.

There are multiple approaches to the prescribing of diazepam for home detoxification. The following is one approach used by the authors. Diazepam can be used to lessen the effects of withdrawal and prevent seizures. It should be given in a large loading dose at the onset of symptoms such as nausea, tremulousness, and anxiety. Often, 40-60 mg is required. Patients should be advised to take an additional 10 mg every 30-60 minutes until they feel sleepy; at this point, no more is given. Diazepam has a very long half-life, and by the time the levels have reduced, the patient will be through the period of highest risk for withdrawal seizures. A prescription for ten 10-mg tablets is often sufficient. Liver function should be assessed before diazepam is prescribed to rule out severe dysfunction. If it is present, lorazepam is a more appropriate choice because of its shorter half-life.
**Note:** **Benzodiazepines should not be prescribed** to people with alcohol addiction, except to mitigate severe withdrawal symptoms and to prevent seizures. The authors suggest that take-home doses be provided only if the administration can be overseen by a responsible family member or friend. Benzodiazepines act like alcohol on the brain and therefore a danger of cross-addiction is present. Combining alcohol and benzodiazepines can result in dangerous sedation and therefore the prescription for take-home doses of benzodiazepines should be observed.

18. **Reduce Consumption and Craving:** In Canada, three drugs have been approved to treat alcohol craving.

**Naltrexone** (ReVia®), a mu-receptor antagonist, is the drug with the best evidence for short-term effectiveness in combination with psychosocial support. It is considered first-line therapy for those with moderate to severe alcohol use disorders. A subset of male alcohol-dependent patients receive a disproportionate endorphin-mediated reward from drinking. In these patients, naltrexone blocks the mu opioid receptor, thereby decreasing the reward. The evidence for its effectiveness is less robust in women. In Canada, naltrexone is available only in tablet form, while in the United States depot preparations have been approved. The standard dose is 50 mg daily, but the dose can be doubled if necessary. It is a safe drug when used at the doses recommended for alcohol addiction; the only contraindication is concurrent opiate use because it will precipitate withdrawal given the mechanism of action and liver failure. It is generally thought that if the patient’s transaminases exceed three times the upper limit of normal, naltrexone should not be used. Side effects include nausea (10%), headache, anxiety, and sedation. It is best taken as a single dose before bedtime. Monitor liver enzymes every three to six months. The cost can be a barrier: the cost of one month of therapy approaches $200, but the Ontario Drug Benefit (ODB) will cover the cost with Section 8 (exceptional access program) approval.

**Acamprosate** (Campral®) works by decreasing cravings, particularly in the immediate post-withdrawal period, by modulating the activity of glutamate receptors. Acamprosate has been shown to decrease relapse rates and support continuous abstinence based on a 2010 meta-analysis. The recommended dose is two 333-mg tablets TID with meals for those weighing 60 kg or more. The daily dose should be decreased by one tablet for those weighing less than 60 kg. The most disabling side effect is diarrhea, which affects 10% of users. Decreasing the dose is the recommended strategy if diarrhea develops. It is not eliminated by the liver, so is safe to use in those with compromised liver function short of advanced cirrhosis. Acamprosate has few interactions with other psychotropic medications. Renal failure is a contraindication to use.

Typically, acamprosate is started once a person has been abstinent for at least four days (as this was a criterion in the COMBINE drug trial). No danger of toxicity exists if a person relapses and drinks alcohol while taking
acamprosate. It costs approximately $180 a month and is a benefit of many private drug plans. The ODB will cover the cost with Section 8 (exceptional access program) approval, but only if naltrexone has been found ineffective or is contraindicated.

**Disulfiram** (previously marketed under the trade name Antabuse®) is an aversive agent. Drinking even a tablespoon of alcohol while one is taking disulfiram may be fatal. It interferes with the action of aldehyde dehydrogenase, which leads to an accumulation of acetaldehyde in the body. Acetaldehyde poisoning can cause flushing, shortness of breath, palpitations, nausea, vomiting, and headache. More severe reactions include myocardial infarction, congestive heart failure, and respiratory depression. No longer listed in the *Compendium of Pharmaceuticals and Specialities*, it is available from some compounding pharmacies. Pharmacy.ca will accept a faxed prescription and arrange to deliver the drug to a patient’s home. It is not covered by ODB. The dose ranges from 125 to 500 mg a day, but most people take 250 mg a day.

Side effects include nausea, headache, fatigue, and a metallic taste. It can also cause reversible peripheral neuropathy. Disulfiram is toxic to the liver in high doses, but if it is taken at recommended treatment doses, it protects the liver from harm by preventing excessive alcohol intake. Complete liver function tests should be done before starting disulfiram, one to two months after starting it, and then at six-month intervals. Supervised administration leads to improved compliance. The evidence for efficacy is weak, but some patients do well with it, especially when it is used to manage high-risk situations and/or given under supervision. The approval of this drug predated rigorous placebo-controlled, double-blinded trials. Interest in this drug has been renewed recently because it also appears to decrease cravings and days of use for cocaine.

19. **Prevent Relapse:** Most patients benefit from formal addiction treatment and encouragement to join a self-help group. Alcoholics Anonymous is the best known, but it isn’t for everyone. Addiction treatment provides support, education, and follow-up management. Treatment is just the beginning. Strong connections to others in a caring community allow for early detection and prompt intervention if and when relapses occur. A relapse is not a sign of treatment failure and in fact is part of the illness paradigm.

**Relapse Prevention—Adolescents:** Unfortunately, few treatment options for youth currently include a best practices approach. This gap in service has yet to be addressed by the Ontario Ministry of Health and Long-Term Care. Some options worth exploring in the Greater Toronto Area (GTA) are the Hospital for Sick Children day program for youth up to age 18, and the wilderness-based program for youth aged 13 to 19 at The Pine River Institute (http://www.pineriverinstitute). For other youth treatment options in your community, access the drug and alcohol helpline on the ConnexOntario website (http://www.drugandalcoholhelpline.ca) and click on “directory.”
Parents can receive support from Al-Anon or Nar-Anon. Westover Treatment Centre in Thamesville, Ontario, runs a codependence program for parents. Information about this program can be accessed at their website http://www.westover-fdn.org/programs/.

20. **Treat Concurrent Disorders:** If mood or anxiety symptoms precede addiction or worsen with abstinence, suspect a concurrent disorder: complex PTSD, bipolar depression, major depression, and anxiety are the most common. Treating the concurrent disorder may decrease the risk of relapse. First line treatments for other psychiatric disorders should be combined with best practices/first line treatments for addiction disorders. Because of the risk for cross-addiction, avoid prescribing benzodiazepines for anxiety.

**Nicotine Use Disorders (Tobacco/Smoking)**

21. **Nicotine—Epidemiology:** Alcohol and tobacco, two legal substances, account for 80% of the cost of treating substance abuse in Canada.\(^\text{42}\) Addiction to nicotine is two to four times more common in people with mental health problems and addiction than in the population at large. Many of those in recovery from alcohol or other addictions continue to smoke. The medical complications of nicotine addiction are the most frequent causes of death in this population.

No data support the myth that those with mental health and addiction problems are less interested in quitting smoking or are less likely to be successful at quitting than other patients. Simultaneous abstinence from smoking and other drugs does not increase the relapse risk. In fact, continuing to smoke while in recovery from addiction to other drugs keeps the neural circuits of addiction activated and may make relapsing to the drug of choice more likely.\(^\text{45}\) The Cochrane tobacco addiction group is launching an intervention protocol for smoking cessation in people who are being treated for or in recovery from substance abuse.

Nicotine is the addictive agent in tobacco. Delivery of nicotine from the lungs, through inhalation, to the brain takes seven to nine seconds. Nicotine binds to the alpha-4 beta-2 nicotinic receptor and eventually causes release of dopamine in the nucleus accumbens, the pleasure centre of the brain. Inhalation of addictive substances leads to rapid crossing of the blood-brain barrier and therefore increases the addictive potential and the psychoactive effects. A single cigarette has 10 to 12 puffs, and a standard pack contains 25 cigarettes. A person who smokes a pack of cigarettes puffs 250 to 300 times a day. No other drug is used as frequently. The primary goal, therefore, is to help a person stop smoking, not necessarily abstain from nicotine.

22. **Screening—Adults:** Screen for and offer treatment to those who express interest in smoking cessation in all health care settings, including the emergency department and inpatient units. This can be as simple as asking, “Do you smoke tobacco/cigarettes?”
Smoking cessation is considered the “gold standard” of preventive care. All those who smoke should be advised of the benefits of cessation and offered specific assistance to quit and regular follow-up care. This is referred to as the “5A” approach:

- **Ask** about current smoking status.
- **Advise** current smokers to quit.
- **Assess** readiness to quit.
- **Assist** those who are ready.
- **Arrange** follow-up.

**Screening—Pregnant Women:** All pregnant women should be asked about their smoking status at the first antenatal visit and smoking cessation should be encouraged throughout pregnancy and the postpartum period. Partners and family members should also be screened and encouraged to cease using all tobacco products.

**Diagnosis—Nicotine Dependence:** The Fagerstrom Test for Nicotine Dependence can be accessed at the CAMH Knowledge Exchange website: [http://knowledgeex.camh.net](http://knowledgeex.camh.net). Smoking progress notes are also available at the site. This questionnaire will help diagnosis those with an addiction to nicotine and help determine the severity of this addiction.

**Treatments for Nicotine Use Disorders**

24. **Nicotine Replacement Therapy** (NRT): should be offered as a first-line therapy to all in an effort to reduce the number of cigarettes smoked and to mitigate the symptoms of nicotine withdrawal, such as anxiety, insomnia, irritability, and increased appetite. Nicotine replacement therapy is available in short-acting formats (gum, lozenge, and inhaler) and long-acting formats (a transdermal patch). All forms of NRT double the chance of long-term abstinence from tobacco products and reduce cravings with equal effectiveness. They can be used while a person is still smoking and safely combined with bupropion. Many provinces have free smoking cessation programs, which may include free smoking cessation aids.

25. **Bupropion** (Wellbutrin or Zyban): is an antidepressant that boosts levels of dopamine and norepinephrine. Taking bupropion doubles the odds of smoking cessation. It decreases cravings and diminishes the severity of withdrawal. It should be started at least one week before an agreed-upon quit date at a dose of 150 mg once daily for three days, and then increased to twice daily dosing. Therapy generally should continue for seven to 12 weeks. Bupropion lowers the seizure threshold, so avoid prescribing it to those with a history of seizures, including those with alcohol withdrawal seizures or current heavy alcohol use. Use with care in those with restrictive eating disorders as this medication can decrease appetite. It can also cause dry mouth, a rash, and disturbing nightmares. The Ontario coroner issued an alert in May 2013 advising of a risk of death due to inhalation or injection of bupropion alone or with other drugs. Care should be taken in prescribing this medication to patients with a history of injection drug use.
or at high risk of injection drug abuse. Given these risks, physicians may want to limit initial prescriptions to one month and have close follow up.

26. **Varenicline** (Champix): is a long-acting nicotine receptor blocker that prevents nicotine from binding so it decreases the reward while simultaneously mitigating withdrawal symptoms because of its weak agonist effect. It improves the odds of quitting by a factor of four over placebo. It can be started two weeks before a patient quits smoking; the usual starting dose is 0.5 mg twice daily, which is then increased to 1 mg twice daily after three to seven days.

Common adverse reactions include nausea, headache and insomnia. Varenicline can have serious psychiatric side effects, including suicidal ideation and severe skin eruptions (Stevens-Johnson syndrome), arrhythmias, vision disturbances, and muscle spasm. The safest approach is to start low and go slow. Follow up with patients carefully and often.

27. **Treatment – Pregnant Women:** During pregnancy and breast feeding, counselling is the recommended cessation treatment. If counselling is ineffective, then intermittent dosing with short-acting nicotine replacement products can be offered. In patients with depression or at high risk of depression, buproprion may be used as a second- or third-line agent, however, the efficacy in pregnancy has not been established.44

**Cannabis Use Disorders**

28. **Cannabis – Epidemiology:** The 2011 Canadian Alcohol and Other Drug Use Monitoring Survey (CADUMS) revealed that 9.1% of Canadians used cannabis in the preceding year. The lifetime prevalence of use was 39.4%. Most users smoke cannabis rolled in paper mixed with tobacco. Cannabis smoke contains 50-70% more carcinogens than tobacco. Approximately 10% of regular users will become addicted, but the risk increases to almost 17% in those who start using cannabis by age 14. 49 Endogenous cannabinoid receptors are widely distributed in the central and peripheral nervous system and are thought to modulate mood, pain, memory, cognition, sleep, and appetite via their action on dopamine.

Cannabis has highly variable psychogenic effects on attenuating or exacerbating symptoms of anxiety and depression. 50,51 Cannabis is usually smoked and frequently mixed with tobacco, which increases the risk of addiction as well as lung, heart, and gum disease. Research has shown that heavy cannabis use can cause a decline of neuropsychological function from childhood to midlife.52 Regular cannabis use has also been linked to a heightened risk of psychosis, especially when a positive family history is present.53 Acute intoxication can interfere with judgment, coordination, and memory.

Regular users can present with respiratory symptoms such as worsening of asthma or chronic obstructive pulmonary disease, anxiety, depression, paranoia, or psychosis, as well as problems with memory, employment,
studies, or relationships\textsuperscript{54} Cannabis hyperemesis syndrome is a recently described complication of chronic abuse.\textsuperscript{55} It is characterized by cyclic episodes of nausea and vomiting.

29. \textbf{Screening and Diagnosis:} If a patient uses cannabis more often than weekly, consider using the cannabis severity of dependence scale, available at \url{http://ncpic.org.au/workforce/gps/}.\textsuperscript{56} The diagnosis of cannabis addiction can be made on the basis of the DSMV criteria for a substance use disorder as described above.\textsuperscript{57}

\textbf{Treatments for Cannabis Use Disorders}

30. \textbf{Harm Reduction:} The recently published lower-risk cannabis use guidelines advise abstinence as a first-line strategy for anyone wishing to avoid harm, but especially for pregnant women, middle-aged men with cardiovascular risk factors, and those who suffer from psychosis or have a first-degree relative who suffers from psychosis.\textsuperscript{58} The harm reduction recommendations are:

- Delaying initiation of use until age 18 has been associated with less harm.
- Using cannabis daily more than doubles the risk of addiction.
- Difficulty controlling use is a sign of addiction, for which help should be sought.
- Avoid smoking cannabis with tobacco.
- Avoid deep inhalation.
- Use a vaporizer rather than smoking a joint, blunt, or water pipe.
- Avoid higher-potency products.
- Do not drive a motor vehicle for at least four hours after use, or longer if using higher-potency cannabis.

31. \textbf{Withdrawal:} Abrupt cessation can precipitate withdrawal symptoms that peak at 48 to 72 hours and typically include craving, insomnia, irritability, anxiety, and restlessness. Sleep problems and vivid dreams can persist for weeks. Currently, no drugs are approved to manage withdrawal, although oral tetrahydrocannabinol (nabilone) and dronabinol have shown some effectiveness in clinical trials.\textsuperscript{59,60,61} Its use is off label and cost is an issue. Nabilone (Cesamet) is available on ODB and may be an option as long as the patient is counselled as to the off-label use in cannabis withdrawal. Treating concurrent nicotine addiction may improve success. Delaying the time of first use and gradually cutting back may help to make cessation easier for regular users.

32. \textbf{Psychosocial Intervention:} Motivational interviewing and rehabilitation programs, as described in the alcohol use section, may be of use to those suffering from a moderate to severe cannabis use disorder.

\textbf{Opioid Use Disorders}

33. \textbf{Epidemiology:} One in six (16.7\%) Canadians aged 15 years or older reported using opioid pain relievers in the year before 2011, a 4\% decrease
from the year before. Opioids are the most frequently used psychoactive pharmaceutical in the CADUMS study. The others are sedatives and stimulants. For all drugs in this group, abuse—defined for the purposes of the study as use for the experience, the feeling, or to get high—was reported to be 3.2%. The data cannot be broken down by individual drug classes. Heroin used to be the most commonly abused opioid, but in recent years, long-acting oxycodone has become most common. Now that OxyNEO has replaced OxyContin, heroin is making a comeback.

34. **Screening:** Screening of opioid use disorders can use the same screening tools as for alcohol with a substitution of the word “narcotic” for alcohol (see the section for alcohol use disorders for further information).

35. **Treatment:** Staying abstinent from narcotics is much harder than staying abstinent from other drugs because of persistent (perhaps permanent) changes in the brain’s reward systems, which are the hallmark of opioid use disorders. Patients live longer and do better when they are offered opioid substitution (agonist) therapy than if they try to abstain without pharmacological support. In Canada, the two drugs offered for substitution therapy are methadone and buprenorphine/naloxone (Suboxone®). Both are long-acting opioids that help stabilize the patient’s cravings for opioids and given the long-acting nature provide little positive reinforcement (or high). Patients can self-refer to methadone clinics, which are widely available in the GTA. Methadone prescribers must obtain a special licence to prescribe this product from Health Canada. Buprenorphine does not require a special exemption/licence to prescribe and may therefore be prescribed by family physicians. The prescribing of these two agents is beyond the scope of this module.

If you care for a patient who is taking methadone, be aware that the most frequent side effects are sweating, constipation, urinary retention, and sexual dysfunction. A methadone overdose can be fatal and is more likely if users also suffer from liver disease or combine methadone with alcohol, other sedatives, or drugs metabolized by cytochrome CYP3A4. Daily doses exceeding 120 mg can cause Q-T prolongation and torsades de pointes. The typical treatment dose ranges from 80 to 120 mg. Family doctors should order regular screening ECGs when prescribing concurrent QT prolonging agents. Care should be taken to avoid prescribing sedatives, especially benzodiazepines, to patients taking methadone.

Buprenorphine/Naloxone (Suboxone®) is less likely than methadone to cause fatal respiratory depression if patients overdose with it. It is an effective alternative for patients who can manage with smaller doses of methadone. Suboxone can be prescribed by FPs who have successfully completed an online training program, which can be accessed at http://www.suboxonecme.ca, or if they have taken the CAMH Opioid Dependence Courses.
Case 1, Alex, aged 13

- If Alex suffers from a mood disorder, in what ways might it have increased his vulnerability to substance abuse?

The next time you see Alex, he has been brought to your office for completion of an application for out-of-province funding so he can go to the United States for treatment. Alex subsequently goes to a U.S. treatment centre, returning with three diagnoses (social anxiety disorder, depression, and substance dependence disorder) and three medications. The diagnoses confirm your strong suspicions based on Alex’s family and personal history and his use of marijuana and cocaine: alcohol, cannabis, nicotine, and narcotics are very effective anxiety relievers.

Alex tells you that having to go to school and be around people was more than he could bear. He didn’t see the point of doing anything. The only time he had a reprieve from feeling anxious was when he was high on weed. You suspect that Alex has a concurrent mood disorder, perhaps bipolar variant, which first manifested as depression in early adolescence.

Within a week of his return to Canada, Alex relapses and is using nicotine and cannabis. Soon he is snorting cocaine and injecting ketamine. His parents are distraught. In an effort to distance him from his drug-using friends, they enroll him at a new school. This has the unfortunate and unintended consequence of worsening his anxiety because he is disconnected from his social network. Alex rebels by refusing to attend school or by skipping classes to be with his friends. He starts to deal drugs in order to purchase his own. He talks about quitting cocaine and ketamine, but he isn’t at all interested in quitting pot.

- What long-term approach do you take to help Alex?

You help Alex’s family arrange his admission to another treatment centre closer to home, but he runs away the night before the program starts. Clearly the intervention is not matched to his readiness to change.

After another four years and a near-fatal heroin overdose, Alex is ready to try another treatment program. He spends three months at a residential facility on Vancouver Island. His family is mandated to participate. He is able to stay abstinent for six weeks after discharge. He relapses after reconnecting with his former peer group.

When Alex is 20, he continues to visit you for help. He is still injecting himself with ketamine and heroin. He continues to smoke cigarettes and cannabis. He attended a methadone maintenance program for a few months, but found picking up his drugs every day a hassle. Going there made him feel like a loser. He doesn’t want to go back.
You ask Alex about his hopes and dreams. He says he doesn’t want to die or go to prison, both of which are likely if he doesn’t stop using soon. He wants to finish high school and become self-sufficient like his older brother.

In addition, recently, his mother was diagnosed with breast cancer. He feels guilty about making her life harder than it is already, and he would like to stop.

You then ask what stops him from staying clean. He tells you that he becomes unbearably anxious and depressed within 24 hours of stopping drugs. All he can think of to relieve his distress is using drugs again or killing himself. He receives no pleasure from using drugs anymore; he uses them just to feel “normal.”

He asks for a prescription for diazepam to help him detoxify from ketamine. He insists that this is the only way he’ll get clean and promises that he’ll let his mom be in charge of his pills.

You decline because you worry that he will mix diazepam with narcotics, as he has in the past. You also cannot agree to a plan mandating his mother’s cooperation without her input. You offer him buspirone for anxiety and quetiapine for sleep. You ensure that he is using clean needles to decrease his risk of contracting or spreading human immunodeficiency virus or hepatitis C infection. You recommend screening, to which he agrees. He confirms that he has already been immunized against hepatitis B.

You ask about one step he would be willing to take to change his current situation. He says he might attend a self-help meeting with his cousin, now sober, who also struggled with anxiety and addiction. If Alex can connect with peers who have learned to cope without drugs, this may boost his confidence to do the same.

Finally, you ask if Alex is interested in learning a skill to manage his anxiety. He agrees, and so you invite him to go to the place in his body where his anxiety manifests. You ask him to focus his awareness on the physical sensations of anxiety and notice if they are pleasant, unpleasant, or neutral. You direct him to notice if any feelings change when he slows his breathing. He becomes aware that the anxious feeling in his stomach eases a little. You reassure him that anxiety, although uncomfortable, is temporary and will not harm him. What he does to avoid feeling anxious is the problem. Would he be willing to practice awareness of anxiety in his body and try “letting it be” to see what happens?

He is at the contemplation stage of change. You encourage him to follow through on his intention to attend a self-help meeting with his cousin. You offer to connect him with a disorders worker who can visit him at home to help him apply to an inpatient detox program. However, he still isn’t sure about entering treatment again. Perhaps he will manage to become abstinent this time; in any case, you will be there to support him. Your goal is to help him feel cared for and cared about. As he leaves the appointment, he meets your gaze, shakes your hand, and thanks you.
The Alberta Alcohol and Drug Abuse Commission published the Youth Detoxification and Residential Treatment Literature Review; Best and promising practices in adolescent substance use treatment in 2006. It recommends that all youth treatment programs involve the family; that programs be friendly, flexible and culturally sensitive; that residential treatment is no better than community-based, and that treatment needs to be tailored to the individual.

**Case 2: Barbara, aged 32**

- **What did you forget to do before forming your initial diagnosis and treatment plan?**

Because addiction commonly coexists with mental disorders, asking about substance use is important in patients with a current or past history of such disorders.

- **Why might Barbara have decided not to disclose her addiction to alcohol?**

Poor mental health, particularly if complicated by addiction, is harmful to the woman herself, and also interferes with her ability to be attuned to her children’s needs. Children need stable relationships with their primary caregivers in order to develop secure attachment, which is the foundation for good mental and physical health. Offering support and assistance to mothers who are stressed, depressed, and/or abusing substances increases the likelihood that their children will flourish.

Women frequently withhold information about mood, trauma, and problematic substance use because they fear judgment and losing custody of their children.

- **Why is addiction screening particularly important for women in the reproductive years?**

Alcohol, which is the most commonly abused drug during pregnancy, can result in fetal alcohol spectrum disorder. This is the leading cause of preventable brain damage in children. Any use of alcohol during pregnancy is cause for concern.

Memorial University of Newfoundland, in partnership with the Public Health Agency of Canada, has developed a free continuing medical education program on fetal alcohol spectrum disorders. This program can be accessed at [https://www.mdcme.ca/fasd/](https://www.mdcme.ca/fasd/). The first module contains an excellent discussion of the importance of using a woman-centred, harm-reduction approach and the merits of motivational interviewing.

Case 3: Nora, aged 45

Physicians must be knowledgeable about trauma when they provide addiction treatment. Trauma, substance abuse, and mental health problems are strongly associated. Eighty percent of women who abuse alcohol have a history of trauma. Two of every three women who access shelter networks report that experiencing violence from their intimate partners preceded their substance abuse or mental health issues. A high prevalence of complex PTSD is found in those who become addicted to alcohol.

Post-traumatic stress disorder is primarily an avoidance disorder, characterized by intrusions of unintegrated implicit memories of traumatic events that leak into awareness as flashbacks, panic attacks, and nightmares. These are deeply distressing to those who experience them. Alcohol enables avoidance through its effect on memory, but it also keeps the trauma potent and in the present. Abstinence is critical to safety and an essential first step in staged trauma treatment. Abstinence allows healing of the hippocampus, which is responsible for memory integration. Hippocampus function is negatively affected by the high levels of cortisol that result from life-threatening trauma. The symptoms of PTSD typically worsen in early abstinence, and so patients may need pharmacologic support (selective serotonin-reuptake inhibitors to decrease anxiety and nonaddictive sleep medications like trazodone or quetiapine) until their condition has stabilized enough to begin a trauma treatment program.

You are concerned about Nora because you believe she is suffering from PTSD, which has led to her alcohol addiction. In addition, women experience worse health outcomes than men after drinking less and for a shorter time, because they make less aldehyde dehydrogenase, which breaks down alcohol, and they have smaller circulating blood volumes. Even one drink a day increases a woman’s risk of breast, liver, and rectal cancers. If combined with tobacco addiction, alcohol abuse increases the risk of oral and esophageal cancers, as well.

You provide Nora with information about programs for women who are being abused, along with details about shelters. You also arrange for an assessment of other types of abuse, and recommend that her children’s mental and physical health be assessed.

Case 4: Larry, aged 51

Alcohol is a toxin with a very narrow margin of safety. It has deleterious effects on all major organ systems of the body, but especially the brain, gut, and cardiovascular system.

If a person needs three or more drugs to control blood pressure (as Larry does), ask about alcohol use.
Binge alcohol consumption (five or more drinks on a single occasion for men or four or more for women) triples the risk for hemorrhagic stroke.66

• **How do you handle the patient’s requests for the letter?**

As Larry’s case demonstrates, knowing how much alcohol a person is drinking can be difficult. This is why a corroborating history from family members is important, and why you decided to speak to Larry’s wife and daughter. Eventually, you learned from his daughter that Larry was drinking to inebriation daily. His daughter disclosed this information because she was worried that her father’s driver's licence would be reinstated.

In Ontario, physicians are required by law to report the name and address of all patients over age 16 who suffer from a medical condition that may impair their ability to operate a motor vehicle safely. Addiction tops the list of reportable medical conditions because of its long-lasting effects on neurological function. The decision to report a patient to the Ontario Ministry of Transportation is difficult because it can erode the physician-patient relationship. On the other hand, a wish to drive is a powerful motivator for some people. It can help them commit to abstinence and can be the factor that makes them decide to enter treatment.

Patients diagnosed with alcohol dependence **must** be abstinent for at least one year and have normal liver-function tests (aspartate transferase, alanine aminotransferase, and gamma-glutamyl transferase) and a normal mean corpuscular volume measurement before the ministry will reinstate the licence. The period of mandatory abstinence may be shortened if the patient successfully completes a treatment program and has the support of a physician who is trained in addiction medicine.

A common misperception among both physicians and patients is that the obligation to report comes into effect only when patients knowingly drive under the influence of drugs or alcohol. Driving under the influence is a criminal offence, which is under the purview of the police. A physician’s obligation is to identify and report medical risk. The decision to revoke someone’s licence is made by the medical review board at the MTO.

• **How do you manage his nicotine withdrawal?**

Some drinkers, like Larry, also smoke. People who engage in both are typically sedentary, overweight, and prone to head injuries from falls. These are significant additional risk factors for cerebrovascular morbidity.

You and Larry discuss nicotine replacement as first-line treatment, and while he is not enthusiastic, he agrees to try it. You also mention the possibility of bupropion or varenicline use as a possibility if nicotine replacement is ineffective or he dislikes it.
RESOURCES

Addiction
Mate G. In the realm of hungry ghosts. Toronto: Vintage Canada; 2009.
Urschell HC. Healing the addicted brain. Chicago: Sourcebooks; 2009.

Attachment
Siegel DJ. The developing mind. 2nd ed. New York: Guilford Press; 2012.

Effects of Childhood Trauma
Perry BD, Szalavitz M. The boy who was raised as a dog: what traumatized children can teach us about love, loss and healing. New York: Basic Books; 2006.

Mindfulness Meditation

Motivational Interviewing
Naar-King S, Suarez M. Motivational interviewing with adolescents and young adults. New York: Guilford Press; 2011.
Parenting

Siegel D, Hartzell M. Parenting from the inside out. New York: Penguin Group (USA); 2003.

Wellness
Alberta Family Wellness Initiative [Internet]. Calgary: Norlien Foundation; 2012 [cited 2013 Nov 30]. Available from: http://www.albertafamilywellness.org Click on the tab for health professionals to listen to video recordings or to download pdfs. The site includes video recordings and document files for health professionals. It also offers valuable resources for parents about the importance of secure attachment relationships with their children, which are the basis for good mental and physical health across the lifespan.

Alcohol Use Disorders: Resources

Primary Care Addiction Resources: The Centre for Addictions and Mental Health also has resources for primary care practitioners and mental health specialists: http://www.knowledgex.camh.net/addiction.

Adverse Childhood Experiences Study: A video of Dr. Felitti (the primary author of the Adverse Childhood Experiences (ACE) Study, discussing the early origins of addiction is available on the Alberta Family Wellness Initiative website. 1

Information on Drug Effects: An excellent youth-friendly resource www.experiment.ca can be found on the Canadian Centre on Substance Abuse website. It offers interactive programs detailing the effects of commonly used drugs and the consequences of impaired driving.

References for Resisting Peer Pressure: Other useful sites that provide information about drugs and how to resist peer pressure are http://www.talktofrank.com (United Kingdom) and (United States).

“The Downside of High,” on the link between psychosis and cannabis use, is a podcast at . It can be downloaded free of charge and is a useful resource for young people and their parents. Other helpful resources for parents can be found at the National Institute on Alcohol Abuse and Addiction (http://www.niaaa.nih.gov) or at the U.S. www.Familylives.org.
The Centre for Addiction and Mental Health (CAMH) also has resources for young people and families:  
http://www.knowledgex.camh.net/primary_care/resources_families/

Online screening tools are available to patients who wish to rate their own use of alcohol:

**Rethinking drinking** at http://rethinkingdrinking.niaaa.nih.gov/

**Check your drinking.net**, an online survey at  
http://www.alcoholhelpcenter.net/cyd/CYDScreenerP1_0.aspx

The Centre for Addiction Research of British Columbia **Alcohol Reality Check**  
at http://carbc.ca/AlcoholRealityCheck.aspx (both adult and youth formats)
REFERENCES


44. CAN-ADAPTT. Canadian smoking cessation clinical practice guideline. Toronto, Canada: Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment, Centre for Addiction and Mental Health, 2011.


