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An Introduction to Substance Use Disorder and Supports in Central Zone

Presentation to the CZ MSA (May 17, 2022)

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Faculty/Presenter Disclosure

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  - **Grants/Research Support: Gilead for Hep C, Alberta Innovates PRIHS-IV, CIHR (Cannabis use disorder and Virtual Overdose Response Services). Health Canada. Calgary Health Foundation.**
  - **Speakers Bureau/Honoraria:** N/A
  - **Consulting Fees:** None
  - **Patents: None**
  - **Other:** Rapid Access Addiction Medicine (AHS RAAM), University of Alberta Hospital, Rocky view Hospital, Opioid Dependency Program, Renfrew Recovery, iOAT program, Addiction Network, The Alex Community Health Centre. Calgary Drop In Centre. Medical Lead- National Overdose Response Services.

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  - **Speakers Bureau/Honoraria:** N/A
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  - **Grants/Research Support:** none
  - **Speakers Bureau/Honoraria:** N/A
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  - **Patents: None**
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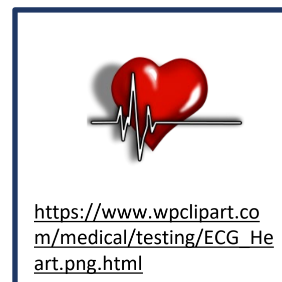

https://www.wpclipart.com/medical/testing/ECG_Heart.png.html

Order an ankle x-ray if:

- Bone tenderness at A
- Bone tenderness at B
- Inability to weight bear both immediately and in the ED

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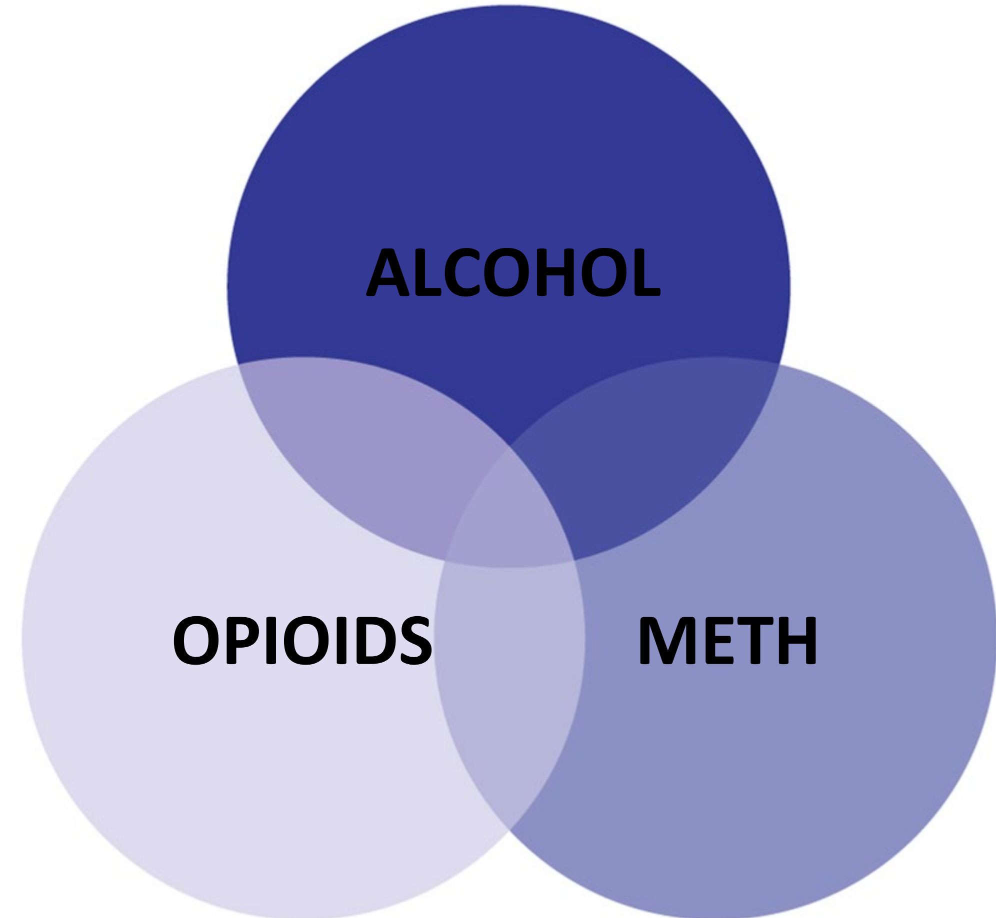
The Big Three

A Brief Overview



Addiction During COVID - 19

- May worsen due to the following:
  - Housing and income instability.
  - Reduced access to health care and recovery support services.
  - Less access to peer run recovery addiction resources including residential treatment facilities.
- Individuals who are isolated and stressed may turn to substances to alleviate stressors.
- Peers, family members, and addiction treatment providers should be alert to this possibility.

Volkow, Collision of the COVID-19 and Addiction Epidemics. Ann Intern Med. 2020 Apr 2 : M20-1212.

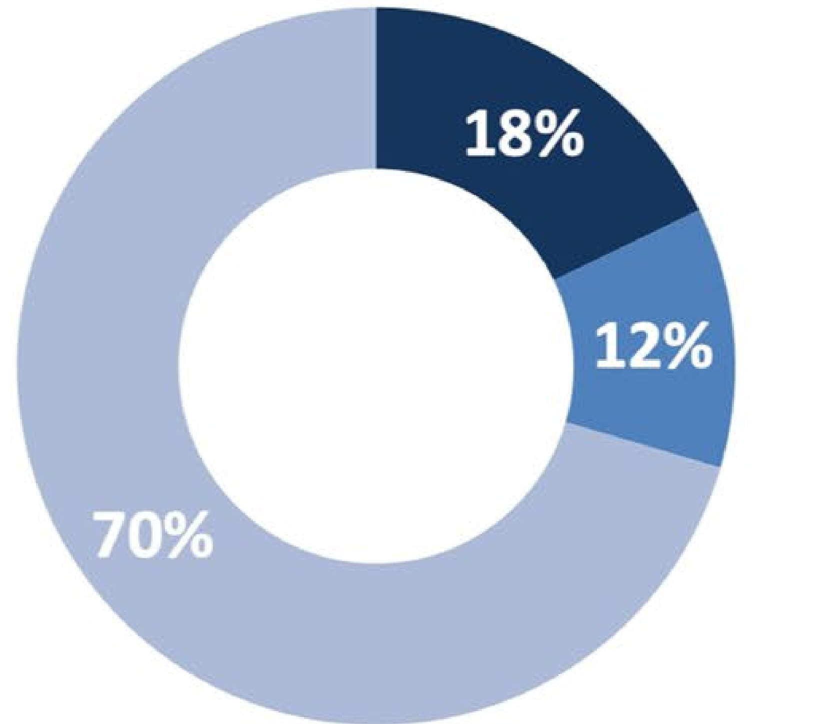
Alcohol

Alcohol Use Disorder

- Still the most common (by far) drug used by Canadians
- ~15% of Canadians who drink alcohol consume above recommended amounts per Canada’s Low Risk Alcohol Drinking Guidelines (10 drinks/week for females, 15 drinks/week for males)
- in 2017, rate of hospitalizations related to alcohol use (249 per 100,000) was similar to rate of hospitalizations for heart attacks (243 per 100,000) and 13x higher than for opioids
- in 2014, alcohol contributed to nearly 15,000 deaths in Canada, representing 22% of all substance-related deaths

Canadian Centre on Substance Use and Addiction. Alcohol (Canadian Drug Summary: Summer 2019). 2019. Web access: https://www.ccsa.ca/sites/default/files/2019-09/CCSA-Canadian-Drug-Summary-Alcohol-2019-en.pdf.

Change in consumption of alcohol



■ Increased ■ Decreased ■ Remained the same

	Remained the same
Atlantic (n=86)	67.1%
Quebec (n=235)	69.6%
Ontario (n=326)	69.0%
Prairies (n=182)	74.6%
British Columbia (n=143)	71.8%
Male (n=490)	66.3%
Female (n=482)	74.3%
18 to 34 (n=205)	66.6%
35 to 54 (n=435)	63.8%
55 plus (n=332)	78.9%

***Weighted to the true population proportion.**
***Charts may not add up to 100 due to rounding.**

QUESTION – [IF STAYING HOME MORE DUE TO CORONAVIRUS/COVID-19] Since you have been home more, has your alcohol consumption increased, decreased or stayed the same?

Reasons for increase in alcohol consumption

Reason	%
Lack of regular schedule	51%
Boredom	49%
Stress	44%
Loneliness	19%
I have a lot	12%
No reason	5%
I cook more/with supper	3%
Unsure	2%
Other	2%
Social gatherings (online or at home	2%

QUESTION – [IF STAYING HOME MORE DUE TO CORONAVIRUS/COVID-19 AND ALCOHOL CONSUMPTION HAS INCREASED] Why has your alcohol consumption increased? (Select all that apply)

Diagnosing AUD

DSM-5 diagnosis criteria for alcohol use disorder*
1. Alcohol is often taken in larger amounts or over a longer period than was intended
2. There is a persistent desire or unsuccessful efforts to cut down or control alcohol use
3. A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects
4. Craving or strong desire, or urge to use alcohol
5. Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home
6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol
7. Important social, occupational, or recreational activities are given up or reduced because of alcohol use
8. Recurrent alcohol use in situations in which it is physically hazardous
9. Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol
10. Tolerance, as defined by either of the following:
a. A need for markedly increased amounts of alcohol to achieve intoxication or desired effect
b. A markedly diminished effect with continued use of the same amount of alcohol
11. Withdrawal or taking alcohol to relieve withdrawal
*(At least of 2 symptoms in past 1 year; mild disorder:2-3; moderate:4-5; severe disorder≥6)

DSM-5 diagnosis criteria for alcohol use disorder.
https://doi.org/10.1371/journal.pone.0203410.g001

Outpatient AUD Management

Medication	NALTREXONE (PO or monthly IM)	ACAMPROSATE	DISULFIRAM
Reduces heavy drinking days	✓	✓	
Manages cravings	✓	✓	
Supports abstinence	✓	✓	✓
Blocks breakdown of EtOH, causes unpleasant symptoms			✓
Contraindicated in Liver Failure (relative)	✓		✓
Contraindicated in Renal Failure (relative)		✓	

Patel AK, Balasanova AA. Treatment of Alcohol Use Disorder. *JAMA.* 2021;325(6):596. doi:10.1001/jama.2020.2012

Outpatient AUD Management

- New kid on the block: **Gabapentin** (anti-craving medication, can be initiated prior to alcohol cessation)

- ALL pharmacological treatments are more effective if paired with psychosocial/wraparound supports

Withdrawal Management

- Patients with mild to moderate alcohol withdrawal symptoms and no serious psychiatric or medical comorbidities can be safely treated in the outpatient setting.
- Patients with history of severe withdrawal symptoms, seizures or delirium tremens, comorbid serious psychiatric or medical illnesses, or lack of reliable support network should be considered for detoxification in the inpatient setting.

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Tiers of Detoxification based on acuity

1. Hospital
2. Residential
3. Community communal detox with minimal monitoring
4. Home detox
5. Outpatient Detoxification

Evidence for home detox

- Improved drinking outcomes compared to residential detoxification.
- Community detoxification has good rates of initiation and completion
  - Wiseman et al. found that 88% of those patients who began detoxification completed it, while 4% dropped out, 3% were discharged, and 5% were moved to inpatient care
- With alcohol, there is evidence to suggest this system is
  - safe
  - reduces stigma
  - encourages family involvement with care,
  - Improves overall treatment capacity

Abhijit Nadkarni, Paige Endsley, Urvita Bhatia, Daniela C. Fuhr, Aneesa Noorani, Aresh Naik, Pratima Murthy, Richard Velleman. Community detoxification for alcohol dependence: A systematic revew. 2016.

Tim Stockwell, Liz Bolt, Ingrid Milner, Peter Pugh, Ian Young. Home detoxification for problem drinkers: acceptability to clients, relatives, general practitioners and outcome after 60 days. 1990.

Wiseman EJ, Henderson KL, Briggs MJ. Outcomes of patients in a VA ambulatory detoxification program. Psychiatr Serv 1997; 48:200-3

Cost effectiveness for home detox

1. In-patient detoxification costs 9 to 22.7 times more than home detox [6].
2. Outpatient-based detox may be anywhere from 1/2 to 1/6 the cost of traditional in-patient detox facilities.
3. Similarly, a study in the US projected $600,000 savings in health care dollars in the first year of a small outpatient program.
4. A retrospective audit conducted in the UK reported a 50% reduction in patient admission to the hospital for alcohol detoxification within the first year of the community detoxification program, giving an estimated savings of 74 inpatient weeks

Klijnsma, M. P. (1995) Outpatient alcohol detoxification – outcome after two months. *Alcohol and Alcoholism* 30, 669–673.

- T. Alwyn, B. John, R.J. Hodgson, C.J. Phillips. The addition of a psychological intervention to a home detoxification programme. 2004.

Inclusion and exclusion criteria

Inclusion Criteria
☐ Patient is stably housed and their environment is conducive to treatment.
☐ Patient is medically stable.
☐ Patient is motivated to undergo detoxification treatment.
☐ A responsible friend or family member is available to support patient and maintain patient safety.
☐ Have a contact phone number or mobile phone.
Exclusion Criteria
☐ History of withdrawal seizures or delirium tremens and/or complications
☐ Patient is currently pregnant
☐ Acute psychosis or unmanaged psychiatric conditions including suicidality
☐ Medically unstable where inpatient level of care is warranted
☐ Inadequate social supports

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BASIC SERVICE PROVISION

1. Daily monitoring of clients either virtually or in person by clinicians.
2. Towards the end of home detox clients are offered uptake to inpatient and outpatient treatment
3. Medical evaluation for residential facilities,
4. On going addiction counselling
5. Anti craving pharmacotherapy and relapse prevention.

Alcohol Dependence/Withdrawal Severity Assessment

- Multiple validated tools
  - Clinical Institute Withdrawal Assessment of Alcohol (CIWA)
    - most often used in inpatient settings
    - for assessing patients actively in alcohol withdrawal
  - Severity of Alcohol Dependence Questionnaire (SADQ)
    - for assessing severity of dependence, and therefore expected withdrawal severity
    - useful in outpatient settings
  - Prediction of Alcohol Withdrawal Severity Scale (PAWSS)
    - useful in outpatient settings to predict withdrawal severity

Withdrawal Management Protocols (Examples)

- **SADQ <16 (Mild Dependence)**
  - Day 1: Diazepam 5mg QID
  - Day 2: Diazepam 5mg TID
  - Day 3: Diazepam 5mg BID
  - Day 4 and Day 5: Diazepam 5mg QHS

Withdrawal Management Protocols (Examples)

- **SADQ 16-30 (Moderate Dependence)**
  - Day 1: Diazepam 10mg QID
  - Day 2: Diazepam 5mg QID
  - Day 3: Diazepam 5mg TID
  - Day 4: Diazepam 5mg BID
  - Day 5 and Day 6: Diazepam 5mg QHS

Withdrawal Management Protocols (Examples)

- **SADQ >30 (Severe Dependence) and NO MEDICAL PROBLEMS and <65 years of age and not living alone**
  - Community Paramedics – Check on daily for first 3 days
  - Day 1: Diazepam 10mg QID + 10mg PRN
  - Day 2: Diazepam 5mg QID + 5mg PRN
  - Day 3: Diazepam 5mg TID
  - Day 4: Diazepam 5mg BID
  - Day 5 and Day 6: Diazepam 5mg QHS

Severe Dependence + comorbidities/living alone/elderly: consider higher level of medical support for withdrawal (e.g. inpatient, residential, supervised communal community)

Withdrawal Management

Other Medications to Consider:

- Gabapentin
  - gradual titration to 600mg TID during + after detox for anti-craving effect
- Thiamine – 200 mg orally per day (for 5 days) then 100mg for 3 months
- Folate 5 mg PO for 3 months
- Multivitamin (1 tab per day) PO for 3 months

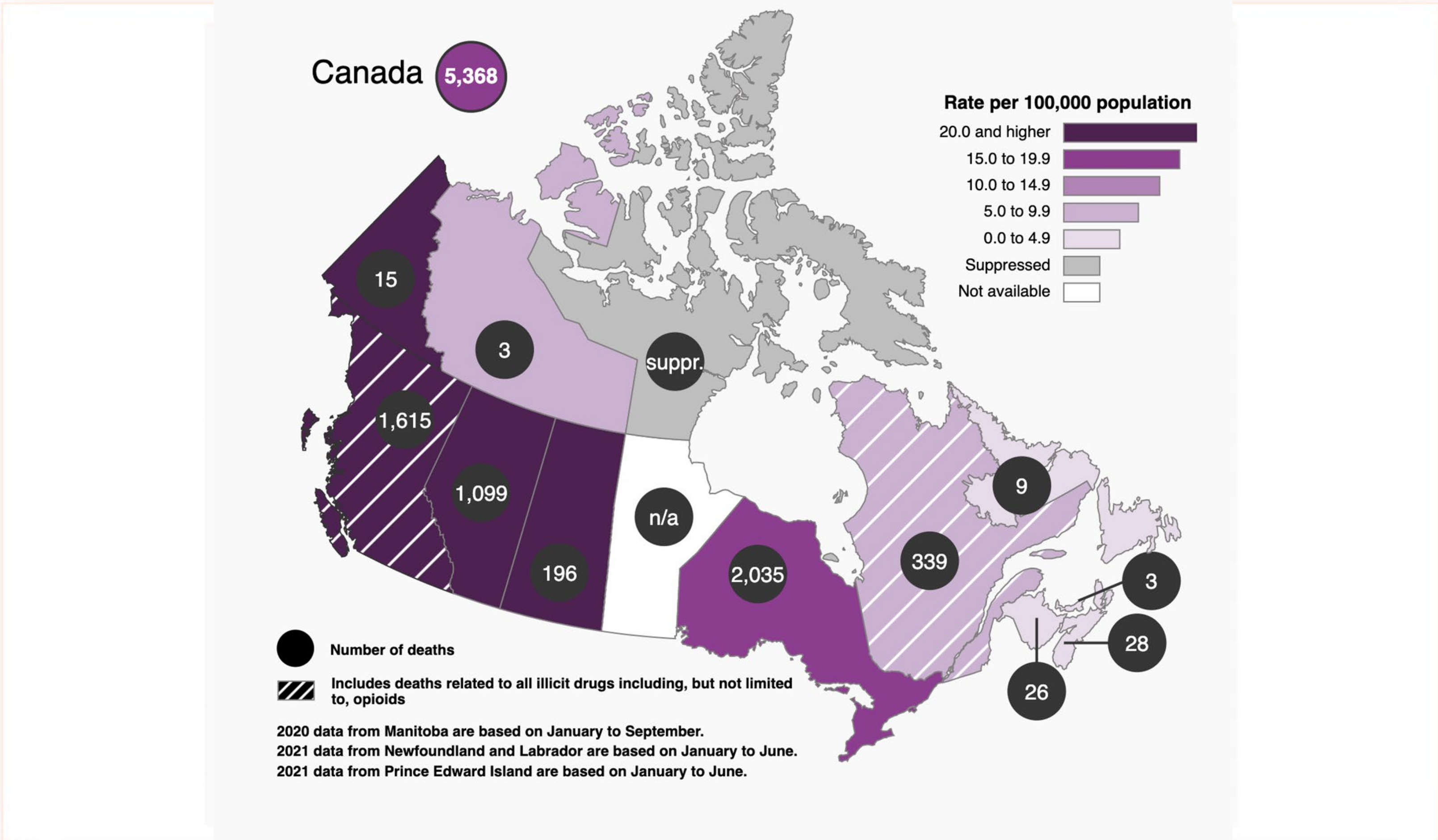
Aftercare

- Referrals to wrap-around services (housing, income support, medication coverage, intensive case management)
- provision and management of anti-craving medications
- referral to psychosocial supports (e.g. group therapy, SMART meetings, support groups)
- referral to harm reduction supports
- referral to residential treatment programs
- reintegration into community

Note: Due to COVID-19, many support groups/outpatient services now have virtual access options (telephone or video)

Opioids

Opioid-Related Deaths in Canada by Province



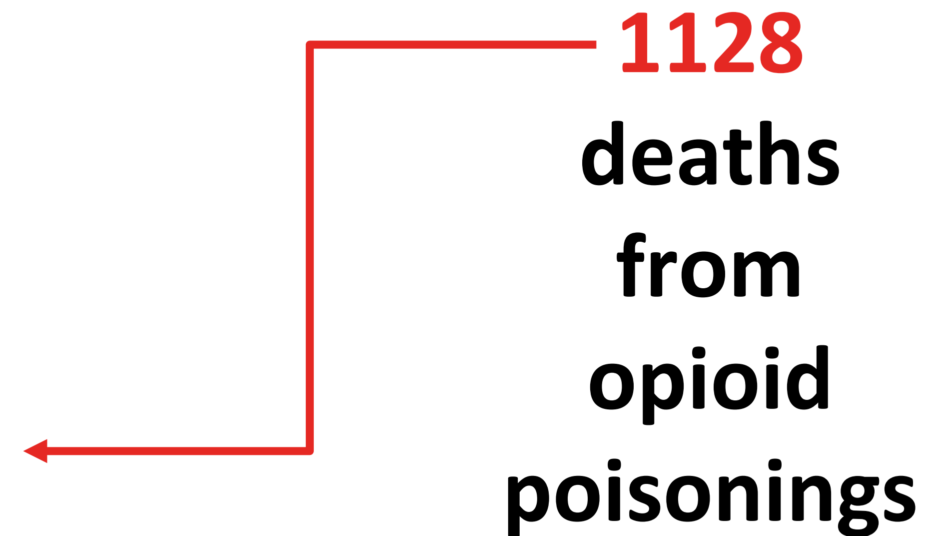
Special Advisory Committee on the Epidemic of Opioid Overdoses. Opioid-related Harms in Canada. Ottawa: Public Health Agency of Canada; June 17, 2020. https://health-infobase.canada.ca/substance-related-harms/opioids Accessed June 29, 2020.

X

1128 deaths

Alberta’s Leading Causes of Death: 2020

Ranking	Cause of Death	# of Deaths
1	Dementia	2081
2	Chronic Ischemic Heart Disease	1897
3	Lung Cancer	1563
4	Other Ill-Defined or Unknown Cause	1464
5	COVID-19	1178
6	Acute Myocardial Infarction	1084



Key Reasons the Opioid Crisis has Worsened with COVID-19

- Disproportionately impacts marginalized populations (compounded by COVID-19)
- Increased barriers to care (clinic closures, reduced clinic capacity)
- Disruptions in usual treatment protocols (e.g. frequent in-person assessments, daily witnessed dosing vs. carries, medication delivery systems)
- Unpredictable and highly toxic drug supply (disruption of international trade routes, more local production, increased benzodiazepine use, reduced drug testing capacity)
- Increased self-isolation and drug use alone

Treatment of Opioid SUD

- Medication Assisted: Therapy, Treatment, Recovery
- Opioid Agonist/Partial Agonist Therapy: Methadone, Buprenorphine/Naloxone, Sublocade (monthly SC buprenorphine injectable)
- Opioid Antagonist Therapy: Naltrexone (limited evidence of benefit)

PSYCHOSOCIAL TREATMENT + HARM REDUCTION INTERVENTIONS IMPROVE OUTCOMES WITH ALL MODALITIES

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Impact of Maintenance Therapy

- Reduction in Death Rates
- Reduction in IV Drug use
- Reduction in Crime
- Reduction in HIV Seroconversion
- Reduction in relapse to IVDU
- Improved employment, health, and social function

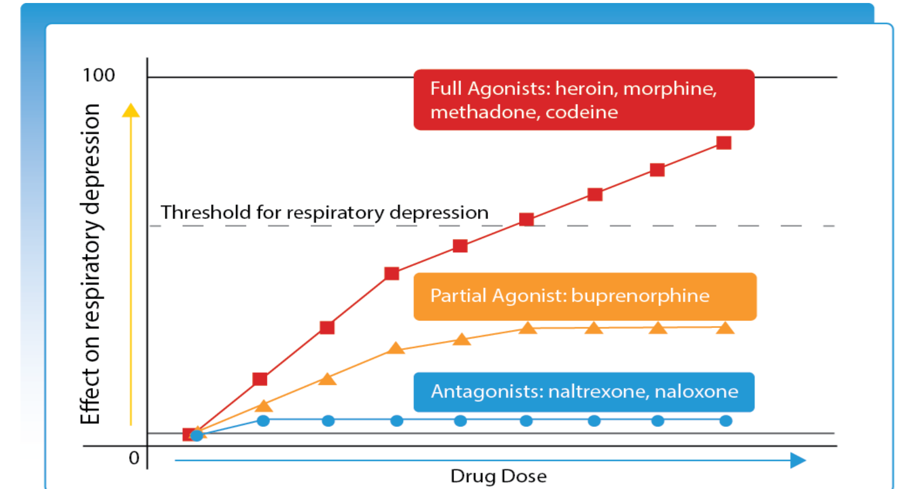
Buprenorphine SL (Suboxone)

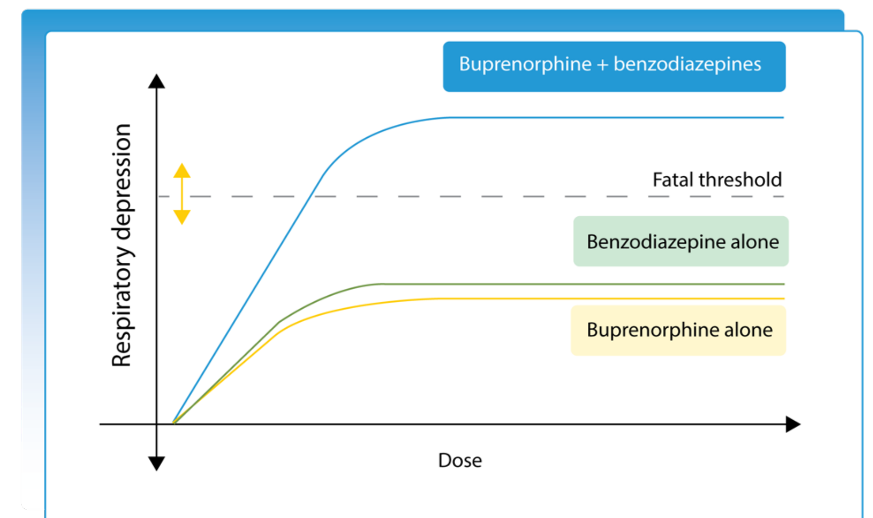
- Considered first-line treatment for OUD
- Comes in a mix of buprenorphine and naloxone (4:1 ratio)
  - Naloxone component discourages misuse, not bioavailable if taken orally
- Mu-partial agonist, kappa-antagonist.
- High affinity for mu receptors (+ slow dissociation from receptors)
- Hemodialysis safe
- Hepatic excretion (70%), Renal excretion (30%).
- Side Effects:
  - Headache, constipation, sweating most common

Why is Buprenorphine Considered Safe?

- Low Risk of Overdose
- Ceiling Effect:
  - Because of the low intrinsic activity at the mu receptor, as the dose is increased, the agonist effect does not increase
  - Higher doses occupy a greater number of receptors but do not produce increasing opioid effects
  - A maximum effect is reached, regardless if the dose continues to increase (24mg-32mg)
  - Overdose is less likely to cause fatal respiratory depression

*unless consumed with EtOH/Benzos





Why choose Buprenorphine/Naloxone?

Buprenorphine/naloxone preferred over methadone for:

- Reduced overdose potential due to less respiratory depression
- Fewer drug interactions (less impact on QT)
- Less sexual side effects
- Flexible dosing, carries, follow-up schedule
- Quick titration/stabilization
- Equal efficacy to methadone

CMAJ 2018 March 5;190:E247-57. doi: 10.1503/cmaj.170958

(Relative) Contraindications to Buprenorphine

- Patients with known hypersensitivity to buprenorphine, naloxone, or any other components of the drug product (for a complete listing, see the Product Monograph)
- Opioid-naïve patients
- Patients who have severe respiratory or severe hepatic insufficiency
- Patients with acute alcoholism or delirium tremens

Pharmacokinetics

- Onset of action
  - Onset of action within 30-60 minutes
  - Peak occurs within 1-4 hours
- Duration of action
  - Slow dissociation from receptors
  - Duration is dose dependent but can be up to 72 hours

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Clinical Opioid Withdrawal Scale (COWS):

- Total Score:
- Mild: 5-12
- Moderate: 13-24
- Moderately Severe: 25-36
- Severe: Over 36

*MDCalc can be used for this:

https://www.mdcalc.com/cows-score-opiate-withdrawal

APPENDIX 1
Clinical Opiate Withdrawal Scale

For each item, circle the number that best describes the patient's signs or symptom. Rate on just the apparent relationship to opiate withdrawal. For example, if heart rate is increased because the patient was jogging just prior to assessment, the increase pulse rate would not add to the score.

Patient's Name:____________________ Date and Time ____/____/____:__________

Reason for this assessment:________________________________

Resting Pulse Rate: ________beats/minute *Measured after patient is sitting or lying for one minute* 0 pulse rate 80 or below 1 pulse rate 81-100 2 pulse rate 101-120 4 pulse rate greater than 120	**GI Upset**: *over last 1/2 hour* 0 no GI symptoms 1 stomach cramps 2 nausea or loose stool 3 vomiting or diarrhea 5 multiple episodes of diarrhea or vomiting
Sweating: *over past 1/2 hour not accounted for by room temperature or patient activity.* 0 no report of chills or flushing 1 subjective report of chills or flushing 2 flushed or observable moistness on face 3 beads of sweat on brow or face 4 sweat streaming off face	**Tremor** *observation of outstretched hands* 0 no tremor 1 tremor can be felt, but not observed 2 slight tremor observable 4 gross tremor or muscle twitching
Restlessness *Observation during assessment* 0 able to sit still 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of legs/arms 5 unable to sit still for more than a few seconds	**Yawning** *Observation during assessment* 0 no yawning 1 yawning once or twice during assessment 2 yawning three or more times during assessment 4 yawning several times/minute
Pupil size 0 pupils pinned or normal size for room light 1 pupils possibly larger than normal for room light 2 pupils moderately dilated 5 pupils so dilated that only the rim of the iris is visible	**Anxiety or Irritability** 0 none 1 patient reports increasing irritability or anxiousness 2 patient obviously irritable or anxious 4 patient so irritable or anxious that participation in the assessment is difficult
Bone or Joint aches *If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored* 0 not present 1 mild diffuse discomfort 2 patient reports severe diffuse aching of joints/muscles 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort	**Gooseflesh skin** 0 skin is smooth 3 piloerrection of skin can be felt or hairs standing up on arms 5 prominent piloerrection
Runny nose or tearing *Not accounted for by cold symptoms or allergies* 0 not present 1 nasal stuffiness or unusually moist eyes 2 nose running or tearing 4 nose constantly running or tears streaming down cheeks	Total Score ______ The total score is the sum of all 11 items Initials of person completing assessment: ______

Score: 5-12 = mild; 13-24 = moderate; 25-36 = moderately severe; more than 36 = severe withdrawal

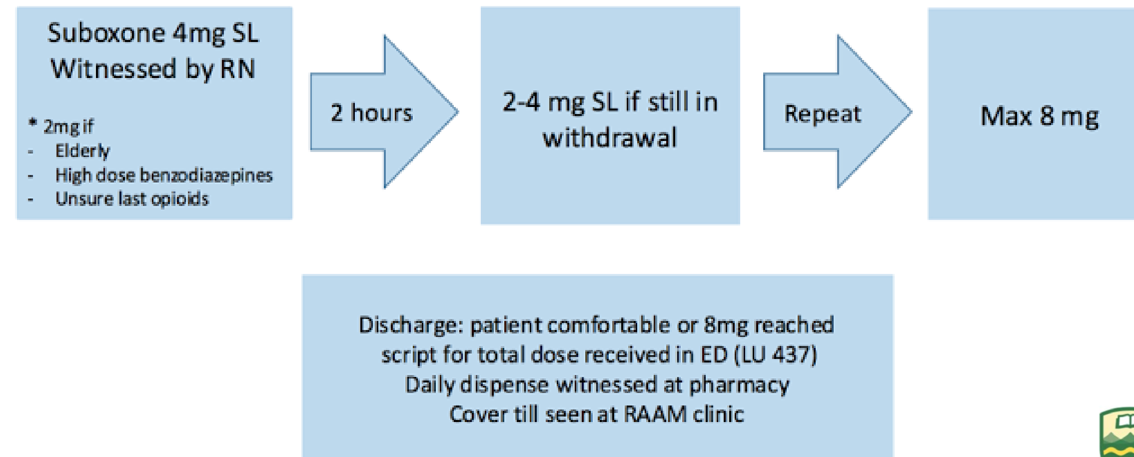
This version may be copied and used clinically.

Downloaded by [HSRL - Health Science Research Library] at 14:04 02 September 2015

Source: Wesson, D. R., & Ling, W. (2003). The Clinical Opiate Withdrawal Scale (COWS). *J Psychoactive Drugs*, 35(2), 253–9.

Buprenorphine use and induction:

- Start with patient who have a COWS Score of 12 or more.
- This is to avoid precipitated withdrawal.
- Start at 4mg SL. Wait 2 hours. Can let patient take up to 12mg on first day.
- Maximum Second day 16-20mg PO Qdaily
- Maximum Third day 20-24mg PO Q daily.
- Slow titration / week thereafter.
- Ensure they are not driving during induction period.



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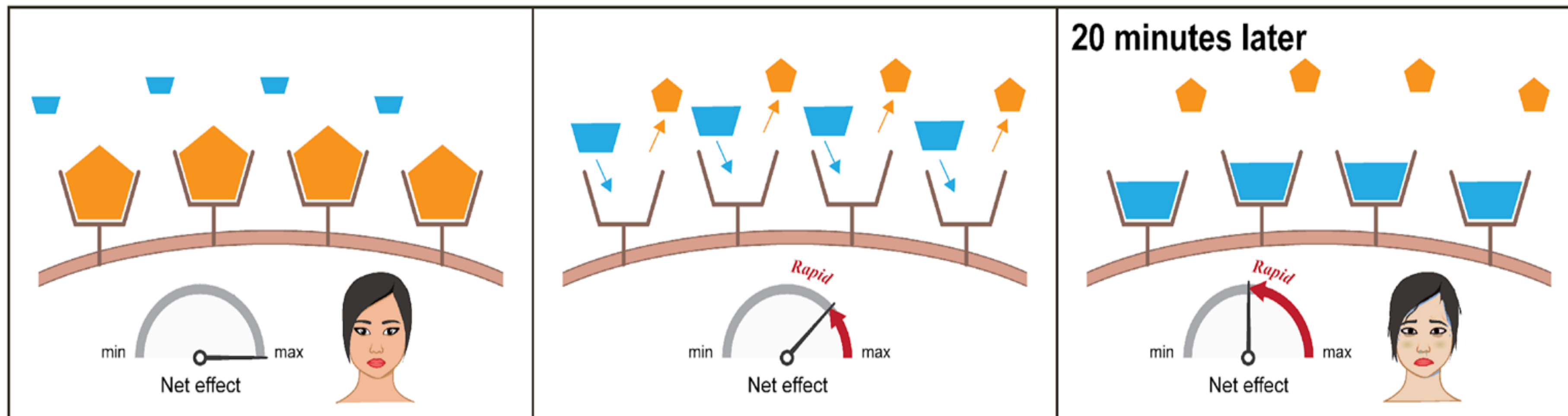
Precipitated Withdrawal Management:

- The Partial Agonist can displace already existing opioids.
- Treat By:
  - 1. Repeated 2 mg doses of buprenorphine every 1-2 hours
  - 2. Clonidine 0.1 mg every 8 hours (caution regarding hypotension)
  - 3. Anti-emetics for nausea
  - 4. NSAIDS for arthralgias and myalgias



Sample Script for Induction:

No need to use triplicate form

Rx

Dr. Jane Doe

Prescription:

Suboxone 2 mg tablet

May take up to 6 tablets on Day 1
May take up to 8 tablets on Days 2 and 3.
Quantity: 22 tablets
To be dispensed on a daily basis.

NO SUBSTITUTION

Buprenorphine Maintenance:

- Average effective maintenance dose is 16mg SL q daily
- Maximum dose is 24mg/day officially, 32 mg/day unofficially

Key Things about Buprenorphine

- Carries: can be provided right away due to low OD risk
- Coverage is available through most social insurance plans, including emergency Alberta Works.
- Prescribe up to 2 weeks of dosing and arrange for follow up with family doctor or opioid clinic (e.g. VODP)

Special Populations:

- The Elderly
- Pregnant Patients: Be aware of Neonatal abstinence syndrome.
- Individuals with severe respiratory concerns.
- Individuals with liver failure

CONSIDER SPECIALIST REFERRAL FOR THESE SUBPOPULATIONS

Why not abstinence without OAT?

- It does not work!!!!
- High rates of relapse post detox
  - As high as 91% in the literature
- Decreased tolerance leading to fatal & non-fatal OVERDOSE)
- Low rates of retention in residential or O/P psychosocial tx

IMPORTANT SAFETY NOTICE

Withdrawal management alone is not an effective treatment for opioid use disorder, and offering this as a standalone option to patients is neither sufficient nor appropriate. As will be reviewed in detail below, rates of dropout and relapse to opioid use are high, regardless of treatment modality used.[11-13] Furthermore, the risks of serious harms, including fatal and non-fatal overdose and HIV and hepatitis C transmission, are higher for individuals who have recently completed withdrawal management compared to individuals who receive no treatment.[14-16] To support informed decision-making, patients who request withdrawal management alone should be provided with clear, concise information about the known risks to personal and public safety, and be engaged in supportive, constructive discussion about safer treatment options. Withdrawal management alone is not recommended unless a discharge plan is in place for referral to ongoing addiction treatment (i.e., intensive outpatient treatment, residential treatment, access to long-term opioid agonist treatment, or antagonist treatment).

1. A Guideline for the Clinical Management of Opioid Use Disorder. Health Ministry of BC. 2017
2. Nosyk B, Sun H, Evans E, et al. De ning dosing pattern characteristics of successful tapers following methadone maintenance treatment: results from a population-based retrospective cohort study. Addiction. 2012;107(9):1621– 1629.
3. Smyth et al. Lapse and relapse following inpatient treatment of opiate dependence. Ir Med J. 2010 Jun;103(6):176-9.

Supporting the Frontal Lobe

- Cognitive Behavioral therapy
- Motivational Interviewing
- Coping Skills
- Social Supports (housing, income)
- Safe Environment
- Spiritual support
- 12 step programs
- SMART meetings

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Methamphetamines

Emerging Trends

- Evidence of dramatically rising rates of use
  - several Canadian jurisdictions report a 3-fold increase in people seeking treatment/harm reduction services for meth use over past 5 years
  - 590% increase in meth possession incidences from 2010 to 2017

- 800% increase in AB hospital admissions due to methamphetamine use 2010-2015 (AHS data, 2019)

- Disproportionately problematic in Western provinces

Canadian Centre on Substance Use and Addiction. Methamphetamine (Canadian Drug Summary). November 2019. Web access: https://www.ccsa.ca/sites/default/files/2019-04/CCSA-Canadian-Drug-Summary-Methamphetamine-2018-en.pdf

Reasons for Rising Use

- Many individuals experiencing homelessness rely on the physiological effects of methamphetamine use, such as alertness, reduced sensitivity to cold and suppressed appetite, to cope with conditions on the street
  - Bungay, et al., 2006; Werb, Kerr, Zhang, Montaner, & Wood, 2010

- Easy access to the drug, as methamphetamine is often cheaper and easier to obtain than other drugs in Canada
  - Brands, et al., 2012; Wood, et al., 2008; Centre for Addiction and Mental Health, 2019

- Stigma deters many people who use methamphetamine from seeking support
  - Bungay, et al., 2006; Canadian Centre on Substance Use and Addiction, 2019

Acute Treatment

- Treat based on symptoms

- Common acute presentations:
  - Acute Psychosis → atypical antipsychotics (e.g. olanzapine, risperidone)
  - Agitated Delirium → benzodiazepines, atypical antipsychotics, ketamine
  - Hypertension → antihypertensives
  - Seizures → benzodiazepines
  - Hyperthermia → cooling protocols

Withdrawal Management

- Usual onset of withdrawal within 24h, typically resolves <1 week
- Rarely requires hospitalization
- Mainstay of treatment = supportive care, symptom management
- Benzodiazepines for more severe cases
- Antipsychotics for psychosis
    - consider psychiatry assessment if psychosis lasts >3 days

Long-term Treatment

- Limited evidence for pharmacologic treatment of Methamphetamine Use Disorder
  - Emerging evidence (for buproprion, naltrexone, mirtazipine)

- Mainstay is lifestyle modifications + psychosocial supports (addiction counseling, CBT, motivational interviewing, housing supports, income support)

QUESTIONS?

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