SUBSTANCE USE DISORDER (SUD)/ADDICTION

1) Definitions
- Spectrum of severity: use – misuse – abuse – dependence
- Misuse: sporadic use without adverse consequence
- Sporadic use: use without adverse consequences
- Alcoholism: chronic alcohol use leading to distress or impairment
- Addiction’s 4Cs
  - Loss of control
  - Frequent early refills, excuses for running out of supplies
  - Polypharmacy with CNS depressants
  - Habituating substances
- Unintentional
- SUD: frequency of consumption may vary; use leads to adverse consequences (health issues or problems at work, school or home)

2) Statistics from the Literature (CTADS 2017; CADUMS 2011/12)
- Prevalence, past 1 yr: any tobacco (38%), e-cigarette (3%); illegal drugs (3%), cocaine (2%), ecstasy (1%), hallucinogens (1%); problematic psychoactive use to get high or other (i.e. opioid, stimulants, tranquilizers & sedatives, 5%)
- The rate of drug use: use/crash or crack, speed, ecstasy, hallucinogens (including salvia) or heroin by youth 15-24 yrs is much higher (6.5%) than reported by adults ≥25 yrs (1.2%)
- 72% of non-medical opioids used by patients were obtained from home.4
- The prevalence of harm 4x higher among youth aged 15 to 24 yrs (5.5%) than adults aged 25+ yrs (1.4%) (Age adjusted mortality ↑ 6x in urban SUD ax) (norm related to social life, health, work, studies, employment, financial, legal, housing, learning)
- 10% report drugs/alcohol as reason for 1st ever sexual intercourse6

3) Principles of SUD Treatment
- No single tx is appropriate for all; concomitant medications are useful for many; tx needs to be readily available
- For success, attend to multiple needs, not just drug use
- Assess for medical, family, vocational, social & legal services
- Ensure adequate time in treatment (≥3 months)
- Arrange for counselling & behaviour tx
- Integrate tx for those with mental disorders
- Acute detoxification is only the 1st stage of tx
- Tx does not need to be voluntary to be effective
- Drug & alcohol use monitoring should be ongoing
- Assess for HIV/AIDS, HBV, HCV, etc. & provide counselling regarding risk behaviours (sexual contacts, drug use, etc.)
- Expect a long-term process with relapses
- Individualize “self-help” & spiritual support programs

SUD Screening: CAGE-AID, AUDIT, Other e.g. SASSI
- C – Have you ever felt a need to Cut down on your drinking/drug use?
- A – Do you get Annoyed when others criticize your drinking/drug use?
- G – Have you ever felt Guilty about your drinking/drug use for any reason?
- E – Eye-opener: Have you ever felt the need for a drink/drug use early in the morning to steady nerves, decrease hangover or withdrawal?

AUDIT: questions to assess alcohol use
- 0 1 2 3 4
- 1. How often have you had 1 drink containing alcohol?
- 2. How many drinks do you have on a typical day?
- 3. How many times in the past year were you not able to stop drinking?
- 4. How often did you fail to do what was expected?
- 5. How often did you have a drink you felt was bigger than usual?
- 6. How often did you have a drink you had a feeling of guilt after drinking?
- 7. How often did you feel you had not remembered the night before?
- 8. How often have you been a month without drinking?
- 9. Has a relative, friend or doctor been concerned about your drinking?
- 10. Did you ever feel you needed a drink first thing in the morning to steady nerves, decrease hangover or withdrawal?

AUDIT: questions to assess alcohol use

4) Single Question Screen: How many times in the past year have you used an illegal drug or prescription med for nonmedical reasons?

Histories – Using a non-judgmental approach
- Ask first about socially acceptable drugs: nicotine, caffeine

History – Using a non-judgmental approach

Physical findings (intoxication, withdrawal, other):
- Evidence of associated infections, HIV, oral thrush
- Needle marks, including hidden sites; STDs; pupil size, ↑HR, runny nose, watery eyes, slurred speech, yawning, unsteady gait
- Lab: LFTs, HBV/HCV screen; drug screens (e.g. UDT as at bottom of page)

HARM REDUCTION

See urine drug screens for more information.

Urine Drug Screening (UDS): to monitor medication compliance & identify/monitor SUD risks
- Immunosay: rapid, inexpensive & preferred for initial screening. Chromatography: ↑ delay but ↑ accuracy
- Amphetamines & Cocaine: detectable 2-3 days; Benz, 3 days for short acting; Opioids: 1-2 days
- THC: 3 days if single use, ~15days if daily use, 60+ days if long-term/heavy use
- False negatives possible
- Assess drug use causes for false positives. Ensure proper collection technique & integrity of specimen
- Goal is to improve patient care & communication. NOT to police! Discuss unexpected results with patient
- If abuse risk is high, advise of consequences, tight boundaries, refer to addiction specialist/IDC if necessary

A SUD is a chronic disease. Patients with a SUD will require acute & ongoing intervention. A continuum of care approach supports patients in accessing varying levels & intensities of care over time. An effective team approach is often the critical factor toward a successful outcome

Best Practices (Adapted)
- 1) Individual experiencing harm should determine ultimate goal of treatment (e.g. safer use, abstinence, etc.) with input from provider
- 2) Determine treatment plan together and offer stepped care with least intensive services first
- 3) Assess, address, coordinate all wellbeing components
- 4) Ensure services are culturally, trauma & gender informed
- 5) Reduce stigma to overcome major recovery barriers
- 6) Peer-engaged and peer-led services help with trust
- 7) Enhance outcomes by being recovery-oriented

Harm Reduction Measures

1) Address risks for other diseases (e.g. HIV, Hep C, syphilis)
- screening, b) needle distribution & exchange programs, c) vaccinations, d) counselling regarding risky behaviours, e) safer smoking options, f) referral services, g) oral hygiene

2) Educate regarding to overdose (including recommending take-home naloxone)

3) Inform re supervised consumption services when available

A non-judgmental attitude is a key for success!
Cannabinoids
- THC = delta-9-tetrahydrocannabinol
- CBD = cannabidiol
- CBG = cannabinol
- CBN = cannabinol
- THCV = cannabichromene
- THCA = cannabichromene
- CBDV = cannabidivarin
- CBC = cannabicyclol
- CAM = cannabichromene
- CBDA = cannabidiolic acid
- CBDA = cannabicyclol

Hashish
- Andrew hemp flower resin + hash oil

Amphetamine
- Synthetic spice, K2

Cocaine
- Drug of choice
- Addicted
- Methylphenidate: Ritalin
- Methamphetamine: crystal meth, speed

Morphine
- Analgesic
- Naloxone: reversal agent

Methadone
- Opioid
- Opioid analgesic

LSD
- Hallucinogenic

Mescaline
- Button, cactus, mushroom

Codeine
- Opioid

Fentanyl
- Fentanyl (Duragesic)

Heroin
- Drug of choice

Hydromorphone
- Vioke, Watson-387
- Erected

Meperidine
- Demerol

Methadone
- Opioid

Opium
- Opioid

Oxycodone
- Future control

Alcohol
- Booze, liquor
- Zero-order kinetics

GHb
- Blood alcohol

Flunitrazepam
- Roko, roche, roofed, roof

Barbiturates
- Hops, phens, yees

Benzodiazepines
- Downers, downers, pits

Methaqualone
- Melds, mandres, quad, quay

Amphetamine
- DEXEDRINE
- Methamphetamine
- MDA

Mephedrine
- Crystal meth, speed, ice

Amphet. analogues
- Designer drugs

Anabolic Steroids
- SR-9009, GW501516, BM3007

Anabolic Androgenic Steroids
- Anabolic androgenic

Varied
- XK

Respiratory Depression & Coma
- Intubation

Cocaine
- Cardiovascular
- Neurotoxicity

Other
- Baclofen
- BuPROPion
- Clozapine
- Lithium
- MAO inhibitors

Impairments/Adulterants/Toxins
- Drug-related
- Drug testing
- Drug abuse
- Drug use
- Drug testing
- Drug use
- Drug testing
- Drug use
- Drug testing
- Drug use

Management & Treatment Options
- CBT
- Naltrexone
- Methadone
- Bupropion
- Ritalin
- Methadone
- Gabapentin
- Lyrica
- Carisoprodol
- Reva
- Baclofen
- Lithium

Substance Use Disorder (SUD): Overview & Treatment Considerations

Alcohol

Cannabis

Hashish

Cocaine

Amphetamine

Opioids

Methadone

Bupropion

Crocs

Pregnancy

Clones

Gabapentin

Lyrica

Reva

Naltrexone

Methadone

Bupropion

Crocs

Pregnancy

Clones

Gabapentin

Lyrica

Naltrexone

Methadone

Bupropion

Clones
**Intoxication: Common Presentations – Possible Causes**

- Unresponsive: hypoglycemics, narcotics, alcohol, cyanide, carbon monoxide, tranquilizers, hydrocarbons, barbiturates
- Seizures: hypoglycemics, amphetamines, cocaine, hallucinogens, anticoagulants, TCAs, PCP, mescaline; benzodiazepine withdrawal
- Hyperthermia: salicylates, Ecstasy, atropine, amphotericin B, phenytoin
- Hypothermia: ethanol, narcotics, sedatives/hypnotics, TCAs, barbiturates, carbon monoxide.
- If mixed presentation consider possibility of mixed ingestion!

**Intoxication Management - (Primary assessment ABCs: airway, breathing, circulation)**

<table>
<thead>
<tr>
<th>Opioids</th>
<th>Intoxication (coma, lethargy, stupor; constipation, N&amp;V; flushing, pruritis; hypotension; miosis; resp depression)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>supportive tx; regular assessment of cardio/respiratory safety</td>
</tr>
<tr>
<td>HR</td>
<td>airway protection; correction of hypoxia</td>
</tr>
<tr>
<td>RR</td>
<td>naloxone option: short term duration; balance reversal of resp depression with opioid withdrawal</td>
</tr>
<tr>
<td>Temp</td>
<td>(naloxone can be considered if opioid toxicity suspected).</td>
</tr>
<tr>
<td>Pulpuls</td>
<td>consider type of opioid for duration of risk &amp; naloxone effect</td>
</tr>
<tr>
<td>Diaphoresis &amp; depressed, hypotension</td>
<td>consider N-acetyl-pa-aminophenol level if overdose cause unknown (ro acetaminophen as possible agent).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stimulant</th>
<th>Supportive tx (agitation, diaphoresis, hypothermia, mydriasis, psychosis, seizures, +HR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>oral diazepam or lorazepam for agitation &amp; hypothermia, e.g. cocaine induced</td>
</tr>
<tr>
<td>HR</td>
<td>+ IV lorazepam, diazepam or midazolam short acting if severe agitation/anxiety</td>
</tr>
<tr>
<td>RR</td>
<td>Optional (if predominant psychosis): sedating antipsychotic (e.g. olanzapine, risperdone, quetiapine)</td>
</tr>
<tr>
<td>Temp</td>
<td>Avoid mixing benzodiazepine &amp; antipsychotic if possible due to risk of oversedation &amp; respiratory AE</td>
</tr>
<tr>
<td>Pulpuls</td>
<td>HTN: benzodiazepines; alternatively nilitriprusside, NTG</td>
</tr>
<tr>
<td>Diaphoresis &amp; depressed, hypotension</td>
<td>Monitor: hyperthermia, hypothermia, cardiac, electrolytes</td>
</tr>
</tbody>
</table>

**Acute Alcohol Intoxication**

- **Blood Alcohol Levels (BAL):**
  - <50mg/dl: impairment in skills; talkativeness, relax; 100 mg/dl = impaired judgment, + coordination & reactions, mood/personality change; 200 mg/dl: amnesia, delirium, N&V; 300-500 mg/dl = risk of respiratory depression, coma & death

- **DSM-IV:** A recent EIOH. B clinically significant behavioural/psychological change e.g. aggression, mood, impaired C one or more of: 1. Sturred speech, 2. Coordination, 3. Unsteady gait, 4. Nystagmus, 5. Attention/memory, 6. Stupor/coma, other.
- When to let them leave the emrg?: Consider holding till they can walk out unassisted.

**Management of Cocaine Body Packers**

- Hx: # & type of packages; other agents; GI symptoms; Investigations: ECG, CBC/SCR, etc., chest & abd x-rays; Management if asymptomatic: admit, oral gastric lavage until all packages passed; 4 hr observations of vitals after package passed; light/normal diet, IV access, daily evaluation for intoxication/bowel obstruction.

**When to Discharge?**

- Consider time from last ingestion. Can they walk unaided?

**LifeSpan Spectrum of Complications**

- **Pregnancy - obstetrical complications,** fetal distress, stillbirth, low birth weight; adolescent & young adult – self inflicted injuries, homicides, premature morbidity; **Later life -** decline.

- **Substance Abuse in Older Adults:** 2005 USA data on treatment programs: Alcohol only (48%), alcohol + 2nd illicit substance (52%); 2nd substance cocaine 44%, marijuana 29%, opiates 16%, stimulants 5%, other 10%.

- Signs: headache, cognition/memory ability; Unique features: tendency to drink smaller quantities more often, DI with + metabolism of other drugs, + in sleep patterns. Clues: recent losses, psych hx, family hx of abuse.

- **Prescription Opioids:**
- **Heroin**: 10 toenail pressure; 20% of heroin addicts use opioids; 30% of users are in treatment for other drug use.
- **Methadone**: 20% of users are in treatment for other drug use.
- **Oxycodone**: 10% of users are in treatment for other drug use.
- **Codeine**: 10% of users are in treatment for other drug use.

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**Acknowledgements:** We would like to thank those who contributed to the development, review for this chapter. SHR Addictions: Christy Becker, Terry Patzer, Dr. Peter Butt (FM), Dr. Kevin Kok (Psychiatry), Dr. Morris Markentin (FM, Saskatoon), Dr. Brian Fern, Other: Dr. Amy Semaka (PharmD, Edmonton), Dr. M. Varenbut (Toronto), Dr. J. Witt (Emerg, Saskatoon), Dr. R Hartmann (Emerg), Wendy Pecho (Prince Albert) and the RxFiles Advisory Committee. Prepared by Loren Regier BSA, Brent Jensen BSA
UK Study Ranking - most harmful drugs: overall, to individual and to society.

- BACKGROUND: Proper assessment of the harms caused by the misuse of drugs can inform policy makers in health, policing, and social care. We aimed to apply multicriteria decision analysis (MCDA) modelling to a range of drug harms in the UK. METHODS: Members of the Independent Scientific Committee on Drugs, including two invited specialists, met in a 1-day interactive workshop to score 20 drugs on 15 criteria: nine related to the harms that a drug produces in the individual and seven to the harms to others. Drugs were scored out of 100 points, and the criteria were weighted to indicate their relative importance. FINDINGS: MCDA modelling showed that heroin, crack cocaine, and metamfetamine were the most harmful drugs to individuals (part scores 34, 37, and 32, respectively), whereas alcohol, heroin, and crack cocaine were the most harmful to others (46, 21, and 17, respectively). Overall, alcohol was the most harmful drug (overall harm score 72), with heroin (55) and crack cocaine (54) in second and third places. INTERPRETATION: These findings lend support to previous work assessing drug harms, and show how the improved scoring and weighting approach of MCDA increases the differentiation between the most and least harmful drugs. However, the findings correlate poorly with present UK drug classification, which is not based simply on considerations of harm. FUNDING: Centre for Crime and Justice Studies (UK).

Salvia leaves (magic mint, diviner's sage, salvia, purple sticky)
- Member of mint family, smoked or chewed. Contains salvinorin A, a selective kappa opioid receptor antagonist; does not bind to 5HT2A receptors like other hallucinogens. Halucinogen effects rapid & last <30min. SE: dysphoria, diuresis, chills, headache, insomnia, exhaustion, loss of control, impaired coordination & judgement (DANGEROUS). Sensitized in SK by Salkation media DJ who smoked herb on live broadcast in Dec 2010.

Angel's Trumpet: (Angel's tears, Apple of Peru, Green Dragon, Devil's trumpet)
- Alkaloid (atropine, scopolamine) containing flowers & stem. Each flower contains 0.2mg atropine & 0.65mg scopolamine; 3–6 flowers causes hallucinations; 9+ flowers can be life-threatening. Commonly ingested by making a tea. Effects in 1–4hrs; duration 24hrs. SE: mydriasis, dry mouth, tachycardia, fever, erythema, constipation, ↑ thirst, retrograde amnesia & anxiety; arrhythmias & CV collapse / respiratory failure in high doses. (DANGEROUS)

“Bath Salts” PABS (mephedrone, bk-mephedrone, mephedrone-MMV, NRG-1, mephedrone-MC, Mec, 4-MMC, Bubbles, methylethylmethcathinone, bk-MDMA, M1, Explorers) being sold in shops & online. Cloud 9, Ivery Wave, Vanilla Sky, Purple Wave, Blizzards, Blue Silk, etc. Common in UK, now USA via New Orleans, India, China.
- Similar effects (THR, paranoia, psychosis) & to x as stimulants. May/11 CDC: MMWR: Emergency Department Visits After Use of a Drug Sold as “Bath Salts” — Michigan, November 13, 2010–March 31, 2011 http://www.cdc.gov/mmwr/pdf/wk/mm6006e18.pdf
- Two common ingredients: MDPV (a dopamine & norepinephrine (NE) reuptake inhibitor ⇒ stimulus); mephedrone: MAO effects that ↑ 5HT, NE, & DA at neuronal synapses (AEs: agitation, aggression, anxiety, bruxism, chest pain, confusion, diaphoresis, headache, hyperreflexia, TBP, N/V, palpitations, peripheral vasodilation, paresthesia, psychosis, seizure, THR.) Sep/11: DEA invoked its emergency authority necessary to protect the public & will Schedule 1 substances in 30 days from now.

Spice – (“legal highs”): a range of synthetic drugs; combustible vegetable material sprayed with a variety of chemicals, each slightly different; often mixed with tobacco & smoke; effect (heightened awareness and imagination; potential for panic & violence; blackouts).
- The most extreme of effects often subsided in 15min. Signs: acrid breath smell; higher voice pitch. Withdrawal: cramping, sweating, twitching. Other caut – loss of control, impaired coordination & judgement (DANGEROUS)

Miscellaneous Other Drug Considerations / Cautions
- Salbutamol: sometimes used to enhance effect of crack cocaine
- Benzodiazepines: calming effect
- Bupropion: sometimes messed with & snorted for high
- Quetiapine: may enhance heroin effects & tolerance
- Vitamin C sometimes used as an acidifier to help dissolve substances (i.e. crack cocaine, heroin) for injection


Oxymorphone OPANA ER Abuse
- Thrombotic thrombocytopenic purpura (TTP) strongly associated with injection drug abuse of OPANA ER.

Buprenorphine/naloxone (ZUBSOLVE) 1,4mg/0.36mg – new SL tab formulation (available in USA); ↑bioavailability & may taste better than Suboxone. (Achieves plasma concentrations = 2/10.5mg and 8/2mg strengths of other Brand tabs.)

Synthetic Cannabinoids – common in herbal incense products
- Full agonists of CB1 & therefore ↑ potential for overdose & toxicity
- ↑ association with seeking medical attention. AE: agitation, altered time perception, anxiety, dysphoria, TBP, listlessness, hallucinations/psychosis, nausea, paranoia, seizures, tachycardia.
- Marijuana extraction/concentration ⇒ production of very highly concentrated levels (80-90%) called “Shatter”; easily over consumed resulting in overdose / emergency visits

Videos – informational related to teen drug recreational drug use (for teens, by teens) - Canada
- Unwasted: 4 videos by teenagers regarding gambling, alcohol, marijuana, opioids/oxycodin: http://unwasted.ca/; or http://unwasted.ca/the-pressure
- Your when moment (videos from Nova Scotians): http://changingtheculture.ns.ca/

Videos – other
- Addressing the risk of diversion of Rx drugs; secure storage of medications. Powerful. http://www.youtube.com/watch?v=sunbjDZe1whttp://www.youtube.com/watch?v=sunbjDZe1w

Guidelines of Interest:

Other Links of Interest:
http://addictionlibrary.org/ 

www.RxFiles.ca – Substance Abuse
buprenorphine. It is not possible to draw any conclusions from the available evidence about the rate of dose taper. One such factor could be whether the patient based on reducing doses of methadone over a period of around 10 days, but methadone was associated with fewer adverse effects than clonidine. 


Foxcroft DR, Tsertsvadze A. Universal school-based prevention programs for alcohol misuse in young people. Cochrane Database of Systematic Reviews 2011, 5. Art No: CD000730. DOI: 10.1002/14651858.CD000730.pub5. The results of this review indicate that there are no substantive, meaningful benefits of MI interventions for the prevention of alcohol misuse. Although some significant effects were found, we interpret the effect sizes as being too small, given the measurement scales used in the studies included in the review, to be of relevance to policy or practice. Moreover, the statistically significant differences are not consistent across all studies included in this review. The potential for publication bias due to the use of multiple factors affecting the response to the rate of dose taper. One such factor could be whether the patient based on reducing doses of methadone over a period of around 10 days, but methadone was associated with fewer adverse effects than clonidine.