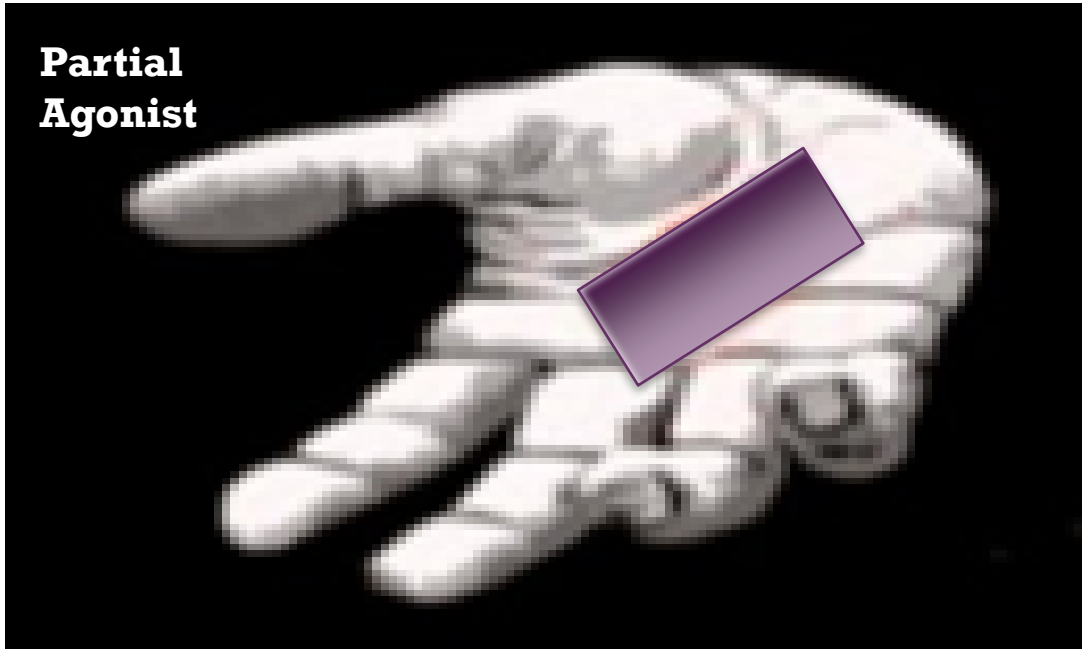
Buprenorphine…
in Partially Agonizing Detail

Frances Southwick, DO

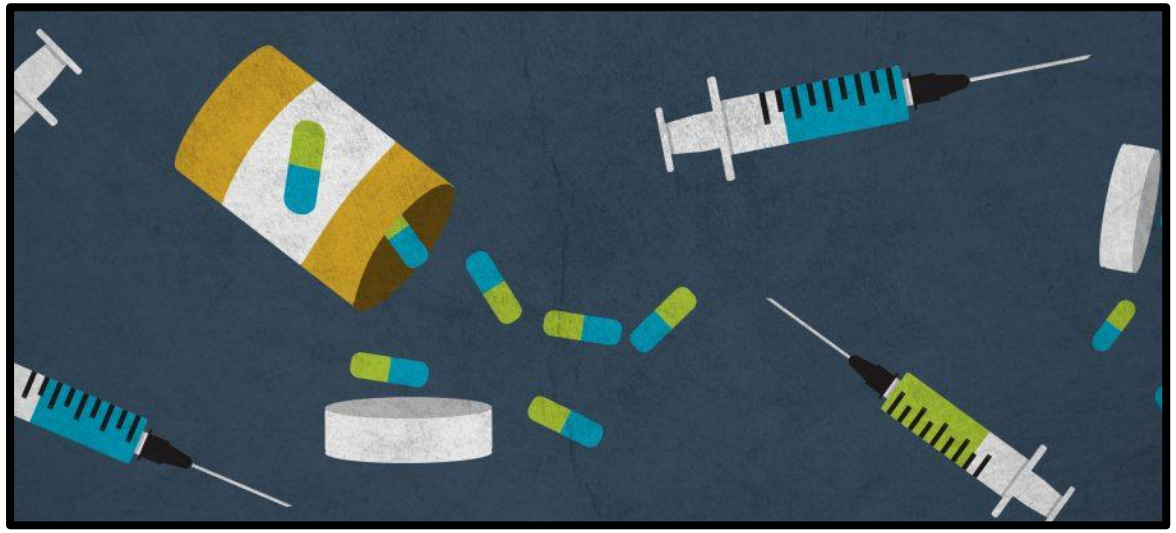

Antagonist
Agonist


Partial
Agonist

“…..why oh why didn’t I take the blue pill?”

Uses for buprenorphine

Opioid Use Disorder
Topic for today!



Chronic Pain
NOT topic for today!

Special thanks to Martin Leamon, MD for this slide (team sport…)

“I got my life back.”

- Buprenorphine is **greater than twice as effective** at opioid free days than referral alone
- JAMA 2015: Emergency Department-Initiated Buprenorphine/Naloxone treatment for Opioid Dependence
  - At **day 30** of the study:
    - 89/114 Bup patient engaged in treatment (78%)
    - 38/102 referral group (37%)
    - 50/111 in brief intervention (45%)

Preliminary Sneak Peak Data

2019 Retrospective Chart Review of CA Central Valley Outpatient MAT Program, Hub/Spoke Model

- n = 65 patients
- 55 patients included in study; 10 were never induced.
- Positive outcome: retention, successful taper, successful discharge/transfer

*At **13 months** post induction day:*

47% (8/17) of pts started on naltrexone w/ positive outcomes

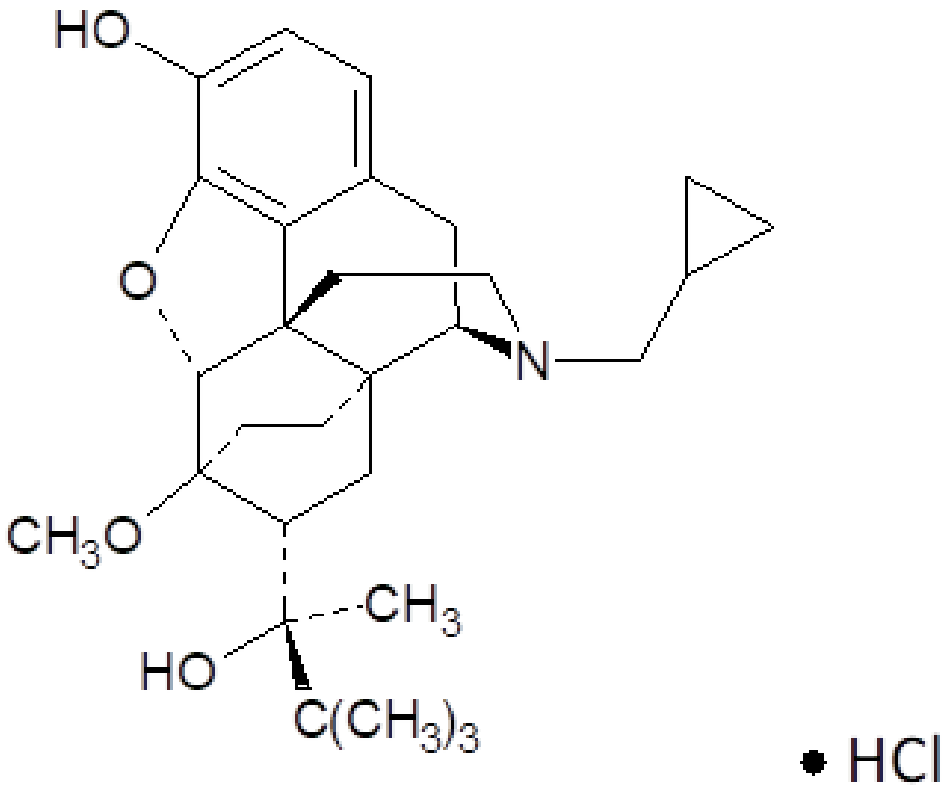
55%** (21/38) of pts induced on **buprenorphine w/ positive outcomes

Of those 29 w/ positive outcomes, 28 showed last UDS neg opioids

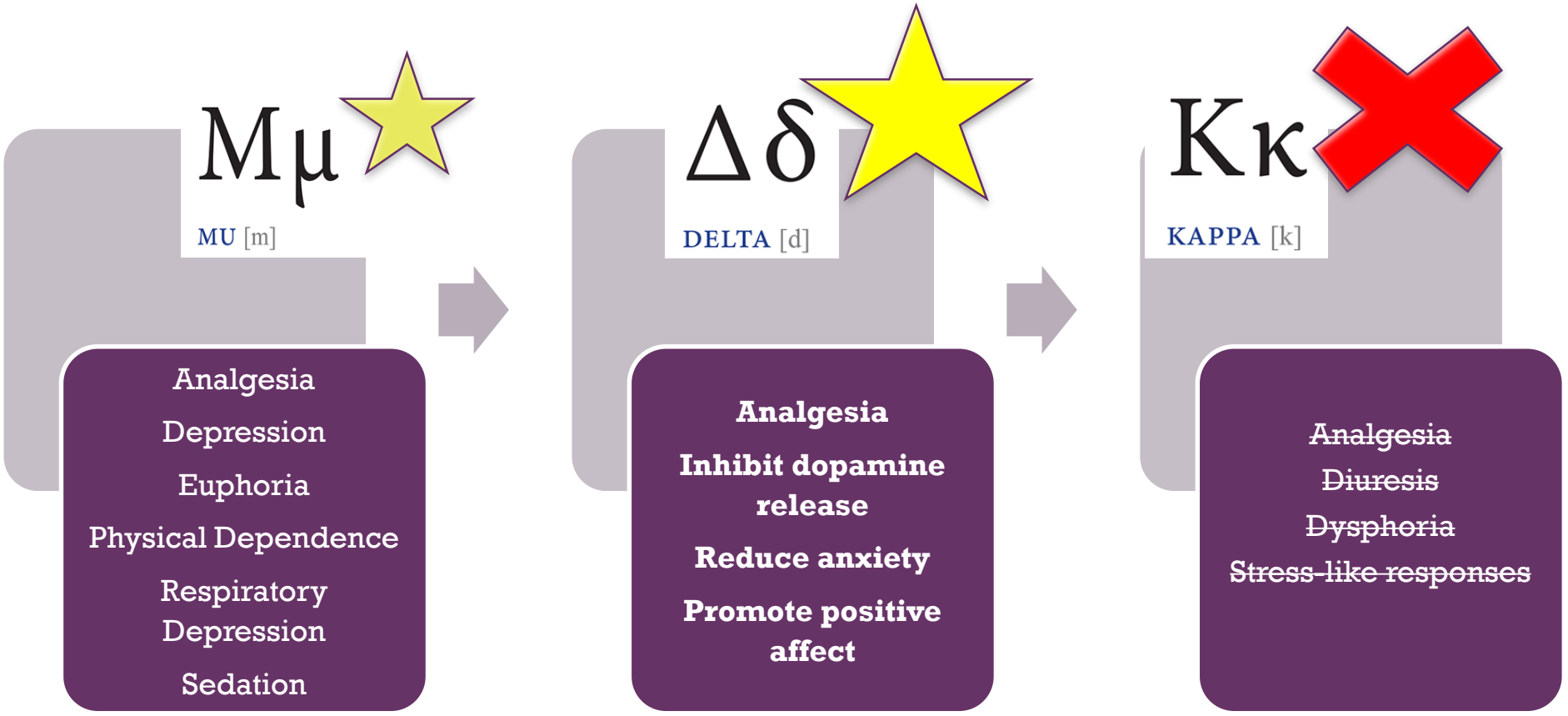
- 1 death, coroner report: not substance related, was one of 10 never induced.

Buprenorphine Basics

- Buprenorphine is a mixed agonist/antagonist opioid.
- μ (mu) partial agonist
- Δ (delta) agonist
- K (kappa) antagonist
- High affinity to μ receptor



Opioid Receptor Clinical Effects



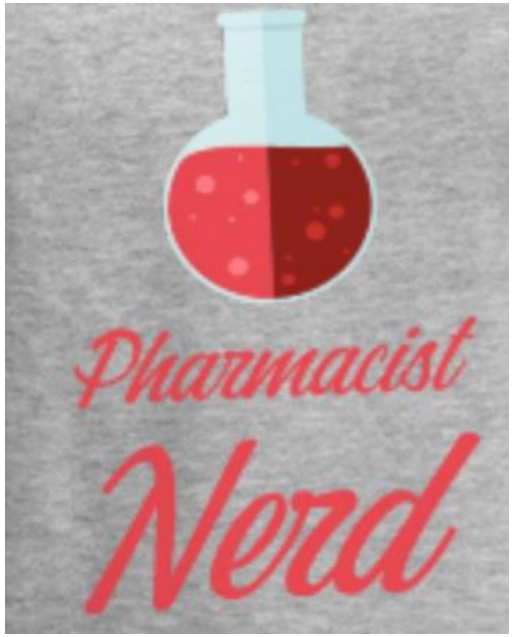
PARTIAL AGONIST

AGONIST

ANTAGONIST

PK Q&A

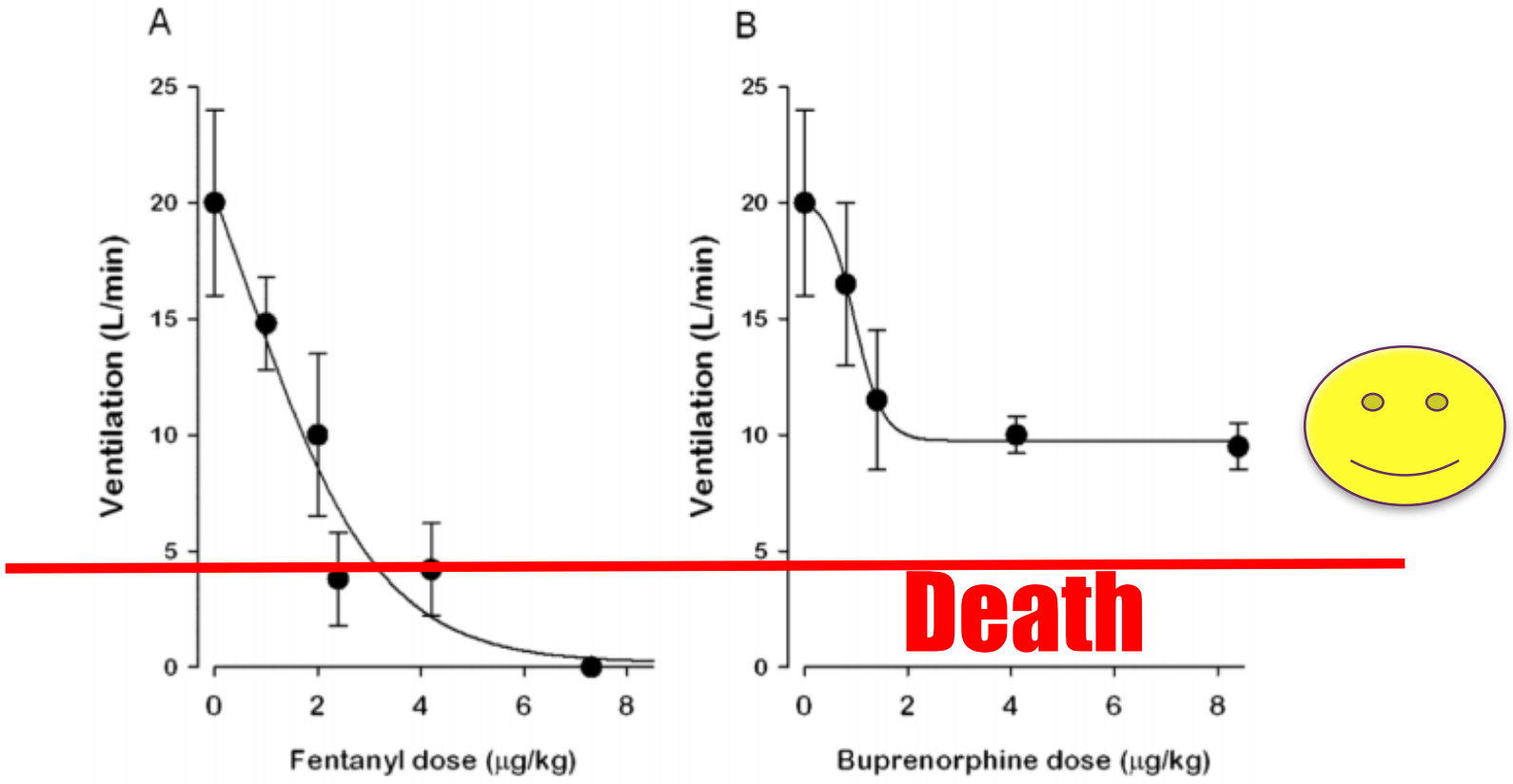
- SL onset? 15 min
- $t_{1/2}$? 20 - 72 hours
- Bioavail? 13 – 30% SL. Low po.
- Ceiling effect?
  - 16mg: 85-92% receptors occupied
  - 32mg: 85-98% receptors occupied
  - Low risk overdose
  - Low risk of respiratory depression (DEATH)



Ceiling Effect

Buprenorphine induces ceiling in respiratory depression but not in analgesia

A. Dahan[1]*, A. Yassen[2], R. Romberg[1], E. Sarton[1], L. Teppema[1], E. Olofsen[1] and M. Danhof[2]



Bup Induction: Methadone vs Heroin

- Both are full agonists
- Methadone: LONG HALF LIFE. Dose reduce to 30-40 mg and abstain for 3 to 7 days
- Heroin: SHORT HALF LIFE. Base timing on COWS or evidence of active withdrawal (6-30 hours)

Fun caveats / FAQs

- Naloxone in bup/nalox reduces risk of IV misuse/OD
- BID dosing not uncommon
- In practice, patients successfully cut and SL administer films
- Mouth must be moistened
- Films dissolve rapidly
- Tabs are inexpensive
- Pharmacies typically carry 8 mg films. They come 30/box. Law vague – 'splitting' boxes
- Movement AWAY from needing labs to induce (ie: LFTs)
- Confirm birth control method, presence/absence of pregnancy

Bup in Pregnancy

- Viable option
  - Simple when continuing
  - Nuanced when inducing
- +/- naloxone
- Mixed data but likely shorter duration of NAS than methadone
- May need higher dosing during pregnancy than pre-pregnancy
- MANY caveats and considerations in psychosocial/biomedical/legal domains
- Expert consultation recommended

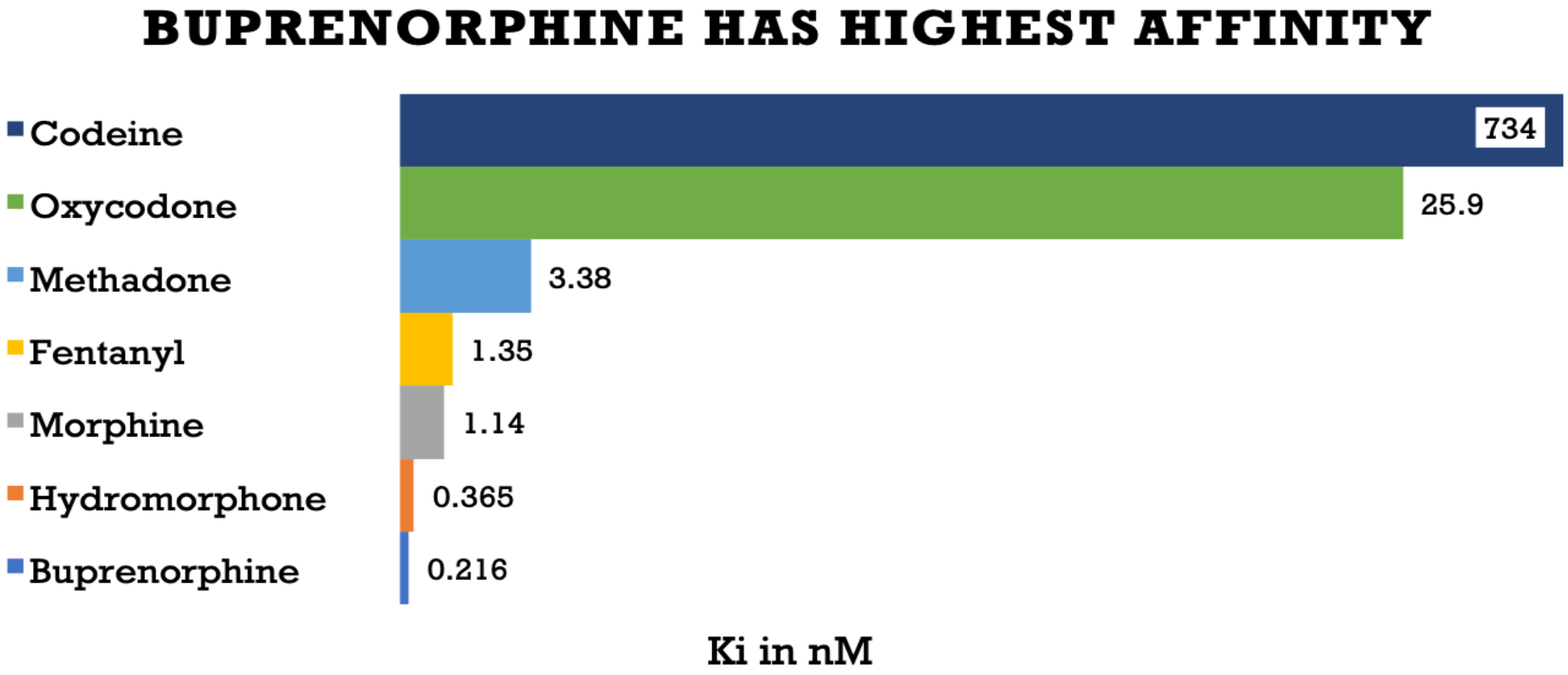
Breastfeeding

Yes.

Perioperative Management

- CONTINUE. Continue. Continue.
- Divide q8h
- Utilize our experienced pain management providers
- Utilize local & regional analgesia, NSAIDs, APAP, etc.
- Opioids that can out compete buprenorphine μ receptor affinity: fentanyl, hydromorphone
  - Oxycodone - must use higher doses

Comparison: μ receptor affinity



Know when to ask an expert

- Questioning validation of a dose
  - Unclear indication
  - Cumulative dose >32 mg in 24 hr
  - Opioid use in last 24 hr
- Pregnancy
- Methadone
- Perioperative pain control
- If a patient is getting sicker
- If you are stuck

Make a clear follow up plan.

Contact Information

- Frances Southwick, DO
  francess@communicarehc.org

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