

BACKGROUND

62%

increase in opioid-related-deaths¹

25%

rise in hospitalisations between 2007 - 2016 in Australia alone. This is driven mainly by prescription use, not illicit drugs.

These trends highlight the need to better understand how opioid use evolves after surgery, particularly in rural settings.



Opioid use is common after surgery, but for some patients, short-term prescribing can lead to extended use and dependence.



Rural and regional areas face unique challenges, with higher opioid prescribing rates and limited access to alternative pain care.



There is little research exploring postoperative opioid patterns following major surgeries like cardiothoracic procedures in regional settings.

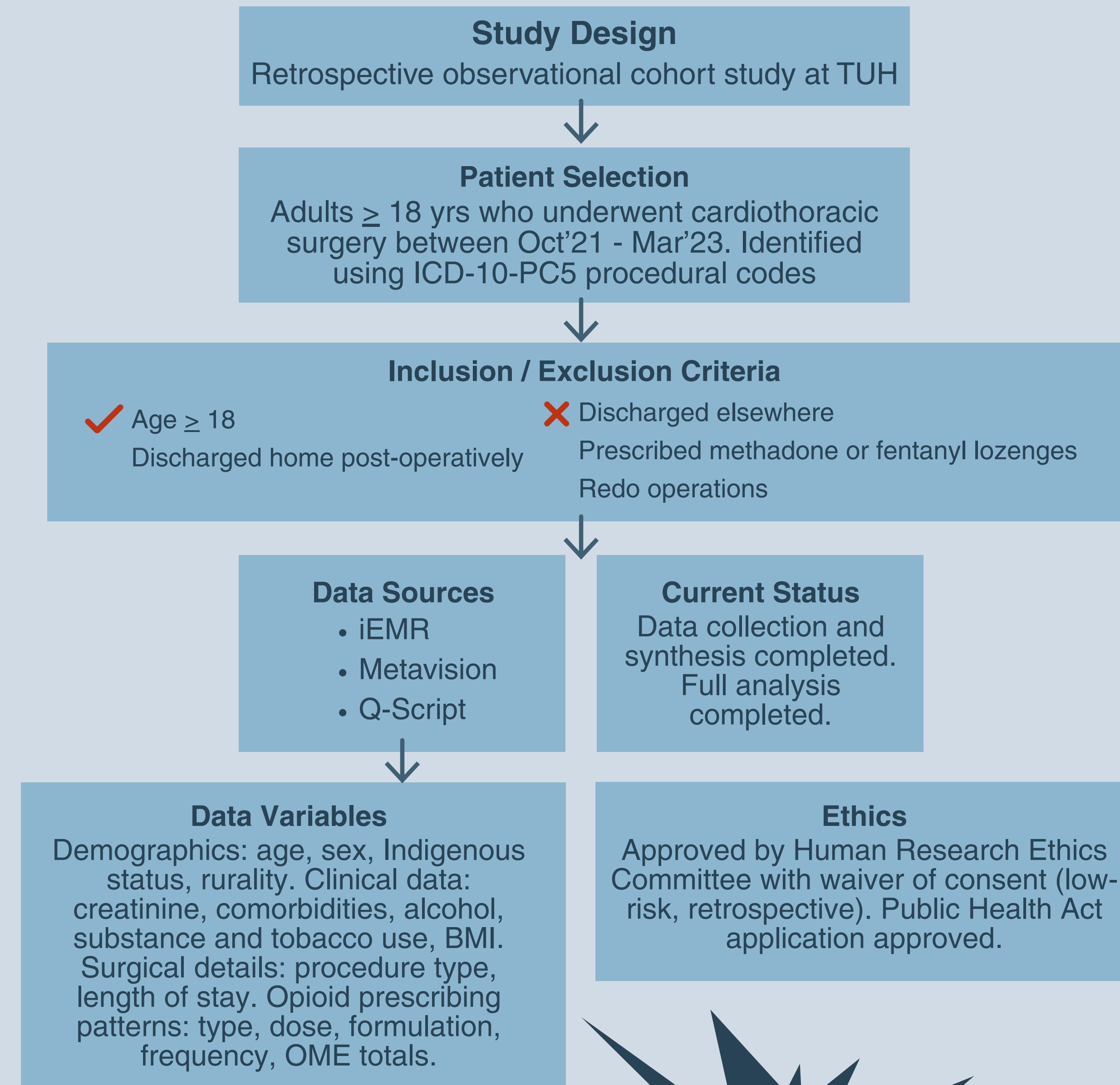


Indigenous patients are often underrepresented in surgical research, despite having distinct health risks and care experiences.

AIMS

- To calculate how many patients continue opioid use at **3, 6, and 12 months** post-discharge
- To examine the **types of opioids prescribed**, including frequency, dose, and release formulation
- To explore whether persistent use differs between Indigenous and non-Indigenous patients
- To assess the influence of rurality, type of surgery, and comorbidities on long-term use
- To **identify patient and system-level risk factors** that may contribute to ongoing prescribing
- To identify if **opioid naivety** affects dosages of opioids prescribed and persistent usage

METHODOLOGY

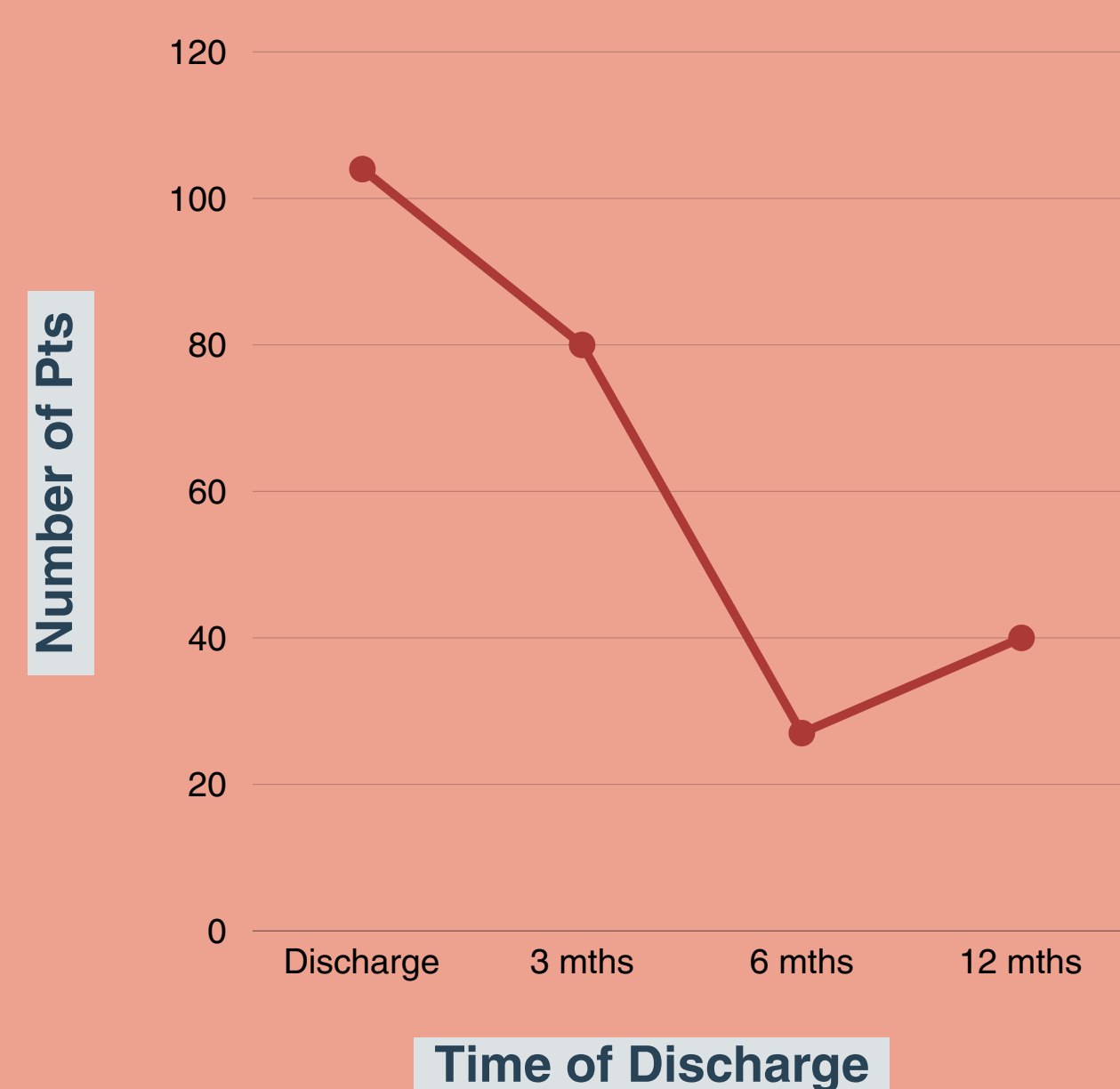


RESULTS

240 patients included; 43% discharged on opioids

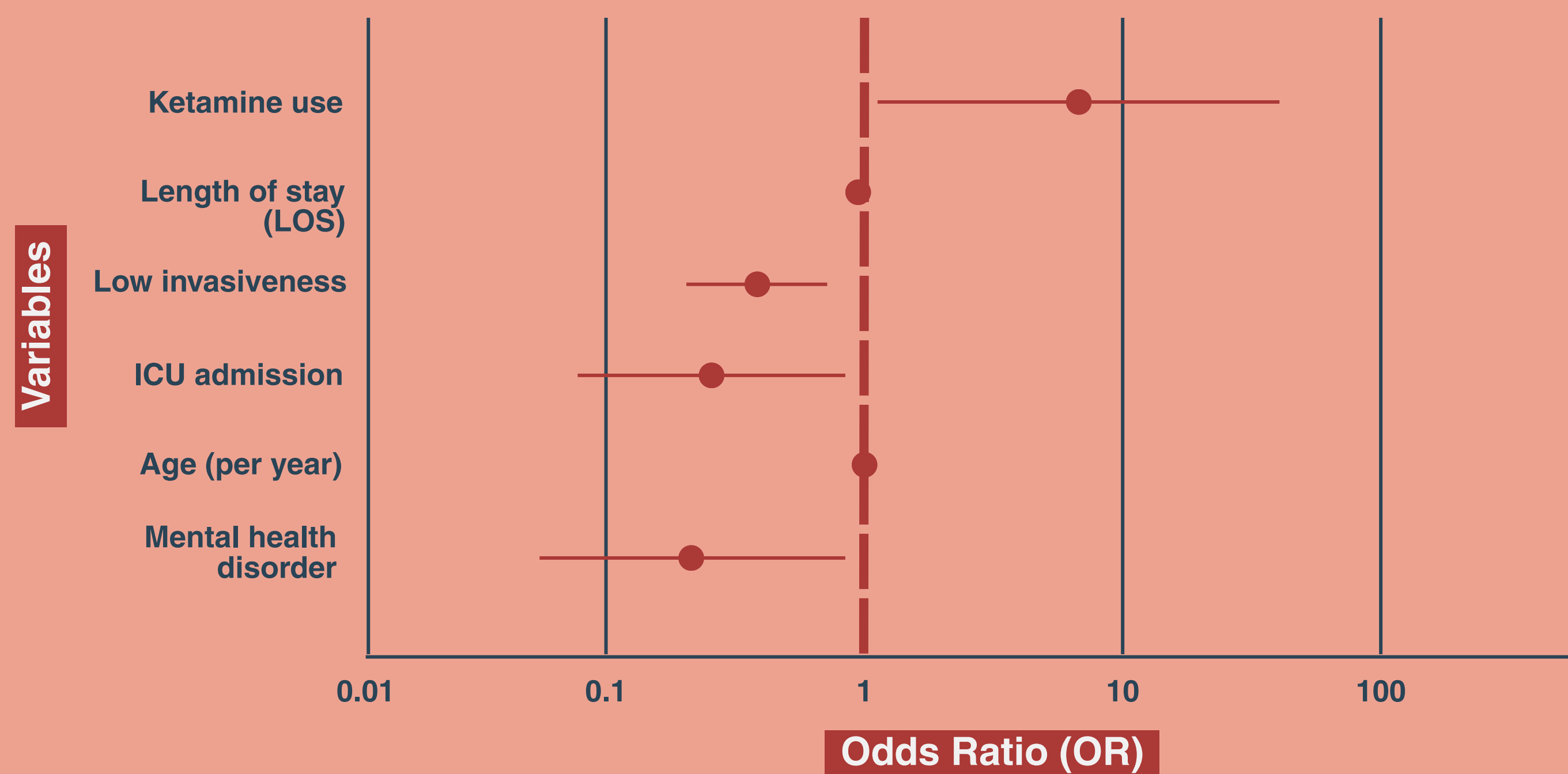
Of those discharged, **77%** remained on opioids at 3 months, **26%** at 6 months, and **38%** at 12 months.

PERSISTENT OPIOID USE AFTER 12 MONTHS



Discharge on sustained-release (SR) opioids was the most consistent predictor of persistence overall. Some factors are illustrated below:

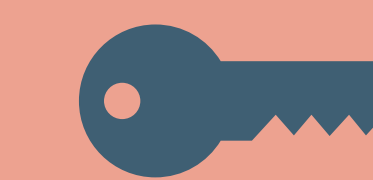
PREDICTORS OF DISCHARGE OPIOID PRESCRIBING



Increased odds → ketamine use, high invasiveness, shorter LOS
Protective → ICU admission, older age, mental health disorder

Timepoint	Predictor	OR	P-value
3 months	SR opioids	21.84	0.027
	Tobacco use	0.26	0.025
	Substance use	5.25	0.032
6 months	Male sex	0.27	0.008
	Opioid naive	0.33	0.03
	Healthy BMI	0.38	0.05
12 months	Age (per year)	1.05	0.04

Other predictors varied according to the time point assessed. At **3 months**, sustained-release opioids were associated with increased persistence, while tobacco use was protective. At **6 months**, substance use and female sex were associated with greater persistence, whereas being opioid-naïve and having a healthy BMI were protective. By **12 months**, older age was the only factor associated with persistent opioid use.



KEY FINDING

100%

of patients discharged on sustained-release opioids remained on opioids at follow-up

No statistically significant differences in discharge prescribing, persistence, or total OME based on rurality.

No statistically significant differences in discharge prescribing or persistence at 3, 6, or 12 months compared with non-Indigenous patients.

FUTURE IMPACT

This study contributes much needed regional Australian data and shows that postoperative opioid use is influenced by discharge practices and broader system factors. Similar patterns have been reported in the United States, particularly in rural settings where access to non opioid pain care is limited.

The findings align with international guidance that recommends cautious prescribing after surgery and avoidance of long acting opioids in opioid naive patients. Clear tapering advice, early review and consistent perioperative stewardship may help prevent unplanned long term use.

Real time prescription monitoring systems such as QScript and US PDMPs can also support safer prescribing by identifying ongoing use earlier. Larger multicentre studies with stronger rural and Indigenous representation will further clarify postoperative opioid trajectories and guide targeted interventions.