

Suicide-related service presentations following residential treatment for substance use disorders: a data linkage study

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Acknowledgement of Country

- I acknowledge the Turrbal/Jagera people - the Traditional Owners and custodians of the lands at which the University of Queensland is situated – where the majority of work presented today was completed.



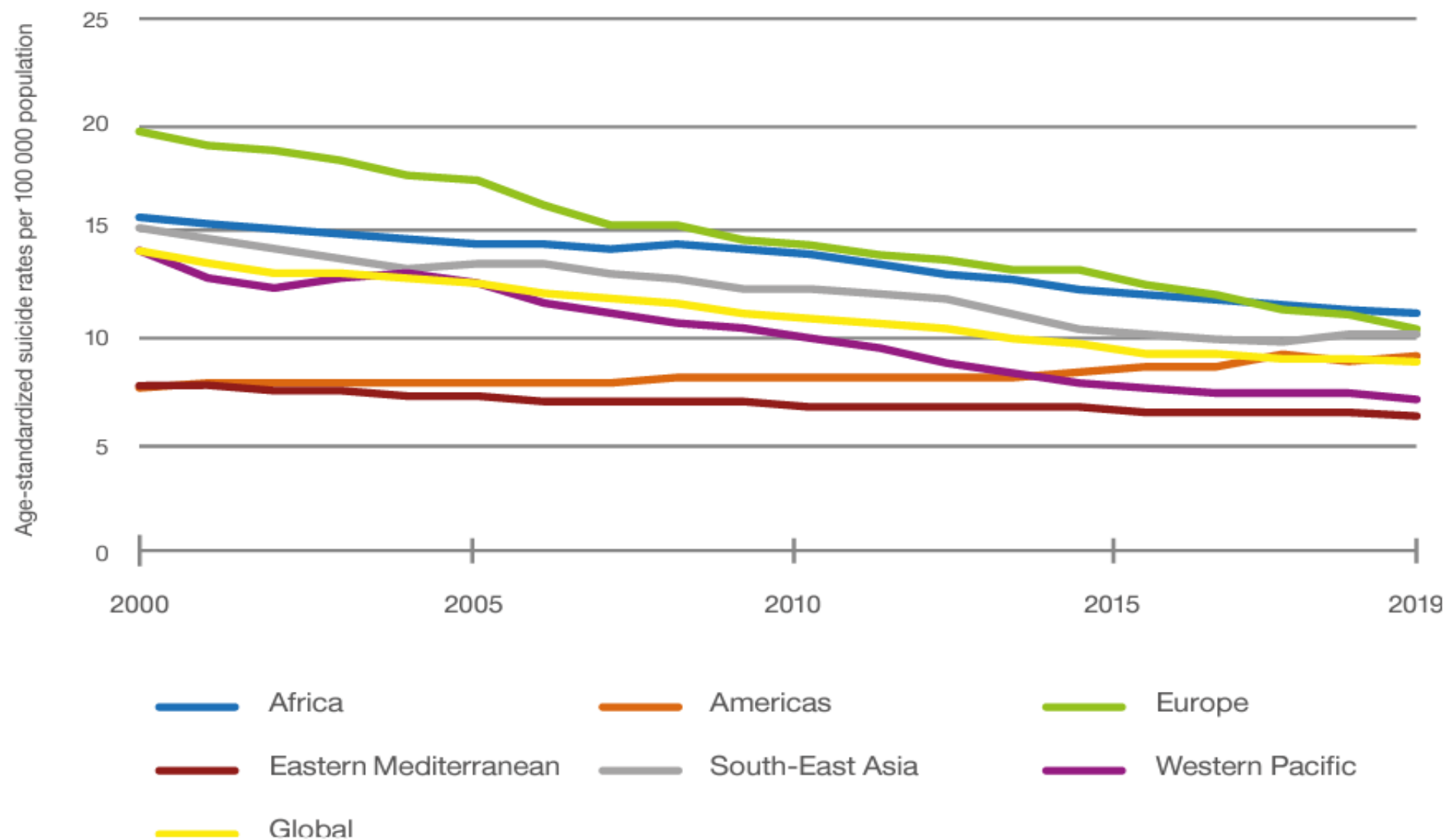
Conflicts of Interest

- Calvert Tisdale received a PhD scholarship from the service provider in the current study. No other conflicts to declare.

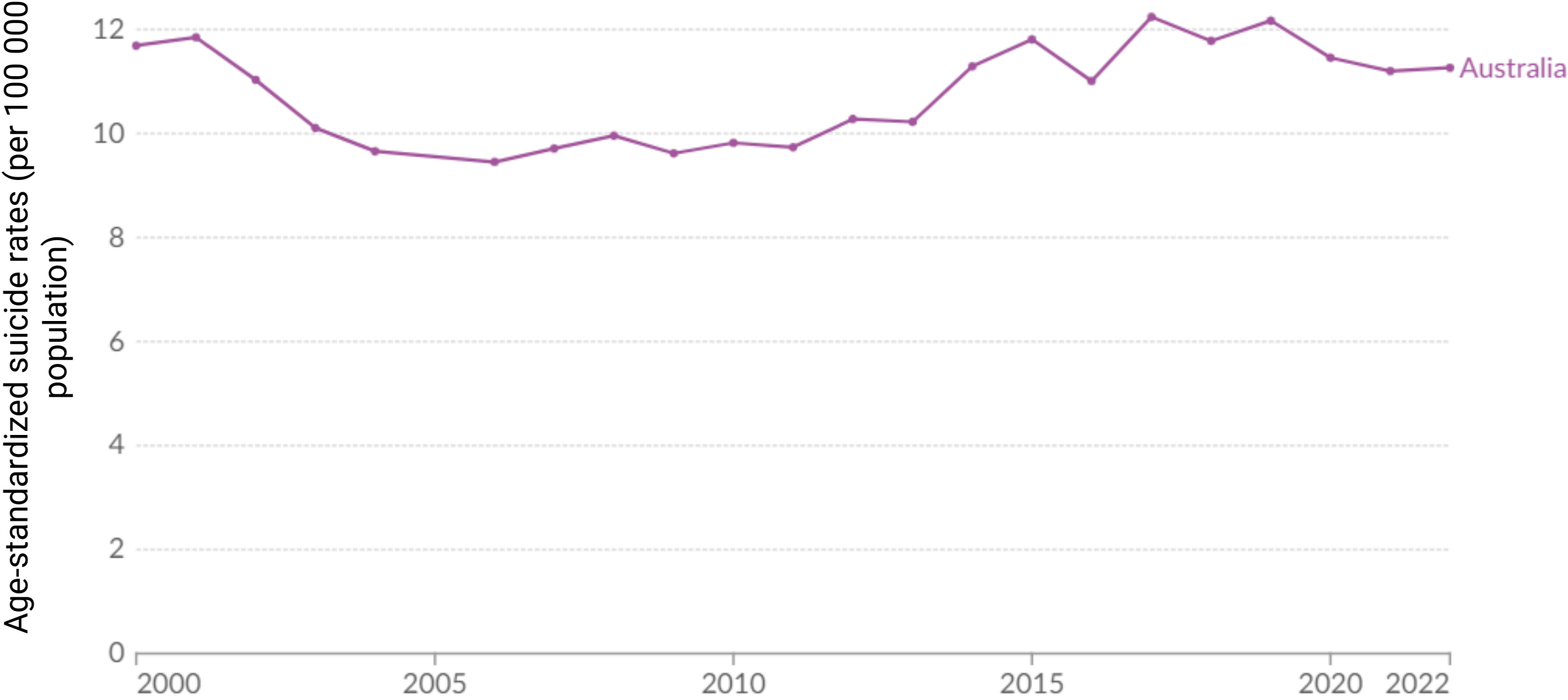


Suicide Globally – 2000-2019

Age-standardized suicide rates (per 100 000 population) over time by WHO regions, both sexes

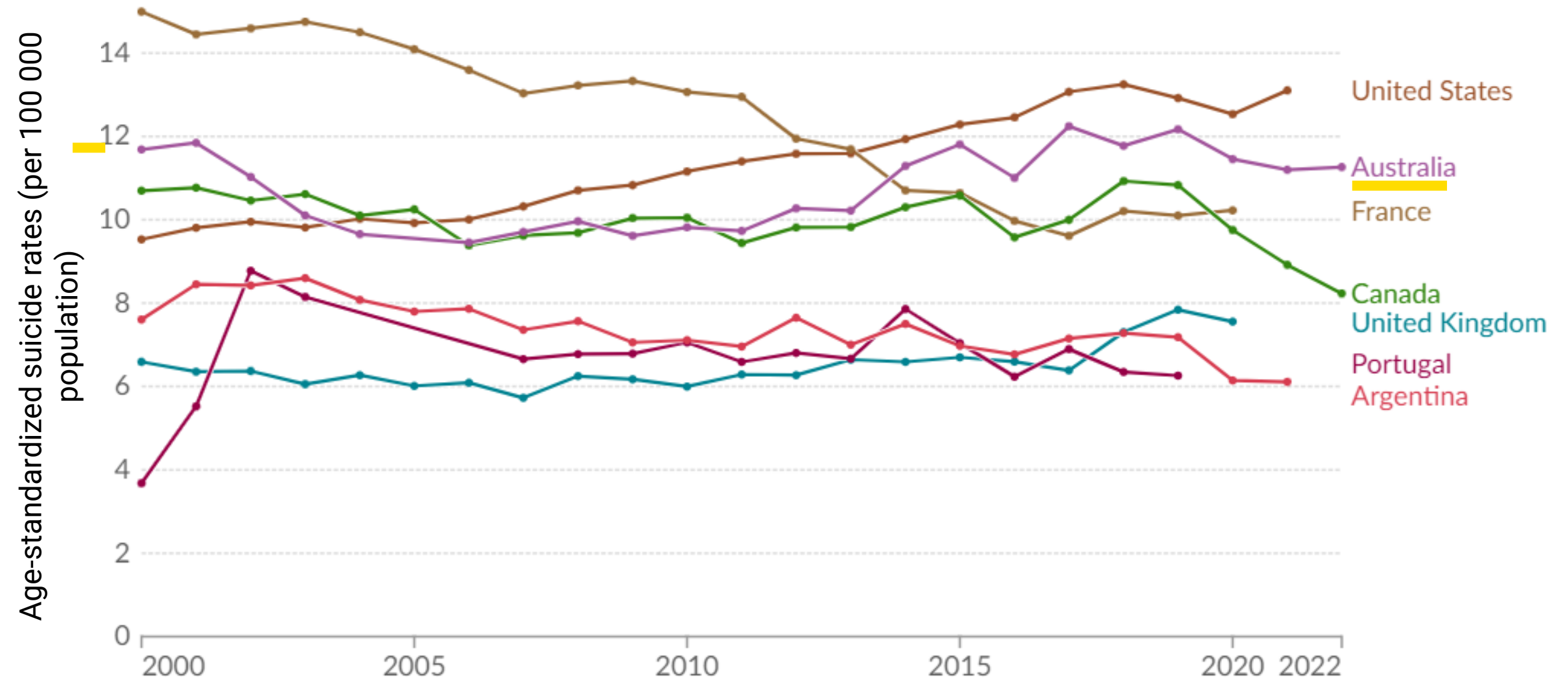


Suicide in Australia, to 2022



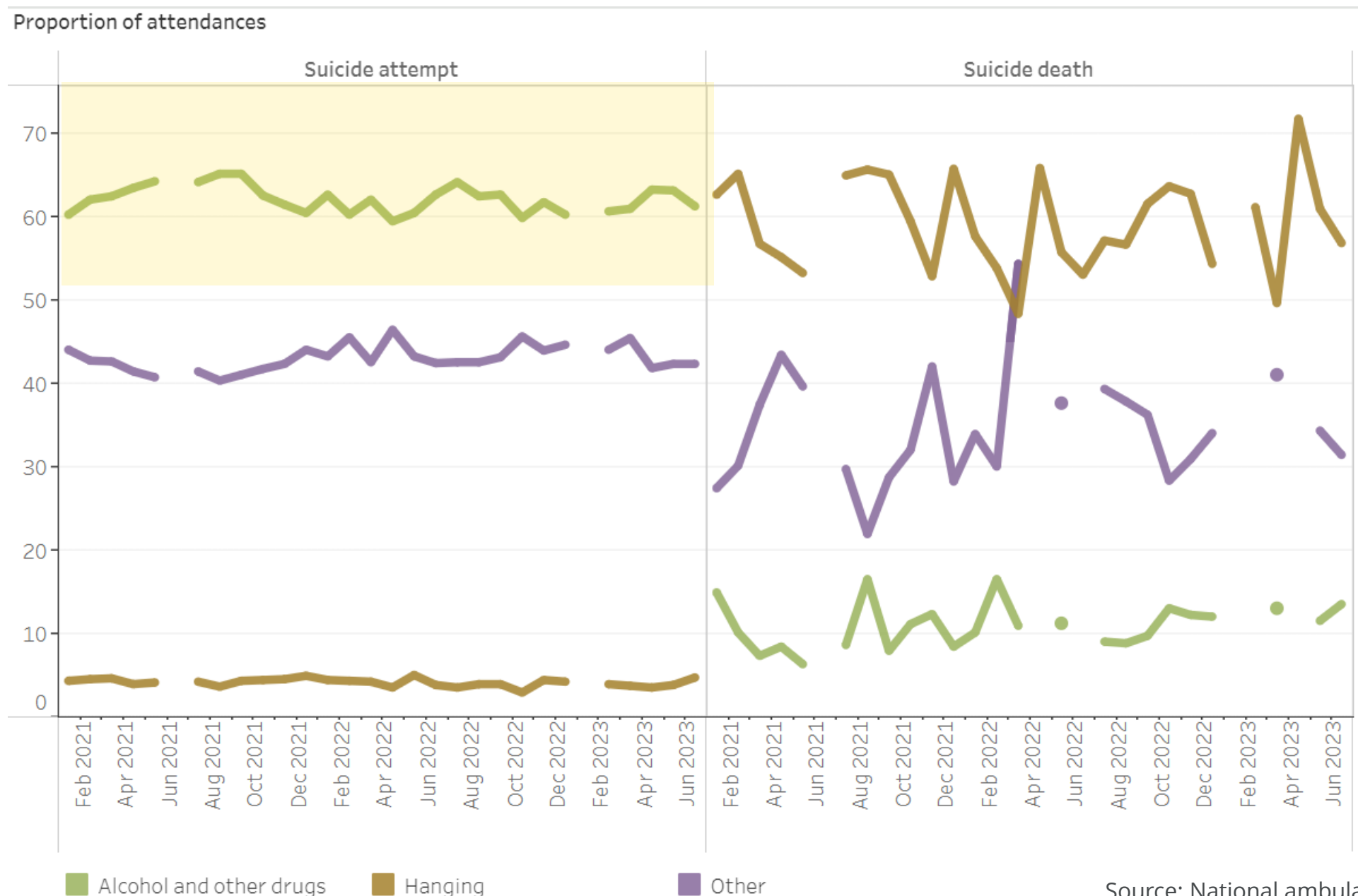
Data source: WHO Mortality Database (2024)

Suicide in Australia, to 2022



Data source: WHO Mortality Database (2024)

Ambulance attendances for suicide attempt and suicide death by modality, January 2021 to June 2023



Source: National ambulance surveillance system

Suicide and Substance Use

Prevalence of suicide is especially high among individuals with substance use disorders

This is especially true for those seeking treatment for substance use:

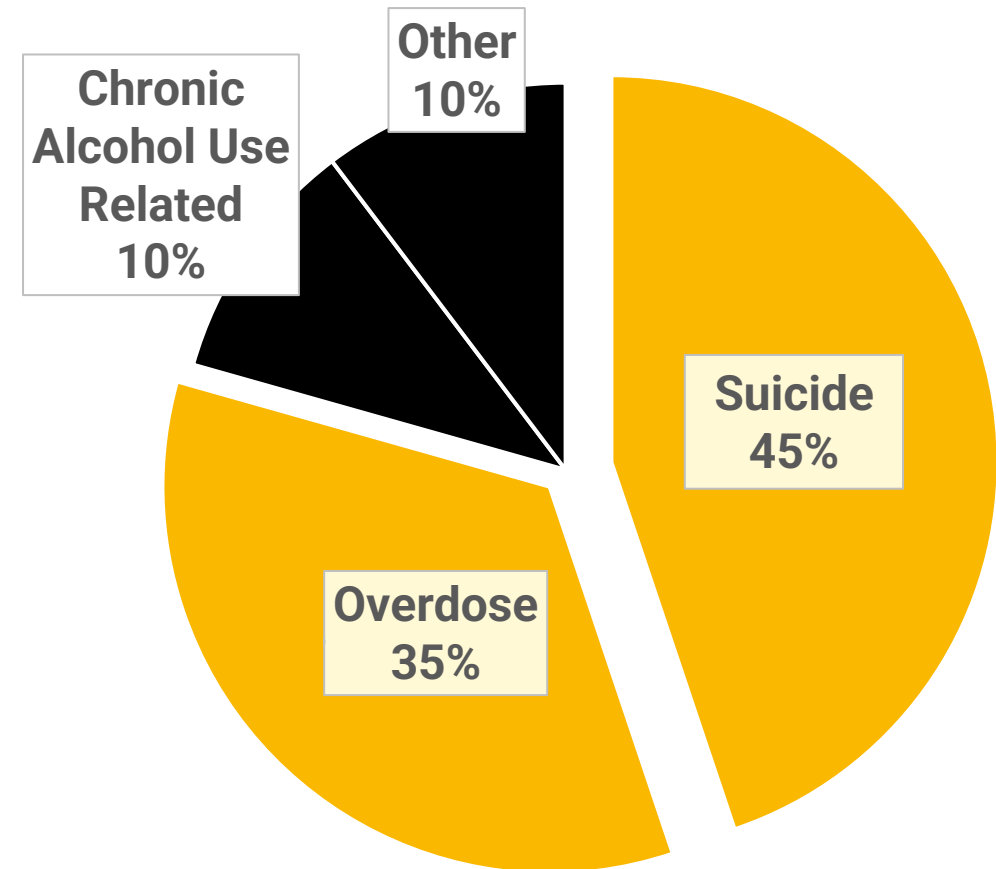
- Suicide-related **ideation** (~**16-55%**)
 - Suicide **attempts** and/or **self-harm** (~**18-47%**)
 - **Elevated risks** of suicide-related premature **mortality**
- These risks are especially high for individuals in the period following discharge from inpatient treatment.



Suicide Among Treatment Seeking Individuals

Cohort of **1056** individuals attending inpatient (residential) treatment services across Queensland, Australia from January 1 2014 – December 31 2016.

Client treatment data was linked to the Registry of Deaths in Australia from Dec 2014 – Dec 2018

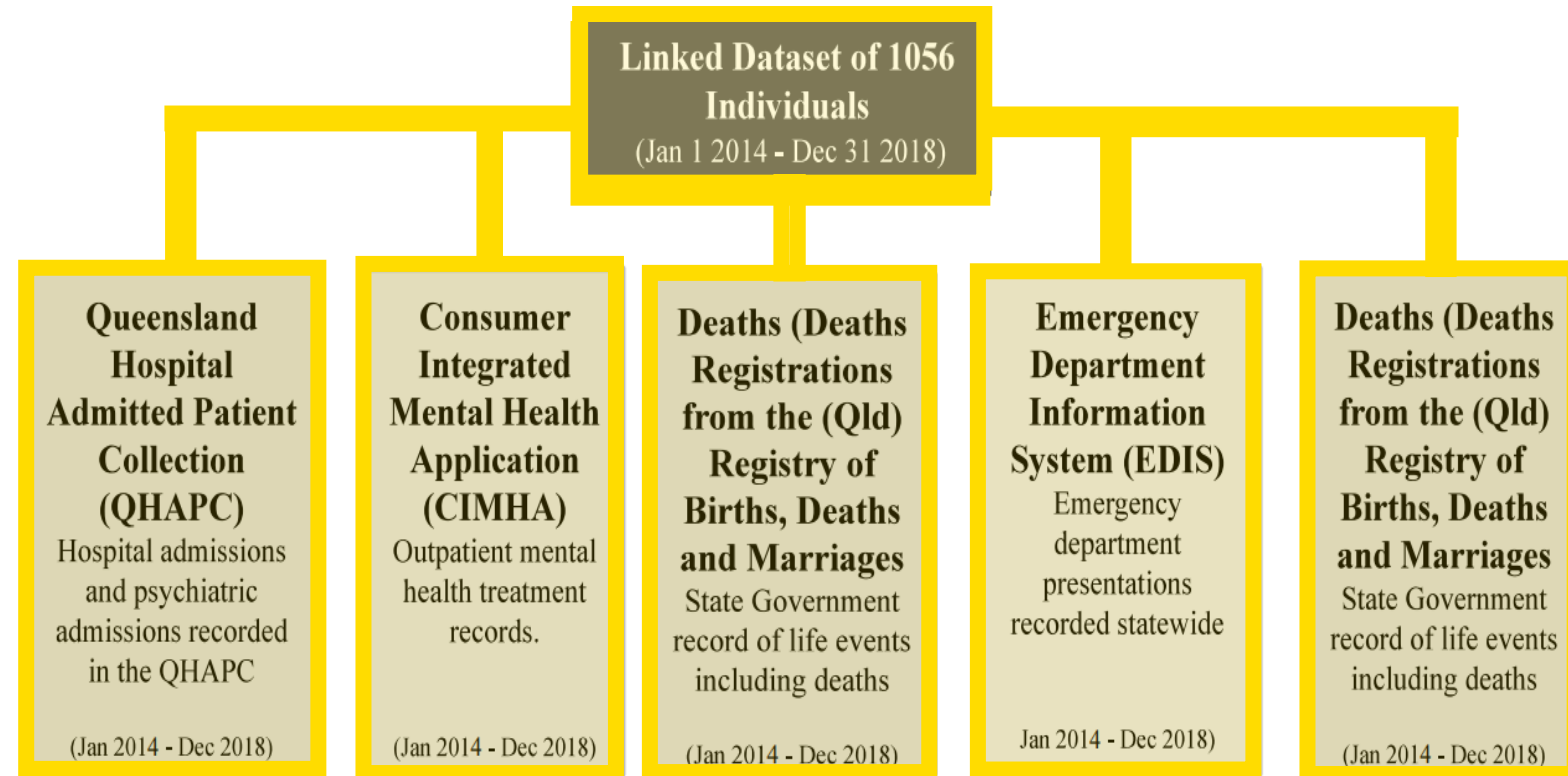


Aims and Linkage

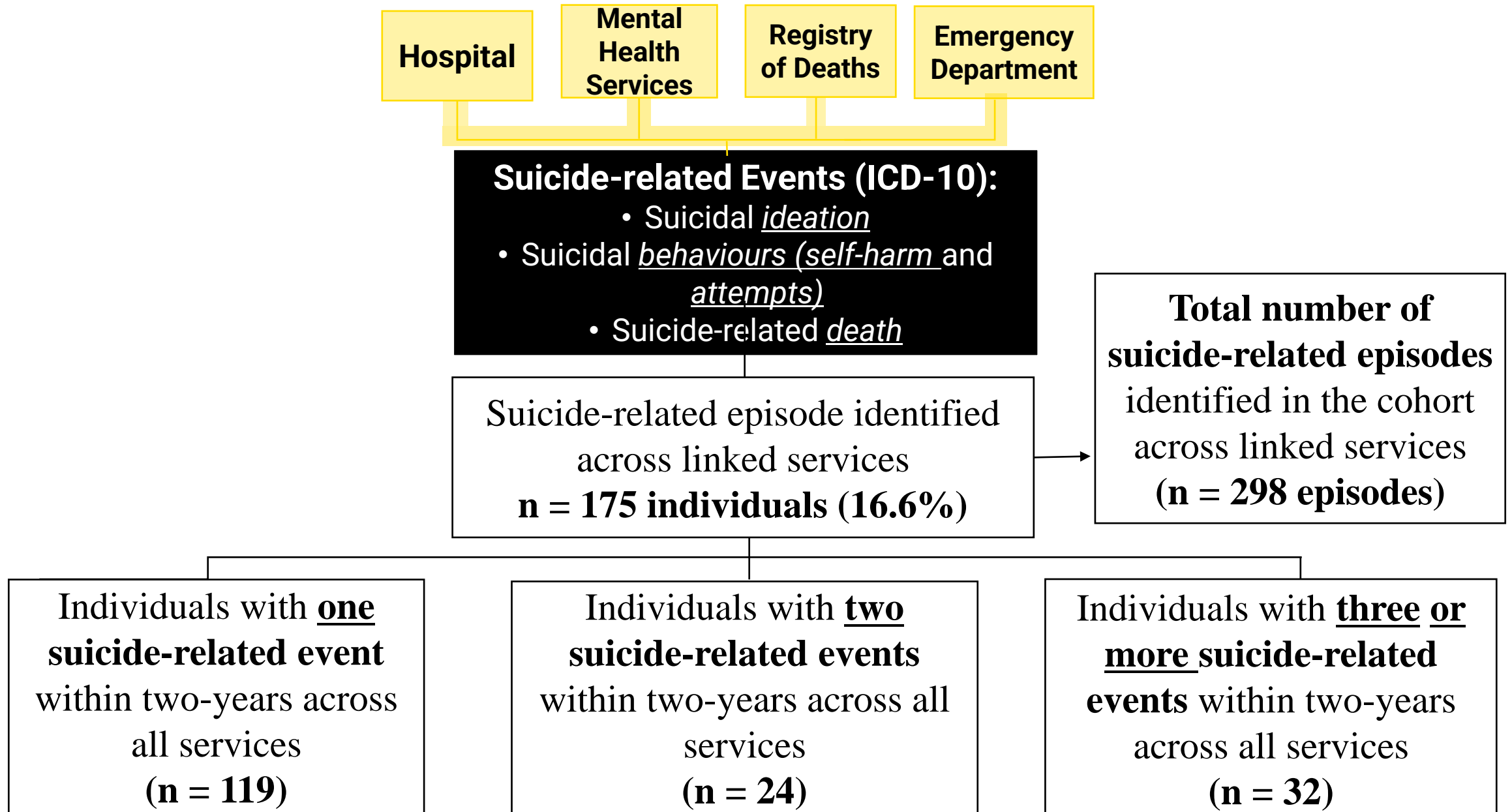
With the cohort of **1056 individuals** accessing treatment in Queensland, Australia:

We aimed to investigate the long-term suicide outcome of this cohort:

1. Specifically, to quantify and examine:
 - a) **Suicide-related events**
(ICD-10 events of ideation, attempts and self-harm, death)
 - b) **Risk and protective factors for suicide-related events; and**
 - c) **Recurrent events of suicidal-behaviour.**

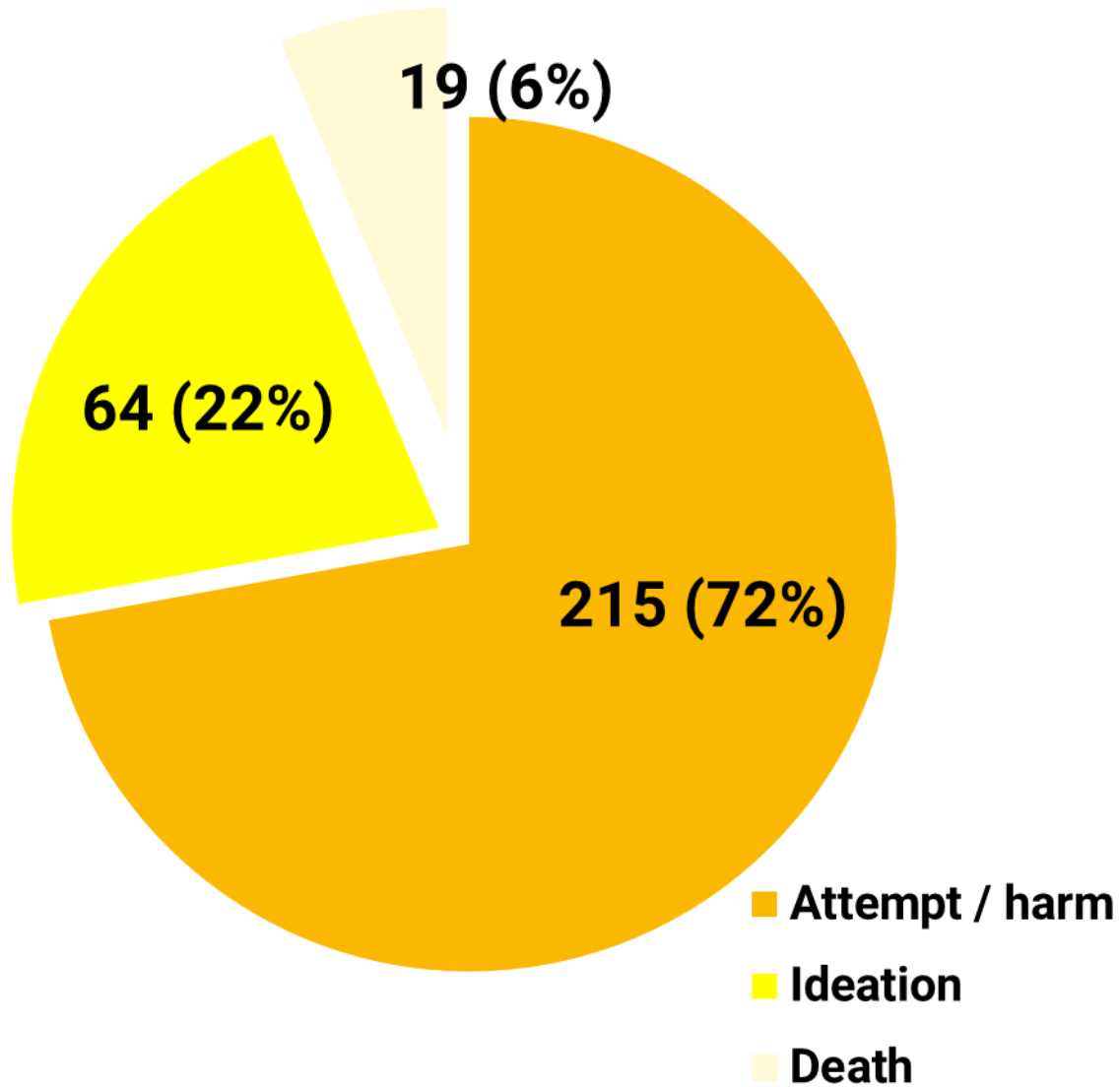


Suicide-related events identified through linkage

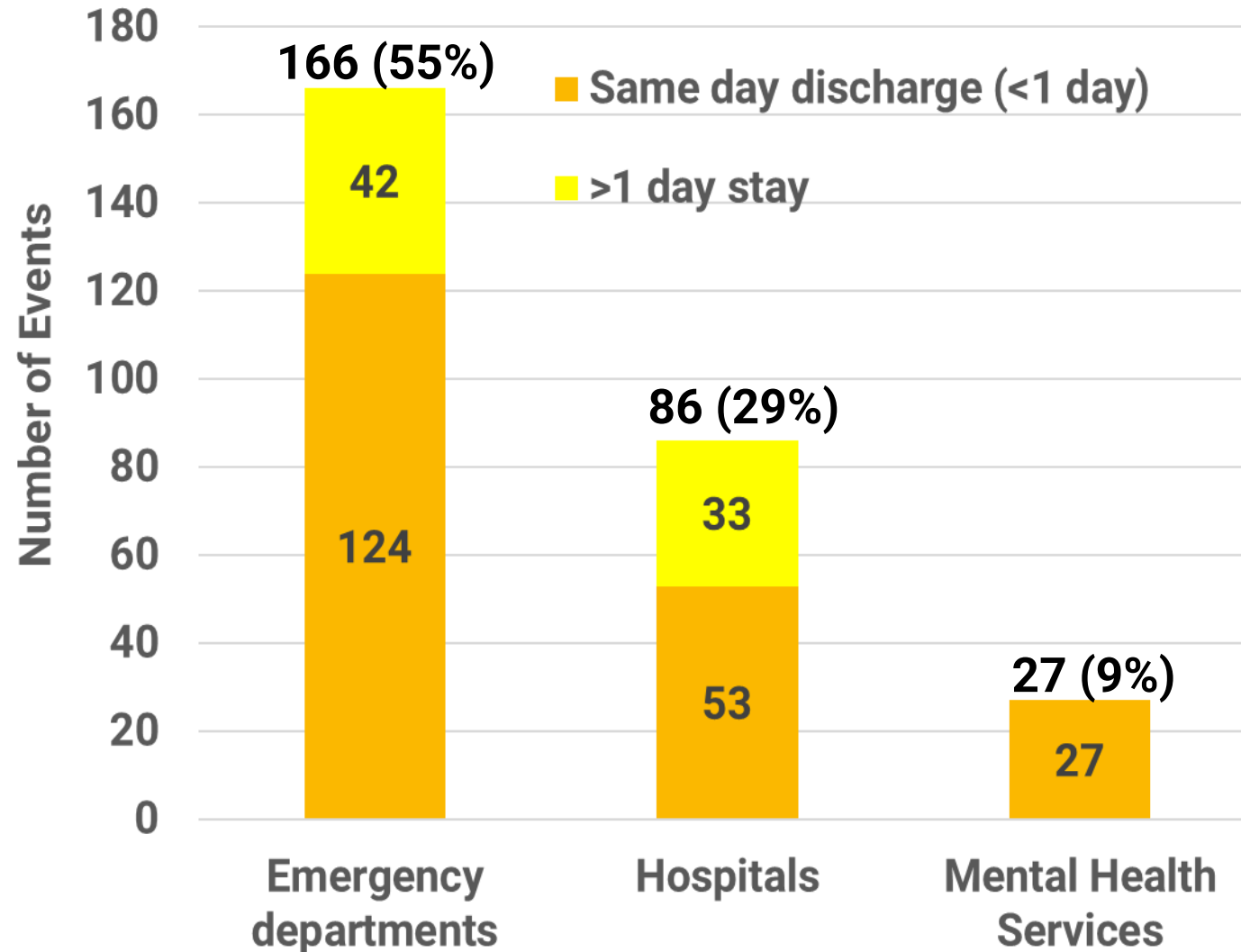


Suicide-related events

Total number of events by suicide episode type; n=298



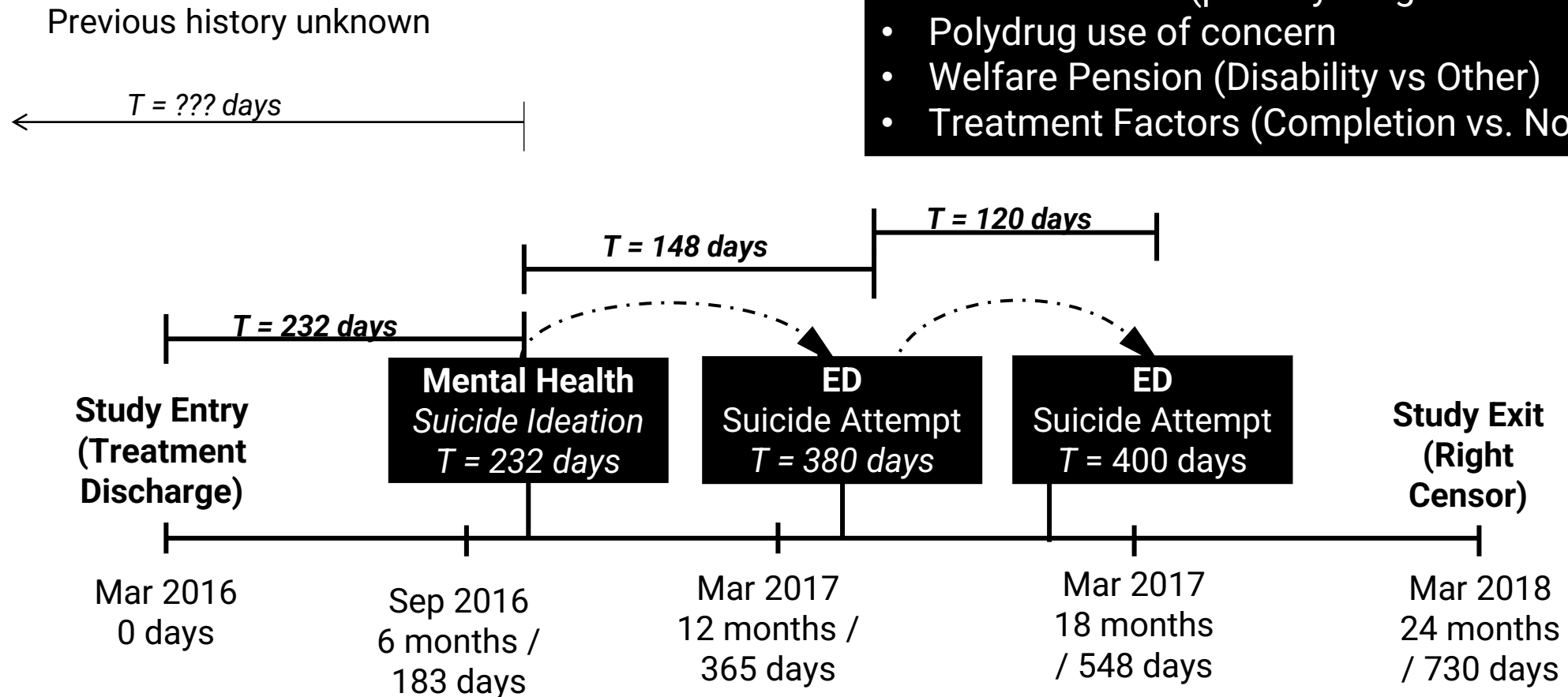
Service Utilisation and Length of Stay for suicide events by service; n=279



Recurrent Event Analysis

Factors Impacting Risk of Suicide

- Gender
- Age
- Identification as Indigenous Australian
- Substance Use (primary drug of concern)
- Polydrug use of concern
- Welfare Pension (Disability vs Other)
- Treatment Factors (Completion vs. Non-completion)



Predictive Factors

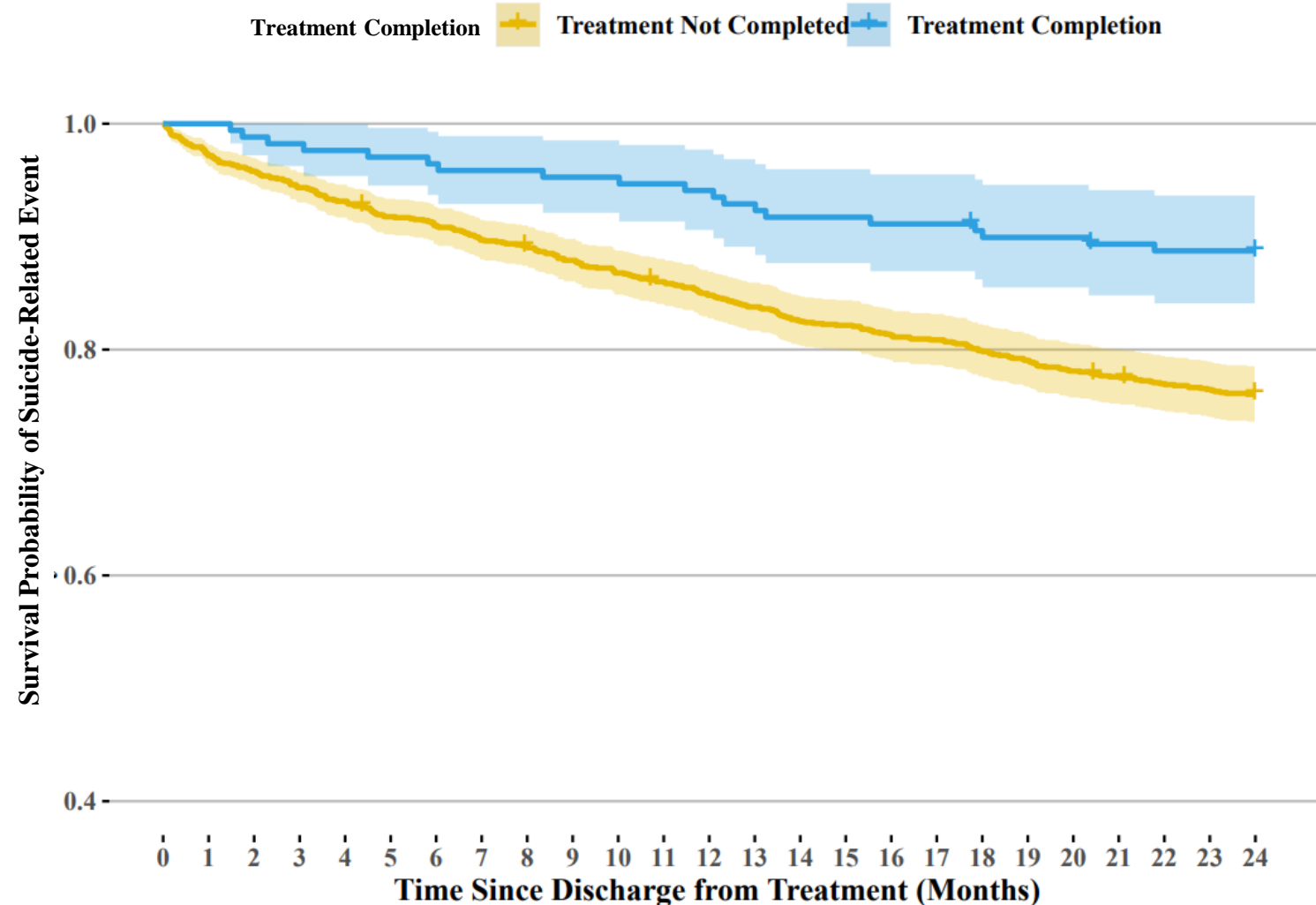
Lower likelihood of recurrent suicide-related events:

- **Completing residential treatment episode**
(aHR=0.53 (95%CI:0.28, 0.92), p=0.025)
- **Identifying as Indigenous Australian**
(aHR=0.54 (95%CI:0.35, 0.83), p=0.005)

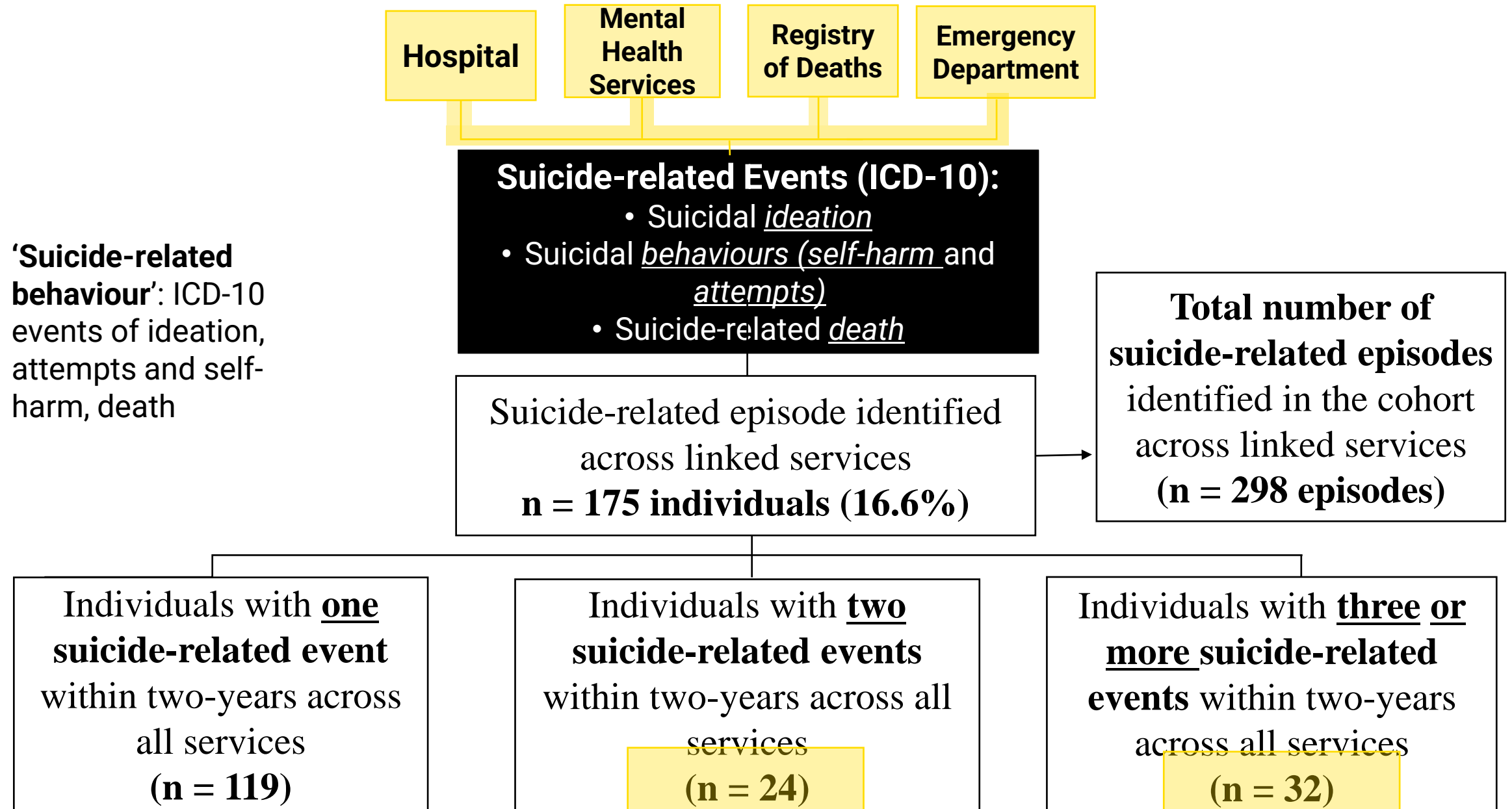
Higher likelihood of AOD-related events:

- **Previous episodes to residential treatment**
(aHR=1.49 (95%CI:1.30, 2.15), p=0.032)
- **Disability Support Pension**
(aHR=1.69 (95%CI:1.10, 2.59), p=0.016)

**Survival Function of Suicide-Related Events and Treatment Completion
(within two-years of discharge)**



Suicide-related events identified through linkage



Linkage to the Future

Improving health information systems

- Creating larger data environments that enable greater investigation
 - Optimising information sharing between health services for accessible information for research and clinical purposes
 - Australia has the existing infrastructure to do this, and has since introduced suicide specific monitoring systems '**The National Suicide and Self-harm Monitoring System**'

Targeting preventable deaths and suicidal-behaviours in individuals who use substances

- All deaths in the study represent a loss of human life and were preventable
- Implementing suicide prevention strategies within and post-treatment
- Managing the co-occurrence of suicidality and substance use

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The service provider and their staff for providing funding and in-kind support for this project, including support through a PhD scholarship.

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Research paper

The risk of repeated suicidal presentations following residential treatment for substance use disorders: A recurrent event analysis using linked administrative data

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ABSTRACT

Background: Individuals seeking alcohol and other drug (AOD) treatment consistently experience higher rates of suicidal behaviours and death by suicide when compared to the general population. By linking residential AOD treatment data to administrative healthcare and death datasets, we aimed to examine suicide-related behaviours and identify risk and protective factors for these events following discharge from residential treatment.
Methods: Participants included 1056 individuals aged 18-69 ($M = 32.06$, $SD = 9.55$, $male = 696/65.9\%$) admitted to three residential treatment facilities in Queensland, Australia from January 1, 2018 to December 31, 2016. Treatment data was linked to administrative hospital, emergency department (ED), mental health service, and Registry of Deaths data 2-years post-discharge. ICD-10 codes were used to identify and analyse suicide-related events.
Results: Within 2-years post-discharge, 175 (16.6%) individuals had a suicide-related event ($n = 298$ episodes). The highest proportion of episodes (11.1%) occurred within 1 month of discharge. Higher risk of a recurrent suicide-related event was associated with receiving a Disability Support Pension ($aHR = 1.69$ (95%CI: 1.10, 2.59)), two or more previous episodes of residential AOD treatment ($aHR = 1.49$ (95%CI: 1.30, 2.15)). Completing residential treatment was associated with a lower risk of suicide-related events ($aHR = 0.54$ (95%CI: 0.35, 0.83)).
Limitations: The amalgamation of suicide ideation, attempts, and death into a single outcome oversimplifies their complex nature and interplay. The exclusive focus on one service provider limits generalisability, and data constraints and missingness preclude many analyses.
Conclusions: Understanding suicidal behaviours and critical risk periods following discharge from residential treatment is crucial for improving continuing care, developing effective suicide prevention, and implementing targeted interventions among this high-risk population.

1. Introduction

Suicide is a major concern globally with >700,000 deaths by suicide every year (World Health Organization, 2021), with an estimated 3249 deaths by suicide specifically in Australia in 2022, a rate of 12.3 per 100,000 people (Australian Institute of Health and Welfare, 2023). This

concern is elevated for individuals with substance use disorders (SUDs) who experience greater risks of suicidal ideation, suicidal attempt and/or harm, and death by suicide (Franklin et al., 2017; Sirta et al., 2022; Yuodis-Piars and Ries, 2015).

Among individuals seeking AOD treatment for SUDs, lifetime estimates of suicide-related behaviours remain consistently high; with

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