Hospital management of Opioid use Disorder

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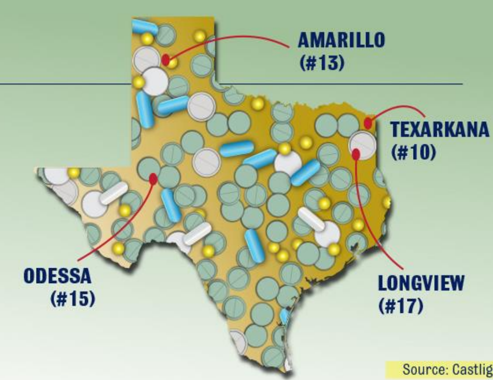
About Heroin

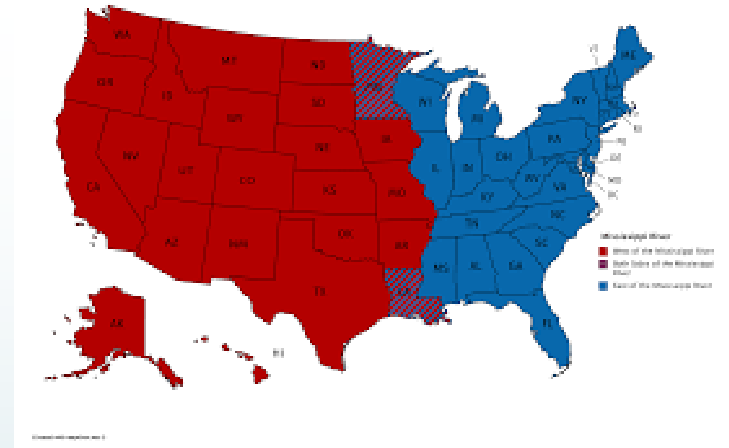
- There are three main routes of administration of heroin:
  - Inhaling (or "*snorting*"),
  - Smoking ("*chasing the dragon*"),
  - Injecting.
- Studies comparing inhalers, smokers, and injectors have found that
  - Injectors are more likely to be male, older, started heroin use earlier, have higher daily doses, possess more extensive histories of use of other drugs, test seropositive for HIV and hepatitis B and C, and have higher levels of dependency.
  - A study of 408 heroin users in the U.K. found that more than a third of the sample had changed their predominant route of administration, with the most common transition being from snorting to injecting.

Opioid Epidemic



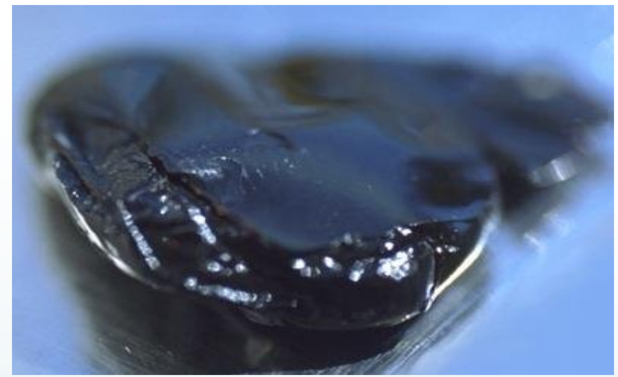
- A study in Texas between 1997 and 2001,
  - **Injectors** were more likely to be younger at first use of heroin, to have entered treatment later, to have lower annual incomes, to have more treatment episodes, and to be caucasian.
  - **Inhalers** were more likely to be older at first use of heroin, to have entered treatment sooner, to have minor children at home, to have higher annual incomes, to be first admissions to treatment, and to have a secondary drug problem with crack cocaine. They were also more likely to be Hispanic or African American.
  - 93% of the heroin admissions were injectors and 7% were inhalers; smoking heroin was rare. In comparison, in a study in the U.K., 61% were injectors, 37% were smokers, and 1% were inhalers.
  - In Dallas, heroin was sold in grams, in pills, or in pieces of tin foil. It was usually cut with Benadryl. In Fort Worth, heroin was sold as grams and pills. It was cut with mannitol.
  - South American and Asian varieties, which are powdered, are rare in Texas, and clients who had used “white” heroin had either used it when they were on the East Coast or overseas or when a friend brought some back to Texas.

Opioid use disorder



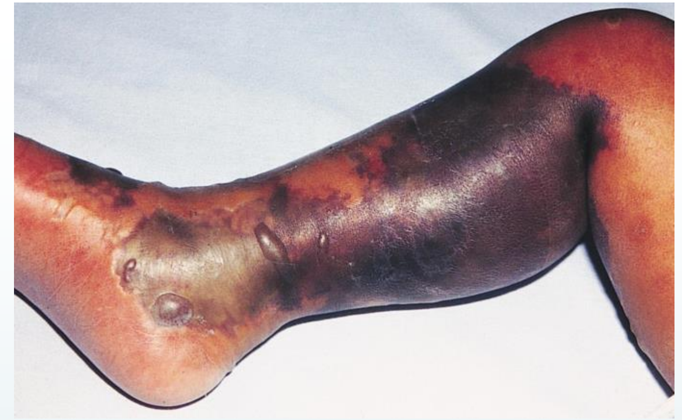
- Route of administration of heroin is influenced by the type of heroin available.
    - East of the Mississippi River, 92% of heroin samples in 2002 were South American, which is a powdered heroin with an average street-level purity of 46%.
    - West of the Mississippi, 98% of the samples in 2002 were Mexican heroin (black tar and to a lesser extent, brown powder), with an average purity of 27%

Black Tar Heroin



- Mexican black tar may be **sticky or hard like coal.**
- It may be black tar that has been turned into a brown powder by local dealers or users by adding a diluent.
- The most common route of administration of black tar is injection.
- Because of its oily, gummy consistency, special steps are required to convert the heroin into a powder that can be inhaled.
- Tar heroin can be frozen, the "cut" added, and then pulverized or ground into a powder in a coffee grinder or with mortar and pestle. It can also be dried out on a plate over the stove or under a heat lamp prior to pulverizing.
- Diluents ("*cuts*") can include Benadryl, Mannitol, Lactose, Benedryl, and Coffee creamer.

Black Tar Heroin



- **IV injection** - High risk of **Venous Sclerosis.** (the presence of 6-monoacetylcodeine in Black tar is thought to make it more toxic)
- Can lead to rapid destruction of veins and stickiness, could force people to convert to SC injection **(Skin Popping)**
- May put people at a lower risk for HIV (Due to heating involved in dissolving).
- Increased risk of life threatening bacterial infections, in particular necrotizing soft tissue infections.
- Skin popping → **Necrotizing Fasciitis** or Necrotizing Cellulitis (Clostridium perfringens) or Clostridium botulinum.

Interventions - Medications & Referral

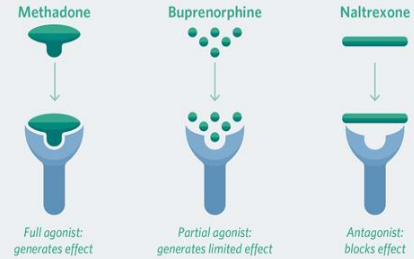
-Psychiatrist & SW

- **Opioid withdrawals / Opioid use Disorder**
  The patient will need to be on Buprenorphine induction & maintenance.
  The patient is in significant discomfort and irritable.
  The patient is unlikely to cooperate fully with the primary team and let them carry out life saving treatment unless Opioid withdrawals are reasonably managed.

- Discharged on Buprenorphine/Naloxone 8/2mg Daily x 7 Days

- **Disposition** : She will be started on Subutex with a view to start maintenance. She will be given an appointment with Parkland Addictions Clinic.

Figure 1
How OUD Medications Work in the Brain



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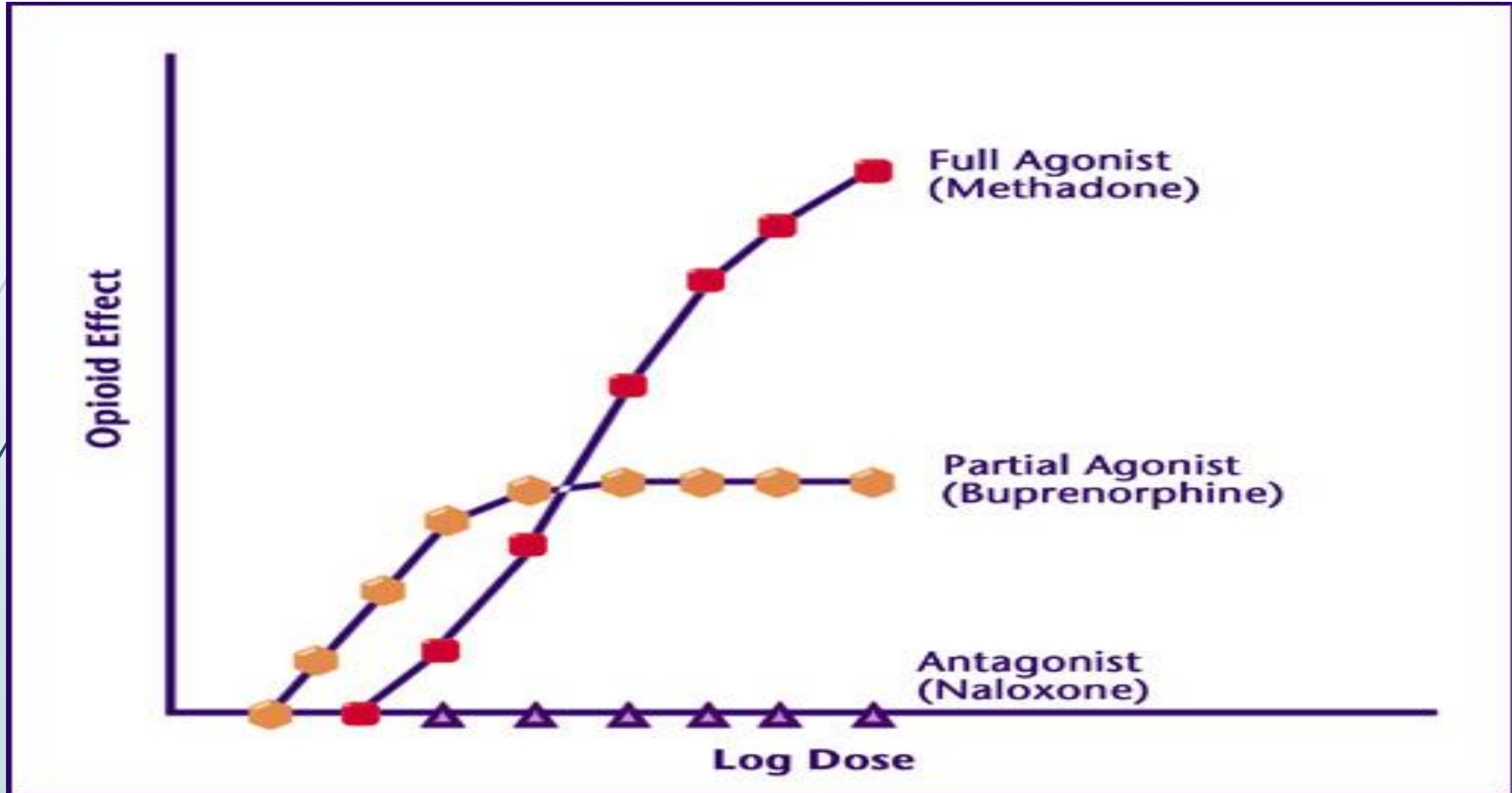
Opioid Effect @ Mu Receptor



Acute Opioid Withdrawal Management

Opioid withdrawal Management with Buprenorphine

Day of induction

Withdrawal Check

Are you currently experiencing withdrawal?

- YES
- NO
- I'M NOT SURE

- joint and bone aches
- bad chills or sweating
- anxiety or irritability
- twitching, tremors, or shaking
- goose bumps
- restlessness, inability to sit still
- heavy yawning
- enlarged pupils
- runny nose, tears in eyes
- stomach cramps, nausea, vomiting, or diarrhea

More objective

5 or more signs

No

Re eval hourly up to 3 hours

Yes

Buprenorphine 4mg x 1 followed by 4mg in 1 Hr. Then 4mg HS. 8mg Daily from the next day.

Precipitated withdrawals Appendix 5

Discharge with a script for Buprenorphine 8mg Daily x 7 doses

Acute Opioid Withdrawal Management

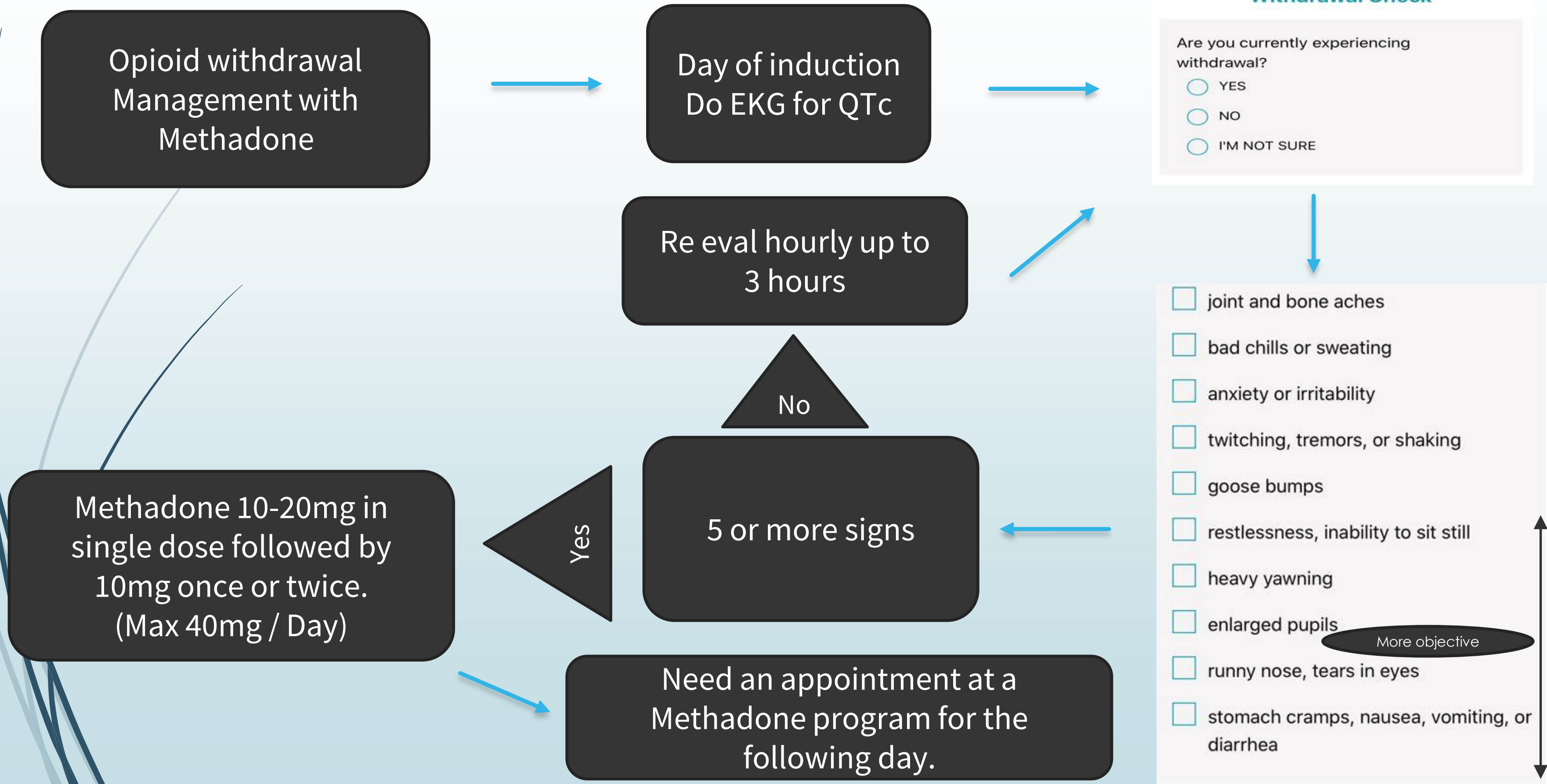
Appendix 5

Repeat Buprenorphine 2mg hourly + Adjunctive medications

Table 1. Adjunctive, Non-opioid-based Medications to Treat Withdrawal

Clonidine 0.1 mg Q4, PRN for irritability and anxiety
Hydroxyzine 50 mg Q6, PRN for anxiety
Diazepam 10 mg PO for sleep (once)
Ondansetron 4 mg Q6, PRN for nausea and vomiting
Acetaminophen and ketorolac, PRN for pain management (avoid opioids)
Dicyclomine 10 mg Q6, PRN for cramping
Loperamide, PRN for loose stool
i.v. fluids, PRN for hydration

Acute Opioid Withdrawal Management



References

1. Ciccarone D, Bourgois P (2003). "Explaining the geographical variation of HIV among injection drug users in the United States". *Substance Use & Misuse*. **38** (14): 2049–2063.
2. Passaro DJ, Werner SB, McGee J, Mac Kenzie WR, Vugia DJ (March 1998). "Wound botulism associated with black tar heroin among injecting drug users". *JAMA*. **279** (11): 859–63.
3. Transitions in patterns of heroin administration: a study of heroin chasers and heroin injectors.*Griffiths P, Gossop M, Powis B, Strang J, Addiction. 1994 Mar; 89(3):301-9.*
4. Potential risk factors for the transition to injecting among non-injecting heroin users: a comparison of former injectors and never injectors. *Neaigus A, Miller M, Friedman SR, Hagen DL, Sifaneck SJ, Ildefonso G, des Jarlais DC, Addiction. 2001 Jun; 96(6):847-60.*
5. Drug Enforcement Administration . 2002 Domestic Monitor Program. U. S. Department of Justice; Washington DC: 2003. DEA-03057.
6. An Exploratory Study of Inhalers and Injectors Who Used Black Tar Heroin -Jane Carlisle Maxwell, Richard T. Spence, J Maint Addict. 2006 Jan 1; 3(1): 61–82.