

Evaluating an integrated clinical pharmacy service in ambulatory clinics at Australia's first dedicated cardiac hospital

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INTRODUCTION

Cardiovascular disease (CVD) remains an ongoing healthcare burden in Australia, contributing substantial impact on patient mortality, morbidity and hospitalizations despite major advances in prevention and treatment.¹ One strategy is shifting focus from treating the acute the current illness in the hospital setting to assisting patients on diseases prevention and ongoing management in the ambulatory setting.²

OBJECTIVES

To describe pharmacist-led interventions in ambulatory cardiac clinics and assess predictors for hospital admissions.

METHODOLOGY

A retrospective audit was conducted for patients who attended the Heart Failure (HF) and Hypertension (HTN) clinic from April 1st to May 31st, 2023. Patients' demographic data, Charlson comorbidity index (CCI), types of pharmacist interventions and readmission data 30 days post clinic review were recorded.

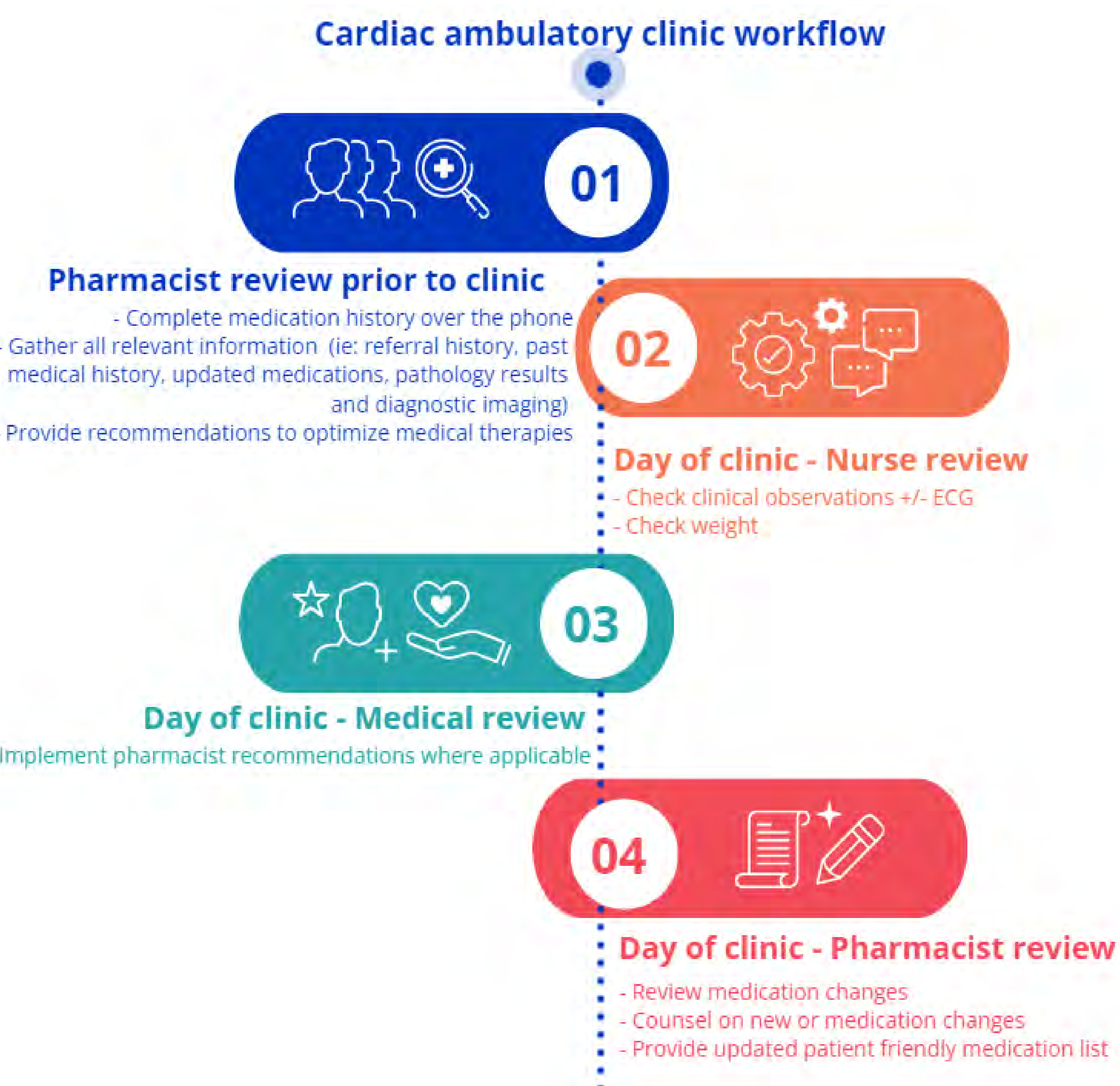


Figure 2: Clinic workflow

EVALUATION

A total of 120 patients over 14 clinic sessions were reviewed by a pharmacist. There were 94 (78%) patients from the HF clinics and 26 (22%) patients from the HTN clinics. Patients' median age was 62.5 years (IQR 53-72.3) and median CCI was 4 (IQR 2-5).

Medication histories were documented for all patients (100%) prior to the day of clinic, pharmacists provided 149 clinical recommendations of which 78 (48%) were actioned by the Cardiologists. The most common types of interventions were guideline-directed prescribing and de-prescribing of medications (41%) and up-titration of current therapies (32%). (Figure 2)

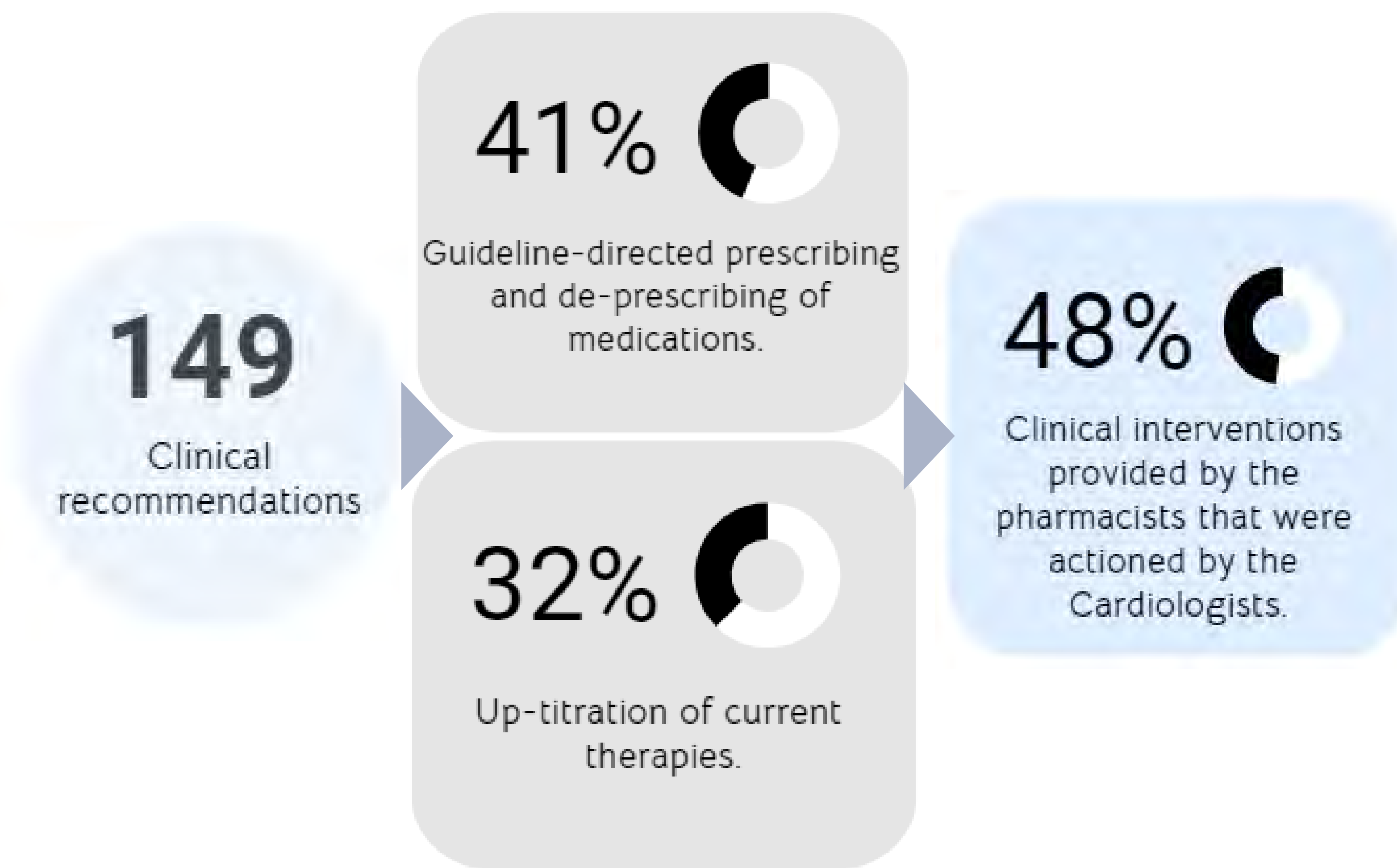


Figure 2: Clinical intervention results

Readmission to hospital within 30 days resulted to 11 (9%) patients from this cohort. Predictors for hospital admissions included age above 70 years old (OR 1.935 95% CI 0.544-6.879), HF patients (OR 2.678 95% CI 0.318-22.562), male patients (OR 2.461 95% CI 0.472-12.837) and those with a history of non-compliance (OR 3.341 95% CI 0.695-16.067). Patients with pharmacist interventions were less likely to be admitted to hospital within 30 days of review (OR 0.405 95% CI 0.086-1.903).

DISCUSSION

Specialised cardiology care delivered in the ambulatory clinic setting is effective in improving patient outcomes and possibly influences preventable hospitalizations rates (although not clinically significant), through provision of detailed assessment, regular close monitoring, medication education and clinical interventions.³

Current evidence is lacking in the outpatient setting, particularly in Australia where this is still a relatively new area of practice for clinical pharmacists.⁴ Nevertheless, studies to date have shown promising results demonstrating the positive impact of having ambulatory clinical pharmacy service in improving health outcomes through collaboration with physicians and patients.⁵

References

- Heart Foundation. Key Statistics: Cardiovascular Disease | The Heart Foundation [Internet]. heartfoundation-prod.azurewebsites.net. 2022. Available from: <https://www.heartfoundation.org.au/bundles/for-professionals/key-stats-cardiovascular-disease-2>.
- Snoswell CL, De Guzman KR, Barras M. Pharmacists reducing medication risk in medical outpatient clinics: a retrospective study of 18 clinics. *Intern Med J*. 2023 Jan;53(1):95-103. doi: 10.1111/imj.15504.
- He, J., Balmain, S., Kobulnik, J., Schofield, A., & Mak, S. (2019). The Role of Ambulatory Heart Failure Clinics to Avoid Heart Failure Admissions. *CJC open*, 2(1), 15-21. <https://doi.org/10.1016/j.cjco.2019.11.007>
- Fact sheet: Clinical Pharmacy Services - optimising patient health outcomes [Internet]. SHPA; 2014 Jan [cite 2023 Jun 7]. Available from: https://shpa.org.au/publicassets/e81fef5e-5789-ec11-90fc00505696223b/clinpham_fact_sheetv2.pdf
- Snoswell CL, De Guzman KR, Barras M. Pharmacists reducing medication risk in medical outpatient clinics: a retrospective study of 18 clinics. *Intern Med J*. 2023 Jan;53(1):95-103. doi: 10.1111/imj.15504.