The impact of severe mental illness on treatment retention and all-cause mortality of people in opioid agonist treatment

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Data Resource Profile

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Data Resource Profile: The Opioid Agonist Treatment and Safety (OATS) Study, New South Wales, Australia

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Background

- Severe mental illness (SMI – psychotic and/or bipolar disorder) is common among individuals with opioid dependence.
- People with mental disorders have mortality rates more than twice as high as those without mental disorder[1]
- Few studies have examined the impact of SMI on opioid agonist treatment (OAT) outcomes or accounted for real-world patterns of treatment engagement.

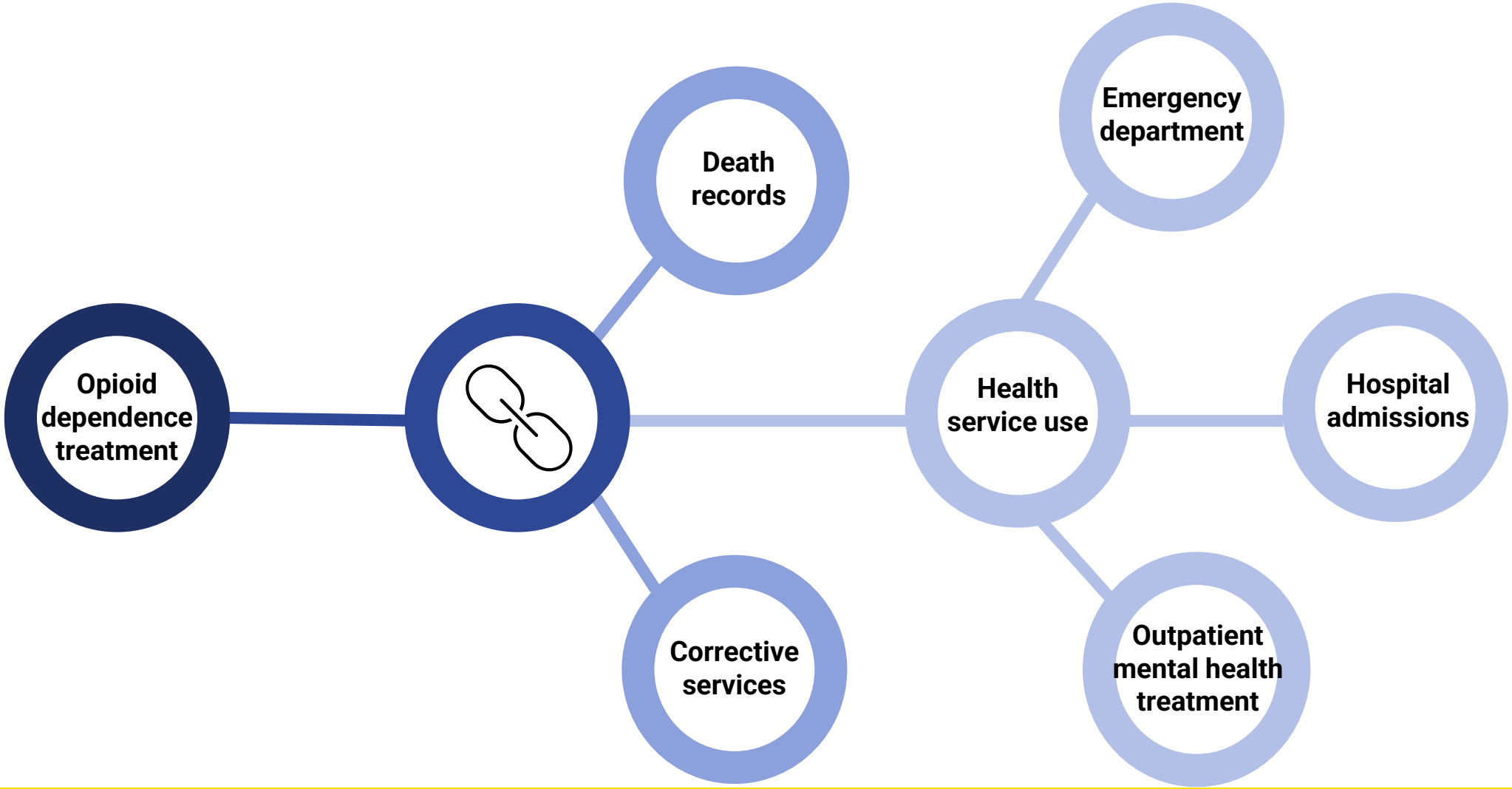
1. Walker E, McGee R, Druss B. Mortality in mental disorders and global disease burden implications. *JAMA Psychiatry* 2015; **72**: 334-41.

Aims

- This study uses whole-of-population linked OAT, health, corrective services and mortality data from NSW, Australia, and aimed to examine:
  - The impact of SMI on OAT retention in the first (a) and first five (b) treatment episodes[1]; and
  - The impact of SMI and OAT on all-cause mortality.

[1]treatment episode is defined as a continuous period of treatment (allowing for 6 days between one period ending and another starting)

OATS Study: New OAT clients in NSW (2006-17)

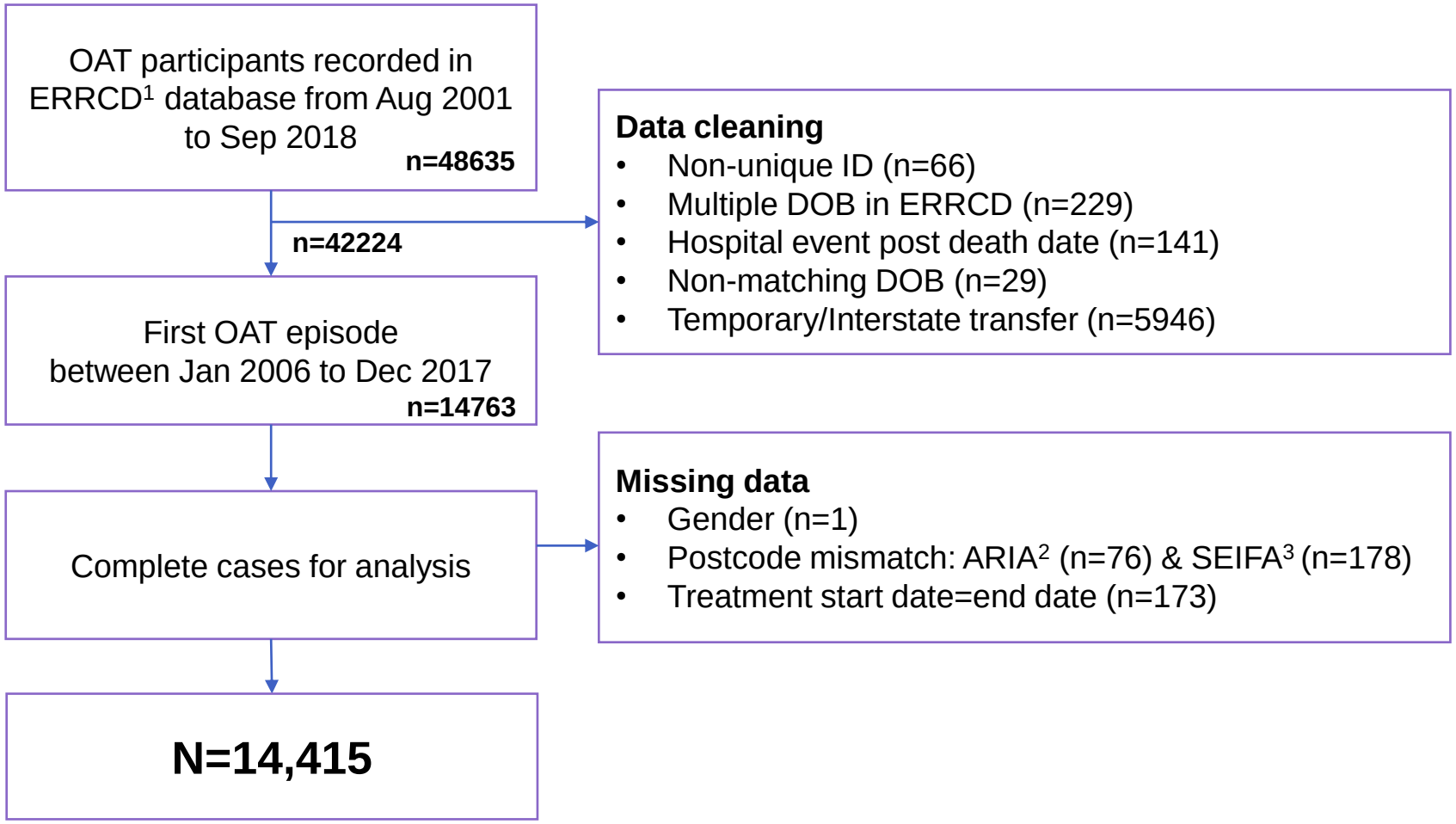


Cohort definition

- NSW Electronic Recording and Reporting of Controlled Drugs (ERRCD)[1] Data Collection captures all OAT entrants in NSW since 1985
  - Adult NSW residents initiating opioid agonist treatment for opioid dependence from 1 Jan 2006 to 31 Dec 2017
  - Initiation defined as no previous treatment of OAT in NSW and not transferred from other States and Territories
  - Observation commenced on the date exactly 12 months prior to each client's first recorded OAT treatment episode and ended on either 31 December 2017, the date of death, or 4 years after a final treatment episode, whichever was earliest.

[1]part of the Controlled Drugs Data Collection (CoDDaC)

Cohort size



1. NSW Electronic Recording and Reporting of Controlled Drugs system part of the Controlled Drugs Data Collection (CoDDaC)
2. Australian Bureau of Statistics. "The Australian Standard Geographical Classification (ASGC) Remoteness Structure." Retrieved August 2020, from https://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.005.
3. Australian Bureau of Statistics. Socio-Economic Indexes for Areas (SEIFA). 2016. https://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001 (accessed 17 July 2024).

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Severe Mental Illness (SMI)

- Identified using International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) codes using:
  - mental health ambulatory outpatient records and
  - hospital admission data
- Included schizophrenia, schizotypal, delusional, acute and transient psychotic disorders, schizoaffective and bipolar affective disorders, nonorganic psychosis, manic and severe depressive episodes with psychotic symptoms.
- Measured at baseline (12 month look back) and then in a time-dependent manner

OAT exposure

- Treatment entry and exit dates captured in ERRCD
- Includes dates of authorised methadone and buprenorphine exposure
- Ongoing opioid dependence was assumed given that opioid dependence is a chronic relapsing disorder with low remission rates.[1]
- *Retention*: the effects of exposure to both methadone and buprenorphine were compared
- *Mortality*: OAT was measured in a time-dependent manner with status of either 'In OAT' or 'Out of OAT'

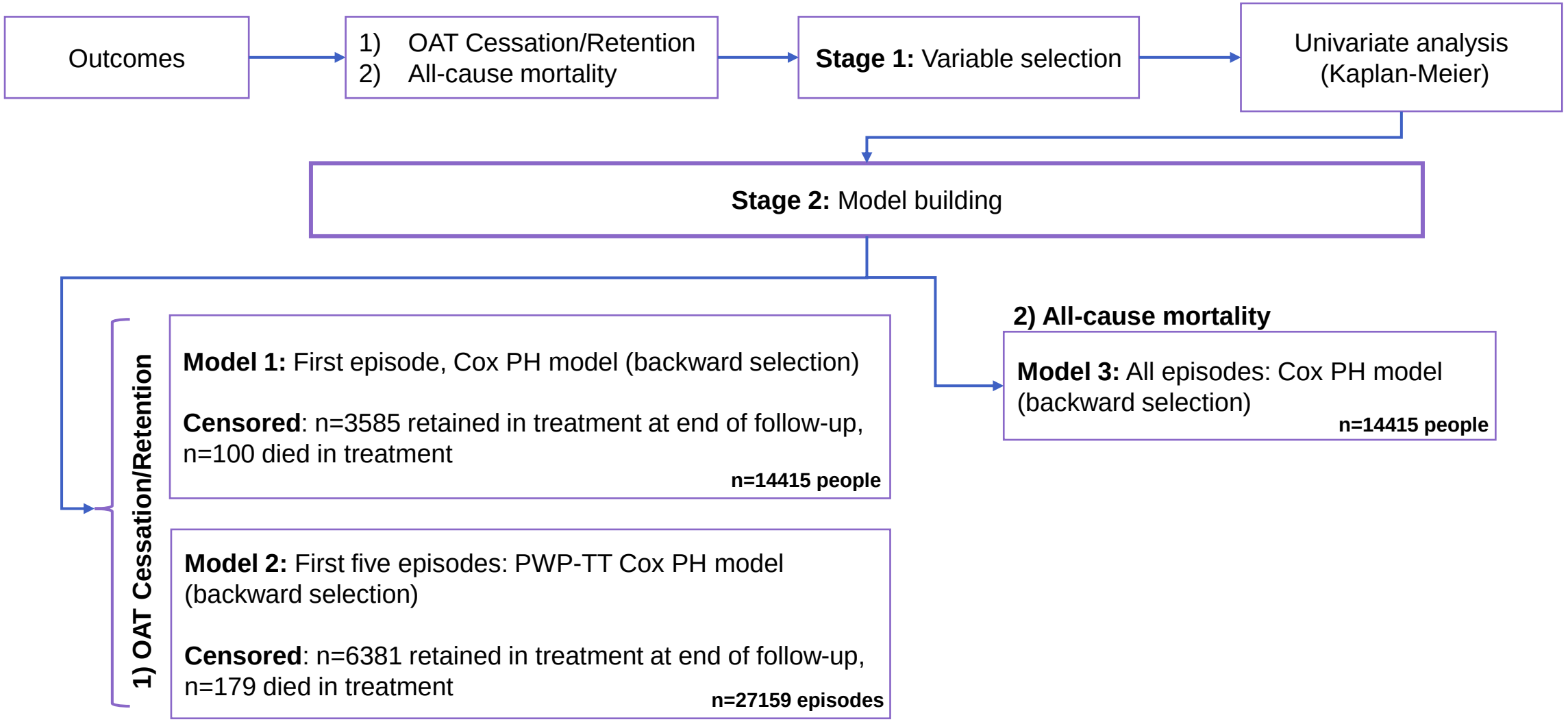
1. Hser Y, Hoffman V, Grella C, Anglin M. A 33-year follow-up of narcotics addict. *Arch Gen Psychiatry* 2001; **58**: 503-8.

Covariates

- Fixed covariates:
  - Demographics
  - Year of treatment entry
  - Treatment setting
  - Criminal activity
  - Hospitalisations, i.e. for:
    - Substance dependence
    - Depression and/or anxiety disorders
  - Geographical remoteness index[1]
  - Socio-disadvantage index[2]
- Time-varying covariates:
  - OAT treatment and status
  - Release from incarceration
  - Hospitalisations, i.e. for:
    - Self-harm
    - Non-SMI mental health disorders
    - Chronic diseases

1. Australian Bureau of Statistics. "The Australian Standard Geographical Classification (ASGC) Remoteness Structure." Retrieved August 2020, from https://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.005.
2. Australian Bureau of Statistics. Socio-Economic Indexes for Areas (SEIFA). 2016. https://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001 (accessed 17 July 2024).

Methods


Outcomes
1) OAT Cessation/Retention
2) All-cause mortality
Stage 1: Variable selection
Univariate analysis (Kaplan-Meier)
Stage 2: Model building
1) OAT Cessation/Retention
Model 1: First episode, Cox PH model (backward selection)
Censored: n=3585 retained in treatment at end of follow-up, n=100 died in treatment
n=14415 people
Model 2: First five episodes: PWP-TT Cox PH model (backward selection)
Censored: n=6381 retained in treatment at end of follow-up, n=179 died in treatment
n=27159 episodes
2) All-cause mortality
Model 3: All episodes: Cox PH model (backward selection)
n=14415 people

Cohort demographics at entry

N=14763	No evidence of SMI in the 12 months prior to cohort entry (n=13,701)	Evidence of SMI in the 12 months prior to cohort entry (n=1,062[a])
Buprenorphine	**7904 (57.7%)**	**504 (47.5%)**
Initial treatment dispensing site:		
Clinic	7799 (56.9%)	564 (53.1%)
Community pharmacy	2621 (19.1%)	151 (14.2%)
Correctional facility	**1900 (13.9%)**	**244 (23.0%)**
Other	1381 (10.1%)	103 (9.7%)
Female	4016 (29.3%)	314 (29.6%)
Aboriginal and/or Torres Strait Islander	**3616 (26.4%)**	**404 (38.0%)**
Median age in yrs (IQR)	31 (25-39)	30 (25-37)
Died during follow-up	**676 (4.9%)**	**87 (8.2%)**

[a]Additional 927 (5%) people diagnosed with SMI during follow-up [n=64 (6.9%) died]

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Model 1 Covariates

Risk of cessation: first OAT episode

Buprenorphine

Dispensed in a pharmacy

Males

Aboriginal and\or Torres Strait Islander

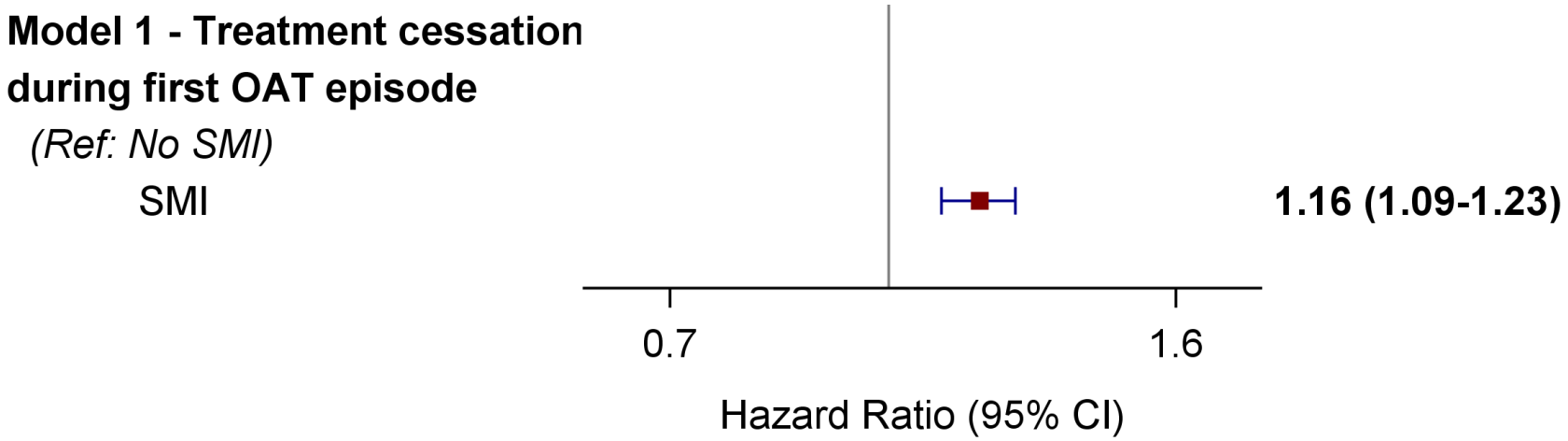
Risk of cessation: first OAT episode

Release from incarceration

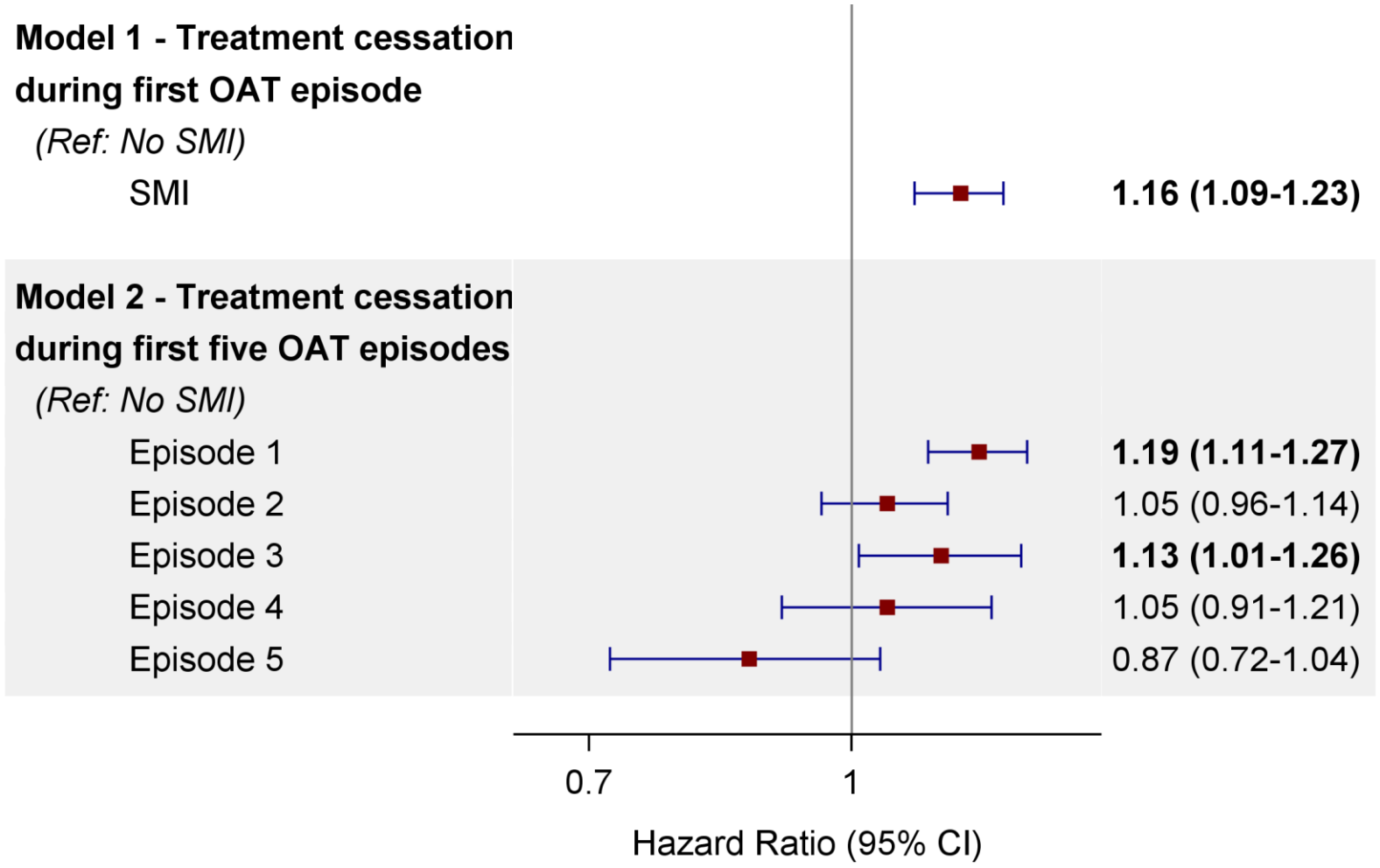
Hospital admission for opioid dependence (within 12 months)

Hospital admission for non-opioid dependence (within 12 months)

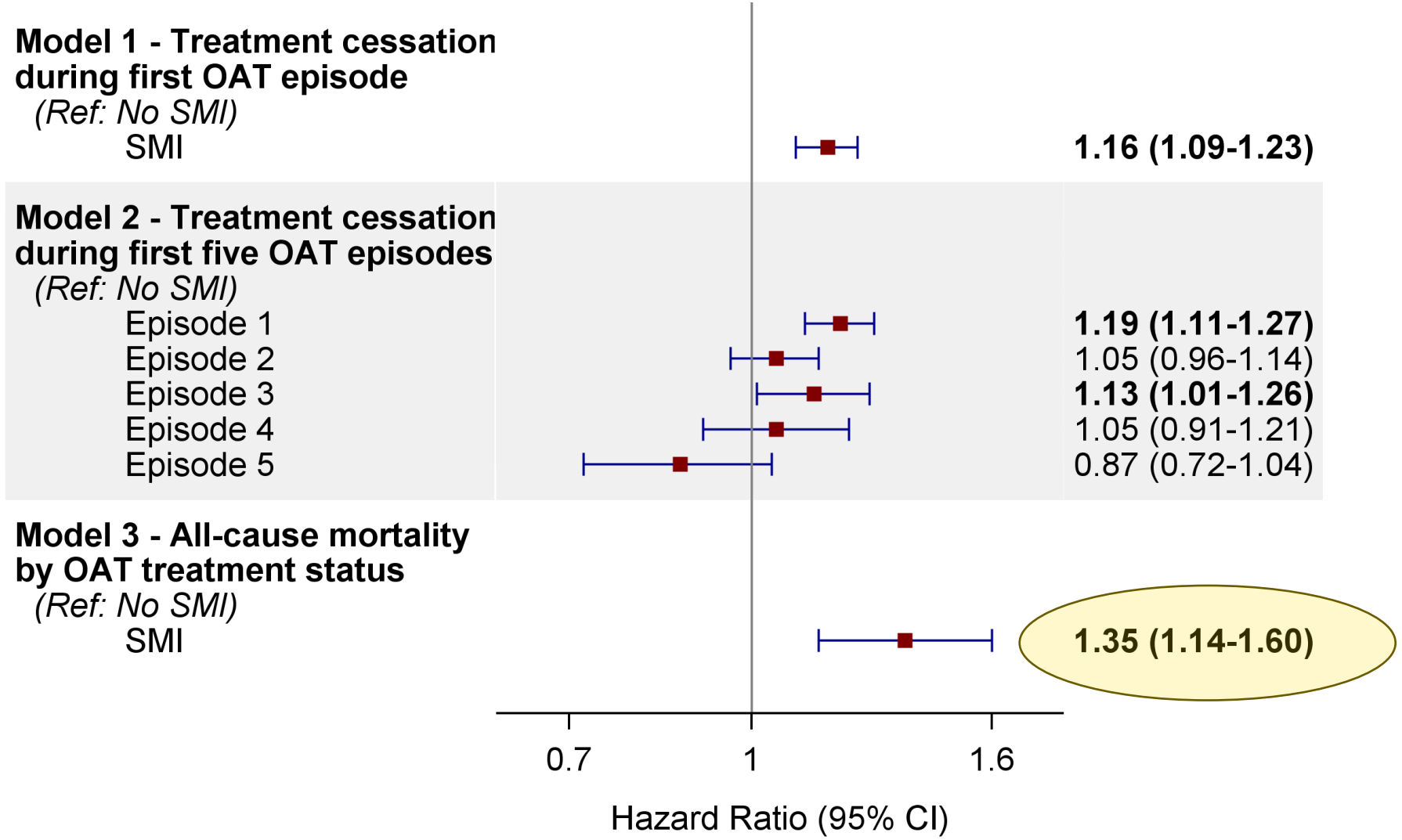
Model Hazard Ratios



Model Hazard Ratios



Model Hazard Ratios



Slightly lower than a 2015 systematic review, Walker et al. for mental health disorders

Implications

- OAT retention and all-cause mortality are poorer among individuals with SMI and opioid dependence
- For the greatest impact, at first-time OAT engagement, formalise a mental health assessment, including screening for SMI
- Tailored strategies are critical especially in the early stages of OAT
  - Enhanced case management, adopting an integrated treatment approach
  - Referral and communication with mental health providers
  - Treatment coordination between opioid dependence and SMI treatment services
  - Potential to address some of the barriers to treatment for individuals with SMI

Thank you

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