



# Targeting Novel Approaches to Treatment

Michelle Lofwall, MD



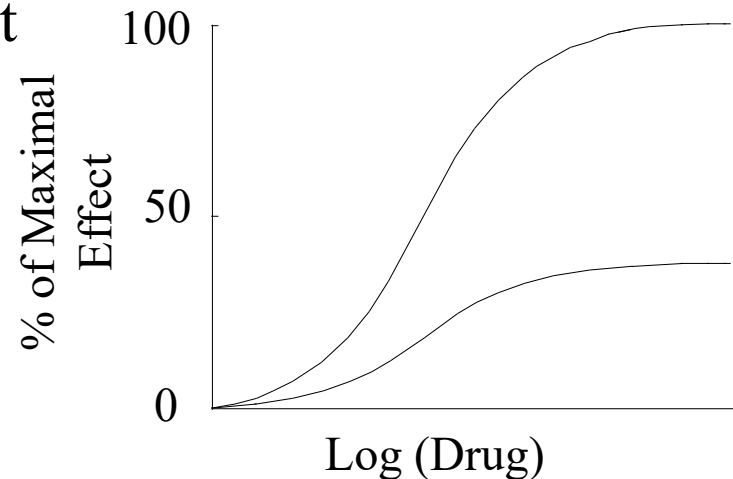
# Background

- **Only 20% of persons with opioid use disorder (OUD) receive specialty addiction treatment**
- **Among those, only 37% receive FDA-approved medication for OUD**
- **There are many reasons for low treatment uptake, BUT it is not because our treatments are ineffective**
  - Treatment decreases illicit opioid use, infection, crime, and death
  - What's holding us back? Stigma, discrimination, and concerns about diversion limit uptake
  - Diversion: unauthorized rerouting or misappropriation of medication to someone other than the person for whom it was intended



# Buprenorphine Basics

- **Most commonly prescribed OUD treatment**
- **Sublingual (under the tongue) tablets/films or buccal (cheek) films most often prescribed as daily medication**
- **Partial mu-opioid agonist FDA approved in 2002 for OUD treatment**
  - High affinity and binds tightly to receptor
  - Not as strong as a full agonist
  - Long half-life





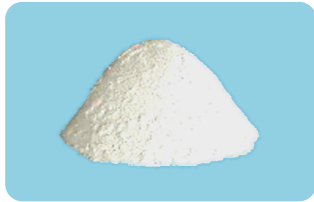
# Buprenorphine: Why It Works

- **Therapeutic efficacy is provided because it:**
  - Relieves opioid withdrawal that often drives use
  - Decreases craving for opioids
  - Provides opioid blockade (of euphoria and respiratory depression). The blockade makes it a waste of money and time to use, so we see less illicit opioid use over time
- **Overall, it gives people a fighting chance to make other important changes in their lives, so they can enter into and maintain remission and work a recovery program...**
- **But this requires access and adherence to medication**



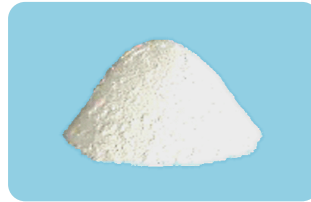
# Probuphine®: Solid Matrix Subdermal Implant FDA-approved May 2016

**EVA polymer**

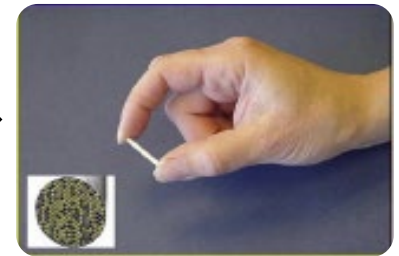


+

**Buprenorphine**



**Blended  
&  
Extruded**



**26 mm long,  
2.5 mm diameter,  
80 mg buprenorphine/rod**

Four rods provide sustained release of buprenorphine for up to six months. Intended for clinically stable patients already on 8 mg SL daily.



# Probuphine Results

- **177 randomized; 166 completed (93.8% retention = WOW!!!)**

Responder rate	Implant	Sublingual tablets	P value
<b>Primary Analysis</b>			
- 4 of 6 months without illicit opioid use	81/84 (96.4%)	78/89 (87.6%)	<0.001
<b>Secondary Analysis</b>			
- 6 months of illicit opioid abstinence	72/84 (85.7%)	64/89 (71.9%)	0.03

- **Less need for tablets = less opportunity for non-adherence, misuse and diversion**



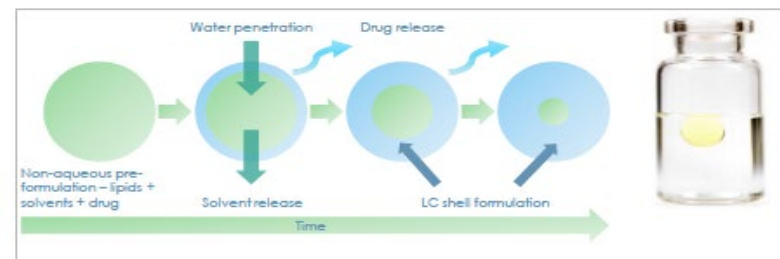
# CAM2038: Subcutaneous Buprenorphine

## Overview

- FluidCrystal® nano-technology
- Weekly and monthly injections
- Multiple doses
- Room temperature
- Small volume, thin needle

## Advantages

- Steady and sustained blood levels
- Less concern about misuse and diversion
- Improved adherence





# CAM2038 Study Results

- **Phase 2 and 3 studies successful**
  - Quickly alleviated opioid withdrawal
  - Suppressed craving for opioids
  - Blocked effects of illicit opioids
  - Reduced illicit opioid use
- **Potential utility to further increase access to treatment for several reasons:**
  - Attractive to providers
  - Attractive to new settings (ex: justice, emergency rooms, and hospitals)
  - Attractive to payors
  - Attractive to patients





# Summary

- We have many opportunities for novel treatment development.
- The opioid epidemic started here in Appalachia.
- It is very appropriate that UK scientists and clinicians are leading the way to improve the treatment of this devastating disorder.