# Incidence of postoperative delirium in Northern Health surgical patients aged 65 years and older



## **Northern Health**

## INTRODUCTION

Delirium is generally defined as an acute change in cognitive function characterised by sudden and fluctuating changes in attention and cognition [1]. It is a common hospital-acquired complication with an incidence of 35.7 per 100,000 admissions in Australian hospitals [2]. In the postoperative setting this rate is even greater, with an incidence of 10-20% in older patients aged 60-70 years, and up to 50-70% in high-risk surgical groups e.g. hip fracture patients [3].

Postoperative delirium (POD) is associated with increased length of hospital stay and expenditure, increased 30-day mortality, and increased risk of long-term cognitive decline [1].

### **AIMS**

Perform a retrospective audit to identify the incidence of postoperative delirium in patients greater than 65 years old at Northern Health undergoing elective or emergency surgery.
Identify perioperative factors that are associated with the development of postoperative delirium in this surgical population.

#### **METHOD**

A retrospective audit of patients aged 65 and older undergoing elective or emergency surgery at Northern Health, Melbourne, Australia, with a minimum 48-hour hospital admission, over a four-month period from 1st November 2023 to 29th February 2024, was performed.

Baseline patient demographics, preoperative, intraoperative and postoperative details were collected and stored securely using the REDCap database. Patients were identified as having developed POD as per documentation by the medical team in the electronic medical record system.

For patients that developed postoperative delirium, further subanalysis including duration of delirium, surgical complications, delirium management (pharmacological and non-pharmacological), and input from multidisciplinary teams was also recorded.

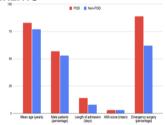
#### **RESULTS**

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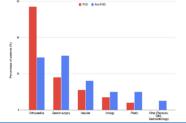
A total of 460 patients were identified during this study period. The mean age was 77 years, with 64% undergoing emergency surgery. The most common surgical subspecialty was orthopaedics (31%), followed by general surgery (30%), vascular (15%) and urology (10%). Mean ASA score was 3, and overall average length of hospital admission was 9 days.

Postoperative delirium was diagnosed in 28 patients (6.1%), and found to be more common in those undergoing emergency surgery (89%), orthopaedic patients (57%), those with pre-existing cognitive impairment (32%), hearing and/or visual impairment (18%), and in those who received ketamine intraoperatively. Postoperatively, these patients had a longer average hospital admission (14 vs. 8 days), and a high incidence of discharge to geriatric evaluation and management (GEM), rehabilitation or aged care facility (92%).

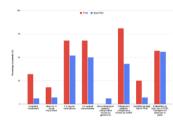
## COMPARISON OF DEMOGRAPHICS OF POD PATIENTS AGAINST NON-POD PATIENTS



## COMPARISON OF SURGICAL SPECIALTY OF POD PATIENTS AGAINST NON-POD PATIENTS



## COMPARISON OF PREOPERATIVE FACTORS OF POD PATIENTS AGAINST NON-POD PATIENTS



#### DISCUSSION

The incidence of POD at our institution is lower than reported in literature, which may reflect a lower true incidence due to preventative strategies - for example all emergency orthopaedic patients received a preoperative geriatrician review. However this may also be due to under-reporting or under-diagnosis, and is limited by our small population sample.

Screening, or documentation of screening, remains limited, with minimal 4AT or miniCOG assessments being utilised in clinical practice. Patients at increased risk of POD appear to be those undergoing emergency surgery, orthopaedic patients, and those with pre-existing cognitive impairment.

Increasing the use of preoperative screening tools to improve risk stratification and early implementation of preventative strategies may be useful next steps in further reducing our POD rate. Furthermore, there may be a need to further educate healthcare staff on the importance of diligent documentation to ensure accuracy of all patient encounters.

#### REFERENCES

- 1. Deiner S, Silverstein J. Postoperative delirium and cognitive dysfunction. British Journal of Anaesthesia. 2009 Dec 1;103(suppl\_1):i41-6.
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- 3. https://www.safetyandquality.gov.au/sites/default/files/ 2023-02/delirium\_clinical\_care\_standard\_2021\_print.pdf
- Jin Z, Hu J, Ma D. Postoperative delirium: perioperative assessment, risk reduction, and management. British Journal of Anaesthesia. 2020 Oct 1;125(4):492-504.