Turning Point
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Does the location of Opioid Agonist Treatment (OAT) prescribers and dispensers impact the number of heroin-related ambulance attendances?

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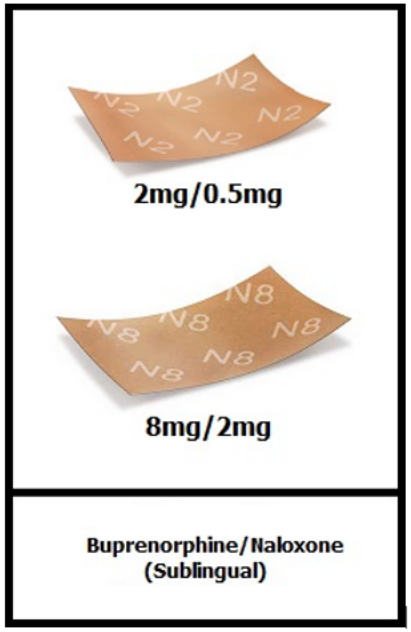
Introduction

- Heroin harms include premature death including from overdose, withdrawal and injection related issues (1)
- Risk of harms from heroin usage often occur at higher levels in certain geographical pockets (2)
- Paramedics and ambulance services are often first responders to acute harms resulting from heroin (3)
- First responders have been responding to an increased number of presentations associated with heroin harms (4, 5)

Introduction

- Opioid agonist treatment (OAT) reduces illicit heroin use and non-medical prescription opioid use, fatal overdoses and blood borne disease (6)
- OAT prescribed by doctor who have completed an OAT accreditation course
- OAT dispensed by pharmacists at pharmacies or specialised OAT dosing points
- OAT dosing points that provide OAT in Australia increased by 50% from 2012 to 2022 (7)



Study aim

- To determine where ambulance attendances for heroin-related harms are occurring in Victoria
- To determine if there is an association between OAT service locations and heroin-related harms

Method – data source

- Multilevel models included data from two sources
  - Heroin harms from the National Ambulance Surveillance System
  - Opioid Agonist treatment services from the Turning Point DirectLine referral report

- Multilevel model outcome variable
  - Heroin ambulance presentations

- Multilevel model predictor variables:
  - Prescriber with current vacancy
  - Prescriber with limited vacancy
  - Dispensing point with current vacancy
  - Dispensing point with limited vacancy
  - SEIFA quintile
  - Geographic location

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Method – data source

- Demographic analysis for heroin groups was completed via percentages and means
- Multilevel models nested in postcodes and LGA's were developed using forward stepwise regression and examination of the Bayesian information criterion (BIC)
    1. Model 1 - Null model
    2. Model 2 - Level one variables
    3. Model 3 - Level two variables and interaction effects
- Best linear unbiased predictions at the LGA and postcode level to identify postcodes higher and lower than the average – adjusted for population

Results – Demographics of the heroin ambulance sample

	Heroin attendance, n (%) November 2023 – February 2024
	n=760
Age, years (SE)	41.9 (0.4)
Gender	
- **Male**	549 (72)
- **Female**	206 (27)
- **Other**	5 (<1)
Police co-attendance	199 (26)
Transport to hospital	430 (57)
Metropolitan	624 (82)
Comorbid suicidal behavior attendance	333 (44)
Re-presenter*	287 (38)

*Two or more opioid-related ambulance presentations in 4 months

660 OAT services

***251 dispensers with current vacancy**

***285 dispensers with limited vacancy**

***20 Prescribers with current vacancy**

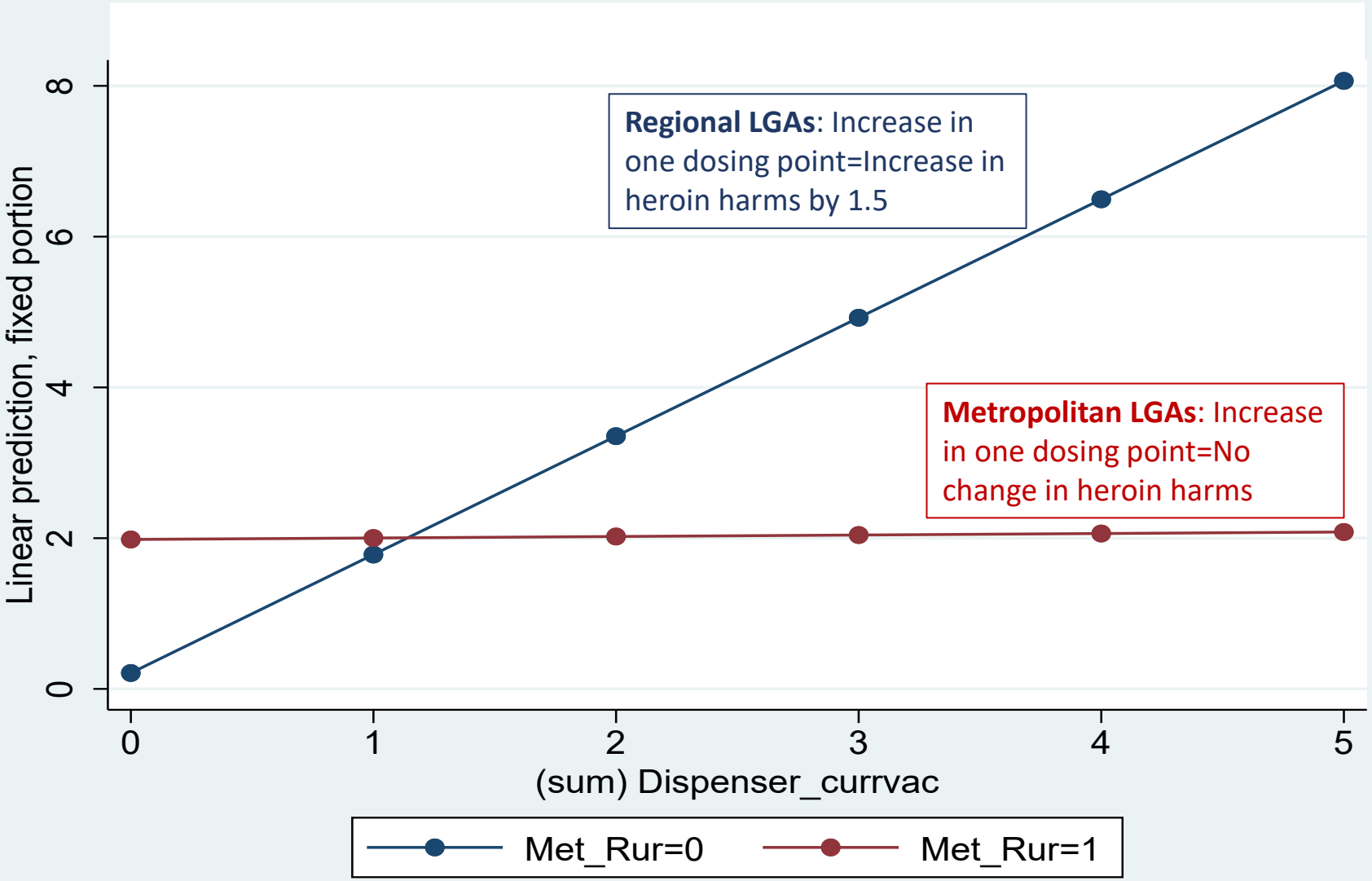
***104 prescribers with limited vacancy**

Results - Adjusted multilevel regression for heroin ambulance attendances

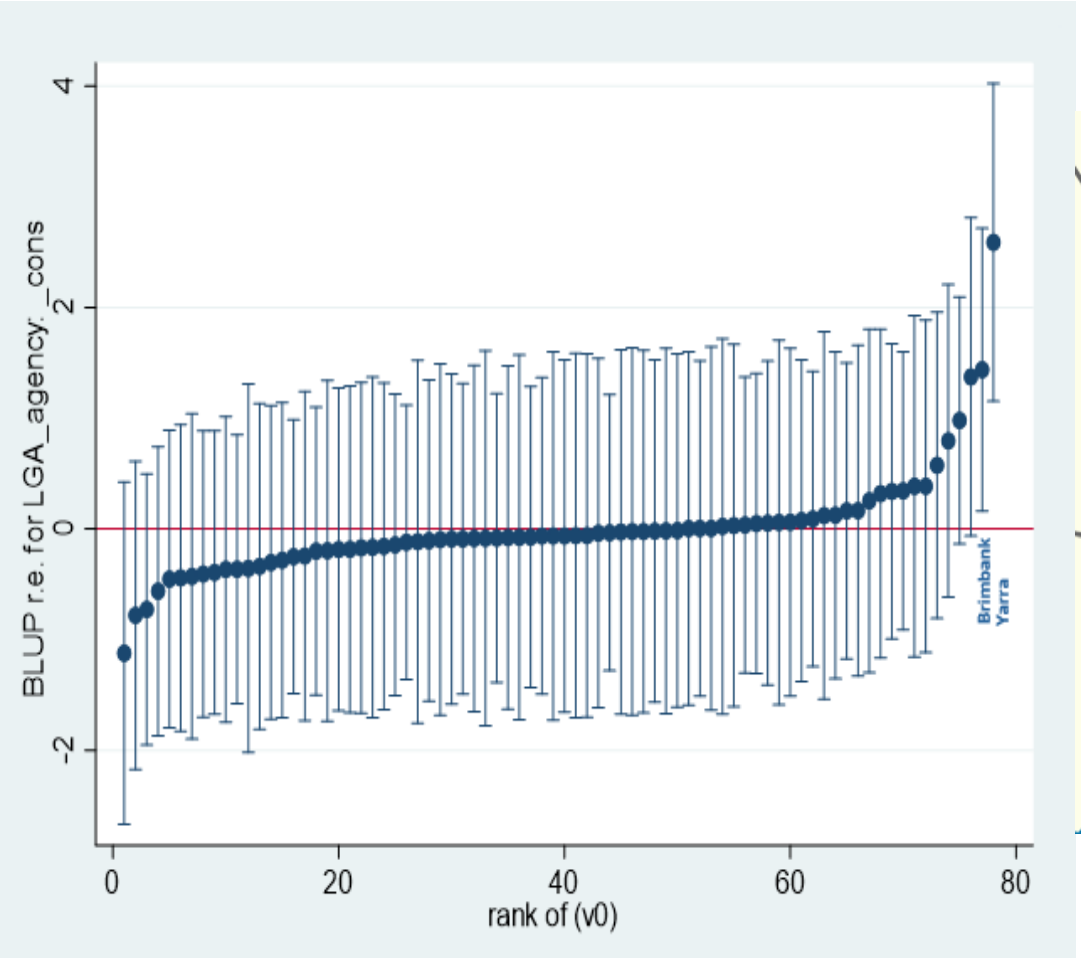
Variable	Heroin B (95CI), n=3,459
Dosing point with limited vacancy	***1.25 (0.88, 1.62)****
Prescriber with limited vacancy	***0.61 (0.15, 1.08)****
Prescriber with current vacancy	0.26 (-0.97, 1.49)
Dosing point with current vacancy	***1.57 (0.78, 2.36)****
Location (metropolitan)	***1.77 (0.71, 2.83)****
Dosing point with current vacancy#location	***-1.55 (-2.42, -0.68)****
SEIFA quintile	***-0.26 (-0.51, -0.003)****
Constant	-0.85
Variance	6.19
Log likelihood	-8,353
Aikake Information Criteria (AIC)	16,730
Bayesian Information Criteria (BIC)	16,804
N (postcode)	306
N (LGA)	78

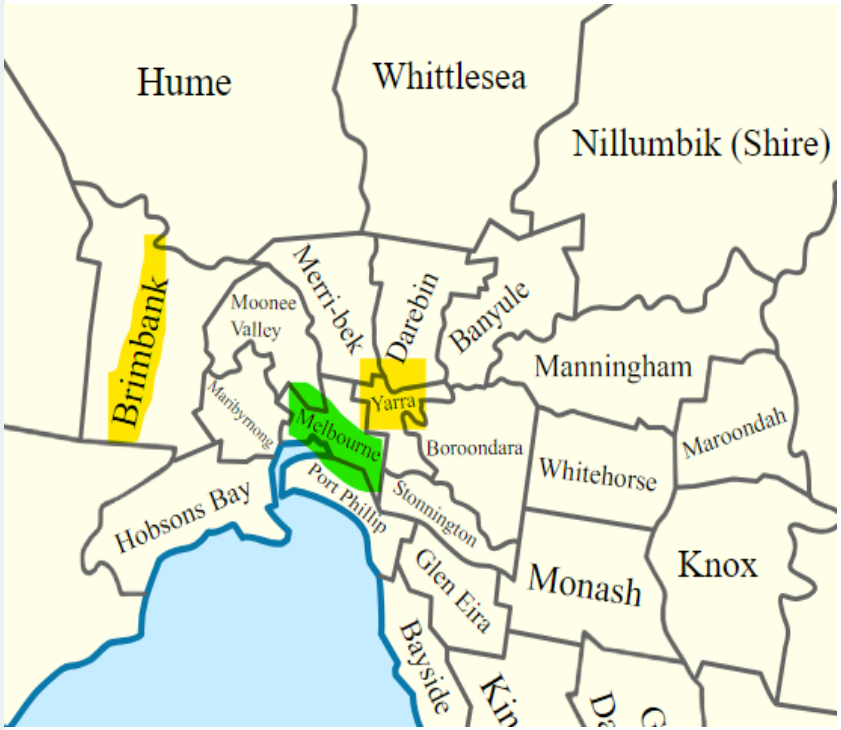
*Significant at p<0.05
Interaction term between dosing point/prescriber with current vacancy and location (metropolitan or regional)

Results – Predictive margins of geographic location and heroin harms



Results - LGA plot for heroin ambulance attendances





Implications and conclusions

- Develop ways to increase prescribers and dispensers in areas of need
- Dispensing points with limited vacancies increased the risk of heroin harms at a higher rate than prescribers with limited vacancies
- Heroin harms are mostly contained to metropolitan areas and large regional centres
- Improve availability and access to treatment options and harm reduction services in areas with lower SEIFA quintiles
- Policies around OAT service planning and increasing the number and scope of OAT dispensers

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