

Antimicrobial Prescribing Patterns in the last 2 weeks of life at a single tertiary hospital

Authors: Athena Asmanis¹, Merlina Sulistio^{1,2}, Robert Wojnar^{1,3}

Affiliations: 1. Cabrini Health, Melbourne Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne, Australia 3. Centre for Medicine Use and Safety, Monash University, Melbourne, VIC.

Introduction

- Antimicrobials are often reported to be **prescribed** in **50 to 90%** of hospitalised patients **in the last week of life** often with an undocumented indication.^{1,2}
- When prescribed appropriately in patients with a life-limiting illness, they are considered to **only provide 60% symptomatic relief**.¹
- Their use is associated with longer hospital stay, adverse effects and transmission of multi-resistant organisms.^{1,2}
- Few antimicrobial stewardship programs or policies address palliative and end-of-life contexts, leaving wide variation in practice and limited support for clinicians.³

Aim

To determine antimicrobial prescribing rates in the last 14 days of life, comparing hospitalised patients with and without palliative care involvement

Methodology

A retrospective audit conducted at Cabrini Health from 03/2022 to 03/2025

1835 deaths identified via the Patient Administration System (PAS) and matched against antimicrobial prescriptions in the electronic medication management (eMM) charts

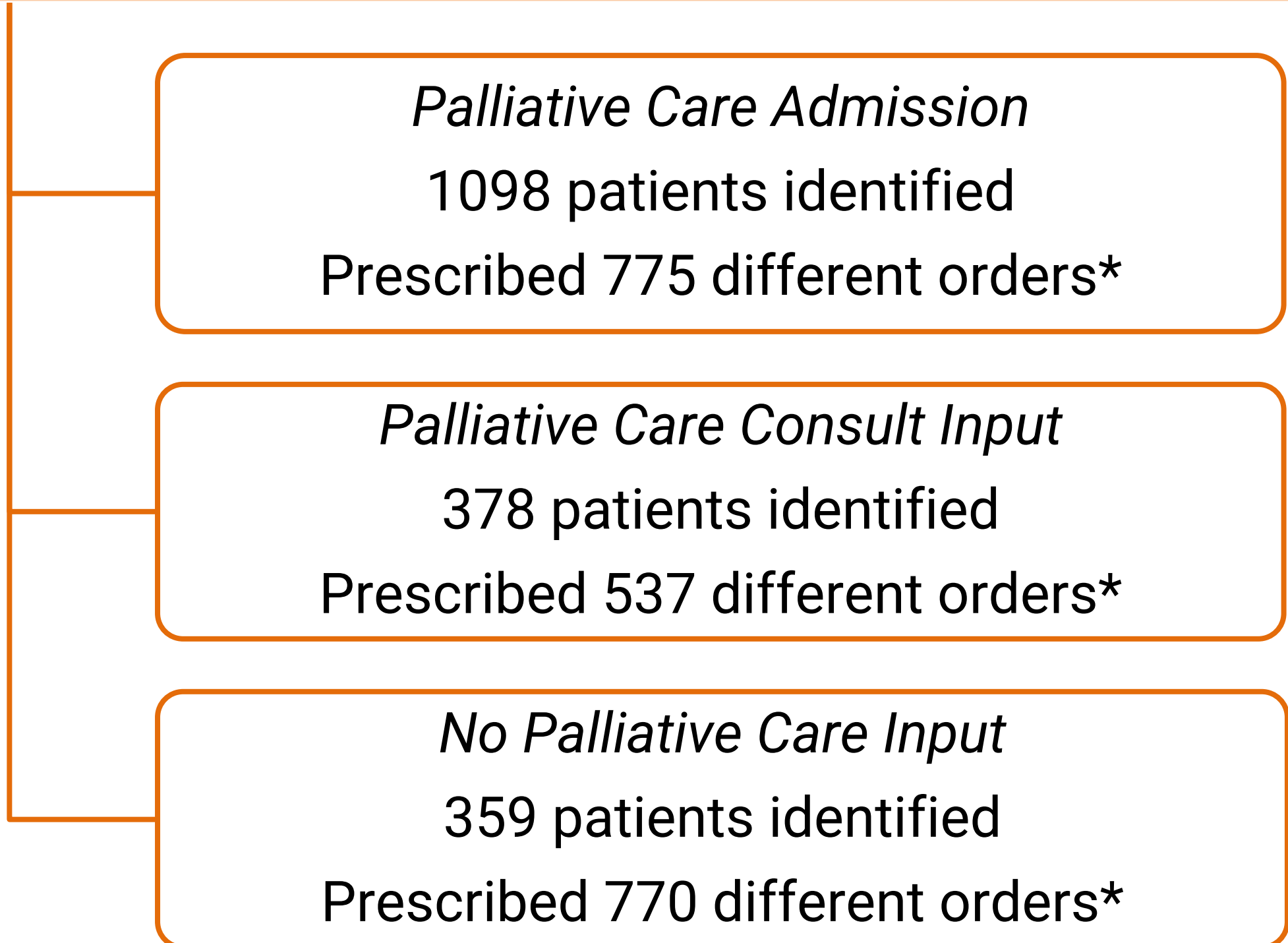


Figure 1: Flow Diagram

*An order was defined as either a different antimicrobial or the same antimicrobial with a different route (i.e. intravenous to oral switch). Excluded any antimicrobial orders prescribed for prevention of infection or topical antimicrobial.

Results

Table 1: Demographic Information

	Palliative Care Admission (N = 1098)	Palliative Care Consult Input (N = 378)	No Palliative Care Input (N = 359)
Age, years [mean (SD)]	79 (12.4)	81 (12.9)	81 (12.0)
Gender, Male [number (%)]	527 (48)	181 (48)	179 (50)
Length of stay [mean (SD)]	7.4 (7.9)	9.6 (9.3)	8.1 (9.4)
Charlson Comorbidity Index [mean (SD)]	8.4 (4.2)	7.2 (3.6)	7.0 (3.7)
Days between last antimicrobial ceased and death [Median (IQR)]	3 [1, 6]	1 [0, 3]	0 [0, 1]

In the last 2 weeks of life, **37.4%** (552/1476) of patients **with palliative care** input received an antimicrobial compared with **68.8%** (247/359) of those **without palliative care** input
(OR 3.69, 95% CI 2.88–4.72; p<0.0001)

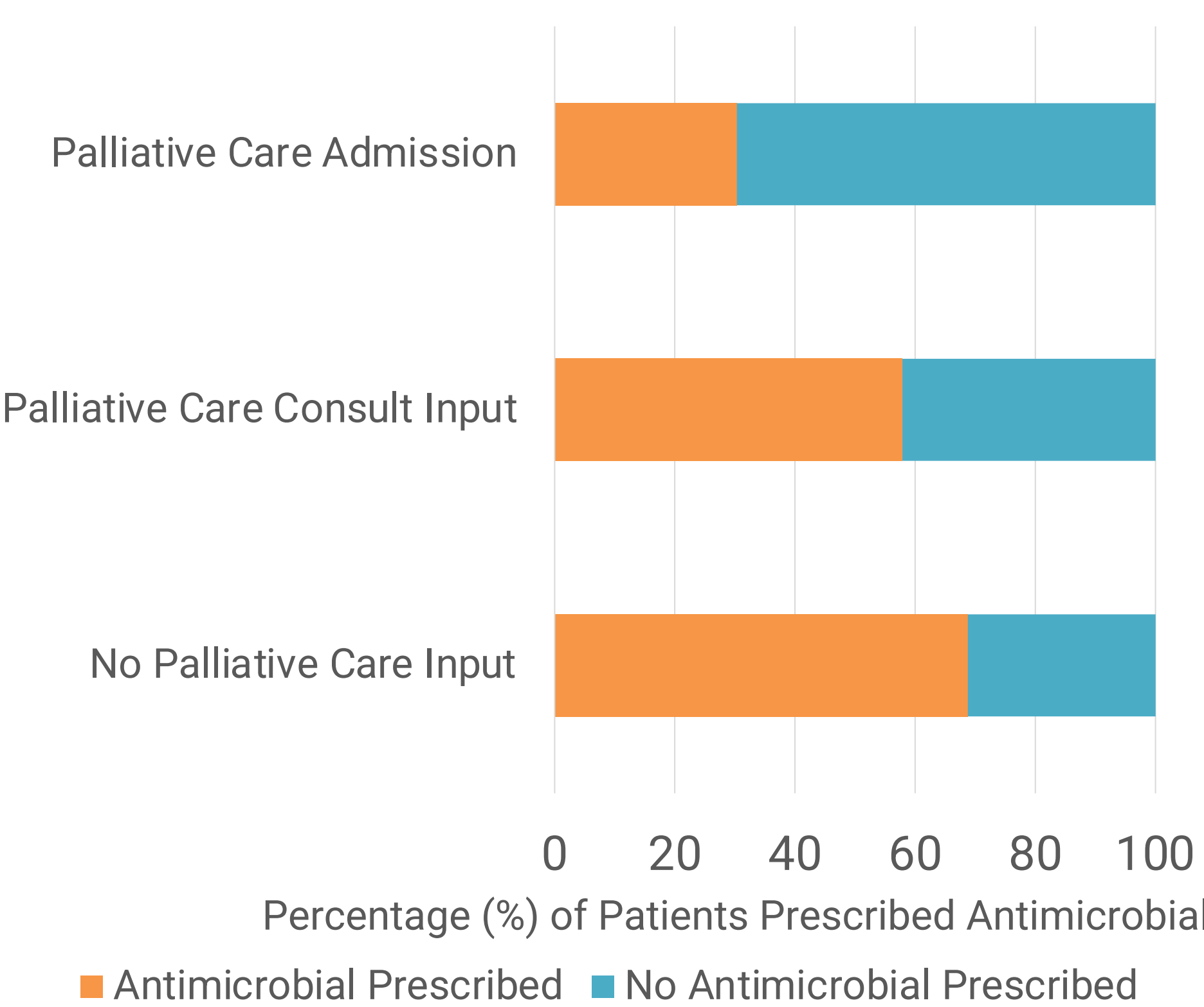


Figure 2: Antimicrobial Prescribing Rate

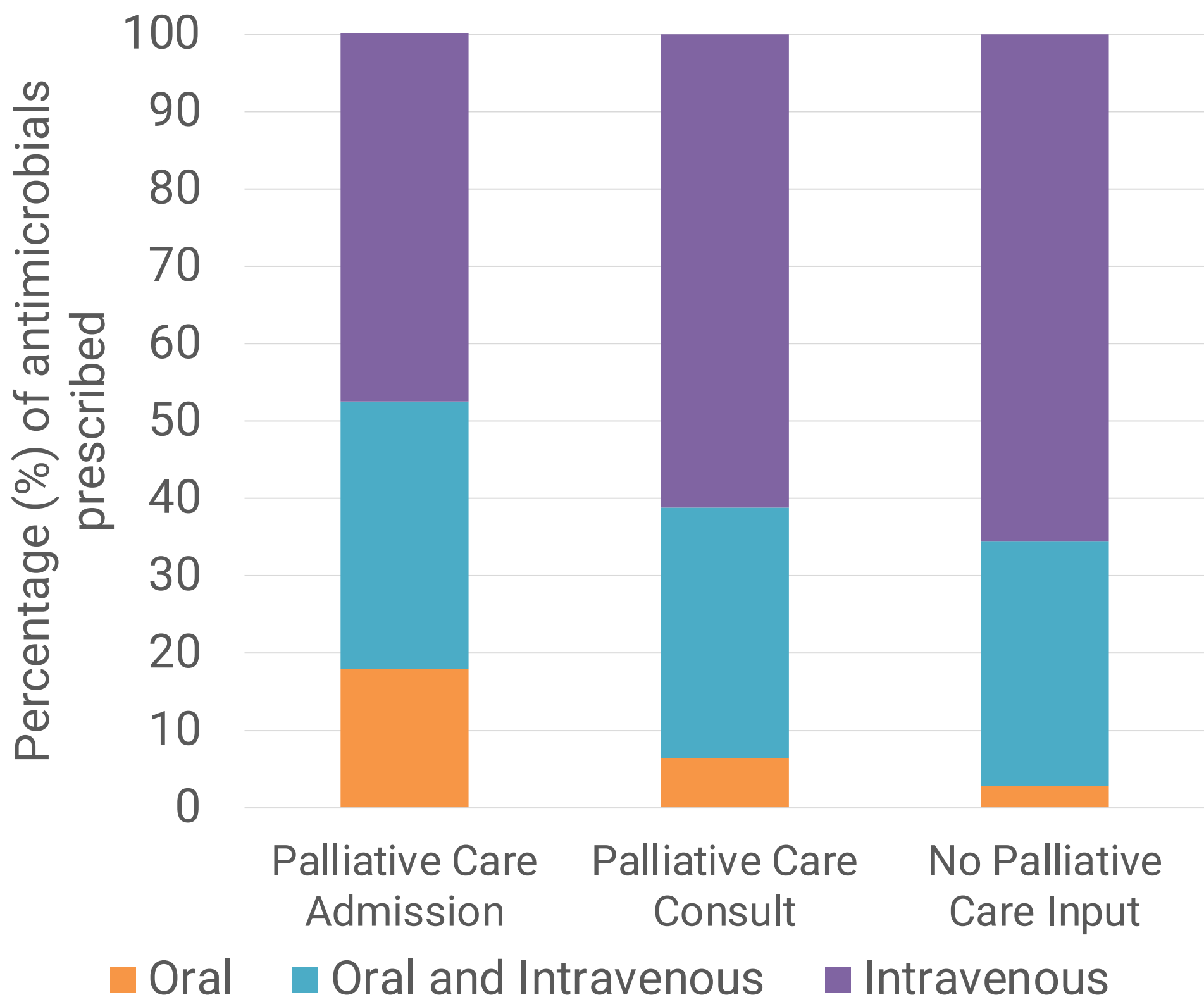


Figure 3: Formulations Used

Discussion

The prescribing rate observed in this study is lower than previously reported in retrospective studies.^{1,2} Patients without palliative care involvement were 3.7 times more likely to be prescribed antimicrobials in the last two weeks of life compared with those with palliative care input.

This study adds to the current literature suggesting that palliative care input promotes decision-making aligned with comfort-focused goals rather than life-prolonging interventions.¹⁻³ In contrast, patients without palliative care input may receive antimicrobials which may align with a life-prolonging approach, contributing to higher prescribing rates, including administration by the intravenous route and longer hospital stays.

Implications

- Antimicrobial therapy at the end of life is often viewed as life-prolonging; palliative care involvement can support timely discussions about de-escalation and alignment with patient goals when appropriate.
- Future studies should examine indications for prescribing and the extent of symptomatic relief provided by antimicrobials in the last weeks of life, especially in a population with a life limiting illness.

Limitations

This retrospective, single-site study was limited by potential misclassification bias and unmeasured confounding factors, is not generalisable beyond the study setting, and was unable to capture goals-of-care discussions or patient/family preferences.

Conclusion

This study highlights the impact of palliative care input on antimicrobial prescribing at the end of life. Incorporating end-of-life perspectives into antimicrobial stewardship programs or policies may promote the appropriate prescribing of antimicrobials while supporting patient-centred care.

References

- Shekhar A et al. J Hosp Palliat Care 2022;25(1):50-54
- Awada et al. BMC Palliative Care 2025;24:15
- Rosa W et al. Lancet Infect Dis 2025;25:e416-31