

## 1. The Morphine Opioid Problem

- 1.6 Million People with an opioid use disorder in 2019\*
- 10.1 Million People with extra-medical use in 2019\*
- 80% Percentage of people who developed opioid use disorder following extra-medical opioid use\*\*
- 42% - 71% Percentage of opioid pills prescribed post-surgery that went unused\*\*\*

\*hhs.gov/opioids, \*\*NIH, https://www.drugabuse.gov, \*\*\*Bicket, JAMA, 2019

## 2. Clinical Burden of Opioid Prescribing

- Regulatory paperwork to prescribe take-home opioids to patients
- Prescribing pain medication for outpatient use is risky and not a billable service
- Patient requests for more opioid medication are uncomfortable and time consuming
- Managing patient pain has become an ethical dilemma

## 3. Solution: Long-Acting Injectable Implants

- An injectable sustained-release buprenorphine product delivered in the clinic
- 2 – 3 days of safe and effective pain relief
- Balancing powerful pain management with responsible prescribing
- Eliminates extramedical use, reduces diversion, overdose, and accidental pediatric exposure



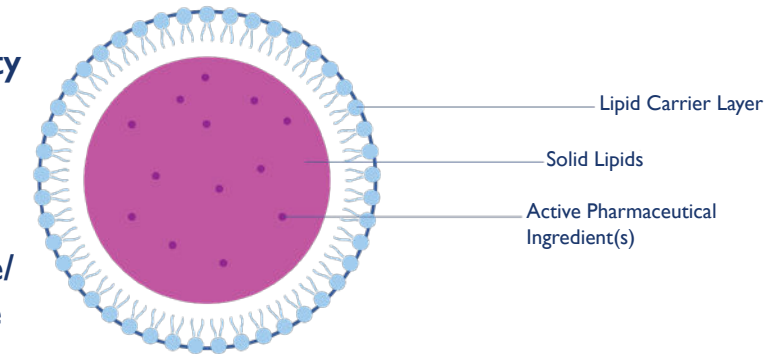
## 4. Competitive Analysis

Value	Long-Acting Buprenorphine	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Codeine	Tramadol	Ibuprofen	Acetaminophen
Analgesic Potency*	●	●	●	●	●	●	●	●	●
Risk Mitigation	●	●	●	●	●	●	●	●	●
Safety Profile	●	●	●	●	●	●	●	●	●
Revenue Generating	●	●	●	●	●	●	●	●	●
Duration/ Dose	● (48 - 72 hrs)	● (3 - 4 hrs)	● (4 - 6 hrs)	● (3 - 6 hrs)	● (3 - 4 hrs)	● (4 - 6 hrs)	● (6 hrs)	● (4 - 6 hrs)	● (4 - 6 hrs)

\*Based on oral morphine equivalents ● = Good ● = Average ● = Poor

## 5. Hunterian Neutral Lipid Carrier System

- Controlled release
- Longer stability
- High Drug Loading
- Biocompatible/ Biodegradable
- No toxicity
- Ease of scalability

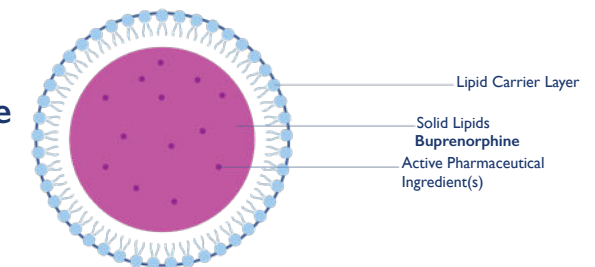


## 6. Buprenorphine

- A 40-year history of safety with only one morbidity associated with the singular use of buprenorphine
- Has 30 x greater analgesic potency than morphine
- Has a better safety profile than other analgesics including acetaminophen and NSAIDs
- Is less reinforcing than other prescription opioids such as oxycodone



Hunterian Neutral Lipid Carrier + Buprenorphine = PBD-2021



## 7. Conclusions

- Buprenorphine is a safe, effective alternative to morphine analgesia.
- Long-Acting buprenorphine implants reduce the burden of opiate prescribing.