

# Implementing Depot Buprenorphine in NSW Correctional Setting

Dr Jillian Roberts  
MBBS Grad. Dip. A&D.St FACHAM. FFCFM(RCPA)  
Clinical Director Drug and Alcohol JHFMHN  
August 22 Correctional Mental Health Care Conference



Justice Health and  
Forensic Mental Health Network

# Disclosure and Disclaimer

---

I do not have any relevant financial relationships with any commercial interests

UNLOC-T Research funded by NSW Government Ministry of Health with Camurus providing CAM 2038 (Buvidal)

- **This informational presentation was developed by independent experts. The information provided in this presentation is not the official position or recommendation of NCCHC but rather expert opinion. This information is not intended to be appropriate for every clinical situation nor does it replace clinical judgment.**
- **NCCHC does not endorse or recommend any products or services mentioned**

# Educational Objectives

---

**Objective 1** Understand the prevalence of substance use in incarcerated populations

**Objective 2** Understand the evidence for Opioid Agonist Treatment

**Objective 3** Develop Clinical understanding of role of Depot Buprenorphine as Treatment for Opioid Use Disorder

# D&A Services

---

- Management of Drug and Alcohol Withdrawal (often complex/severe)
- Opioid Agonist Treatment (OAT)
- Substance Use Pregnancy (Multidisciplinary Team)
- Brief Interventions/relapse prevention
- Post release support programs – Connections
- Post release Naloxone
- Multidisciplinary Multispecialty Care for patients complex mental health/primary health/hepatitis C comorbidities
- Court Diversion Programs-Drug Court ProgramDrug Courts: Attempt to address underlying drug dependence which has resulted criminal offending and provide long term solutions cycle drug use & crime
- Health component in CSNSW D&A programs eg Compulsory Drug Treatment Program, Intensive Drug and Alcohol Treatment Program

# The Patients-Substance Use

*(2015 Network Patient Health Survey)*

---

- Alcohol: 69% hazardous levels (AUDIT)
- Illicit Drugs: 84%
- Daily Use Illicit Drugs in 12 months prior: 44%  
(Methamphetamine 63%, Cannabis 57%, Heroin 44%, benzodiazepines 35%)
- Ever injected drugs: 43%
- Ever injected in prison: 17%
- Over 60% report being under the influence of drugs or alcohol at the time of offending for current incarceration
- 63% received diagnosis mental illness at some stage life
- 23% PWID (People who inject drugs) reported h/o overdose

# Opioid / Amphetamine Type substance use in patient population

---

- During the last financial year (FY20/21), 11,251 Reception Screening Assessments (RSA) completed with 6,121 (54%) patients self reported drug use in the 4 weeks prior to incarceration

Drug Type used in the past 4 weeks before custody*	No. of patients	Percentage of patients reported drug use
Heroin	1,038	17%
Other Prescribed Opioids	127	2%
Non Prescribed Opioids	357	6%
Amphetamine Type Substance	3,624	59%

# Literature Review of OAT and Implications of Depot Buprenorphine in Custodial Settings

Finding	NHMRC/NICE level of evidence	Author
People who use opioids have an increased mortality post release from custody	Level I	Merrall 2010
OAT associated with reduced drug use in prison	Level I	Moore 2019, Hedrich 2012, Stallwitz 2007
OAT associated with reduced mortality post release	Level III-2	Marsden 2017
OAT initiated in prison associated with increased engagement post release	Level I	Moore 2019, Heidrich 2011
OAT in prison is cost-effective	Level III-3	Gisev 2015
OAT initiated on release not associated with engagement in treatment or reduced mortality	Level III-2	Pierce 2018
OAT in prison associated with reduced crime post release	Level 1	Perry 2015
OAT in prison associated with reduced deaths in prison	Level III-2	Larney 2014
Depot buprenorphine is safe in prison and not associated with diversion	Level III-2	Dunlop 2021
Depot buprenorphine is associated with higher retention post release from prison compared to sublingual buprenorphine	Level II	Lee 2021

# Challenges OAT provision Custody

---

- Time intensive daily medication administration, esp SL Buprenorphine /naloxone (BPN-NLX)
- Diversion- methadone overdose deaths, frequent SL BPN-NLX
- High levels interpersonal violence
- High levels illicit SL BPN-NLX smuggled into correctional setting
- High levels Injecting Related Injury and Disease IRID
- Pre 2020 methadone had remained first line treatment OAT NSW Custodial setting.



# Understanding NSW Long-acting Opioids in Custody- Treatment (The UNLOC-T study)

---

- **Investigators:**

Adrian Dunlop<sup>1,2</sup>, Jillian Roberts<sup>3</sup>, Nicholas Lintzeris<sup>4,5</sup>, Paul Haber<sup>4,6</sup>, Michelle Cretikos<sup>7</sup>, Judith Mackson<sup>8</sup>, Mark Howard<sup>9</sup>, Terry Murrell<sup>9</sup> John Attia<sup>2,10</sup>, Chris Oldmeadow<sup>2,10</sup>, Andrew Searles<sup>2,10</sup>, Michael Doyle<sup>4</sup>, Liz McEntyre<sup>11</sup>, Libby Brown<sup>12</sup>



- **Research & Clinical Staff**

Bethany White<sup>4,6</sup>, Dena Attalla<sup>3</sup>, Hellal Hussein<sup>3</sup>, Sobi Kim<sup>3</sup>, Monique Hourn<sup>1</sup>, Kerryn Butler<sup>4,6</sup>, Sophia Little<sup>4,6</sup>

1. Hunter New England Local Health District
2. University of Newcastle
3. Justice Forensic Mental Health Network
4. Discipline of Addiction Medicine, University of Sydney
5. Sydney South East Local Health District
6. Sydney Local Health District

7. Centre for Population Health, NSW Ministry of Health
8. Legal & Regulatory Services Branch, NSW Ministry of Health
9. Corrective Services, NSW Department of Justice
10. Hunter Medical Research Institute
11. Durri Aboriginal Corporation Medical Centre
12. Aboriginal Health Unit, Nepean Blue Mountains Local Health District

Funding: NSW Ministry of Health

- Medication: depot buprenorphine (CAM 2038 weekly/monthly): Camurus AB methadone (Department of Health Australia)

# Depot BPN as BUVIDAL®

*(formerly known as CAM2038)*

*Manufactured and distributed by Camurus*



## **Weekly and monthly** dose options

- Weekly: 8 mg, 16 mg, 24 mg, 32 mg
- Monthly: 64 mg, 96 mg, 128 mg, 160 mg



- Ready-for-use in prefilled syringe
- Small volume 0.16–0.67 ml
- SC injection by healthcare professional (not to be dispensed to patient)
- Stored at room temperature
- Injections rotated between multiple sites (buttock, abdomen, arm, thigh)

Camurus Pty Ltd. Australian product information: Buvidal weekly.

<http://www.medicines.org.au/files/capbuviw.pdf>

Camurus Pty Ltd. Australian product information: Buvidal monthly.

<http://www.medicines.org.au/files/capbuvim.pdf>

# UNLOC-T Study Objectives

---

- Primary:
  - Safety & tolerability of depot buprenorphine in custodial settings
  - Assess diversion and non-medical use of depot buprenorphine
  - Costs of depot buprenorphine (compared to standard care)
- Secondary
  - Retention in treatment, drug use (self report)
  - Patient satisfaction with treatment
  - General physical, mental health, psychosocial functioning
  - Assess staff satisfaction and acceptability

# Eligibility criteria

---

- Inclusion criteria

- Adult (male and female) prisoners ( $\geq 18$  years old)
- Sentenced in full-time custody, with **at least six months** remaining on sentence
- **Moderate to severe Opioid Use Disorder**

- Exclusion criteria

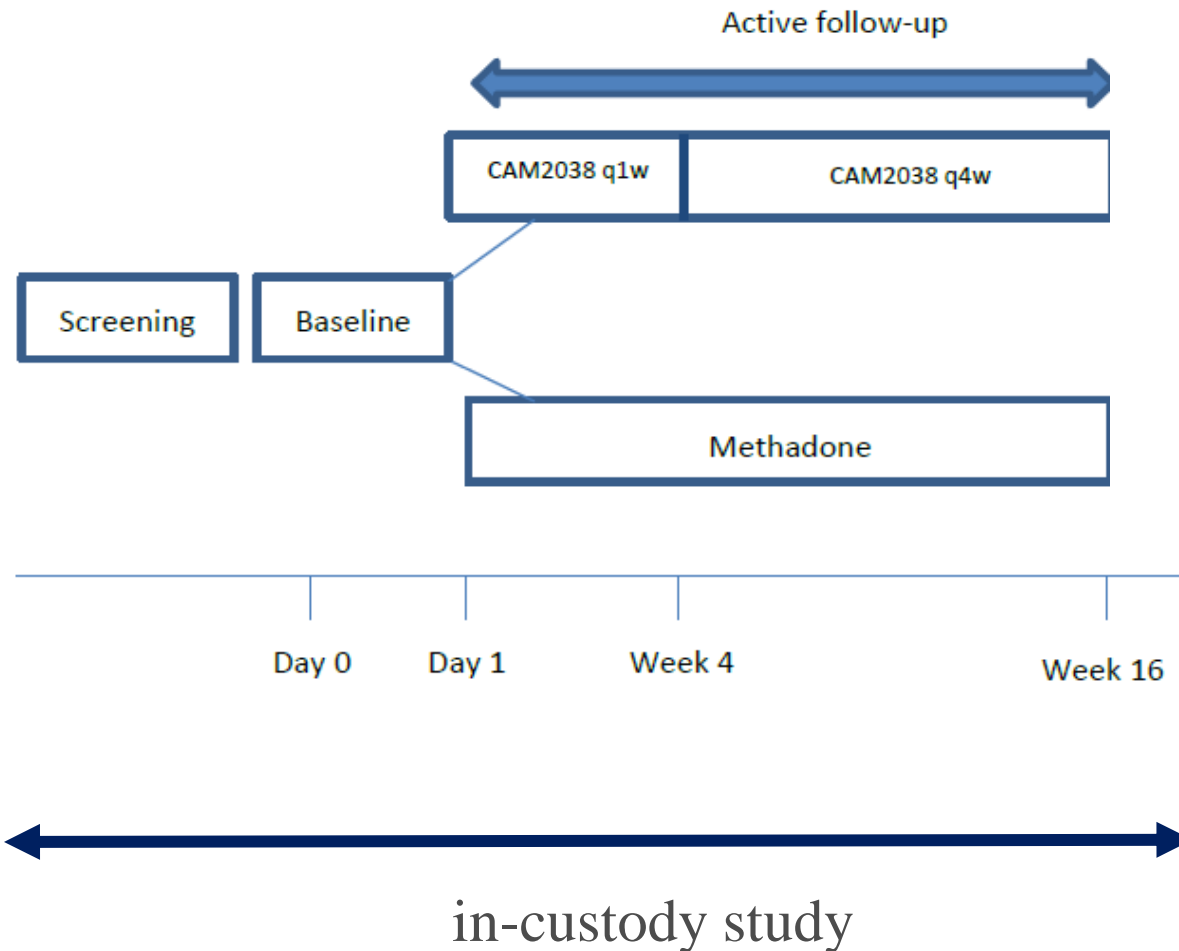
- Unstable **medical / mental health condition/suicidality**
- **Forensic mental health patient** not guilty by reason of mental illness
- Currently **breastfeeding or pregnant**
- **Enrolled in a residential or intensive treatment program** (Intensive Sex Offender Treatment Program, Compulsory Drug Treatment Program and Drug Court Program)

# Medication – flexible doses

- Methadone: standard care
  - Typically - >80 mg
- Buprenorphine
  - Suboxone (buprenorphine-naloxone SL film)
    - 4 mg day one ('test' dose) - tolerance test
  - Buvidal (depot-BPN)
    - 4 x weekly (weeks 1-4)
      - 16mg weeks 1-4, may be titrated up (24mg, 32 mg doses)
    - 3 x monthly (weeks 5-16)
      - 96 mg, may be titrated up or down (64mg, 128mg, 160mg doses)

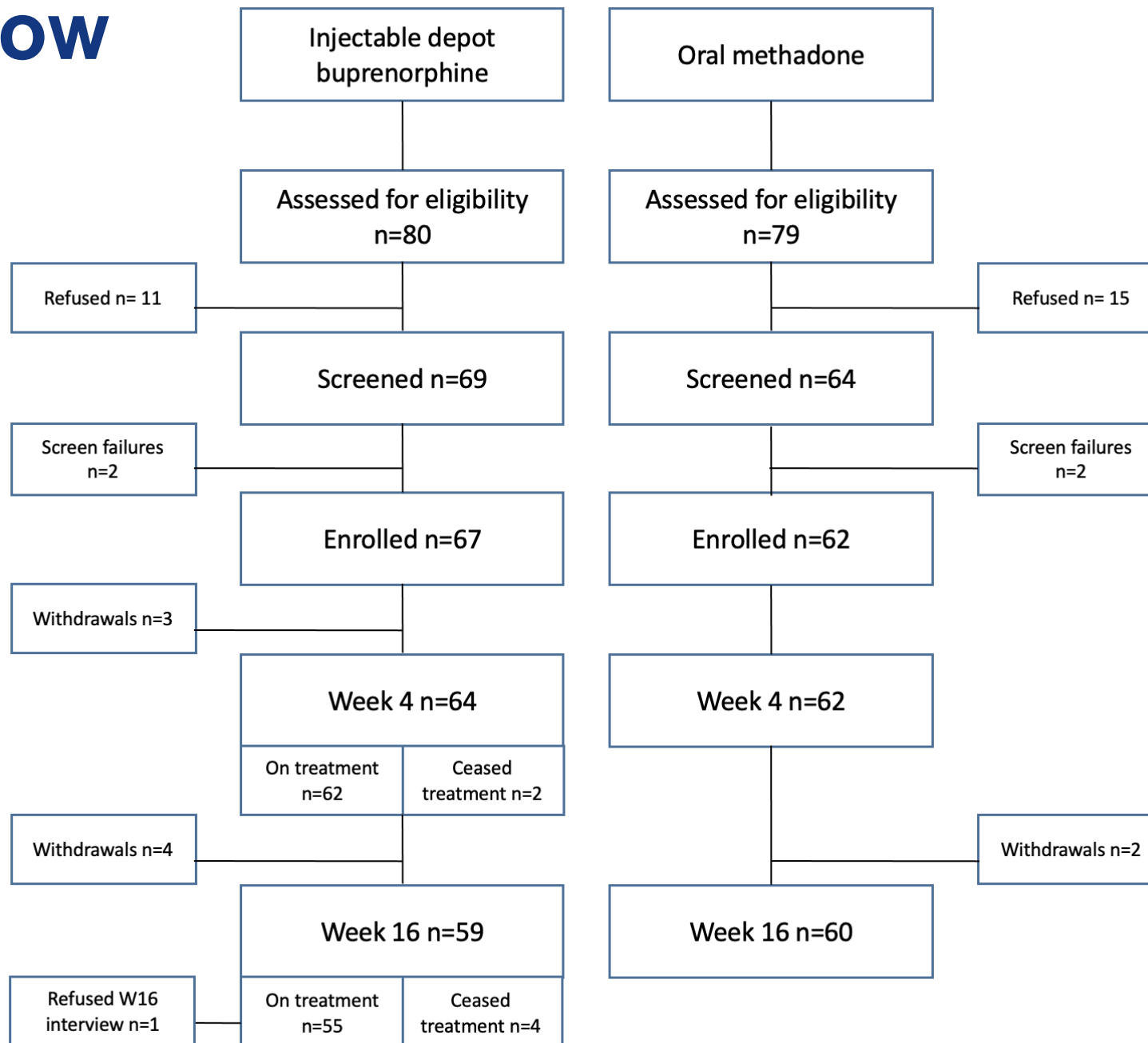


# Study design



- Two-arm, case-comparison study (non randomized)
  - Methadone: Standard care, already stable on methadone n=62
  - Depot BPN: Opioid dependent, not currently on methadone/ buprenorphine treatment n=64
- Sites:
  - 7 prisons across NSW
  - Mix of metro/rural, security levels, female & male

# Study flow chart



# Demographics baseline & clinical characteristics

Characteristic	Depot BPN n=67	Methadone n= 62	<i>p</i>
Age, years, mean (SD)	34 (7.5)	38 (8.9)	0.004
Male (%)	82%	86%	0.602
Australian born (%)	94%	94%	0.910
Aboriginal and/or Torres Strait Islander (%)	45%	34%	0.206
Did not complete high school (%)	48%	68%	0.014
BMI, kg/m2, mean (SD)	28.7 (5.6)	30.7 (7.7)	0.046



# Demographics baseline & clinical characteristics

Characteristic	Depot BPN n=67	Methadone n= 62	<i>p</i>
Anti-HCV + (%)	76%	84%	0.273
Of those anti-HCV+, HCV RNA detected (%)	31%	4%	<0.001
Previous OAT (%)	70%	97%	<0.001
Mean number previous OAT episodes (SD)	1.6 (1.9)	2.4 (1.8)	0.027
Baseline methadone dose (mg), mean (SD)	NA	92.7 (38.0)	-
Ever overdosed on opioids (%)	37%	52%	0.102
Subjective opioid withdrawal scale (SOWS), mean (SD)	3.7 (5.5)	2.8 (5.3)	0.341
Opioid craving; need-to-use VAS, mean (SD)	52.9 (32.4)	18.4 (23.0)	<0.001

## Summary of treatment related adverse events in depot BPN patients

Category	Depot BPN n= 67 (%)
≥ 1 TEAE	65 (97)
≥ 1 Drug-related TEAE	63 (94)
<ul style="list-style-type: none"> <li>• Injection site reaction (≥ 2 mild or ≥ 1 moderate injection-related AEs)</li> </ul>	14 (12)
<ul style="list-style-type: none"> <li>• Non-injection site AE</li> </ul>	56 (84)
Deaths	0
≥ 1 Serious Adverse Event	2 (3)
<ul style="list-style-type: none"> <li>• Hospital admission</li> </ul>	2 (3)
Drug-related AE leading to discontinuation	4 (6)*
Overdose	0

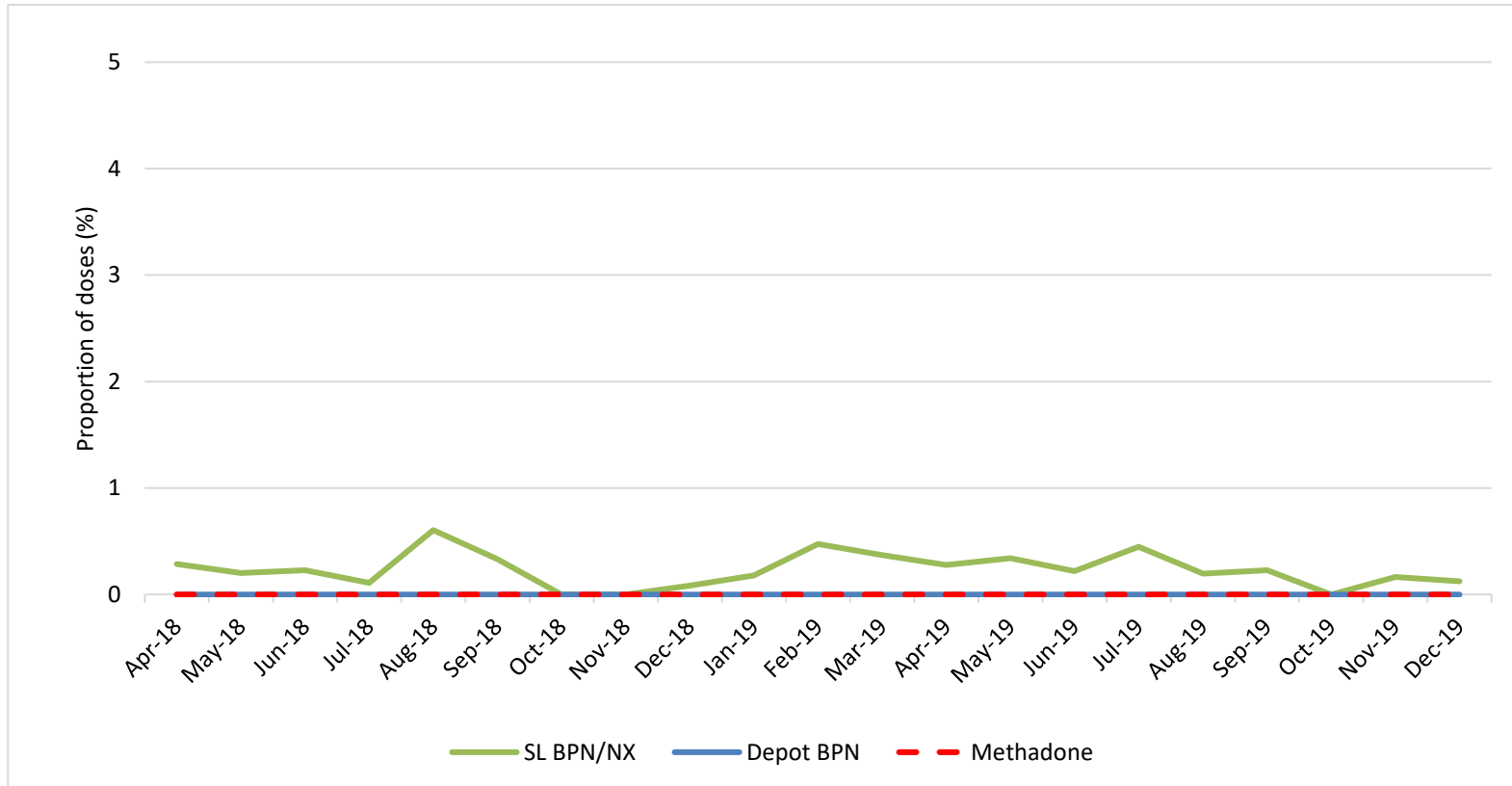
\*2 clinician-observed, 2 self-reported

## Summary of treatment related adverse events in depot BPN patients-

Drug-related TEAE in > 10 % of depot BPN participants	n= 67 (%)	Severity n = 67 (%)		
		Mild	Moderate	Severe
Injection site pain	34 (51)*	35 (52)	1 (2)	0
Constipation	34 (51)*	26 (39)	9 (13)	0
Injection site swelling*	23 (34)	22 (33)	1 (2)	0
Headache	19 (28)*	16 (24)	4 (6)	0
Injection site erythema	15 (22)	15 (22)	0	0
Nausea	14 (21)	13 (19)	1 (2)	0
Vomiting	13 (19)	10 (15)	3 (4)	0
Self report sedation	10 (15)*	10 (15)	1 (2)	0
Self report urinary hesitancy	12 (18)	9 (13)	1 (2)	0
Pruritus	7 (10)	7 (10)	0	0
Rash	7 (10)	6 (9)	1 (2)	0

\*Includes induration

# Medication diversion

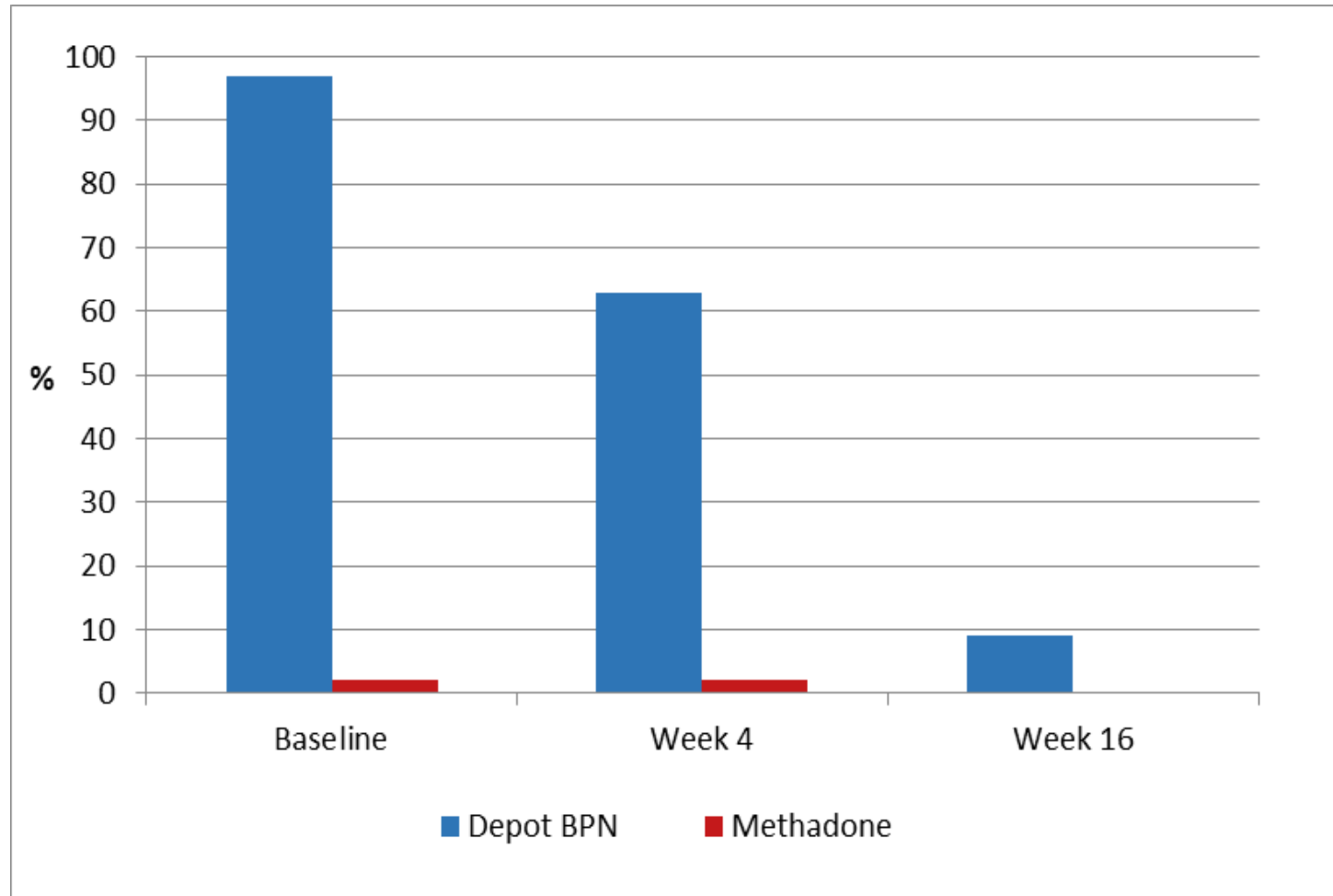


- No observed or self-reported diversion of depot BPN or methadone
- No evidence of diversion (examination of depot injection sites) of depot-BPN

Proportion of depot BPN doses, methadone and SL BPN doses diverted at UNLOC-T trial sites, JHFMHN incident data

# Prevalence of self-reported non-prescribed opioid use last 28 days- depot and methadone patients

---



# Treatment costs – \$AUD (monthly per patient)

	Depot BPN	Methadone	SBL BPN
<b>Justice Health &amp; Forensic Mental Health</b>			
Pharmacy	\$23	\$4	\$30
Inventory management	\$24	\$4	\$16
Clinic OAT administrations	\$46	\$198	\$838
Total	\$94	\$206	\$884
<b>Corrective Services NSW</b>			
Movement Supervision	\$31	\$68	\$303
Clinic Supervision	\$19	\$86	\$287
Total	\$50	\$154	\$590
<b>Total NSW Government (\$)</b>	<b>\$143</b>	<b>\$361</b>	<b>\$1,474</b>
Patients (n)	50	239	40
Administrations (n)	84	7,409	1,240
Orders to Pharmacy (n)	0	21	24
<b>Commonwealth Government</b>			
OAT supply costs per patient	<b>\$434</b>	<b>\$80</b>	<b>\$525</b>

# Preference for depot BPN vs other OAT

Preference increased overtime: from 58% (week 4) to 84% (week 16)

- *“This is the first time that I've stopped all drugs while on treatment. Previous methadone/bup treatment was not this effective.” (Patient 3, week 16)*
- *“I prefer injection- I don't have to go every day. It holds me and I'm glad I got to do it. At first I wasn't, but now I am.” (Participant 12, week 16)*
- *“It stops me from taking other drugs/using. I gave first clean urine (drug test) in 10 years.” (Participant 43, week 16)*

## Benefits - decreased stigma

- *“Even officers treat you differently when you’re on depot BPN- they're not even concerned about doing treatment- they treat you like a junky on methadone and suboxone.” (Participant 37, Week 16)*
- *“On depot BPN I don't have to stand in a line and being interrogated and scrutinised. There’s so much scrutiny with strips. It’s an invasion of my body and my privacy and personal space, because they constantly check your mouth etc. Its degrading, its shaming.” (Participant 56, week 16)*
- *“I have a new job. Management (Corrections NSW) are aware of the trial (UNLOC-T), they know that we have more stability, so they are giving us more responsibility.” (Participant 3, week 4)*



## Access to otherwise unavailable treatment

- *“I’ve still got a long period inside, but I’m not chasing. I feel proud, I’m not injecting - I didn’t inject on the outside. So it’s a big improvement, and reduced the chance of infection (blood borne viruses).” (Participant 27, week 16)*
- *“Just grateful for the experience. A chance to work on me time and not avoid it. An experience that benefitted me, changed my life. Very grateful.” (Participant 3, week 48)*

# Benefits from Depot Buprenorphine

---

- **Better therapeutic experience for patient when steady state reached**
  - Longer acting so not dosing daily
  - Can focus on other aspects of life and reduce burden of treatment
  - Better stability patients serious comorbid mental health.
- **Difficult to divert**
  - Reduced non-medical use → reduced harm including BBV
  - Less risk of violence in custody
  - Improves relationship between patient and clinic and correctional staff
- **Reduction IRID- osteomyelitis, hep C reinfection**
- **Cost effective as not resource intensive**
- **Release implications**
- **Immediate translation into Practice**

# Depot Buprenorphine Implementation

---

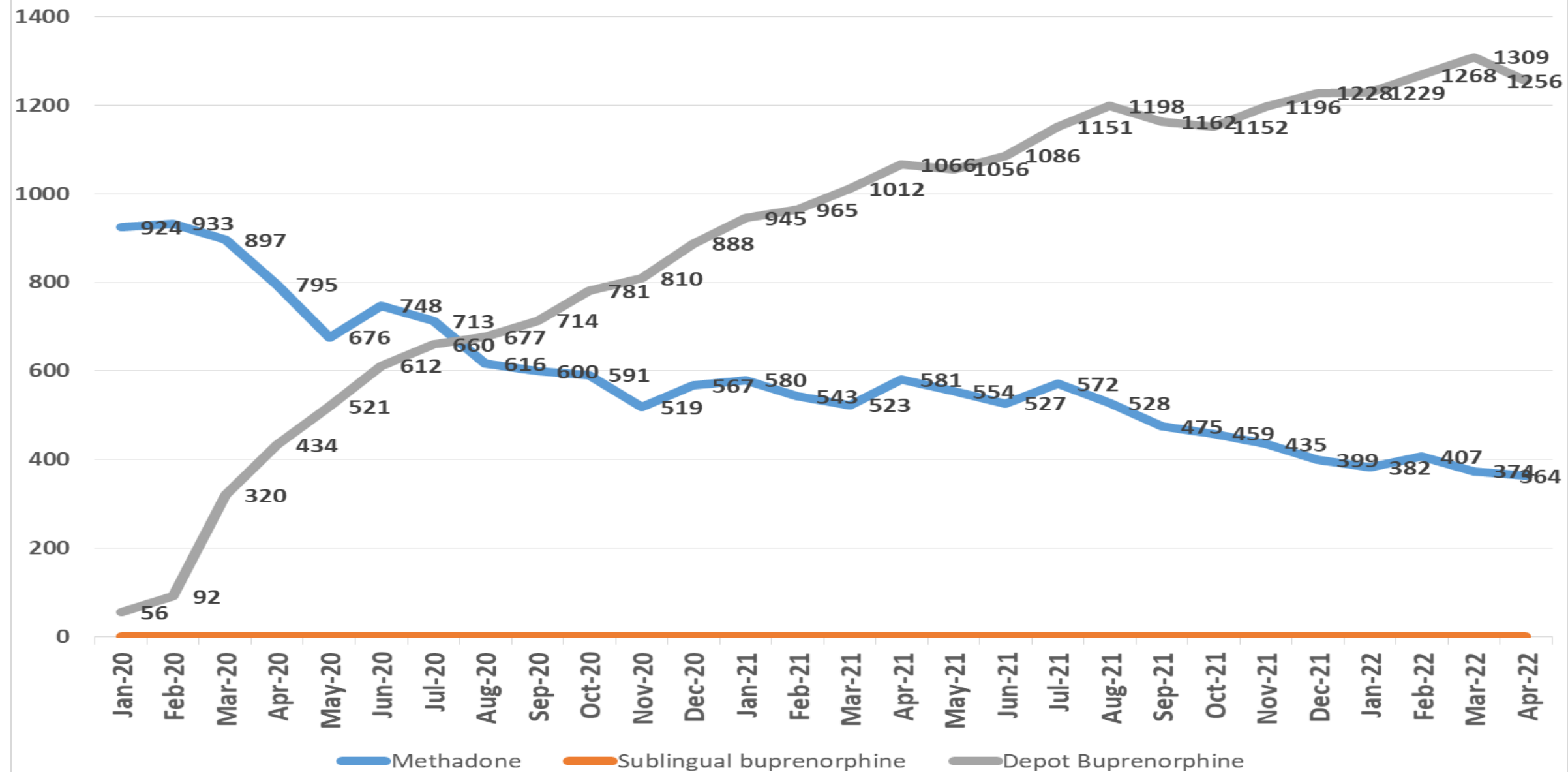
- UNLOC-T positive momentum from patients, corrective services, health staff, peer to peer
- Late 2019 preparing upscaling DBPN treatment as soon as medication registered.
- Stakeholder engagement key-managing expectations
- Operational changes-trouble shooting barriers.
- Engaging Consumer bodies-"Inside News"
- Data Managers, Pharmacists, Admin Staff all vital
- 2020 DBPN became first line treatment OAT initiations

# Implementation context of COVID-19

---

- Ceased SL BPN unless significant clinical reason
- Patients entering custody on SL BPN transferred to DBPN
- Changing levels opioid tolerance- altered induction protocol
- Cost illicit supply suboxone \$1000 for single 8mg film
- Need to maintain high standards of assessments and reviews
- MDT reviews with pharmacy/psychiatrists/primary care when DDI concerns
- Patients commenced DBPN in context sudden drop illicit drug supply remained in treatment.

## OAT Patients in JHFMHN Facilities



# Network Depot Buprenorphine data

---

- 2,492 patients not on OAT commenced on Buvidal in custody (Jan 2019 – April 2022)
- 414 Depot Buprenorphine patients transferred into custody
- 700 patients switched to Buvidal treatment in custody
- 2,292 patients released to community on Buvidal
- As of 30 April 2022 – 1,664 patients on OAT in the Network, 1256 patients on Buvidal treatment. 77% of overall OAT patients (up by 11% compared to April 2021)

# Post Release Continuity of Care

---

- **Acutely elevated mortality risk overdose and suicide**
- **Retention in Treatment protective against revolving door reincarceration**
- **Importance Release Planning and engaging community services**
  - Aim for last depot close to date of release
  - If DBPN not available release location can T/F SL BPN after release
- **Snap Shot 1/7/20-30/9/20**
- 131 patients released on DBPN
  - 97 (74%) presented first community depot
  - 5 returned to custody prior to date first community depot due and continued in custody
  - 7 transferred to SL BPN
- **83% patients continued on BPN for first month after release**

# NSW Guidelines

**Clinical Guidelines for use of Depot Buprenorphine** (brief & full) are available on the NSW Health website

Clinical guidelines for use of depot buprenorphine (Buvidal® and Sublocade®) in the treatment of opioid dependence



Brief Clinical guidelines for use of depot buprenorphine (Buvidal® and Sublocade®) in the treatment of opioid dependence

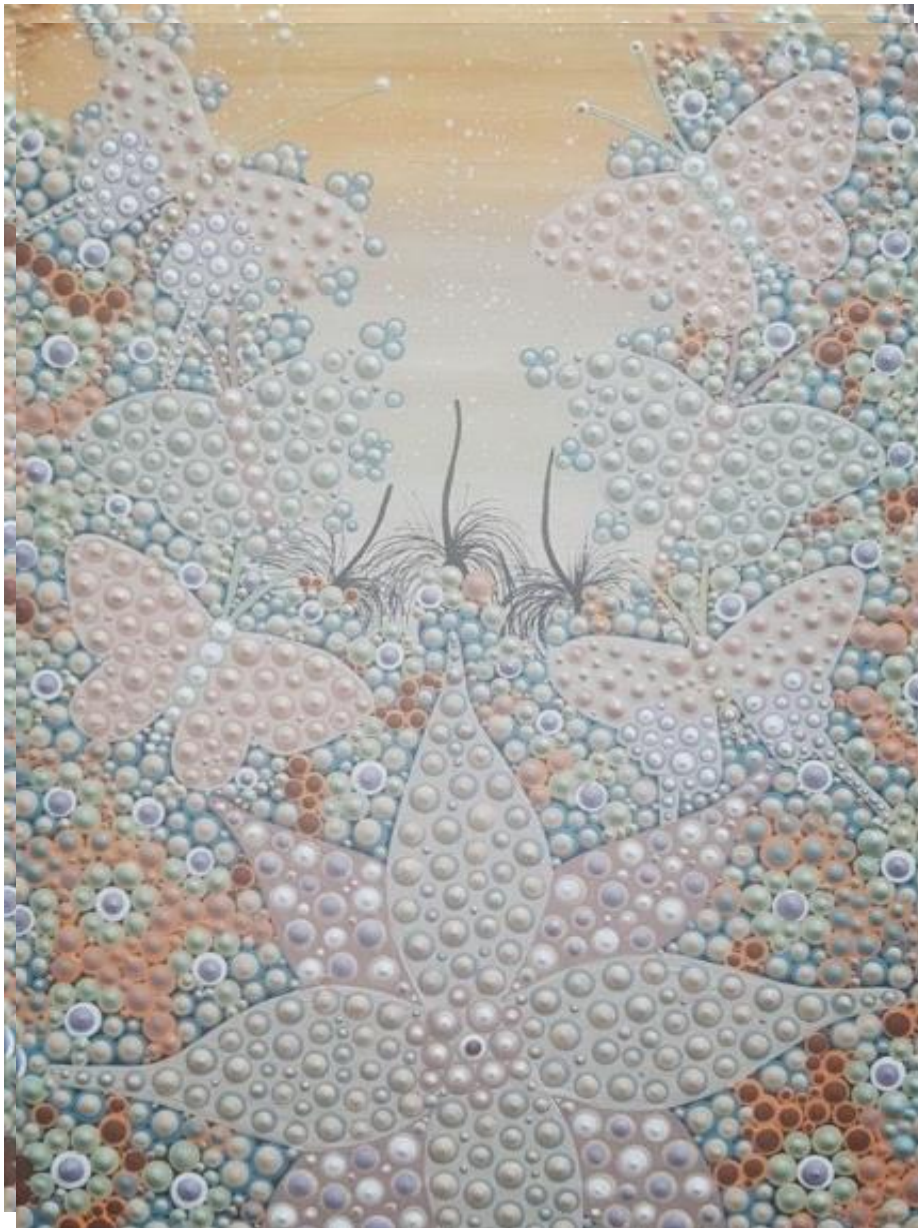
Prepared by Prof Nicholas Lintzeris, Prof Adrian Dunlop, Debbie Masters for NSW Health





# References

- Dunlop AJ, White B, Roberts J, Cretikos M, Attalla D, Ling R et al. Treatment of opioid dependence with depot buprenorphine (CAM2038) in custodial settings. *Addiction* 2021 doi 10.1111/add.15627
- Ling R, White B, Roberts J, Cretikos M, Howard MV, Haber P, Lintzeris N, Reeves P, Dunlop AJ, Searles A. Depot buprenorphine as an opioid agonist therapy in New South Wales correctional centres: A costing model. *BMC Health Services Research* (accepted with revisions)
- Roberts J, White B, Attalla D, Ward S, Dunlop AJ. Rapid Upscale of Depot Buprenorphine (CAM2038) in Custodial Settings During the early covid-19 pandemic in NSW, Australia. *Addiction* 2020 Sep 4. doi: 10.1111/add.15244.
- Lintzeris N, Dunlop A, Masters D (2019) Clinical guidelines for use of depot buprenorphine (Buvidal® and Sublocade®) in the treatment of opioid dependence. NSW Ministry of Health, Sydney Australia



Patient Artwork given to one of  
our staff specialists in appreciation  
of our services.