Management of alcohol use disorders: A pocket reference for primary care providers

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META:PHI

THE COLLEGE OF FAMILY PHYSICIANS OF CANADA
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Acknowledgments

Mentoring, Education, and Clinical Tools for Addiction: Primary Care–Hospital Integration (META:PHI) is an ongoing initiative to improve the experience of addiction care for both patients and providers. The purpose of this initiative is to set up and implement care pathways for addiction, foster mentoring relationships between addiction physicians and other health care providers, and create and disseminate educational materials for addiction care. This pocket guide is excerpted from *Safe prescribing practices for addictive medications and management of substance use disorders in primary care: A pocket reference for primary care providers*, a quick-reference tool for primary care providers to assist them in implementing best practices for prescribing potentially addictive medications and managing substance use disorders in primary care, endorsed by the College of Family Physicians of Canada. This excerpt is a guide to talking to patients about their alcohol use and managing at-risk drinking and alcohol use disorders.

We thank those who have given feedback on this document: Dr. Mark Ben-Aron, Dr. Peter Butt, Dr. Delmar Donald, Dr. Mike Franklyn, Dr. Melissa Holowaty, Dr. Anita Srivastava, and three anonymous CFPC reviewers.

We gratefully acknowledge funding and support from the following organizations:

- Adopting Research to Improve Care (Health Quality Ontario & Council of Academic Hospitals of Ontario)
- The College of Family Physicians of Canada
- Toronto Central Local Health Integration Network
- Women's College Hospital

Version date: December 19, 2017

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Introduction

Until recently, primary care providers' role has been restricted to treating medical complications of alcohol misuse and referring patients for specialized alcohol treatment. However, primary care is an ideal setting for the long-term management of alcohol disorders. Primary care practitioners can provide ongoing advice (1); there is evidence that the length of treatment has a greater impact on outcome than the intensity of treatment (2). Surveys suggest that patients would much prefer to receive treatment in a primary care setting than in a formal addiction setting. Addiction treatment in a primary care setting also enables the provision of ongoing medical care to the addicted patient. Controlled trials, cohort studies, and a systematic review have demonstrated that patients with a substance-related medical condition had reductions in hospitalizations, emergency room visits, health care costs, and possibly mortality if their primary care practitioner had addiction medicine training, or if addiction treatment was integrated with primary care (3-6). However, despite compelling evidence for primary care provider involvement with alcohol use disorders, clinicians do not consistently screen for alcohol or drug problems, counsel their addicted patients, or refer patients to formal treatment (7). A strong and growing body of evidence indicates that these interventions are effective, easily learned, and practical in a primary care setting. What follows is a brief overview of these interventions.

Diagnostic continuum of alcohol problems

Alcohol use occurs along a spectrum of severity: abstinence, low-risk drinking, at-risk drinking, and alcohol use disorder (AUD).

Low-risk drinking

The Canadian Centre for Substance Abuse released these low-risk drinking guidelines in 2010 (8):

Note: These guidelines are not intended to encourage people who choose to abstain for cultural, spiritual or other reasons to drink, nor are they intended to encourage people to commence drinking to achieve health benefits. People of low bodyweight or who are not accustomed to alcohol are advised to consume below these maximum limits.
Guideline 1 Do not drink in these situations: • When operating any kind of vehicle, tools, or machinery • Using medications or other drugs that interact with alcohol • Engaging in sports or other potentially dangerous physical activities • Working • Making important decisions • If pregnant or planning to be pregnant • Before breastfeeding • While responsible for the care or supervision of others • If suffering from serious physical illness, mental illness, or alcohol dependence
Guideline 2 If you drink, reduce *long-term* health risks by staying within these average levels: **Women:** 0-2 standard drinks* per day, no more than 10 standard drinks per week **Men:** 0-3 standard drinks* per day, no more than 15 standard drinks per week Always have some non-drinking days per week to minimize tolerance and habit formation. Do not increase drinking to the upper limits as health benefits are greatest at up to one drink per day. Do not exceed the daily limits specified in Guideline 3.

Guideline 3

If you drink, reduce *short-term* risks by choosing safe situations and restricting your alcohol intake:

- Risk of injury increases with each additional drink in many situations. For both health and safety reasons, it is important not to drink more than three standard drinks* in one day for a woman and four standard drinks* in one day for a man.
- Drinking at these upper levels should only happen *occasionally* and always be consistent with the *weekly* limits specified in Guideline 2. It is especially important on these occasions to drink with meals and not on an empty stomach; to have no more than two standard drinks* in any three-hour period; to alternate with caffeine-free, non-alcoholic drinks; and to avoid risky situations and activities. Individuals with reduced tolerance, whether due to low bodyweight, being under the age of 25 or over 65 years old, are advised to never exceed Guideline 2 upper levels.

Guideline 4

When pregnant or planning to be pregnant:

The safest option during pregnancy or when planning to become pregnant is to not drink alcohol at all. Alcohol in the mother's bloodstream can harm the developing fetus. While the risk from light consumption during pregnancy appears very low, there is no threshold of alcohol use in pregnancy that has been definitively proven to be safe.

Guideline 5

Alcohol and young people:

Uptake of drinking by youth should be delayed at least until the late teens and be consistent with local legal drinking age laws. Once a decision to start drinking is made, drinking should occur in a safe environment, under parental guidance and at low levels (i.e., one or two standard drinks* once or twice per week). From legal drinking age to 24 years, it is recommended women never exceed two drinks per day and men never exceed three drinks in one day.

*A **standard drink** is defined as a 341 ml (12 oz.) bottle of 5% strength beer, cider, or cooler; a 142 ml (5 oz.) glass of 12% strength wine; or a 43 ml (1.5 oz.) shot of 40% strength spirits.

At-risk drinking

At-risk drinkers have the following properties:

(a) Patient drinks above recommended guidelines.

(b) Patient may have alcohol-related problems.

- Psychological problems: insomnia, anxiety, depression
- Social problems: spending inadequate time with family, reduced work performance, impaired driving charges
- Physical problems: gastritis, hypertension, fatty liver, recurrent trauma, sexual dysfunction

(c) Patient does not meet the DSM-V criteria for an alcohol use disorder.

Alcohol use disorder (AUD)

The DSM-V gives the following criteria for an AUD (9):

(a) Alcohol taken in larger amounts or over a longer period of time than intended.
(b) Repeated unsuccessful efforts to reduce use.
(c) Great deal of time spent obtaining or using alcohol, or recovering from its effects.
(d) Strong cravings or urges to drink.
(e) Recurrent use resulting in a failure to fulfill major responsibilities.
(f) Continued use despite alcohol-related social or interpersonal problems.
(g) Reduction of major activities because of alcohol (e.g., missing work, spending less time with children or spouse).
(h) Repeatedly drinking in situations or activities where intoxication is dangerous.
(i) Continued use despite knowledge of alcohol-related physical or psychological problems.
(j) Tolerance (need to drink more to achieve the same effect, or diminished effects with continued use of the same amount of alcohol).
(k) Withdrawal (e.g., tremors, sweating and/or anxiety in morning or afternoon, relieved by drinking; withdrawal seizures).

Patients who meet two or three of these criteria have a **mild** AUD, four to five criteria indicate a **moderate** AUD, and six or more indicate a **severe** AUD.

Screening and identification

Alcohol consumption history

- Ask all adolescent and adult patients at baseline and annual physical.
- Elicit a specific weekly consumption.
- Convert responses into standard drinks: 12 oz. of beer, 5 oz. of wine, or 1.5 oz. of spirits.
- Ask about patients' maximum consumption on one day in the past one to three months.

Common errors in alcohol history

- Not asking.
- Accepting vague answers (e.g., "I just drink socially").
- Not converting to standard drinks (most people pour large drinks at home).
- Missing binge consumption (many patients do not mention periodic heavy consumption when asked about "average" or "typical" drinking).

Screening questionnaires

- Three common surveys: CAGE (10-12), binge drinking question (13), AUDIT (14).
- Best as waiting room questionnaire, but can be incorporated into clinical interview.
- Sensitivity for detecting alcohol problems in primary care 70–80%.
- Positive screens require further assessment.

(1) CAGE questionnaire

Have you ever felt you ought to **C**UT DOWN on your drinking? Have people **A**NNOYED you by criticizing your drinking? Have you ever felt bad or **G**UILTY about your drinking? Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (**E**YE-OPENER)?

* A positive screen is 2/4 for men, 1/4 for women.

* CAGE is retrospective; it may indicate a past problem rather than a current one.

(2) Binge-drinking question

How many times in the past year have you had five (men)/four (women) or more drinks in one day?

* Once or more is a positive screen.

(3) Alcohol use disorders identification test (AUDIT)

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

* A score of 8+ suggests at-risk drinking or a mild AUD.

* The higher the score, the greater the likelihood of AUD. A score of 20+ indicates a strong chance of AUD.

Laboratory measures

Laboratory measures can be used to confirm clinical suspicion and monitor response to treatment (15, 16).

GGT	• 35–50% sensitive for detecting 4+ drinks/day • Half-life four weeks • Also elevated by hepatic enzyme inducers (e.g., phenytoin), diabetes, obesity, etc.
MCV	• Somewhat less sensitive than GGT • At least three months to return to baseline • Also elevated by medications, folic acid and B12 deficiency, liver disease, hypothyroidism, etc.

Identification of alcohol problems in primary care

System	Presenting complaint	Clue that problem may be alcohol-related
Musculo-skeletal	Trauma	• Recurrent • Not related to sports activities • Occurs during/after social event
GI	Gastritis and esophagitis	• Resolved with abstinence or reduced drinking • Not triggered by usual risk factors (fatty meals, NSAIDs)
Hepatic	Fatty liver Elevated GGT/AST Signs of liver dysfunction	• Not explained by other conditions (obesity, diabetes, viral hepatitis, medication use)
Cardio-vascular	Hypertension	• 3+ standard drinks consumed daily • Relatively resistant to anti-hypertensive meds • BP improves with abstinence or reduced drinking
Sleep	Sleep apnea Insomnia	• Resolves with abstinence or reduced drinking • No trouble falling asleep but disturbed by vivid dreams in middle of night and/or early morning
Social	Problems with relationships at home and at work	• Fails to meet work or family obligations because of drinking or recovering from drinking • Is argumentative, emotionally labile, or sleepy after 4+ standard drinks
Psychiatric	Anxiety and depression	• Rapid improvement in anxiety or mood with first 1–3 drinks (though mood often worsens with 4+ standard drinks) • Worse during periods of drinking, better with reduced drinking/abstinence • Relatively unresponsive to medical or counselling interventions to improve anxiety/mood

Diagnosis: At-risk drinking, mild AUD, moderate AUD, severe AUD

Most heavy drinkers are **at-risk drinkers** or have a **mild AUD**. They drink above the low-risk guidelines, but are often able to drink moderately, have not suffered serious social consequences of drinking, and do not go through withdrawal. They often respond to brief advice and reduced drinking strategies.

Patients with **moderate to severe AUDs** often have withdrawal symptoms, rarely drink moderately, continue to drink despite knowledge of social or physical harm, and spend a great deal of time drinking, neglecting other responsibilities. They generally require abstinence and more intensive treatment.

	At-risk drinking or mild AUD	**Moderate or severe AUD**
Withdrawal symptoms	No	Often
Standard drinks	14+ per week	40–60+ per week
Drinking pattern	Variable; depends on situation	Tends to drink a set amount
Daily drinker	Less likely	More likely
Social consequences	None or mild	Often severe
Physical consequences	None or mild	Often severe
Socially stable	Usually	Often not
Neglect of major responsibilities	No	Yes

Management of at-risk drinking and mild AUDs

Patient intervention (17, 18)

- Review low-risk drinking guidelines.
- Link alcohol to patient's own health condition if possible.
- Review non-specific sedative effects of alcohol (fatigue, insomnia, low mood).
- Ask patient to commit to a drinking goal: reduced drinking or abstinence.
- If unwilling to commit, continue to ask about drinking at every office visit.
- If reduced drinking goal chosen:
  - Have patient specify when, where and how much they intend to drink.
  - Give tips on avoiding intoxication (see below).
  - Ask patient to keep a daily record of drinking.
- Monitor GGT and MCV at baseline and follow-up.
- Identify triggers to drinking (e.g., emotions, social events) and develop plan to deal with triggers.
- Have regular follow-ups.
- Consider referral to alcohol treatment program if problem persists.

Tips to reduce alcohol intake

- Set a goal for reduced drinking. The goal should specify the amount and circumstances of each drinking day (e.g., no more than three standard drinks on Thurs, Fri, Sat; no drinking alone). The goal should include non-drinking days.
- Record drinks on a calendar, log book, or app.
- Arrive and leave drinking events at a pre-determined time (e.g., only stay at a pub or party for three hours). If this is unlikely to work, avoid drinking events altogether.
- Avoid people and places associated with heavy drinking.
- Eat before and while drinking.
- Start drinking later in the evening or night.
- Switch to a less preferred alcoholic drink.
- Pace your drinking (e.g., no more than one drink per 45–60 minutes).
- Sip drinks slowly.
- Alternate alcoholic drinks with non-alcoholic drinks.
- Dilute drinks with mixer.
- Wait for 20 minutes between deciding to drink and actually having a drink.

Management of moderate and severe AUDs

Patient intervention

- Explain health effects of alcohol, linking them to patient's condition; reversible with abstinence.
- Explain that within days or weeks of abstinence, most patients have improved sleep, mood, and energy level.
- Explain that alcohol use disorder is a chronic illness, that it can happen to "good" people, that effective treatments are available, and that prognosis is good with treatment.
- Ask whether patient is willing to commit to a drinking goal (abstinence or reduced drinking).
- If the patient is not ready to commit, ask about drinking and readiness to change at each visit.
- If ready to commit, negotiate a written drinking goal:
  - Abstinence is more likely to be successful.
  - If reduced drinking goal is chosen, encourage a time-limited trial.
- Consider planned detoxification if at risk for withdrawal (6+ standard drinks/day, morning or afternoon tremor/anxiety).
- Treat concurrent conditions (e.g., anxiety, depression, hypertension, liver disease).
- Routinely offer pharmacotherapy: disulfiram, naltrexone, acamprosate, baclofen, gabapentin, topiramate.

- Encourage patient to make healthy lifestyle choices:
  - Avoid people and places associated with drinking.
  - Spend time with supportive family and friends.
  - Take daily walks (if health permits).
  - Maintain regular sleeping/waking schedule.
  - Plan regular activities outside the house as feasible.
- Review options for formal treatment (residential, day, outpatient).
- Encourage access to local addiction services through a local directory.
- Recommend AA for group support, practical advice, and as a way to overcome loneliness and boredom; suggest Al-Anon for families or caregivers (19).
- Arrange follow-up; routinely monitor drinking through self-report, GGT, MCV.
- Acknowledge successes, even if partial or temporary.
- If patient relapses, encourage contact and reconnection with treatment.

Management of alcohol withdrawal

Clinical features of withdrawal

- Starts 6–12 hours after last drink
- Peaks at 24–72 hours
- Resolves in 3–10 days (or longer)
- Tremor is most reliable feature (postural, intention, not a resting tremor)
- Other features: sweating, vomiting, anxiety, tachycardia, hypertension, ataxic gait

Risk factors for withdrawal

- 6+ standard drinks/day for 1+ weeks; risk increases with amount consumed
- Past seizures/DTs risk factor for future seizures/DTs

Withdrawal management options

Indications for office management of withdrawal:

- Reports frequent withdrawal symptoms
- Committed to abstinence and willing to start psychosocial treatment and/or anti-alcohol medications
- No history of seizures, DTs, or ED visits or hospitalizations due to withdrawal
- Not on high doses of opioids or sedating medications.
- Does not have cirrhosis with liver dysfunction
- Has supports at home

Indications for home management of withdrawal:

- Office management not feasible
- A spouse, relative, or friend agrees to dispense the medication
- No history of severe withdrawal (seizures, delirium, hospital admissions)
- Treatment plan in place (anti-alcohol medication, ongoing counselling, AA, etc.)
- Age < 65
- No hepatic decompensation (ascites, encephalopathy)
- Patient agrees not to drink while taking medication

Indications for ED management of withdrawal:

- History of seizures, DTs, or ED visits or hospitalizations due to withdrawal
- On high doses of opioids or sedating medications
- Has advanced cirrhosis
- Lacks supports at home
- No treatment plan in place
- Age ≥ 65

Office withdrawal protocol

Before treatment:

- Advise patient to have their last drink the night before the morning appointment.
- If patient shows up intoxicated, reschedule and/or admit to withdrawal management.

Withdrawal severity scales:

(1) Clinical Institute Withdrawal Assessment for Alcohol, Revised (CIWA-Ar) (20): Standard monitoring scale, strong evidence of validity
(2) Sweating, Hallucination, Orientation, Tremor (SHOT) scale (21): Simple scale validated in the ED

Diazepam vs. lorazepam:

- Diazepam is first-line medication.
- Use lorazepam instead if patient is 60 or older, is on opioids or other sedating medications, has low serum albumin from any cause, or has liver dysfunction (i.e., clinical or laboratory signs of cirrhosis, e.g., low albumin, high bilirubin/INR).

Treatment:

- Administer CIWA-Ar or SHOT every 1–2 hours.
- Give diazepam 10–20 mg (PO/IV) or lorazepam 2–4 mg (SL/PO/IM/IV) for CIWA-Ar ≥ 10 or SHOT ≥ 2.
- Treatment is complete when CIWA-Ar < 8 or SHOT ≤ 1 on 2 consecutive occasion and patient has minimal or no tremor.
- Send the patient to ED if patient has not improved or has worsened despite 3–4 doses; if they display marked tremor, vomiting, sweating, agitation, or confusion; or if they have risk factors for electrolyte imbalance or arrhythmias (e.g., diuretics, heart disease, diabetes).

On discharge:

- Initiate anti-alcohol medication.
- Advise patient to attend AA or other psychosocial treatment program.
- Arrange follow-up in a few days (1–2 days if lorazepam was used).
- Ensure patient leaves accompanied by friend or relative.
- If uncertain whether withdrawal is resolved, give diazepam 10 mg q4h (4–5 10 mg tablets) or lorazepam 1–2 mg q4H (10–12 1 mg tablets) for tremor, to be dispensed by partner if possible.

Withdrawal severity scales

(1) CIWA-Ar scale

NAUSEA AND VOMITING Ask "Do you feel sick to your stomach? Have you vomited?" Observation 0 no nausea and no vomiting 1 2 3 4 intermittent nausea with dry heaves 5 6 7 constant nausea, frequent dry heaves and vomiting	**AGITATION** Observation 0 normal activity 1 somewhat more than normal activity 2 3 4 moderately fidgety and restless 5 6 7 paces back and forth during most of the interview, or constantly thrashes about
TREMOR Arms extended and fingers spread apart Observation 0 no tremor 1 not visible, but can be felt fingertip to fingertip 2 3 4 moderate, with patient's arms extended 5 6 7 severe, even with arms not extended	**TACTILE DISTURBANCES** Ask "Have you any itching, pins and needles sensations, any burning or numbness, or do you feel bugs crawling on your skin?" Observation 0 none 1 very mild itching, pins and needles, burning or numbness 2 mild itching, pins and needles, burning or numbness 3 moderate itching, pins and needles, burning or numbness 4 moderately severe hallucinations 5 severe hallucinations 6 extremely severe hallucinations 7 continuous hallucinations
PAROXYSMAL SWEATS Observation 0 no sweat visible 1 barely perceptible sweating, palms moist 2 3 4 beads of sweat obvious on forehead 5 6 7 drenching sweats	**AUDITORY DISTURBANCES** Ask "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?" Observation 0 not present 1 very mild harshness or ability to frighten 2 mild harshness or ability to frighten 3 moderate harshness or ability to frighten 4 moderately severe hallucinations 5 severe hallucinations 6 extremely severe hallucinations 7 continuous hallucinations
ANXIETY Ask "Do you feel nervous?" Observation 0 no anxiety, at ease 1 mildly anxious 2 3 4 moderately anxious, or guarded, so anxiety is inferred 5 6 7 equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions	**VISUAL DISTURBANCES** Ask "Does the light appear to be too bright? Is its colour different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?" Observation 0 not present 1 very mild sensitivity 2 mild sensitivity 3 moderate sensitivity 4 moderately severe sensitivity 5 severe hallucinations 6 extremely severe hallucinations 7 continuous hallucinations
HEADACHE, FULLNESS IN HEAD Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate for dizziness or light-headedness. Otherwise, rate severity. Observation 0 not present 1 very mild 2 mild 3 moderate 4 moderately severe 5 severe 6 very severe 7 extremely severe	**ORIENTATION AND CLOUDING OF SENSORIUM** Ask "What day is this? Where are you? Who am I?" Observation 0 oriented and can do serial additions 1 cannot do serial additions or is uncertain about date 2 disoriented for date by no more than 2 calendar days 3 disoriented for date by more than 2 calendar days 4 disoriented for place and/or person

(2) SHOT scale

Sweating	0 – No visible sweating 1 – Palms moderately moist 2 – Visible beads of sweat on forehead
Hallucinations "Are you feeling, seeing, or hearing anything that is disturbing to you? Are you seeing or hearing things you know are not there?"	0 – No hallucinations 1 – Tactile hallucinations only 2 – Visual and/or auditory hallucinations
Orientation "What is the date, month, and year? Where are you? Who am I?"	0 – Oriented 1 – Disoriented to date by one month or more 2 – Disoriented to place or person
Tremor Extend arms and reach for object. Walk across hall (optional).	0 – No tremor 1 – Minimally visible tremor 2 – Mild tremor 3 – Moderate tremor 4 – Severe tremor

* False positives: Interpret SHOT with caution if patient has a febrile illness, cerebellar disease or benign essential tremor, psychosis, dementia, impaired consciousness, or delirium not related to alcohol.

Discontinuation

- Discontinue H and O if zero at baseline.
- If either H or O are greater than zero, assess and treat for delirium, encephalopathy, and/or psychosis.

History of seizures

- Diazepam 20 mg (PO/IV) or lorazepam 2–4 mg (SL/PO/IM/IV) q 1–2H x 3 doses, regardless of SHOT score.

Home management of withdrawal

Protocol

- Instruct patient to have last drink the night before
- Instruct patient to take diazepam 10 mg every 4 hours as needed for tremor (dispensed by spouse, relative, or friend)
- Prescribe no more than 60 mg diazepam
- Reassess the next day (by phone or in person)
- Clinic visit within 2–3 days

Anti-alcohol medications

Medication overview

- Anti-alcohol medications should be routinely offered to patients with AUDs. They reduce alcohol use, have a good safety profile, and help retain patients in psychosocial treatment.
- Medications:
  - Level I evidence of effectiveness: naltrexone, acamprosate
  - Level II evidence of effectiveness: topiramate, gabapentin, baclofen
- Level I medications have the strongest evidence of effectiveness; Level II medications are not officially indicated for alcohol use disorders, but have been shown to be effective in controlled trials.
- Choice of medication is based on individual considerations (such as side effects or cost).
- Titrate dose until cravings are mild and patient is abstinent, or until troublesome side effects emerge.
- If effective, prescribe for at least six months (all medications are safe for long-term use). The medication can be discontinued when patient is abstinent or has markedly reduced drinking for at least several months, has minimal cravings, has social supports and non-drug ways of coping with stress, and is confident that he or she no longer needs it to prevent relapse. The medication can be restarted again if patient does relapse.

Availability of medication

- The public formulary status of naltrexone and acamprosate varies by region:

	Naltrexone	Acamprosate
AB	Not covered	Not covered
BC	Limited coverage	Limited coverage
MB	Not covered	Not covered
NB	Special authorization	Special authorization
NL	Not covered	Special authorization
NS	Exception status	Exception status
NT	*Alcohol dependency* listed as condition with restricted benefits	
NU	*Alcohol dependency* listed as condition with restricted benefits	
ON	Exceptional status	Exceptional status
PE	Special authorization	Special authorization
QC	Covered	Exceptional medication
SK	Exception status	Exception status
YT	Covered under certain plans	Covered under certain plans
NIHB*	Covered	Limited use benefit

*The Non-Insured Health Benefits (NIHB) program covers registered First Nations persons and recognized Inuit.

- Early initiation of treatment is important because patients are at high risk for relapse and treatment drop-out in the first few weeks of abstinence; therefore, gabapentin, topiramate, or baclofen may be prescribed while waiting for approval of naltrexone or acamprosate.
- Disulfiram is only available in Canada as a compounded medication. Patients can ask their pharmacy to arrange for compounding.

Medications

1. Disulfiram (22-26)

Action

- Acetaldehyde accumulates when alcohol consumed, causing toxic reaction.
- Most effective when taken with supervision of pharmacist or family member

Side effects

- *With alcohol:* Vomiting, flushed face, and headache lasting several hours.
- *Without alcohol:* Headache, anxiety, fatigue, garlic-like taste, acne, peripheral neuropathy (with prolonged use). May cause depression.

Contraindications and precautions

- Alcohol reaction can cause severe hypotension and arrhythmias, especially in patients with heart disease or on antihypertensives.
- To avoid reaction: Wait at least 24–48 hours between last drink and first pill. Wait at least 7–10 days between last pill and first drink.
- May trigger psychosis at higher doses (500 mg). Recommended dose appears safe in schizophrenia.
- Can cause toxic hepatitis.
- Contraindicated in cirrhosis, pregnancy, and unstable cardiovascular disease.

Dose

- 125 mg PO OD usual dose.
- Increase to 250 mg if patient reports no reaction to alcohol.

2. Naltrexone (27)

Action

- Blocks opioid receptor; reduces euphoric effect of drinking.

Side effects

- Nausea, headache, dizziness, insomnia, anxiety, sedation.
- Blocks analgesic action of opioids.

Contraindications and precautions

- Pregnancy.
- Will trigger severe withdrawal in patients on opioid medications.
- Can cause reversible elevations in AST and ALT; if pre-existing liver disease, order AST and ALT at baseline and at 3-4 weeks, and discontinue naltrexone if levels rise more than 3x baseline.

Dose

- 25 mg OD x 3 days to reduce GI side effects; then 50 mg PO OD.
- Titrate to 100–150 mg per day if 50 mg has minimal effect on craving.
- Patients do not need to abstain before starting.

3. Acamprosate (28, 29)

Action

- Glutamate antagonist.
- Relieves subacute withdrawal symptoms (insomnia, dysphoria, cravings).
- Works best if abstinent several days prior to initiation.

Side effects

- Diarrhea.

Contraindications and precautions

- Renal insufficiency.
- Pregnancy.

Dose

- 666 mg tid; 333 mg tid if renal impairment or BW < 60 kg.

4. Topiramate (30-32)

Action

- Modulates GABA system.
- May improve sleep and mood disturbance in early abstinence.

Side effects

- Sedation, dose-related neurological effects (dizziness, ataxia, speech disorder, etc.) resolve over time.

Contraindications and precautions

- Can cause weight loss (risk for underweight patients).
- Lower dose needed in renal insufficiency.
- Can cause glaucoma or renal stones.

Dose

- Initial dose 50 mg OD; titrate by 50 mg to a maximum dose of 200–300 mg daily.

5. Gabapentin (33-35)

Action

- Modulates dopamine.

Side effects

- Dizziness, sedation, ataxia, nervousness.

Contraindications and precautions

- Can cause suicidal ideation (rare).

Dose

- Initial dose 300 mg bid–tid. Optimal dose is 600 mg tid.

6. Baclofen (36, 37)

Action

- GABA agonist.

Side effects

- Drowsiness, weakness, can cause or worsen depression.
- Safe in patients with liver disease.

Contraindications and precautions

- Lower dose with renal insufficiency.
- Use with caution in patients on tricyclic anti-depressants or MAO inhibitors.

Dose

- Initial dose 5 mg tid, increase to 10 mg tid. Maximum daily dose 80 mg.

Management of common outpatient alcohol-related problems

Alcohol-related mood and anxiety disorders (38)

- May be primary or alcohol-induced. Alcohol-induced disorders tend to resolve within weeks of abstinence or reduced drinking, whereas primary disorders remain the same or improve only marginally.
- Always ask patients with alcohol problems about mood, and ask patients with mood problems about alcohol.
- Treat alcohol and mood disorders concurrently.
- Consider a trial of antidepressant medication if:
  - Symptoms persist after four weeks of abstinence.
  - Unable to sustain abstinence for several weeks.
  - Possible primary mood disorder: depression precedes drinking; strong family history.
  - Severe depression (e.g., suicidal ideation).
- Long-term benzodiazepine use in heavy drinkers creates risk of accidents, overdose, and misuse.

Insomnia, non-restorative sleep

Cause	Comment	Management
Sleep apnea	May contribute to hypertension, accidents, arrhythmias.	Abstinence
Alcohol withdrawal	Can cause night-time seizures.	Abstinence Treat withdrawal
Subacute alcohol withdrawal	Common in first few weeks of abstinence.	Acamprosate, topiramate, gabapentin
Chronic night-time alcohol use	Causes rebound REM and fitful sleep.	Abstinence Trazodone, tryptophan Avoid benzodiazepines

Alcoholic liver disease

(1) Fatty liver

- First and most common phase of alcohol liver disease
- Usually asymptomatic, reversible with abstinence
- Large liver on exam and ultrasound
- Elevated GGT

(2) Alcoholic hepatitis

- Usually asymptomatic but occasionally very severe
- Diagnose elevated AST > ALT
- Advise patient that repeated and prolonged hepatitis may lead to cirrhosis

(3) Cirrhosis (39)

Risk

- Over 10–20 years, 10–20% risk of cirrhosis with 6 (men) or 3 (women) standard drinks per day

Physical signs

- Spider nevai, gynecomastia (estrogen not metabolized)
- Ascites, peripheral edema, right heart failure (low albumin, portal hypertension)
- Firm liver edge
- Splenomegaly (portal hypertension)
- Asterixis, signs of encephalopathy

Diagnostic tests

- ↑GGT (enzyme induction)
- ↑AST > ALT (alcoholic hepatitis)
- ↑INR,↑bilirubin,↓albumin (liver unable to synthesize protein)
- ↑bilirubin, low platelets (due to splenomegaly and portal hypertension)
- U/S unreliable, except if splenomegaly present (portal hypertension)
- Check for other cause of cirrhosis (e.g., hepatitis B, C)
- If concerned about encephalopathy, check serum ammonia
- Biopsy if cause uncertain

Outpatient management

(a) Prevent progression

- Abstinence
  - 5-year survival in cirrhosis with complications: abstainers 60%, non-abstainers 34%.
  - Risk of variceal bleed 10 times greater with recent heavy drinking than with abstinence
  - Abstinence crucial if hepatitis C positive
- Avoid NSAIDs and limit acetaminophen to 2–3 g daily (only as necessary; patient must be abstinent).

(b) Liver transplant

- Most effective treatment for cirrhosis
- To get on transplant list, patients require 6 months to 2 years of abstinence as well as a treatment program

(c) Encephalopathy

- Avoid benzodiazepines; use caution with other sedating drugs
- Lactulose (30–45 mL orally 3 times a day) if at high risk or early signs: poor concentration, day-night reversal, inattention, slow responses.
- Urgent intervention for triggers: electrolyte imbalance, blood loss, high protein meal, benzodiazepines, infection

(d) Ascites

- Low salt diet
- Moderate fluid intake
- Judicious use of diuretics (e.g., spironolactone)

(e) Portal hypertension

- Regular endoscopic measurement of portal pressures
- Nadolol if portal hypertension

Hypertension

- Consumption of 3+ standard drinks/day can cause or exacerbate hypertension.
- Patients with alcohol-induced hypertension tend to be refractory to antihypertensive medication.
- Hypertension resolves within weeks of abstinence or reduced drinking.

Neurological conditions

- Alcohol-induced dementia, cerebellar ataxia, peripheral neuropathy, parkinsonism
- Conditions often improve with abstinence over weeks/months

Dilated cardiomyopathy

- Presents with heart failure and arrhythmias
- Excellent prognosis; sometimes completely resolves within months of abstinence

GI bleed

- Gastritis, esophagitis: abstinence, PPI
- Esophageal varices: abstinence, treatment of portal hypertension, treatment of cirrhosis

Prescribing benzodiazepines and opioids (40)

- Risk of overdose and accidents greatly increased when combining benzodiazepines or opioids with alcohol.
- Both medications should be routinely tapered to the lowest effective dose in the elderly.

Reporting to the Ministry of Transportation

Suggested criteria for reporting

- Patient admits to drinking and driving.
- Family member informs you that patient is drinking and driving.
- Patient drinks steadily throughout the day and regularly drives.
- Patient drove to your clinic while intoxicated.
- Patient regularly drives and has recently experienced severe withdrawal or complication of withdrawal (e.g., seizure).
- Patient has blackouts caused by alcohol consumption.
- Patient has other alcohol-related complications that impair driving ability (e.g., cerebellar ataxia, recurrent trauma, sleep apnea, on high doses of opioids or benzodiazepines, hepatic encephalopathy).

Management of patients with suspended licenses

- Explain to the patient that you have a legal obligation to report.
- Patients may ask you to give them a chance to abstain and attend treatment before deciding to report them.
- However, trusting the patient to comply with your instructions is not considered an adequate reason for failing to report. Therefore, take the following precautions when delaying reporting:
  - Inform the patient that you will report if patient misses follow-up appointments or if monitoring or history suggests ongoing drinking.
  - Order GGT and MCV regularly.
  - Consider urine ethyl glucuronide every 1–2 weeks; EG detects alcohol consumption for several days after last drink.
  - Check urine creatinine to detect tampering.
- To lift the suspension, the patient must have attended treatment and maintained abstinence or low-risk drinking for a specified number of months (usually one year).
- Monthly appointments are recommended. At each appointment:
  - Ask about alcohol consumption and attendance at AA and treatment programs.
  - Order GGT and MCV.
  - With the patient's permission, ask the spouse/partner or close family member to corroborate the patient's reported alcohol consumption.
- Write follow-up letter to Ministry if patient is abstinent at 6 months and at one year.

References

1. Saitz R, Horton NJ, Larson MJ, Winter M, Samet JH. Primary medical care and reductions in addiction severity: a prospective cohort study. Addiction (Abingdon, England). 2005;100(1):70-8.
2. Moos RH, Moos BS. Long-term influence of duration and intensity of treatment on previously untreated individuals with alcohol use disorders. Addiction (Abingdon, England). 2003;98(3):325-37.
3. Parthasarathy S, Mertens J, Moore C, Weisner C. Utilization and cost impact of integrating substance abuse treatment and primary care. Medical care. 2003;41(3):357-67.
4. Willenbring ML, Olson DH. A randomized trial of integrated outpatient treatment for medically ill alcoholic men. Archives of internal medicine. 1999;159(16):1946-52.
5. Druss BG, von Esenwein SA. Improving general medical care for persons with mental and addictive disorders: systematic review. General hospital psychiatry. 2006;28(2):145-53.
6. Friedmann PD, Hendrickson JC, Gerstein DR, Zhang Z, Stein MD. Do mechanisms that link addiction treatment patients to primary care influence subsequent utilization of emergency and hospital care? Medical care. 2006;44(1):8-15.
7. Solbergsdottir E, Bjornsson G, Gudmundsson LS, Tyrfingsson T, Kristinsson J. Validity of self-reports and drug use among young people seeking treatment for substance abuse or dependence. Journal of addictive diseases. 2004;23(1):29-38.
8. Butt P, Beirness D, Cesa F, Gliksman L, Paradis C, Stockwell T. Alcohol and health in Canada: A summary of evidence and guidelines for low risk drinking. Ottawa: Canadian Centre for Substance Abuse; 2010.
9. American Psychiatric A, American Psychiatric A, Force DSMT. Diagnostic and statistical manual of mental disorders : DSM-5. 2013.
10. Bradley KA, Boyd-Wickizer J, Powell SH, Burman ML. Alcohol screening questionnaires in women: a critical review. Jama. 1998;280(2):166-71.
11. Ewing JA. Detecting alcoholism: The CAGE questionnaire. Journal of the American Medical Association. 1984;252(14):1905-7.
12. King M. At risk drinking among general practice attenders: Validation of the CAGE questionnaire. Psychological medicine. 1986;16(1):213-7.
13. Smith PC, Schmidt SM, Allensworth-Davies D, Saitz R. Primary care validation of a single-question alcohol screening test. Journal of general internal medicine. 2009;24(7):783-8.
14. Babor T, Higgins-Biddle JC, Saunders J, Monteiro MG. AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care. 2 ed. Geneva, Switzerland: World Health Organization; 2001.
15. Rosman AS. Utility and evaluation of biochemical markers of alcohol consumption. Journal of substance abuse. 1992;4(3):277-97.
16. Sharpe P. Utility and evaluation of biochemical markers of alcohol consumption. Annals of Clinical Biochemistry. 2001;38(part 6):652-64.
17. Fleming MF, Barry KL, Manwell LB, Johnson K, London R. Brief physician advice for problem alcohol drinkers. A randomized controlled trial in community-based primary care practices [see comments]. JAMA. 1997;277(13):1039-45.
18. Kahan M, Wilson L, Becker L. Effectiveness of physician-based interventions with problem drinkers: a review. CMAJ. 1995;152(6):851-9.
19. Gossop M, Harris J, Best D, Man LH, Manning V, Marshall J, et al. Is attendance at Alcoholics Anonymous meetings after inpatient treatment related to improved outcomes? A 6-month follow-up study. Alcohol and alcoholism (Oxford, Oxfordshire). 2003;38(5):421-6.

20. Sullivan JT, Sykora K, Schneiderman J, Naranjo CA, Sellers EM. Assessment of alcohol withdrawal: the revised clinical institute withdrawal assessment for alcohol scale (CIWA-Ar). British journal of addiction. 1989;84(11):1353-7.
21. Burkitt MJ, Raafat A. Nitric oxide generation from hydroxyurea: significance and implications for leukemogenesis in the management of myeloproliferative disorders. Blood. 2006;107(6):2219-22.
22. De Sousa A. A one-year pragmatic trial of naltrexone vs disulfiram in the treatment of alcohol dependence. Alcohol and alcoholism (Oxford, Oxfordshire). 2004;39(6):528-31.
23. de Sousa A, de Sousa A. An open randomized study comparing disulfiram and acamprosate in the treatment of alcohol dependence. Alcohol and alcoholism (Oxford, Oxfordshire). 2005;40(6):545-8.
24. Laaksonen E, Koski-Jannes A, Salaspuro M, Ahtinen H, Alho H. A randomized, multicentre, open-label, comparative trial of disulfiram, naltrexone and acamprosate in the treatment of alcohol dependence. Alcohol and alcoholism (Oxford, Oxfordshire). 2008;43(1):53-61.
25. Mueser KT, Noordsy DL, Fox L, Wolfe R. Disulram treatment for alcoholism in severe mental illness. The American journal on addictions / American Academy of Psychiatrists in Alcoholism and Addictions. 2003;12(3):242-52.
26. Petrakis IL, Nich C, Ralevski E. Psychotic spectrum disorders and alcohol abuse: a review of pharmacotherapeutic strategies and a report on the effectiveness of naltrexone and disulfiram. Schizophrenia bulletin. 2006;32(4):644-54.
27. Anton RF, O'Malley SS, Ciraulo DA, Cisler RA, Couper D, Donovan DM, et al. Combined pharmacotherapies and behavioral interventions for alcohol dependence: the COMBINE study: a randomized controlled trial. Jama. 2006;295(17):2003-17.
28. Snyder JL, Bowers T. The efficacy of acamprosate and naltrexone in the treatment of alcohol dependence: A
relative benefits analysis of randomized controlled trials. The American journal of drug and alcohol abuse. 2008;34(4):449-61.
29. Rosner S, Leucht S, Lehert P, Soyka M. Acamprosate supports abstinence, naltrexone prevents excessive drinking: Evidence from a meta-analysis with unreported outcomes. Journal of psychopharmacology (Oxford, England). 2008;22(1):11-23.
30. Baltieri DA, Daro FR, Ribeiro PL, de Andrade AG. Comparing topiramate with naltrexone in the treatment of alcohol dependence. Addiction (Abingdon, England). 2008;103(12):2035-44.
31. Johnson B, Rosenthal N, Capece JA, Wiegand F, Mao L, Beyers K. Topiramate for treating alcohol dependence: A randomized controlled trial. Jama. 2007;298(14):1641-51.
32. Ma J, Ait-Daoud N, Johnson B. Topiramate reduces the harm of excessive drinking: Implications for public health and primary care. Addiction (Abingdon, England). 2006;101(11):1561-8.
33. Furieri FA, Nakamura-Palacios EM. Gabapentin reduces alcohol consumption and craving: a randomized, double-blind, placebo-controlled trial. The Journal of clinical psychiatry. 2007;68(11):1691-700.
34. Brower KJ, Myra Kim H, Strobbe S, Karam-Hage MA, Consens F, Zucker RA. A randomized double-blind pilot trial of gabapentin versus placebo to treat alcohol dependence and comorbid insomnia. Alcoholism, clinical and experimental research. 2008;32(8):1429-38.
35. Anton RF, Myrick H, Wright TM, Latham PK, Baros AM, Waid LR, et al. Gabapentin combined with naltrexone for the treatment of alcohol dependence. The American journal of psychiatry. 2011;168(7):709-17.

36. Addolorato G, Caputo F, Capristo E, Domenicali M, Bernardi M, Janiri L, et al. Baclofen effcacy in reducing alcohol craving and intake: A preliminary double-blind randomized controlled study. Alcohol and Alcoholism. 2002;37(5):504-8.
37. Addolorato G, Leggio L, Ferrulli A, Cardone S, L. V, Mirijello A, et al. Effectiveness and safety of baclofen for maintenance of alcohol abstinence in alcohol-dependent patients with liver cirrhosis: randomised, double-blind controlled study. Lancet. 2007;370(9603):1915-22.
38. Nunes EV, Levin FR. Treatment of depression in patients with alcohol or other drug dependence: a meta-analysis. JAMA. 2004;291(15):1887-96.
39. Lucey MR, Connor JT, Boyer TD, Henderson JM, Rikkers LF. Alcohol consumption by cirrhotic subjects: patterns of use and effects on liver function. The American journal of gastroenterology. 2008;103(7):1698-706.
40. Brunette MF, Noordsy DL, Xie H, Drake RE. Benzodiazepine use and abuse among patients with severe mental illness and co-occurring substance use disorders. Psychiatric services (Washington, DC. 2003;54(10):1395-401.