

FACTORS INFLUENCING MEDICATION RELATED HOSPITAL ACQUIRED COMPLICATIONS

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Background

A hospital acquired complication (HAC) is considered a patient complication for which the risk can be reduced (but not necessarily eliminated) by providing care that mitigates avoidable clinical risk to patients (1). HACs lead to patient harm and have financial impact on both the patient and health system (1). Twelve percent (13991) of all HACs in Australian hospitals were attributed to medication complications in 2021/22 (2). It is estimated that medication-related HACs cost the health system \$950 million annually (3).

In 2018, the Independent Hospital Pricing Authority implemented funding changes whereby penalties were incurred by services and adjusted for risk if patients experienced a HAC (4). The intent of the funding adjustments were to provide incentives via funding signals for hospitals to take action to reduce systemic risk related to delivery of care. Since the introduction of HAC pricing adjustments, medication-related HACs have declined from 3824 in 2017-18 to 28643 in 2019-20 (33% reduction) (4).

A recent Australian study looked to quantify the impact of patient related factors (e.g. age, diagnosis and comorbidities) compared with hospital factors (e.g. site, type, standard of care) on the occurrence of HACs (5). The importance of patient related factors on HACs occurring had been established previously (5). The little influence of hospital factors on HAC rates was a new finding. It was found that ninety percent of reported HACs lacked evidence of suboptimal care, instead suggesting evidence of an association with patient related factors (5).

Aim

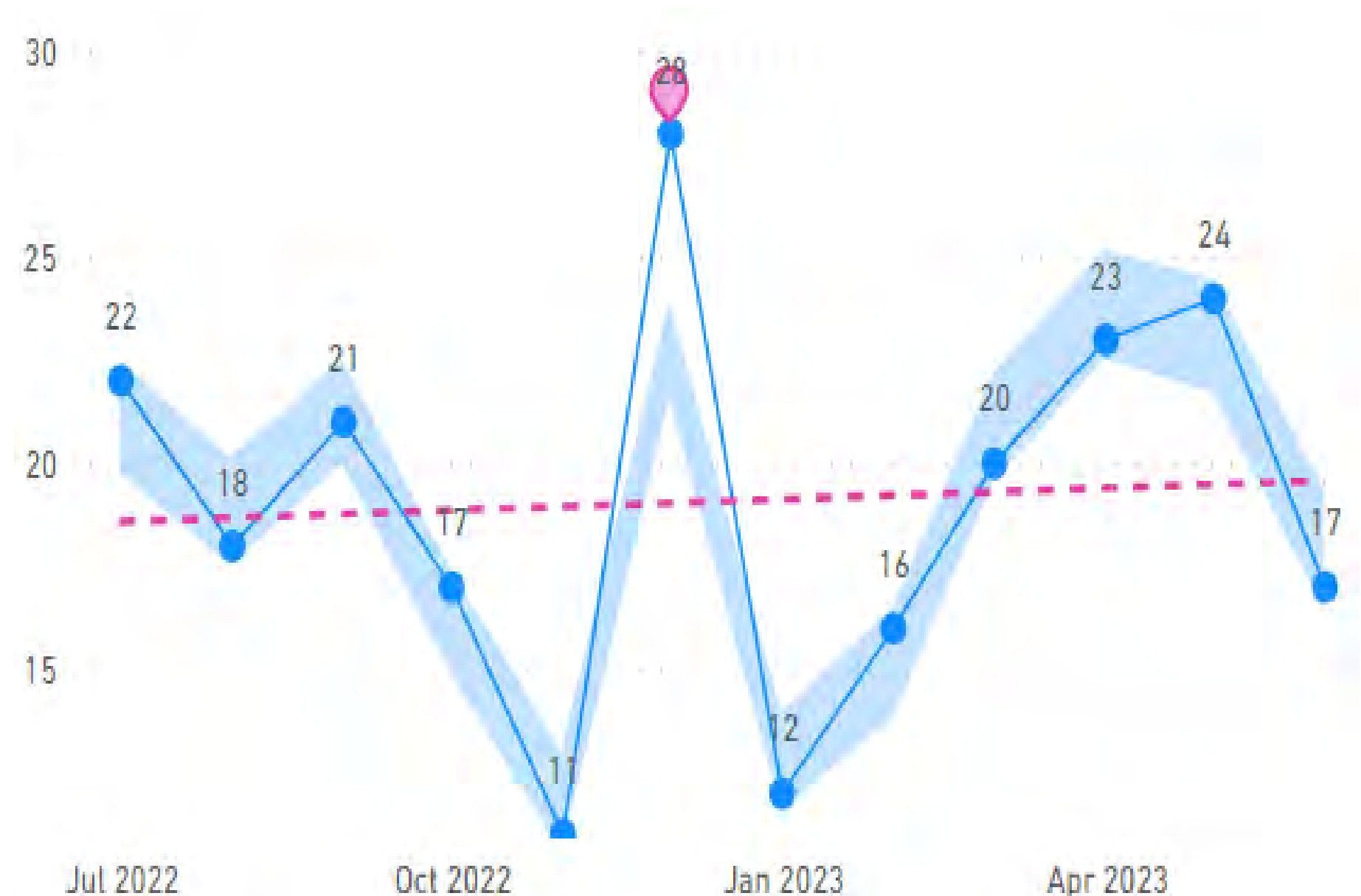
To review and analyse patient trends in cohorts that have incurred a medication-related HAC whilst an inpatient.

Methods

A HAC dataset for 12-months at St. Vincent's Hospital Melbourne was reviewed via Power BI. Trends in age, sex, treating unit, admission type, DRG classification and complication type was collected and analysed.

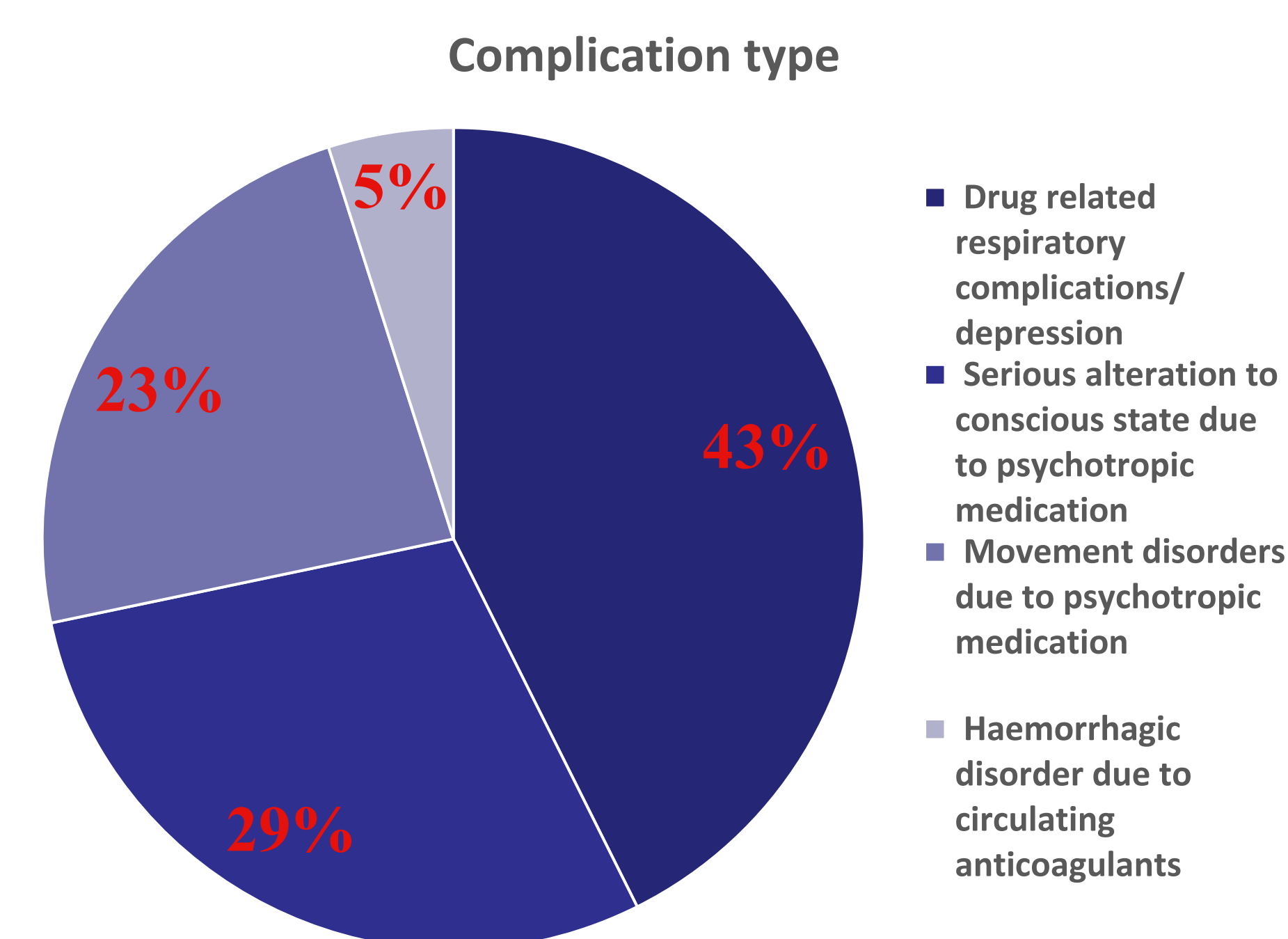
Results

229 medication related HACs occurred in a 12 month period, with the peak occurring in December.

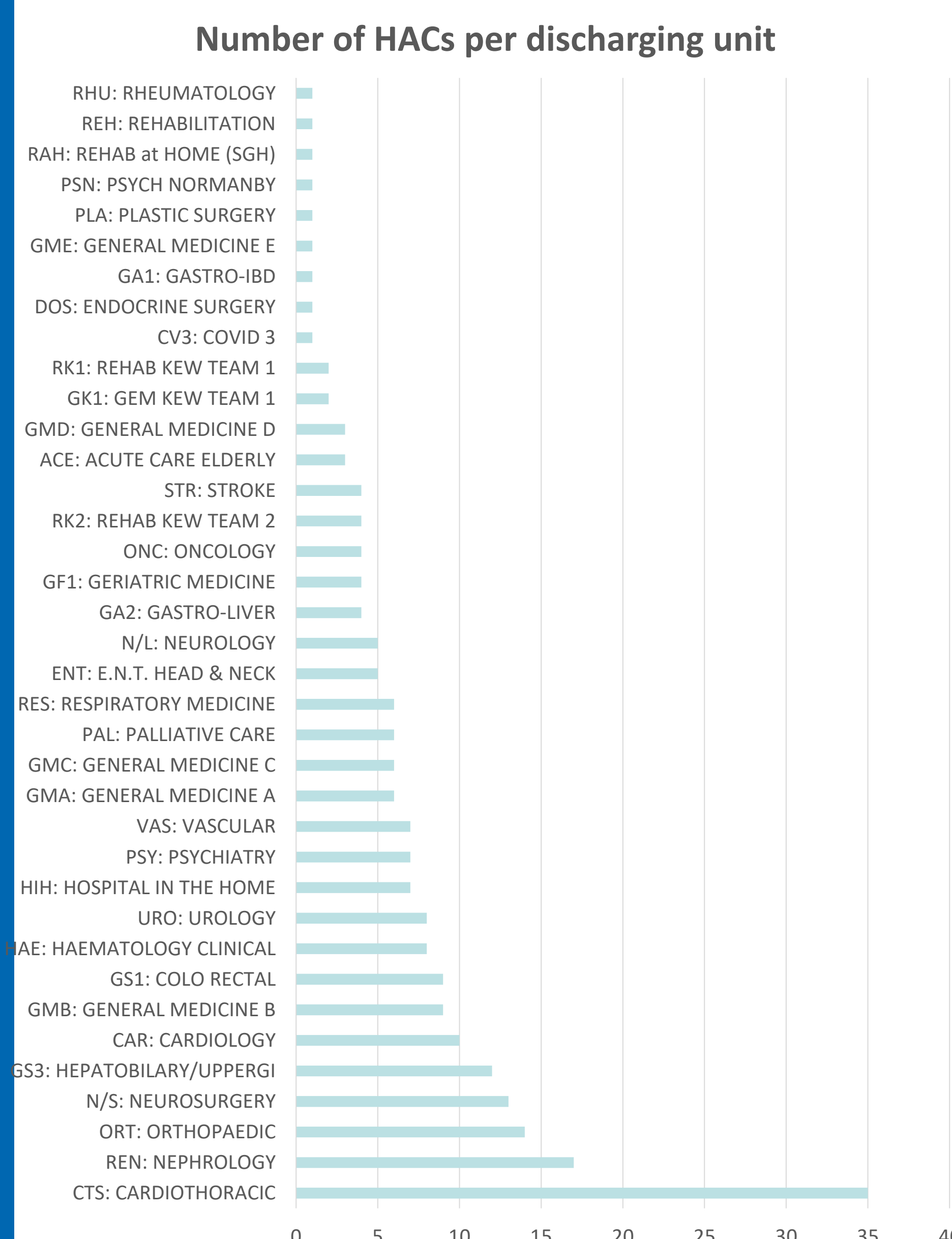


Results

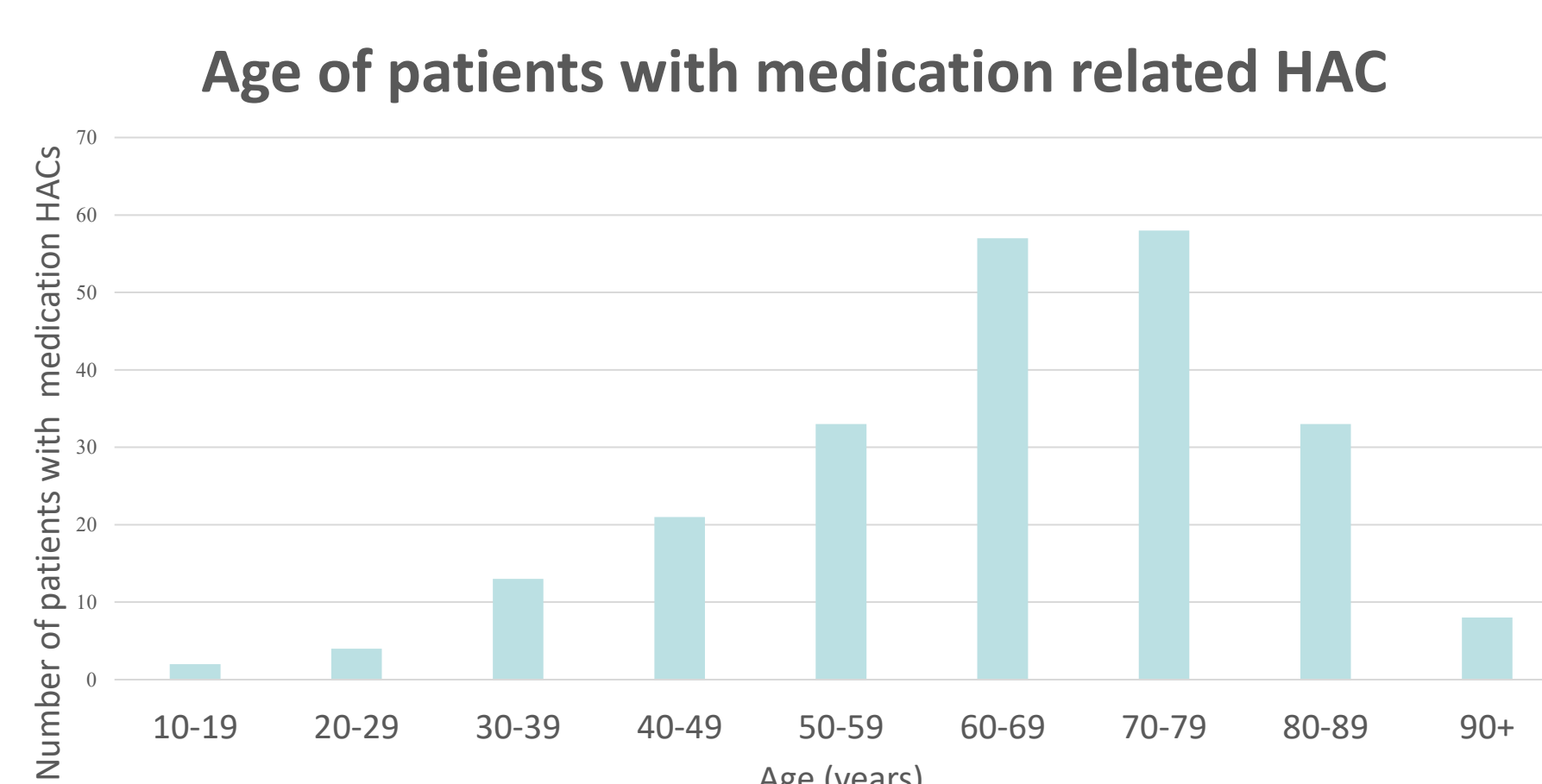
Of the 229, 43% were drug related respiratory complications/depression, 29% were serious alteration of conscious state due to psychotropic medications, 23% were movement disorders secondary to psychotropic medications and 5% were from haemorrhagic disorders.



15% of patients were discharged from the Cardiothoracic Unit, 7% from the Nephrology Unit and 6% from the Orthopaedic Unit.



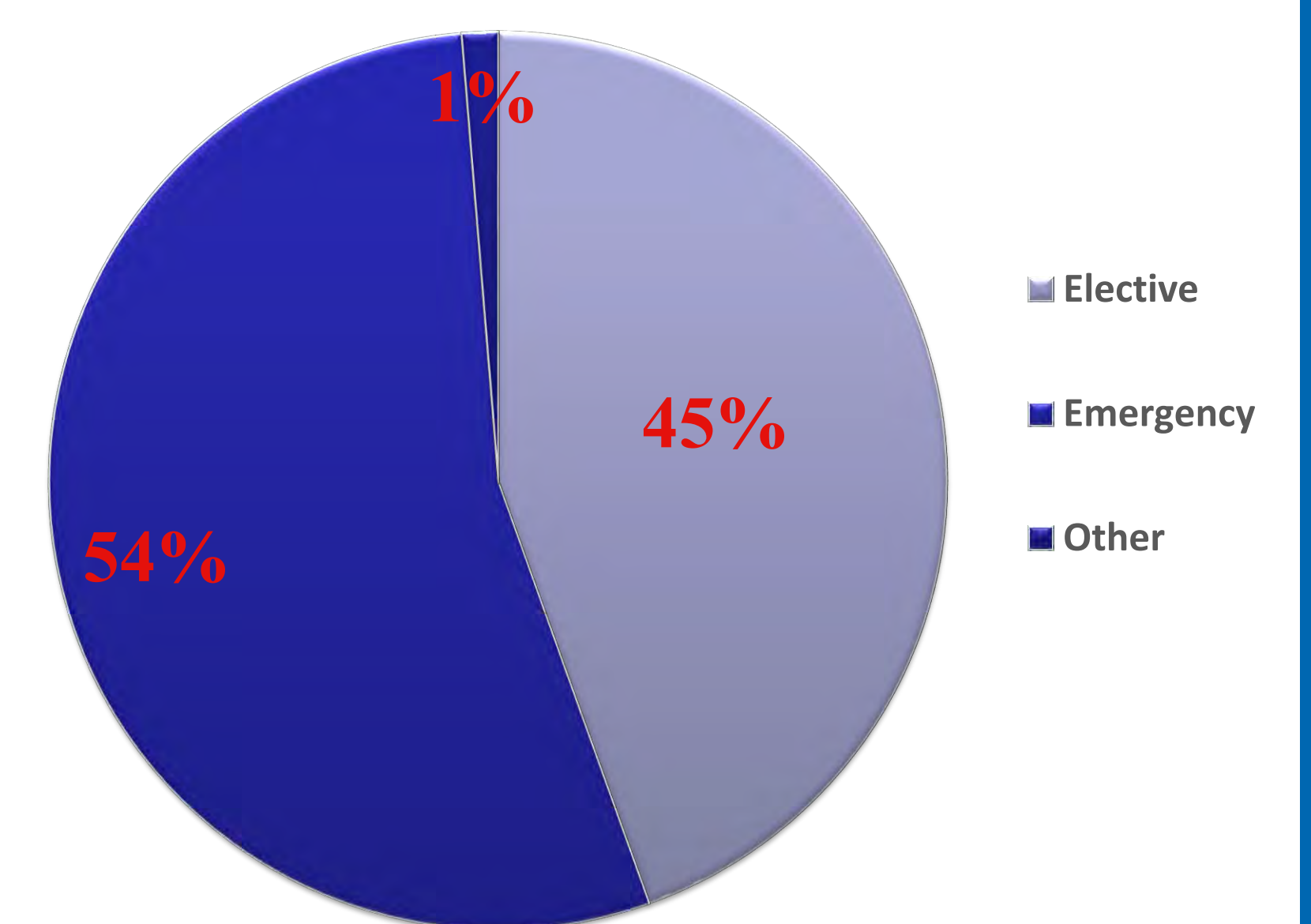
The greatest number of medication related HACs occurred in 60 to 69 year olds and 70 to 79 year olds.



Results

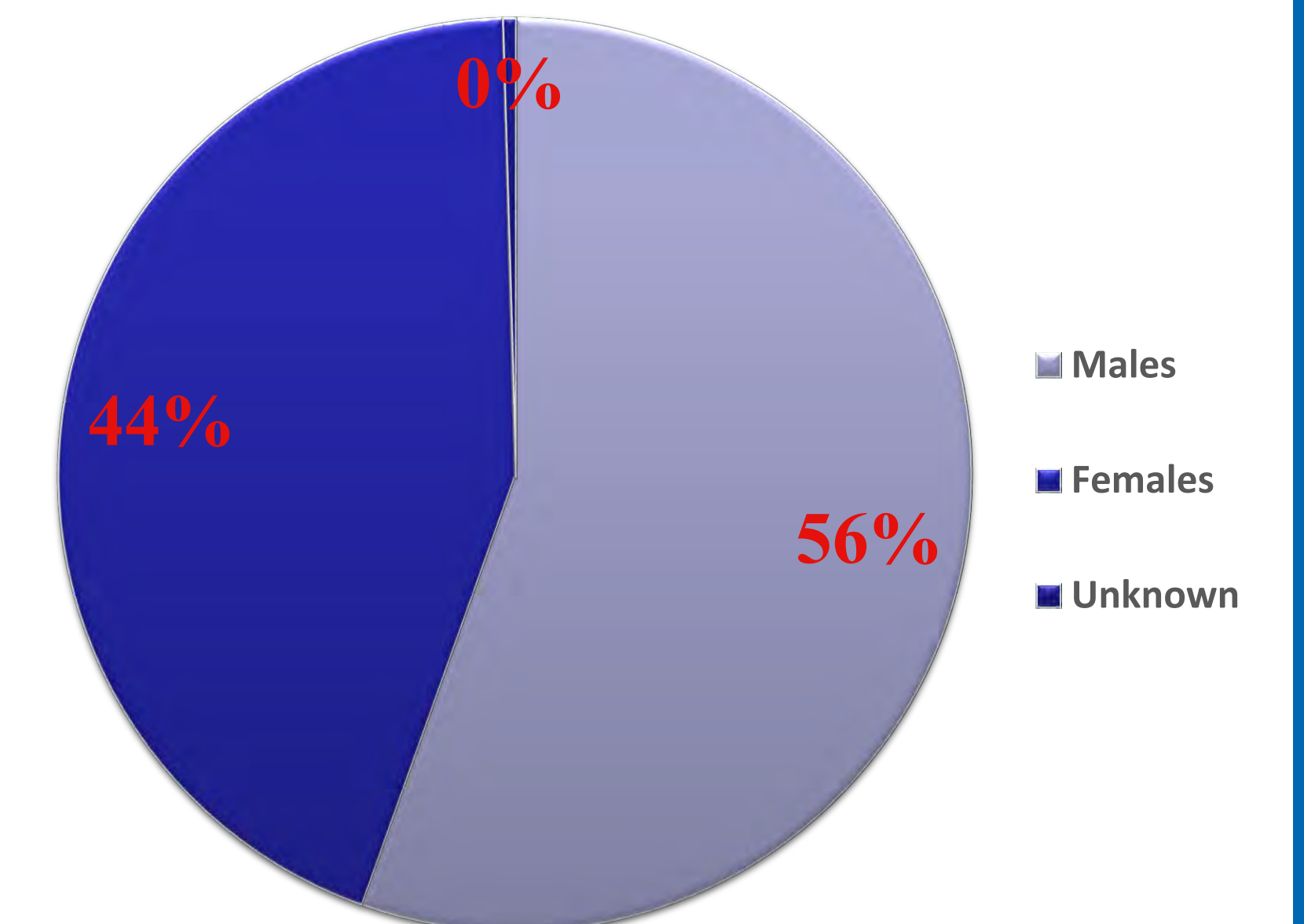
54% of admissions were through the Emergency Department, whilst 45% were elective admissions.

Admission type



56% of medication related HACs occurred in males and 44% in females.

Sex



Discussion

Populations at greater risk of medication related HACs include those aged between 50 and 79 years which is likely to reflect the larger proportion of admissions in this age cohort. This is similar to the recent finding from Duke et al who found the median age reported for patients with HACs was 72 years. Our results are concordant with Duke et al who found males were more likely to incur a HAC compared with females. It should be noted that Duke et al patient factors were pooled for all HAC types which may limit the generalisability to medication related HACs.

Identification of risk factors such as age, male, those being discharged from Cardiothoracic, Nephrology and Neurosurgery Units and those admitted through the Emergency department allow targeted interventions and policy change to be implemented to reduce the risk of medication related HACs for these cohorts.

Conclusion

Whilst this study has identified some general patient related trends in the treated cohort, further research is required to confirm the extend of impact from patient-related factors.

References

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3. Duckett S, Jorm C, Moran G, and Parsonage H. Safer care saves money: How to improve care and save public money at the same time. 2018.
4. Independent Hospital Pricing Authority. Pricing and funding for safety and quality – Risk adjustment model for hospital acquired complications – March 2022. Sydney; 2022.
5. Duke G, Moran JL, Bersten AD, Bhari S, Roodeburg O, Karnon J. Hospital-acquired complications: the relative importance of hospital- and patient-related factors. MJA. 2022;216(5).

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