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# **Use of primary care based medication for opioid use disorder facilitates broader health service utilisation following release from prison**

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# Acknowledgement of Country



## Disclosure of interest statement

Professor Stoové has received investigator-initiated funding from Gilead Sciences, AbbVie and Bristol Myers Squibb for research unrelated to this work.

Professor Dietze has received investigator-driven funding from Gilead Sciences for work related to hepatitis C treatment and an untied educational grant from Indivior for work related to the introduction of buprenorphine/naloxone into Australia. He has also served as an unpaid member of an Advisory Board for an intranasal naloxone product.

# Background:

## People in Australian Prisons



- 41,060 people in Australian prisons<sup>1</sup>
- Majority male<sup>1</sup>
- Low educational attainment<sup>2</sup>
- Previous incarceration is common<sup>2</sup>
- Intergenerational incarceration<sup>2</sup>

# Background:

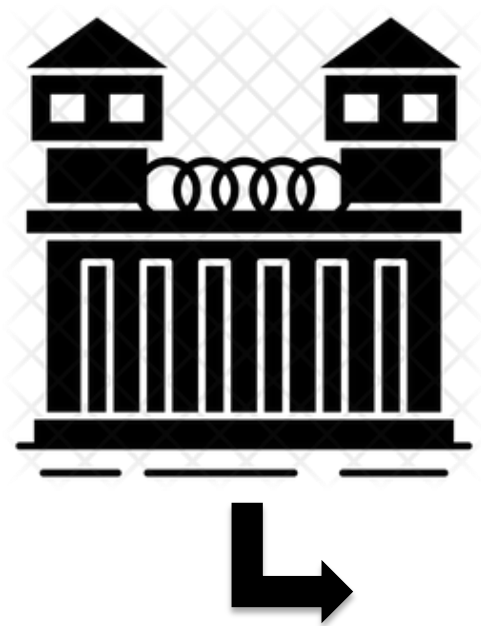
## Health of people in Australian Prisons



- Poor mental health<sup>2-5</sup>
- Poor physical health<sup>2,4</sup>
- Substance use disorders<sup>2,6,7</sup>
- Blood borne viruses<sup>2,4</sup>
- High rates of primary care contact during imprisonment<sup>8-10</sup>

# Background:

## Health after prison



- People recently released from prison experience significant declines in health following release<sup>4,14-16</sup>
- Increased risk of mortality<sup>11-13</sup>
- Initiatives which promote continuity of care from prison into the community to improve post-release health<sup>17,18</sup>

## Background:

### Medication for opioid use disorder (MOUD)



#### Prison-based MOUD<sup>19</sup>:

- Available in all Victorian prisons
- Continued upon entering custody
- Initiation during imprisonment possible
- Referral to post-release prescriber
- Post-release dispensing fees subsidised

#### Community-based MOUD:

- Primary health care setting<sup>20</sup>
- Regular doctors visits: weekly – monthly<sup>21</sup>
- Supervised dosing at pharmacy
- Not covered by PBS

#### Medications:

- Methadone
- Buprenorphine (inc. buprenorphine/naloxone)

# Aim



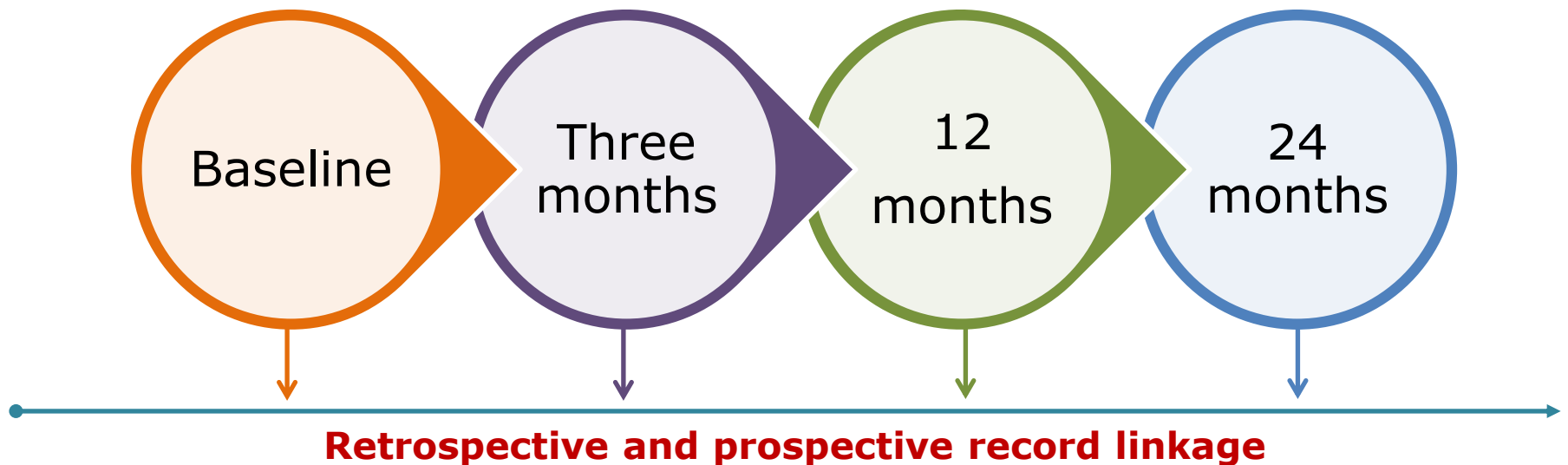
- One USA study found association between primary care and medication utilisation and post-release MOUD retention<sup>22</sup>
- To determine any differences in utilisation of primary health care and medication prescription between those who received MOUD and those who did not following release from prison



# Prison and Transition Health (PATH) Study<sup>23,24</sup>

## Study Aim

To characterise the transition from prison to community for men with histories of injecting drug use in prison in Victoria, Australia



- *Eligibility*: male, sentenced, regular injecting prior to incarceration
- *Recruitment sites*: one minimum, medium and maximum security facility
- *Record linkage*: police, hospital and emergency, mental health, criminal justice, housing, national death records, MBS/PBS, AOD treatment.
  - Linked 2, 5, and 10 years post-release

# Methods: Outcomes

Counts of primary care services accessed following release from prison



## **Medicare Benefits Schedule (MBS):**

- Standard GP visits
- Extended GP visits
- After Hours GP visits
- Mental Health visits
- Pathology requests
- Hepatitis C pathology requests

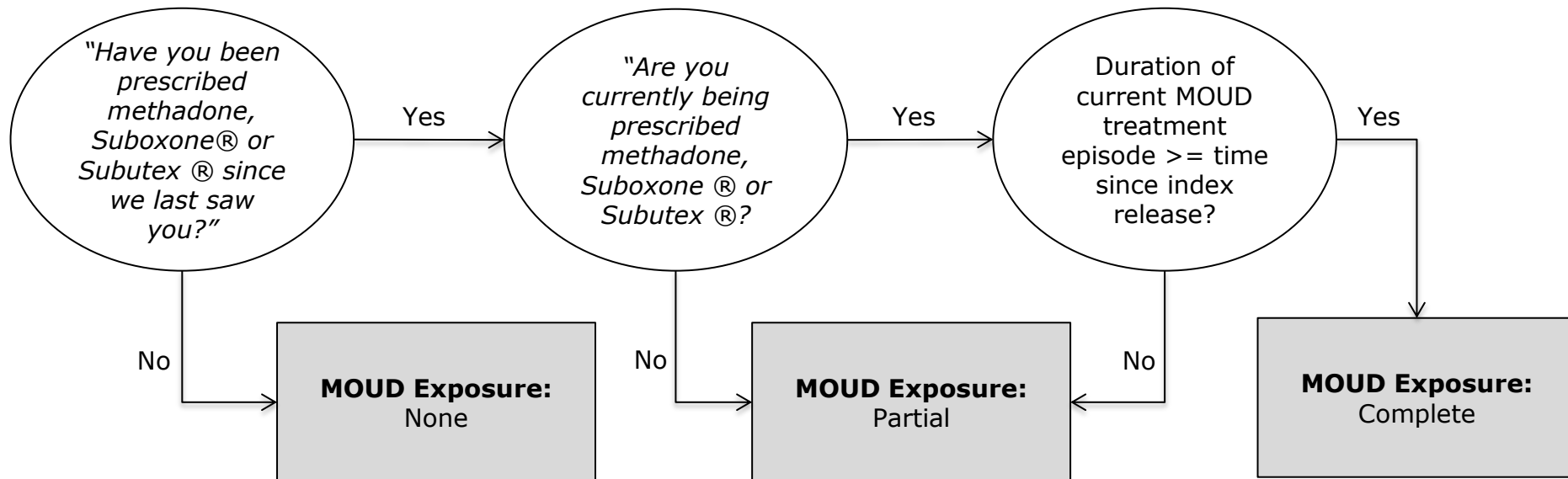
## **Pharmaceutical Benefits Scheme (PBS):**

- Total prescriptions
- Opioid prescriptions (no MOUD)
- Benzodiazepine prescriptions
- Gabapentinoid prescriptions

# Methods:

## Primary exposure

### MOUD Utilisation:



# Methods:

## Model covariates



- Age at baseline (years)
- Aboriginal or Torres Strait Islander (N/Y)
- Fair or poor health (N/Y)
- Main drug injected in the month before prison  
(heroin only / methamphetamine only / methamphetamine & heroin / no heroin or methamphetamine)
- Psychiatric wellbeing (GHQ-12)
- Chronic health condition at baseline (N/Y)
- Area of residence at interview (Metro/Regional/Prison)

# Methods:

## Statistical analysis



### **Baseline demographics**

- T-tests, Kruskal-Wallis tests and chi-square tests

### **Multivariable models:**

- Generalised Linear Modelling
- Adjusted incidence rate ratios
- Negative binomial distribution
- Exposure for time at-risk in the community

# Results:

## Participants



- n=259
- MOUD Exposure groups:

None	= 150
Partial	= 34
Complete	= 75
- Few differences in baseline characteristics between MOUD groups

# Results:

## Primary care health service utilisation

Outcome	Item Count	Adjusted IRR	95% CI
Standard GP consultations <sup>1</sup>			
MOUD			
None	227	1.00	
<b>Partial</b>	<b>140</b>	<b>2.86</b>	<b>(1.97 - 4.14)</b>
<b>Complete</b>	<b>343</b>	<b>3.60</b>	<b>(2.67 - 4.84)</b>
Extended GP Consultations <sup>1</sup>			
MOUD			
None	82	1.00	
<b>Partial</b>	<b>40</b>	<b>2.82</b>	<b>(1.69 - 4.70)</b>
<b>Complete</b>	<b>79</b>	<b>2.56</b>	<b>(1.61 - 4.07)</b>
Mental health GP consultations <sup>1</sup>			
MOUD			
None	57	1.00	
<b>Partial</b>	<b>27</b>	<b>2.48</b>	<b>(1.11 - 5.52)</b>
<b>Complete</b>	<b>52</b>	<b>2.16</b>	<b>(1.31 - 3.54)</b>
After hours GP consultations <sup>1</sup>			
MOUD			
None	29	1.00	
<b>Partial</b>	<b>27</b>	<b>4.68</b>	<b>(2.16 - 10.13)</b>
Complete	31	1.89	(0.86 - 4.14)
Pathology requests <sup>1</sup>			
MOUD			
None	153	1.00	
Partial	42	1.32	(0.67 - 2.61)
<b>Complete</b>	<b>358</b>	<b>2.35</b>	<b>(1.29 - 4.31)</b>

<sup>1</sup>Adjusted for age, Aboriginal or Torres Strait Islander, self-reported health status, main drug injected in month preceding interview, GHQ-12 score, location of interview, chronic health condition at baseline and times moved since last interview

# Results:

## Primary care prescription medication

Outcome	Item Count	Adjusted IRR	95% CI
Total items <sup>1</sup>			
MOUD			
None	548	1.00	
Partial	155	1.59	(0.91 - 2.78)
<b>Complete</b>	<b>485</b>	<b>2.21</b>	<b>(1.48 - 3.30)</b>
Opioids <sup>1</sup>			
MOUD			
None	80	1.00	
Partial	10	0.91	(0.33 - 2.48)
Complete	35	1.01	(0.42 - 2.41)
Benzodiazepines <sup>1</sup>			
MOUD			
None	74	1.00	
<b>Partial</b>	<b>68</b>	<b>4.68</b>	<b>(1.99 - 11.00)</b>
<b>Complete</b>	<b>211</b>	<b>7.60</b>	<b>(3.90 - 14.80)</b>
Gabapentanoids <sup>1</sup>			
MOUD			
None	28	1.00	
<b>Partial</b>	<b>33</b>	<b>11.18</b>	<b>(3.85 - 32.50)</b>
<b>Complete</b>	<b>53</b>	<b>6.22</b>	<b>(2.39 - 16.15)</b>

<sup>1</sup>Adjusted for age, Aboriginal or Torres Strait Islander, self-reported health status, main drug injected in month preceding interview, GHQ-12 score, location of interview, chronic health condition at baseline and times moved since last interview



# Discussion



- Increased GP consultations
- Increased non-MOUD primary care health service use & medication prescription<sup>22</sup>
- Increased contact may support improved health outcomes

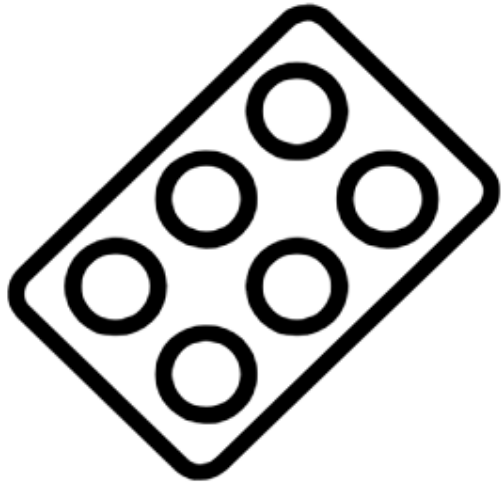
# Discussion



- Motivated treatment group?
- Increased opportunity for identification and treatment of health concerns?
- Role of the prison-to-community MOUD referral?

# Discussion

## Benzodiazepines & Gabapentinoids



- Increased rates of prescribing in partial and complete MOUD groups
- Contrary to Victorian MOUD guidelines<sup>33</sup>
- Both drugs associated with increased risk of multiple drug toxicity
- Raises new questions

# Discussion



## **Limitations:**

- No linked administrative MOUD data
- Prescriber effects unaccounted for
- Sample size
- Self-report
- Generalisability

## **Future Work:**

- Explore additional medication groups
- Extend analysis timeframe

# Conclusion



- People recently released from prison at risk of declines in physical and mental health
- Increased health service and prescription medication access among patients receiving MOUD
- Important to promote retention in post-release MOUD

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- PATH Study participants
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