PACED CASES!

(In the age of High-Potency Synthetic Opioids and novel stimulants)

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Disclaimers

- I have no affiliations with pharmaceutical companies, device manufacturers or substance-use disorder treatment programs to disclose.
- Any reference to “female” or “male” affirms the gender identity of both cis- and transgender individuals. The physiology of the patient in question, as always, guides the workup and therapy.
- I am a father of two and grandfather of three and am prone to making “Dad Jokes” so you have been warned.

Case 0: 31 yo female – Presentation

- Unconscious, not breathing, shoved out of a pickup truck in the ED parking lot. The truck sped off. ED staff bring patient to trauma room on a gurney. VSS: HR 40, RR 0 (apneic), BP 80/40, T 97.0 (forehead), O2 Sat 72%. PE: GCS 3, Constricted pupils, no chest rise observed. Somewhat rounded abdomen. Scarred veins, skin. Pallor with perioral cyanosis.

Case 0: 31 yo female – Resuscitation

- BVM w/ 100% O_2 or intubate?
- Oral or nasal airway
- Intranasal, IV, IM or IO meds
- Chest Compressions?

Case 0: 31 yo female – Resuscitation

- How quickly to administer Naloxone?
- By what route?
- What dose?
- Could a low dose and careful airway/breathing management be attempted to avoid the disruption a full reversal will cause?
- When to repeat a dose?
- How does the likelihood this is fentanyl (HPSO) affect the initial dose chosen?

Case 0: 31 yo female – Curve Balls

- Pregnant? Third trimester?
- No heartbeat along with apnea?
- OD’d on Methadone: what could you expect?
- OD’d on Fentanyl: what could you expect?
- Liver disease?
- DDX: All the other causes of Undifferentiated Coma

Case 0: 31 yo female – Teaching Points

- A Code is still a Code: airway, breathing and circulation need immediate support
- Benefits and risks of titration of naloxone dosing
- Need to keep in mind the workup of undifferentiated coma
  - Alcohol intoxication
  - Hepatic Encephalopathy
  - Head Injury with ICH
  - CO Poisoning
- Possible pregnancy needs to be dealt with later

Case 0: 31 yo female – System Issues

- If this is an EMT call in the field, are they trained in use of naloxone?
- Is naloxone quick to get into the Code Bay?
- Do you have security if the patient wakes up and is violently agitated?
- Do you force the patient to stay in the ED if she insists on leaving?
- Is there a protocol for someone to follow up on this overdose patient if she eventually clears and leaves?
- Is there a Peer Support person available?
- Is there a Harm Reduction Program to at least engage her with clean needles, naloxone?

Case 1: 19 yo female – Presentation

- The manager at the Trading Post notices a young woman acting suspiciously. She confronts the young women, who had tucked some food below her rather distended abdomen. The manager said she would call the police unless the young women agreed to ride with her to the ED for help.
- The ED nurse does triage on a sullen women who makes poor eye contact and mumbles her answers to the nurse's questions.
- VS: HR 100 T 98.5 (oral) BP 110/65 RR 14 O2 Sat% 99
- Exam: Bruise on left cheek, clear lungs, normal heart sounds, gravid-appearing abdomen, visible track marks on arms, several ulcerated areas on lower legs. Mild pedal edema.

Case 1: 19 yo female – History and Exam

- ED workup includes confirmation of pregnancy, US finds a viable fetus with size (CRL) c/w 32 weeks, borderline low amniotic fluid. UDS positive for cannabis, amphetamines and opioids.
- Psych eval: Positive depression screen, pt denies suicidal ideation. Denies being abused by anyone, denies being trafficked. Lives with elderly grandmother with mild dementia.
- Admits to injection of "heroin" 2-3 times daily. Claims use since age 17. Admits to smoking tobacco and cannabis. Denies alcohol use.

Case 1: 19 yo female – Questions

- Is this patient likely getting fentanyl in her heroin?
- Should she be offered MOUD starting right now? (COWS is 8)
- Should she get a nicotine patch?
- Should she be transferred to an OB center ASAP?
- Is she at risk for punishment for prenatal exposure of her infant to illegal drugs?
- Is there a chronic medical condition?

Case 1: 19 yo female – Guidelines by ACOG

- ACOG Guidelines 2017
  - Universal Screening starting at 1st prenatal then SBIRT
  - In chronic pain patients, work to minimize or eliminate opioid use
  - MOUD is recommended for OUD; Buprenorphine > Methadone due to lower incidence of Neonatal Abstinence Syndrome, ease and safety of use
  - Pediatric care for newborns to manage NAS
  - STI/HIV screening
  - Patients stabilized on MOUD may breastfeed
  - Psychosocial support, intervention in abusive/dangerous situations
  - Offer contraception in SUD patients

Case 1: 19 yo female – Ongoing Issues

- BUP dose may need to be raised to higher levels and greater frequency due to high fluid volume and increase in adipose tissue in pregnancy.
- Could consider XR-BUP by injection – 7-day version only.
- Buprenorphine recommended above buprenorphine/naloxone due to lack of study data to firmly establish non-inferiority.
- Methadone is approved for use in selected patients.
- Lower incidence of Neonatal Abstinence Syndrome seen in patients who received buprenorphine.
- Relapses and illegal drug misadventures occur frequently.
- Avoid punitive approaches (where state law allows) to best promote engagement with medical and psychosocial therapy.

Case 2: 72 yo female – COWS Scale

Clinical Opioid Withdrawal Scale (COWS)

Resting Pulse Rate

80 or below (0)	81-100 (1)	101-120 (2)	>120 (4)

Restlessness

Sits still (0)	Difficulty siting still (1)	Frequently shifting limbs (3)	Unable to sit still (5)

Anxiety or irritability

None (0)	Increasing (1)	irritable/ anxious (2)	Cannot participate (4)

Yawning

None (0)	1-2 times (1)	3 or 4 times (2)	Several per/min (4)

Pupil Size

Normal (0)	Possibly larger (1)	Moderately dilated (2)	Only rim of iris visible (5)

Runny Nose or Tearing

Not present (0)	Stuffiness/ moist eyes (1)	Nose running/ tearing (2)	Constant running/ tears streaming (4)

Tremor

No tremor (0)	Felt-not observed (1)	Slight tremor observable (2)	Gross tremor/ Twitching (4)

Sweating

No report (0)	Subjective report (1)	Flushed/ observable (2)	Beads of sweat (3)	Streaming down face (4)

Gooseflesh Skin

Skin is smooth (0)	Piloerection (3)	Prominent piloerection (5)

Bone or Joint pain

None (0)	Mild (1)	Severe (2)	Unable to sit still due to pain (4)

GI upset

None (0)	Stomach cramps (1)	Nausea or loose stool (2)	Vomiting or diarrhea (5)	Multiple episodes (5)

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

If considering initiating buprenorphine in the ED, complete the COWS if there is any doubt that the patient is in at least moderate withdrawal.

Case 2: 72 yo female – Presentation

- Walks into ER WR. Loudly and with pressured speech she asks to see the doctor about her back and leg pain. She is pacing in the waiting room. She is holding an emesis bag and dry heaves from time to time.
- VS: HR 110, RR 16, T 99.2 (Tympanic), BP 170/94, O2 Sat 98%
- Nursing Assessment: diaphoresis, dilated pupils, perseveration about back and leg pain
- Triage?
  - Is she a priority for rapid admission to the ED (eg chest pain)?
  - How to screen?
  - COWS?

Case 2: 72 yo female – History

- Clinic patient until her doc retired. Didn’t like the replacement who kept trying to “get me off pain pills.” No refills x 2 months of any meds. A neighbor had been selling her “some Oxies” during those 2 months but he was arrested over the weekend.

- 2016 chronic pain management guidelines from CDC underwent revision due to reports of greater harms in “Legacy” patients being aggressively withdrawn from opioid medications.

- 2022 CDC Clinical Practice Guideline for Prescribing Opioids for Pain recommends ”patient-centered” care. This gives the prescriber flexibility in constructing a care plan that might or might not include chronic opioid therapy. Changing practice attitudes will take time. Reasonable clinicians may disagree. Remember, these are guidelines, not the “law.”

Case 2: 72 yo female – Medications

- Buprenorphine or Oxycodone or non-opioid treatment (eg clonidine)?
- NSAIDs or Acetaminophen?
- Antiemetics?
- Benzos?
- Naloxone?
- BP meds?

Case 2: 72 yo female – Curve Balls

- Hypertensive emergency?
- Full work up?
- Social Services?
- Well-documented chronic pain syndrome (spinal stenosis)?
- Does PDMP confirm regular prescribing until recent interruption?
- Could the “Oxies” she got from a neighbor contain fentanyl (HDSO)?

Case 2: 72 yo female – Bup Initiation Choices

- Choice 1: High Dose Buprenorphine (HDB) initiation: (8-16 mg SL)
  Quick (<2 hr to stabilization), has moderate OWS (COWS > 12), risk of POW, OK to pre-medicate with adjuvant drugs.

Case 2: 72 yo female – Bup Initiation Choices

- Choice 1: High Dose Buprenorphine (HDB) initiation: (8-16 mg SL)
  Quick (<2 hr to stabilization), has moderate OWS (COWS > 12), risk of POW, OK to pre-medicate with adjuvant drugs.
- Choice 2: Standard Care: (2-8 mg SL), takes 1-3 days to stabilize,
  needs to show OWS, recommended to pre-medicate with adjuvant drugs.

Case 2: 72 yo female – BUP Initiation Choices

- Choice 1: High Dose Buprenorphine (HDB) initiation: (8-16 mg SL) Quick (<2 hr to stabilization), has moderate OWS (COWS > 12), risk of POW, OK to pre-medicate with adjuvant drugs.
- Choice 2: Standard Care: (2-8 mg SL), takes 1-3 days to stabilize, needs to show OWS, recommended to pre-medicate with adjuvant drugs.
- Choice 3: Low Dose Buprenorphine with Opioid Continuation (LDB-OC): (0.25-1 mg), no need to be experiencing OWS, permits ongoing opioid use, whether prescribed or illegally sourced, requires high level of coordination, cooperation of patient, recommended to pre-medicate w/ adjuvant drugs.
- Citation: Buprenorphine Treatment of Opioid Use Disorder for Individuals Using High-potency Synthetic Opioids. Journal of Addiction Medicine, July 28, 2023, Key Question 1.

Case 2: 72 yo female – System Issues

- Communication between ED and Primary Care
- Is Primary Care aware of change in pain management guidelines? (i.e. less forceful efforts to taper in some pts)
- How quickly can provider check PDMP to verify aspects of the story?
- How accessible are primary care notes to the ED provider?
- Social worker available to help coordinate care/referral?
- Will ED provider agree to prescribe bridge? (BUP or Oxy)
- What if she was a client of a Pill Mill practice suddenly shut down by the DEA?

Case 2: 72 yo female – System Issues

- Communication between Health Care System and Law Enforcement?
  - The **Opioid Rapid Response Program** (ORRP) is an interagency, coordinated federal effort to help mitigate overdose risks among patients who lose access to a prescriber of opioids, medications for opioid use disorder, or other controlled substances.
  - In an ideal world, trusted partners in law enforcement at the tribal, state and federal levels communicate with state and local health officials when there could be an <u>anticipated</u> surge in need for management of patients getting chronic opioid therapy whose access will be interrupted due to planned law enforcement actions.

OWS ≠ OW!

Case 3: 26 yo male – Presentation

- Arrives by EMS from Intertribal Rodeo. Fell off angry bull at 7 seconds. Left lower leg with deformity, probable closed fracture of ankle. On 8 mg bid of Suboxone, says he has been treated by prescription for OUD x 4 years at clinic in neighboring state.
- Gritting teeth to avoid screaming from pain.
- VS: HR 120, RR 18, T 98.7 (Tymp), BP 160/88, O2 Sat 97%

Case 3: 26 yo male – Medications

- More BUP?
- Ketamine?
- NSAIDs?
- High potency opioids (IV fentanyl)?
- US Guided regional anesthesia?

Case 3: 26 yo male – Curve Balls

- PDMP not available
- Other major trauma?
- Stop BUP before surgery?
- Open fracture? (needs immediate surgery)
- Urine drug screen does not show presence of buprenorphine
- Patient on Naltrexone instead of BUP

Case 3: 26 yo male – Acute pain management

- Recommendations from American College of Surgeons (2020)
  - 2 goals for alleviating pain: reduce suffering, blunt sympathetic response
  - Use both opioid and non-opioid medications, other modalities
  - Methadone-maintenance patients continue MMT plus meds plus ALTOs. Pain control from methadone is shorter-lived, so t.i.d. dosing is recommended.
  - BUP patients will need high-dose opioids and monitoring to achieve adequate acute pain control, and should continue the BUP as well.
  - BUP patients could be switched to methadone for craving control and baseline pain relief and it plays better with morphine, fentanyl, etc.
  - Naltrexone patients should get input from a pain specialist as this is a complicated situation, hard to treat acute pain with opioids, so will need very high doses and monitoring.

- Citation: ACS TRAUMA QUALITY PROGRAMS: BEST PRACTICES GUIDELINES FOR ACUTE PAIN MANAGEMENT IN TRAUMA PATIENTS – November 2020

Case 3: 26 yo male – System Issues

- PDMP across state lines
- Practice variation in dosing of BUP (qD vs bid, total daily dosage)
- UDS available in the ED to check ongoing compliance with BUP (Do we need to know this)?
- Are specialists on board with continuing BUP in hospital?
- How to alert PCP and BUP prescribers that pt has a complication (acute painful leg injury/surgery)

Case 4: 16 yo male – Presentation

- Comes from school with school nurse. Admits to daily use of heroin by snorting powder. Not sure if there is fentanyl in what he gets, but a classmate who he partied with just OD’d and he’s scared it could happen to him.
- VS: HR 55, RR 12, T 98.6, BP 116/76 O2 Sat 99% RA
- Nursing Assessment: Mildly anxious, cooperative, no focal findings or signs of injection use
- COWS 3

Case 4: 16 yo male – Questions

- MOUD vs abstinence?
- Physical Dependence with Psych changes may occur at 3 weeks of continuous use.
- Abstinence Syndrome (OWS) can be severe with just 2-3 months of continuous use
- More history needed here: How long using? Daily? How much? Multiple substances? Alcohol? Stimulants?
- What is his mood regarding death of his friend? Is he a suicide risk right now?

Case 4: 16 yo male – Treatment options

- For short-term or infrequent users, consider abstinence plus or minus Naltrexone injection (or oral) to blunt any positive effects of taking an opioid.
- Referral to Psychotherapy, Peer Support, other supports (School, Tribal, Religious, Occupational, Artistic, Athletic, etc) in all cases.
- For moderate OUD, Buprenorphine therapy is the medication of choice to blunt cravings. Refer to a clinic with experience in MOUD.

- Citation: UpToDate Substance use disorder in adolescents: Treatment overview, May 16, 2023

Case 4: 16 yo male – Curve Balls

- Family dynamics?
- Inpatient care?
- Bridge prescription?
- 15 years old?
- How does he afford the drugs? (Property crime, trading sex for drugs, stealing from family members?
- Signs of injection use?
- Stimulant use (meth)?

Case 4: 16 yo male – System Issues

- Communication with PCP
- Availability of peer and individual counseling
- Parent/Guardian communication
- Communication with School Staff (HIPAA?)
- Inpatient or residential rehab or discharge?

Case 5: 37 yo female – Presentation

- Tribal Police bring in a patient following a low-speed MVC in the trading post parking lot. She was found unconscious in the driver's seat. EMTs gave 4 mg Naloxone by nose. Patient is now is awake, screaming, threatening to kill everyone.
- VS: Refuses
- Nursing Assessment: Agitated female, no obvious injury or bleeding. Uncooperative.

Case 5: 37 yo female – Medications

- BUP?
- Benzos?
- Ketamine?
- Neuroleptics?
- Nothing?

Case 5: 37 yo female – Medications

- Naloxone-Precipitated Opioid Withdrawal (N-POW) occurs with use of Naloxone doses sufficient to knock a certain number of Full-Agonist Opioids (morphine, fentanyl, etc) off the Mu Opioid Receptors. Beyond this threshold number, withdrawal symptoms begin.
- Buprenorphine, as a Partial Agonist with high affinity, will also knock off the FAOs and when a critical number of them are removed, the weaker agonist effect of BUP is insufficient to ward off development of POW. Consider B-POW if a COWS score **RISES BY 6** or more after initiation begins.
- The best general treatment in the ED setting is to keep giving BUP beyond 16 mg to saturate the MORs. Also, consider giving adjunctive symptom medications. Ketamine may be helpful here at low doses.
- Citation: Buprenorphine Treatment of Opioid Use Disorder for Individuals Using High-Potency Synthetic Opioids – Journal of Addiction Medicine July 28, 2023. Key Question 2.

Case 5: 37 yo female – Curve Balls

- Police decline to press charges, she's all yours
- Admits to using meth along with fentanyl
- Demands to go home right away
- 2 yo toddler in car seat when accident occurs.

Case 5: 37 yo female – System Issues

- Coordination/communication with law enforcement/legal system
- Polysubstance use disorder, with stimulant use. Is there a contingency management plan?
- Peer Counselor available?
- Child Protective Services

Case 6: 34 yo male – Presentation

- Visits ED third time this month for “migraine.” Says those traveling doctors always give him 10 mg morphine and 25 of promethazine shots and then he’ll be good to go.
- VS: Hr 80, RR 14, T 88.0 (Tymp), BP 146/84 O2 Sat 98%
- Nursing Assessment: Pleasant, well dressed, non-focal screening exam
- COWS less than 3

Case 6: 34 yo male – Medications

- The usual? (morphine?)
- BUP?
- Dispense naloxone?
- Quiet dark room available?
- Soothing music?

Case 6: 34 yo male – Curve Balls

- “Allergic” to ACAP/NSAIDs
- Is there an ability to case manage this patient?
- Non-focal neuro exam? Get a head CT?
- Says if he doesn’t get help he will kill himself

Case 6: 34 yo male – System Issues

- Providers able to do nerve block?
- Easy referral to PCP for headache workup?
- Referral to mental health for acute evaluation, chronic care?
- Should he be given Naloxone to take home?

Case 7: 2 yo female – Presentation

- Brought by EMS from remote clinic. Mother told clinic NP that the child may have ingested some “strips” that her aunt left on the sofa.
- NP called report to the ED, noting lethargy, normal color, mild hypopnea.
- EMTs report giving blow by oxygen. Mother accompanied child in ambulance.
- Tribal police escorted ambulance.
- VS: HR 90 RR 6 BP 92/56 T 98.0 (Tymp) O2 Sat 96% RA

Case 7: 2 yo female – Medications and Care

- Naloxone?
- Hospitalize?
- Separate from mother?
- Contact Child Protective Services?

Case 7: 2 yo female – Curve Balls

- Mother admits she herself is on prescribed Suboxone (BUP-NX)
- Grandmother comes to ED saying child's aunt is dealing drugs in the home
- Mother demands to take child home
- Do you suspect this was intentional?

Case 7: 2 yo female – Opioid and Overdose

- Buprenorphine exposure/overdose cases are seen in many pediatric EDs and ICUs. Treat lethargy and/or apnea with naloxone. Consult Poison Center, Pediatrician. Observe 6 hours or more.
- Fentanyl was implicated in 5194 of 13 861 (37.5%) fatal pediatric opioid poisonings between 1999 and 2021. Most deaths were among adolescents aged 15 to 19 years (89.6%) and **children aged 0 to 4 years (6.6%)**. For all ages, 43.8% of deaths occurred at home, and 87.5% were unintentional. May 8, 2023
- Citation: National Trends in Pediatric Deaths From Fentanyl, 1999-2021, *AMA Pediatr.* 2023;177(7):733-735.

Case 7: 2 yo female – System Issues

- Arranging inpatient pediatric care
- Poison Center available for consultation?
- Child Protective Services interaction
- Social Worker available?
- Stigma toward parents/family
- Transfer to higher level pediatric center

A Break to the Basket Then a Break in the Arm

Case 8: 17 yo female – Presentation

- Playing in the Winter Basketball Tournament. Fell on outstretched right (dominant) hand. Hear a crack and felt immediate pain. Coach could see a deformity and called 911.
- EMTs applied field splint.
- VS: HR 120, RR 24, BP 128/90, T 98.7 (Forehead) O2 Sat% 99 on RA
- Nursing Assessment: Distraught female, no other injuries, cooperative. Fingertips are pink.

Case 8: 17 yo female – Pain Management

- Opioids? Would you prescribe discharge opioids?
- Tylenol?
- NSAIDs?
- Anxiolytics (Benzos)?
- Local (hematoma) block?
- Attempt reduction?
- Revise splint?

Case 8: 17 yo female – Curve Balls

- Admits to smoking cannabis daily
- Admits to using her mother’s pain pills on the weekends
- Might be pregnant. Check U-Preg before x-rays per protocol
- Mother arrives in ED and demands opioid meds for her daughter

Cases 9 and 10: SUD, Homelessness, Chronic Mental Illness and Chronic Medical Illness

Case 9: 44-yo male

- 44-year-old male checks into the ED. He is accompanied by his longtime girlfriend. He says he is in need of help for problems with both drinking excess alcohol and chronic painkiller abuse. He has worked for the past 25 years in the oilfields all around the country, sending money home to support his family. But he hasn't worked for the past 6 months due to chronic back pain which he manages by buying oxycontin 30 mg tablets on the street. He also reports drinking between 6 and 12 beers a day.
- ED triage nurse notes jaundice and scleral icterus upon arrival. Patient is tremulous. Patient reports last drink was 18 hours ago. His last pill use was also 18 hours ago.

Case 9: 44-yo male

- ED provider diagnoses evidence of liver disease with total bilirubin of 5, PT INR of 1.4 and mildly elevated transaminases (AST 130, ALT 160). Medical EtOH level is 0. UDS confirms presence of opiates.
- Pt is willing to be admitted for supportive care.
- COWS score is 10.
- CIWA-Ar score is 12 (severe is ≥15).

Case 9: 44-yo male – Questions

- How accurate are COWS and CIWA-Ar when a patient has parallel withdrawal symptoms?
- Optimal treatment of alcohol withdrawal would include benzodiazepines or barbiturates. Optimal treatment of opioid withdrawal might include BUP. How can these be combined safely?
- Patient has evidence of liver disease. Is this acute hepatitis? Chronic alcoholic liver disease? Acute on chronic? Is BUP still safe to use? Should methadone be considered?

Case 9: 44-yo male – Discussion

- CYT P450 3A4 metabolizes both BUP and methadone. Impairment of this pathway either by liver disease or by competing medications can affect drug levels, so monitor carefully, consult with pharmacy and addiction specialists where possible.
- This patient will need further studies such as hepatitis screening, liver imaging and biopsy, to best understand the full nature of the liver disease.
- There is likely a mental health component to the decline in function and ability to work for this patient. Psychiatrist and social work input are needed to provide optimal care.

Case 9: 44-yo male Relevant Research

- Use of BUP and either benzo or phenobarbital in 12 patients with co-occurring AUD and OUD, in withdrawal from both, resulted in no emergency intubations or other major complications.

Citation: Treatment of opioid and alcohol withdrawal in a cohort of emergency department patients, The American Journal of Emergency Medicine, Volume 43, May 2021, Pages 17-20, Herring et. al.

Case 10: 29-yo male

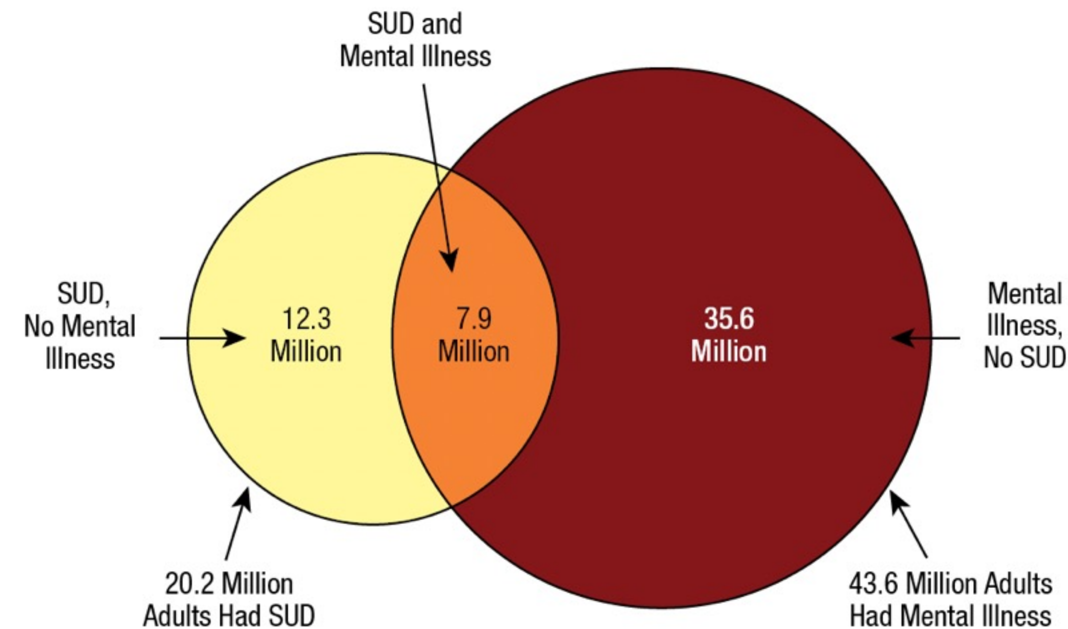
- Tribal police are called to the Lutheran Church downtown where a 29-yo male is acting in an agitated manner, interrupting the Saturday evening service and screaming that there are devils in his head. He is carefully restrained and then brought to the ED for evaluation.
- He is well-known to the ED staff, with prior diagnoses of bipolar disorder, OUD, Hepatitis C and HIV. He stopped going to the Mental Health Clinic about 4 weeks ago. He apparently has been living in a homeless encampment the past couple of months.
- He has been a well-known artist and designer of jewelry and fashion in the region for the past 10 years, and worked for five years in the schools as an art teacher, before quitting one year ago.

Case 10: 29-yo male – Questions

- What is the priority in the care of this patient? Can neuroleptics and/or benzodiazepines be safely used?
- Can the PDMP and Mental Health Clinic records be consulted to see when he was last prescribed MOUD?
- Would a urine drug test be helpful in understanding the etiology of his decompensation?
- Could newer stimulants like Xylazine have a role in causing his behavior? Methamphetamine (phenyl-2-propanone—P2P)?

Case 10: 29-yo male –Discussion

- The co-occurrence of mental illness and substance use disorders is well described.



SAMHSA, 2017

Case 10: 29-yo male – Discussion

- Generally speaking, stabilization of the mental illness enables better control of the substance-use disorder, and vice-versa.
- Availability of prior medical records should be enabled to guide ongoing treatment.
- A Team approach with medical, addiction, psychiatric and social work expertise offers this patient the best chance at recovering stability of his functioning.
- Use of BUP or methadone will need monitoring of the effective dose, given the prescribing of his HIV medications may affect liver metabolism of MOUD. (CYP P450 3A4)