

Impact of pharmacist-prepared discharge prescriptions on the appropriateness of antibiotic durations



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Introduction

Ensuring appropriate duration of antibiotics is a fundamental component of antimicrobial stewardship to reduce adverse reactions, *Clostridioides difficile* infection, candidiasis, antimicrobial resistance, hospital readmission and excess costs.^(1,2)

At discharge, pharmacist review of prescriptions allows for optimised dose, duration and spectrum of antibiotics.⁽³⁾ Internationally, infectious disease pharmacist interventions on discharge improved guideline adherent antibiotic prescriptions in selected indications (pneumonia, urinary tract infections).⁽⁴⁾

An internal audit was conducted at RMH in 2019 on antibiotic durations for common bacterial infections in a pre-electronic medical record setting. Results showed out of 80 patients, 67% had deviations from guideline recommended durations, with 91% of those deviations being longer than recommended courses. Our study will explore the impact of pharmacists generating discharge prescriptions on antibiotic compliance.

Aim

Primary outcome:

- The proportion of Therapeutic Guideline (TG) compliant antibiotic durations prescribed on discharge (pharmacist prepared vs doctor prepared prescriptions) in general medicine and general surgery units

Secondary outcomes:

- Of non-complaint durations, proportion with prolonged or shortened duration
- Of non-complaint durations where the prescription was prepared by pharmacists, proportion with a documented antibiotic duration by the medical team

Methods

Setting : Patients admitted to two general medicine units and a general surgery unit of a major metropolitan quaternary referral hospital.

Inclusion criteria: Patients discharged with an oral antibiotic used for an indication with a recommended duration in the TG between 15/03/22 to 19/06/22.

Exclusion criteria: Interhospital transfers or patients who were on an antibiotic pre-admission for the same indication on discharge.

Study design: This is a retrospective audit

Intervention

- Pharmacists prepared prescriptions within the EMR for doctors to review prior to printing and signing.
- Doctor generated prescriptions occurred when the pharmacist was unavailable to prepare the prescription.

Study definitions:

- A duration was deemed compliant if the total antibiotic duration was within ± 12 hours of the TG recommendation.

Results

Patient demographics	General medicine		General surgery	
	Doctor generated script (n=43)	Pharmacist prepared script (n=17)	Doctor generated script (n=74)	Pharmacist prepared script (n=87)
Age, years, mean (IQR):	79 (62-87)	76 (40-86)	41 (29-61)	51 (35-66)
Sex (%):				
Male	54	62	49	39
Female	46	38	51	61

Table 1: Patient demographics

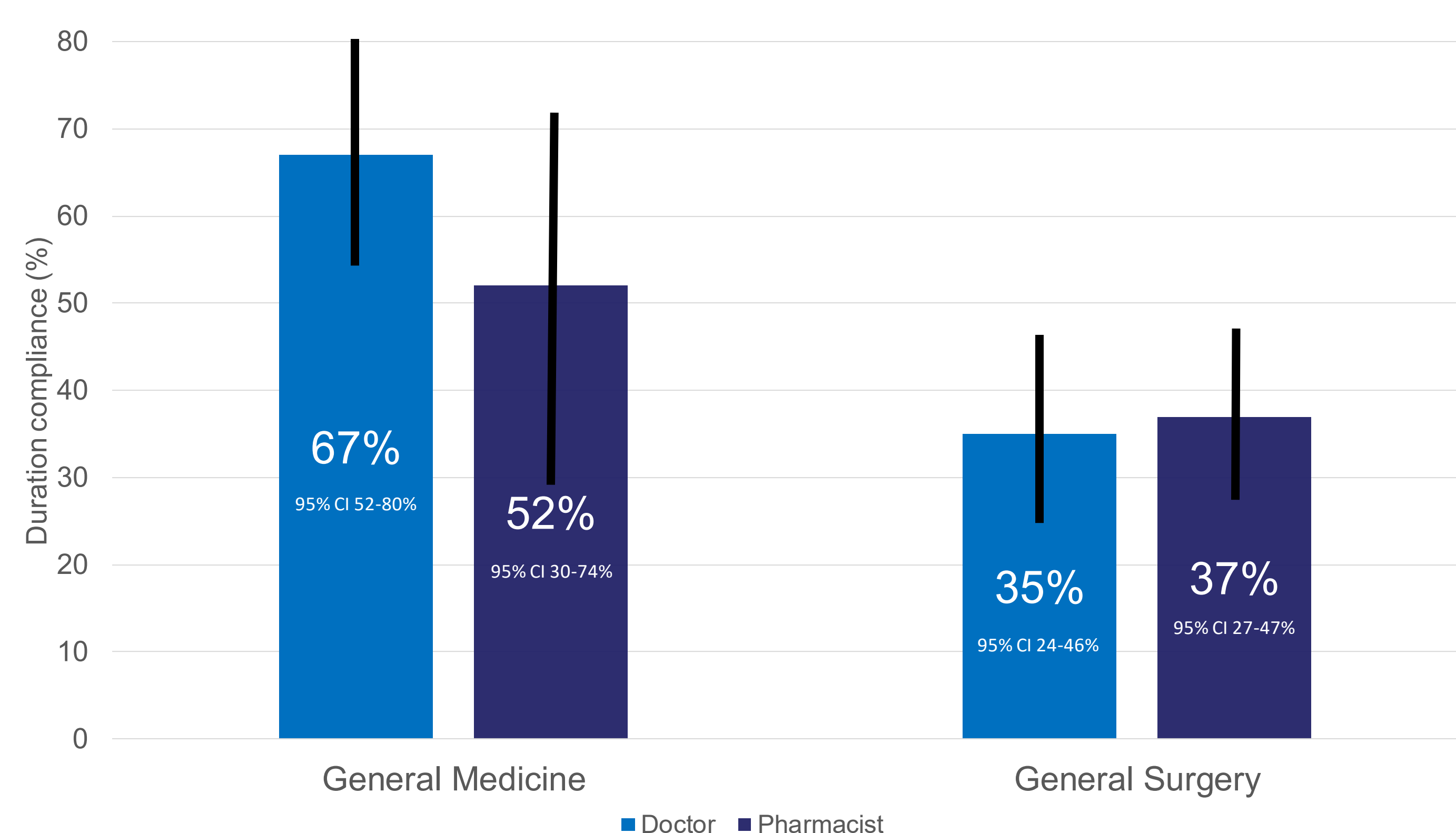
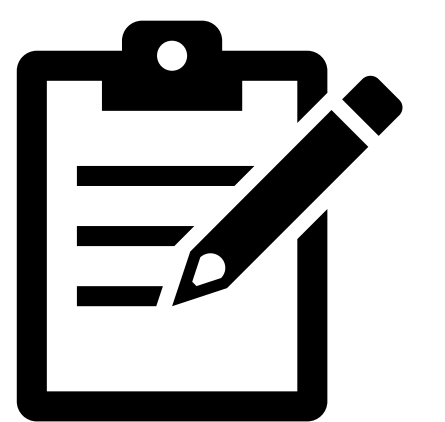


Figure 1: Antibiotic duration compliance with TG



94%

Of non-compliant duration were prolonged

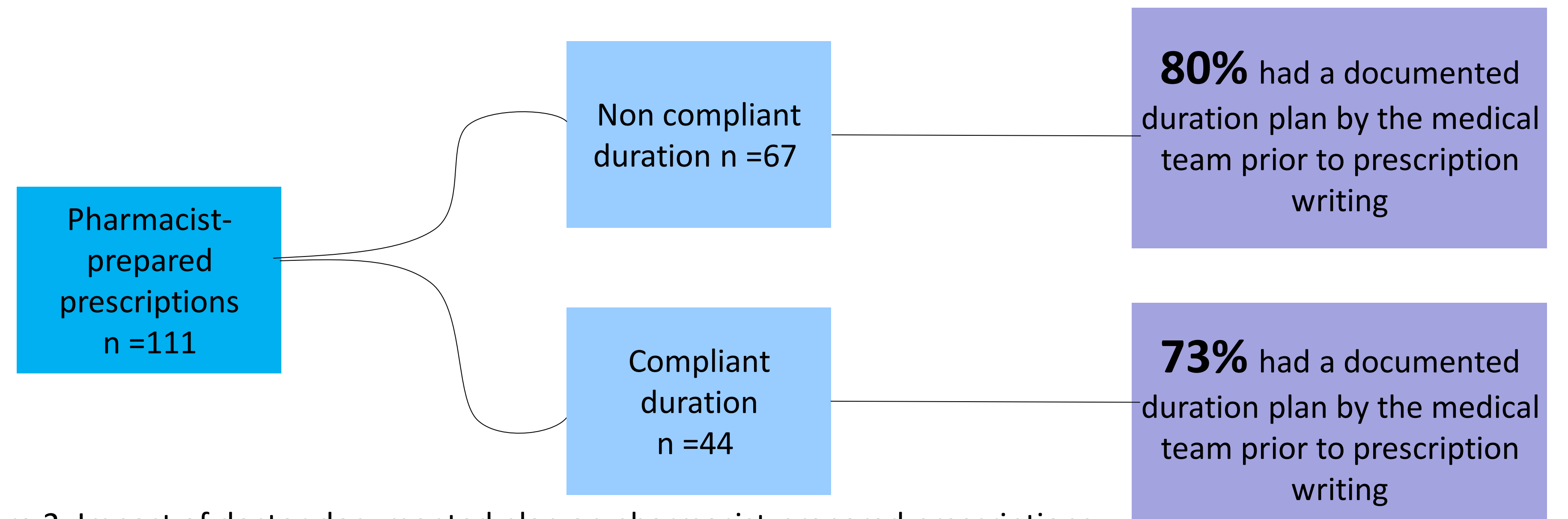


Figure 2: Impact of doctor documented plan on pharmacist-prepared prescriptions

Discussion

Pharmacist-prepared discharge prescriptions did not impact the appropriateness of antibiotic durations prescribed on discharge. This was consistent between general medicine and general surgical units. Doctors were still required to sign pharmacist-prepared orders and could make alterations to these prescriptions. This is supported by the majority of patients in both cohorts having a medically driven antibiotic duration documented in the patients' medical notes prior to the prescriptions being written. Though the incidence of doctors altering pharmacist-prepared prescriptions was not captured, pharmacists described doctors adopting consultant-documented antimicrobial plans rather than pharmacist's recommendations. Of note, this audit was a sample of convenience, yielding a small sample size especially within the general medicine units, consequently limited comparisons could be drawn.

Future efforts should target senior medical staff's attitudes towards antimicrobial prescribing, allowing pharmacists to have a greater impact on antimicrobial durations.

References

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