Heart Failure Care Redesign:
Standardization, Outcomes, and Economic Impact Across Leading Hospitals of a Major Brazilian Health Insurance Company

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Introduction

Heart Failure (HF) is a major global health burden, affecting more than 23 million people worldwide and ranking among the leading causes of hospital admissions and healthcare expenditures. In Brazil, the BREATHE Registry identified poor adherence to guideline-directed therapy and high in-hospital mortality, among the highest in the Western world (Albuquerque et al., 2024). Care fragmentation and inconsistent practices further limit outcomes and system efficiency. To address these challenges, we implemented an ICHOM-aligned outcomes program in partnership with three leading hospitals from our provider network, systematically measuring clinical outcomes, costs, and patient-reported outcome and experience measures (PROMs and PREMs) to reduce waste and improve quality from the patient perspective.

Methods

Study Design and Context

We began with a diagnostic assessment of the heart failure (HF) care pathway in participating hospitals. The nurse care coordinator team initiated the identification and follow-up of hospitalized HF patients, developing a hospital process protocol and conducting clinical governance meetings with care teams.

Retrospective Analysis

In parallel, an independent research company retrospectively analyzed 1,044 HF patients, both inpatients and outpatients, over the period from November 2023 to November 2024. PREMs and PROMs were collected according to the ICHOM Heart Failure Standard Set and effectiveness was assessed. The analysis quantified a waste rate of 43.5% and identified financial opportunities of USD 8.68 million, adjusted for purchasing power parity (PPP, World Bank, 2023). All subsequent cost estimates are expressed in PPP-adjusted USD.

In this study, waste was defined in line with the conceptual frameworks of Conombo et al. (2023) and Sacristán (2020), and was operationalized as expenditures exceeding 20% above the level considered effective. This adaptation was applied to capture low-value practices generating disproportionate costs without proportional health outcome gains.

Care Coordination Unit: Implementation and Patient Demographics

Starting in December 2024, we established a Care Coordination Unit (Figure 1), applying a standardized protocol with bedside visits, medication reconciliation, monitoring of key care indicators, and referrals to chronic care management and rehabilitation. From December 2024 to June 2025, the intervention covered 145 hospitalizations, classified by the DRG Brasil® system (Diagnosis Related Groups), which stratifies patients into severity levels 1–4 based on clinical complexity. The cohort included 52% female patients (mean age 75 years) and 48% male patients (mean age 73 years).

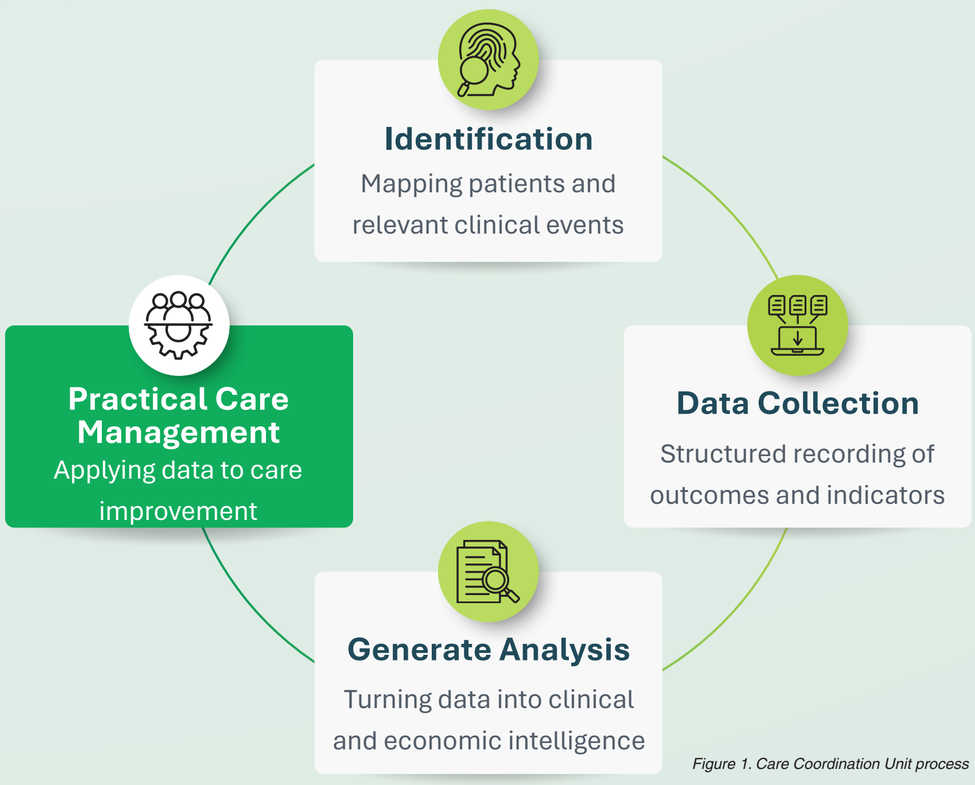


Figure 1. Care Coordination Unit process

Results

The average length of stay (LoS) for the 145 heart failure hospitalizations was 10.3 days, rising to 17.1 days in cases exceeding the DRG-expected stay, with an estimated financial waste of USD 1.08 million. In-hospital mortality reached 12.1%, while the 30-day readmission rate was 8.4%. Costs varied markedly by DRG severity, with level 4 showing the highest average and total expenditures (Figure 2).

Costs by DRG Severity Levels

Total Hospitalizations 145

Mean cost per admission USD 17,958

Total cost USD 2,603,889

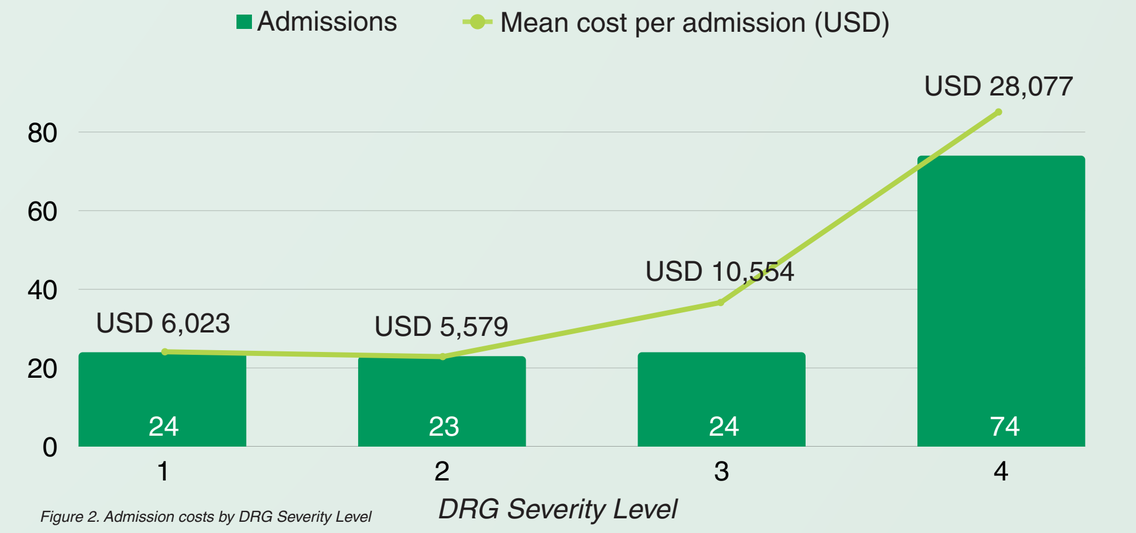
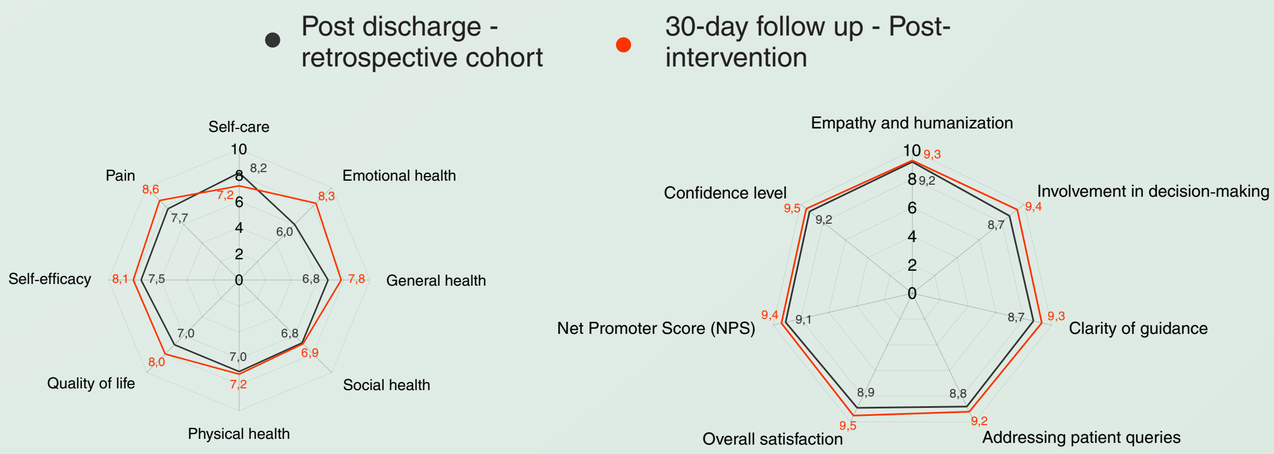
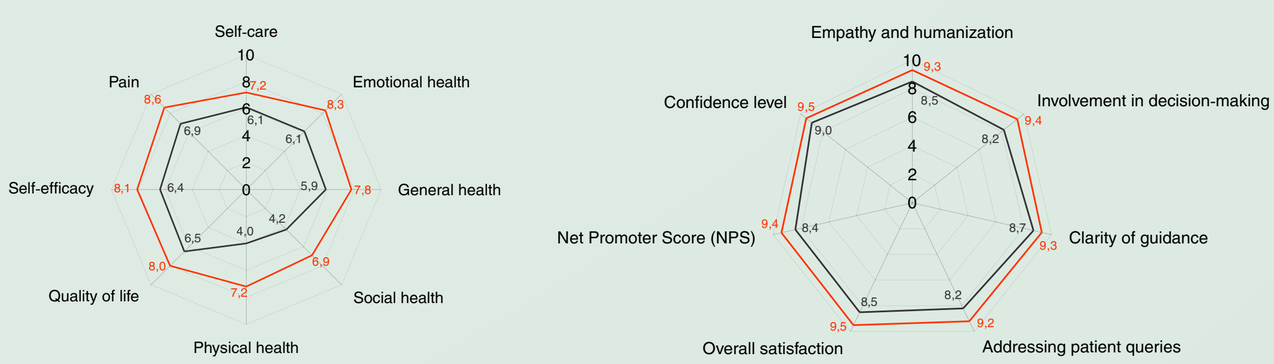


Figure 2. Admission costs by DRG Severity Level

Post-intervention outcomes, assessed through patient-reported questionnaires (response rate: 76.4% at discharge and 48.5% at 30-day follow-up), showed significant improvements from in-hospital evaluation to 30-day follow-up: physical health (4.0→7.2; p<0.0001), social health (4.2→6.9; p=0.0018), emotional health (6.1→8.3; p=0.0194), pain/discomfort (6.9→8.6; p=0.0128), self-efficacy (6.4→8.1; p=0.0013), quality of life (6.5→8.0; p=0.0163), overall health (5.9→7.8; p=0.0002), empathy/respect (8.5→9.0; p=0.0477), availability (8.2→9.2; p=0.038), satisfaction (8.5→9.5; p=0.0026), and NPS (8.4→9.4; p=0.0145). Compared with the retrospective cohort (post-discharge only), network patients reported higher post-discharge questionnaire scores in emotional health (8.3 vs. 6.0; p=0.0004), pain (8.6 vs. 7.7; p=0.0359), quality of life (8.0 vs. 7.0; p=0.0004), overall health (7.8 vs. 6.8; p=0.0027), clarity (9.3 vs. 8.1; p=0.0068), and satisfaction (9.5 vs. 8.9; p=0.0064).





Conclusions

Implementing a VBHC-aligned care coordination program following the ICHOM Heart Failure Standard Set resulted in significant improvements in physical, social, and emotional health, reduced pain, and maintained high levels of trust and satisfaction, while identifying high-cost drivers such as prolonged stays in severe DRG categories. Moving forward, we will sustain continuous outcome measurement at ICHOM-recommended intervals, apply risk stratification to target high-severity cases, optimize management of admissions exceeding expected length of stay, integrate treatment variables into routine monitoring, and expand the model to other sites and chronic conditions with global benchmarking to drive ongoing quality improvement.

References

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