

Prescribing Patterns of Direct Oral Anticoagulant Therapies in a Quaternary Referral Hospital

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Introduction

Direct oral anticoagulants (DOACs) are widely used to prevent cardio-embolic strokes in patients with non-valvular atrial fibrillation, treatment of deep vein thrombosis, and pulmonary embolisms. The National Anticoagulation Incident Analysis released in 2021 highlighted themes to assist the appropriate use of anticoagulants, including the use of electronic medical records (EMR) to optimise DOAC prescribing.

This study is the first comprehensive review of DOAC prescribing conducted at the Royal Melbourne Hospital (RMH).

Aim

To describe the prescribing patterns of DOACs and assess concordance with Pharmaceutical Benefits Scheme (PBS) indications.

Secondary outcomes included dose appropriateness and identifying non-PBS prescribing indications.

Methods

A retrospective audit of EMR was used to obtain prescription and patient information over a two-week period in 2023.

All discharge, outpatient and emergency department prescriptions were extracted and identified patients were randomised for inclusion. New and continuing DOACs prescriptions were included, however prescriptions generated for withheld DOACs were excluded.

The DOAC product information was used to determine dose appropriateness and the documented indication in the EMR was compared to the PBS website. REDCap® was used for data collection. PBS indications for DOACs are as follows:

- Non-valvular atrial fibrillation (NVAf)
- Acute venous thromboembolism (VTE)
- Chronic VTE
- Chronic stable atherosclerotic disease

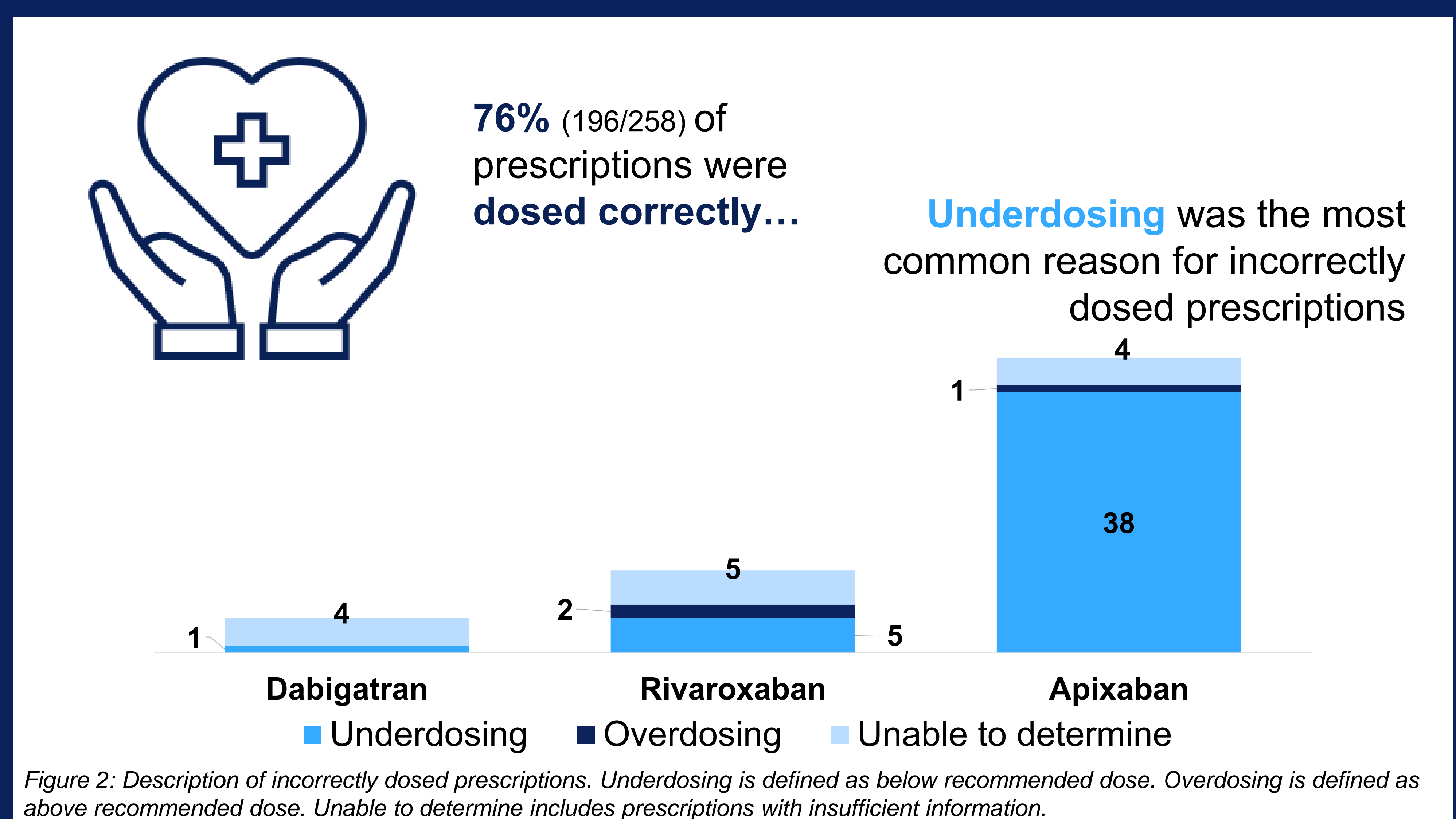
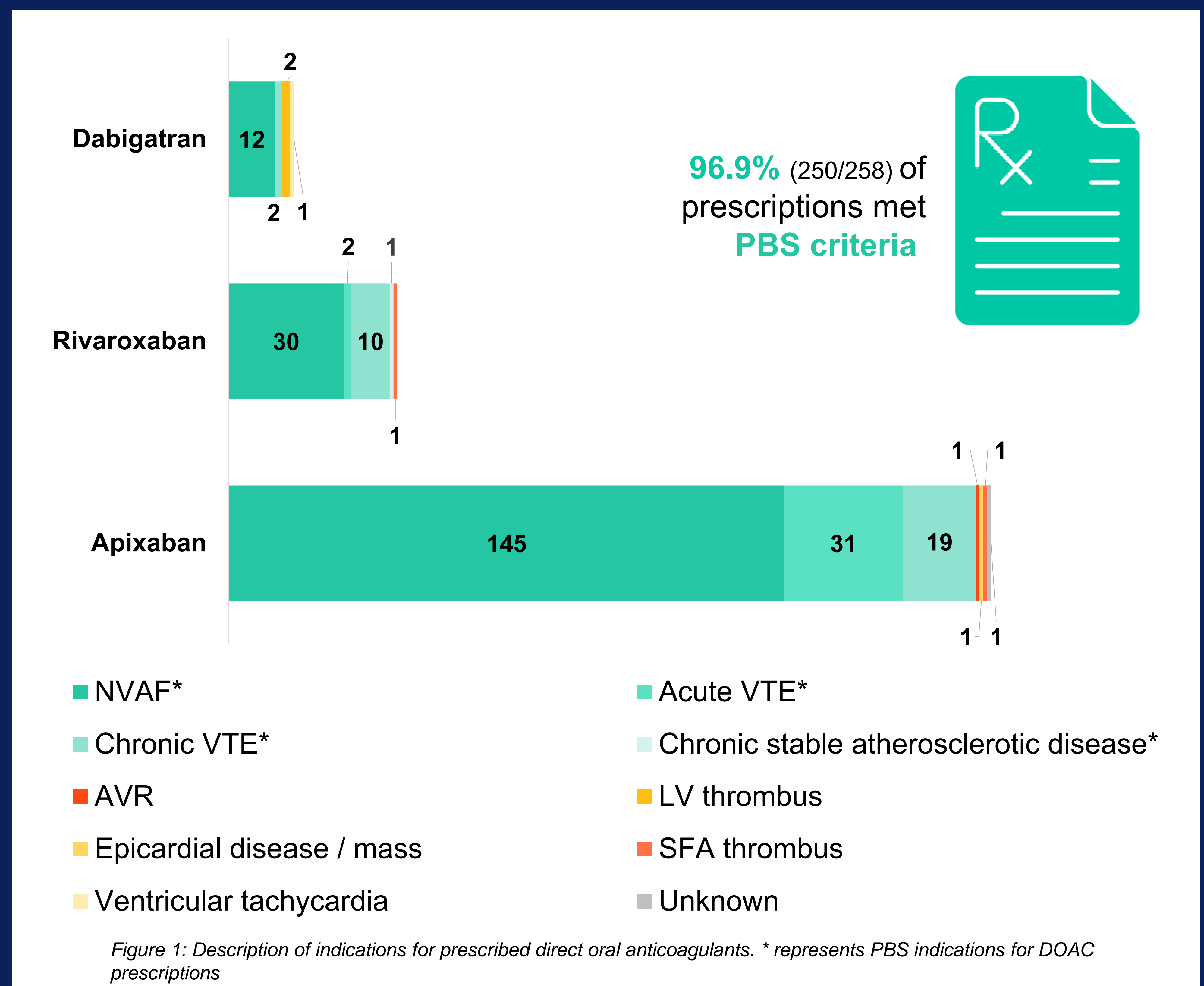
Results

Of 288 prescriptions screened, a total of 258 prescriptions met inclusion criteria.

Characteristic	Dabigatran	Rivaroxaban	Apixaban
Total prescriptions, n	15	44	199
Age (yr), m (IQR)	74 (12)	72.5 (15.5)	74(20)
Female sex, n (%)	2 (13)	20 (45)	104 (52)
BMI, m (IQR)	28.5 (12.7)	29.1 (8.2)	29.6 (8.6)
CrCl mL/min, m (IQR)	84.5 (23)	65 (38)	61 (40)

Table 1: Summary of patient demographics.

n = count, % of column total, m = median, IQR = interquartile range



Discussion

DOACs were largely prescribed for PBS indications (Figure 1). The use of DOAC for indications outside PBS was not unexpected given specialist units at RMH. Almost a quarter of prescriptions were incorrectly dosed, most commonly underdosing of apixaban (Figure 2). Optimisation of EMR decision support tools for DOACs may promote appropriate dosing.

Conclusion

This study has provided useful insights into DOAC prescribing patterns at RMH. It has highlighted potential areas for improvement and a baseline to determine the impact of an Anticoagulation Stewardship Service in the future.