Implementing a Value-Based Healthcare Heart Failure Clinic in an Internal Medicine department using digital collection of patient reported outcomes

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1 Introduction

Heart failure (HF) is a leading cause of hospitalization in internal medicine departments. Affected patients are typically elderly, frail, with multiple comorbidities. This complex clinical profile, added to the disease itself, leads to increased risk of rehospitalization and significantly impaired quality of life (QoL), underpinning an urgent need for a shift toward value-based healthcare (VBHC) in HF patient management. Implementing structured care pathways and digital assessment of patient-reported outcomes (PROs) poses significant challenges, particularly among elderly patients and those with low health or digital literacy.

2 Objectives

Develop a clinical care pathway for the follow-up of patients after an acute HF admission, incorporating the digital collection of Patient-Reported Outcomes (PROs) and test its application in a cohort of elderly HF patients.

3 Methods

Setting

VBHC HF clinic with structured digital care pathway (Fig 1) including the systematic remote collection of Patient-Reported Outcome Measures (PROMs) using:

1. **Kansas City Cardiomyopathy Questionnaire (KCCQ),**
2. **EQ-5D**
3. **PRO-CTCAE**
4. **Medication Adherence Tool (MAT)**
5. **European Heart Failure Self-care Behaviour Scale (EHFScB)**
6. **Patient Health Questionnaire (PHQ-9)**

Collected at predefined time points (Table 1), continuing until patients achieve clinical stability and are transitioned to the chronic HF clinic.

Participants: Patients discharged after an acute HF hospitalization referred by their assistant physician to the HF clinic.

Staff: Dedicated physicians and rehabilitation nurses.

Protocol

Enrollment phase: pre-discharge visit conducted by the HF team, focusing on patient and/or caregiver education (including in the use of digital tools) and self-management, coordination of post-discharge follow-up, and contact planning. A baseline set of PROs was collected digitally at this time.
Follow-up: scheduled face-to-face or telehealth visits, as well as non-programmed consultations triggered by specific alerts generated by PROMs and/or CROMs or by patient/caregiver contact (Fig 1).

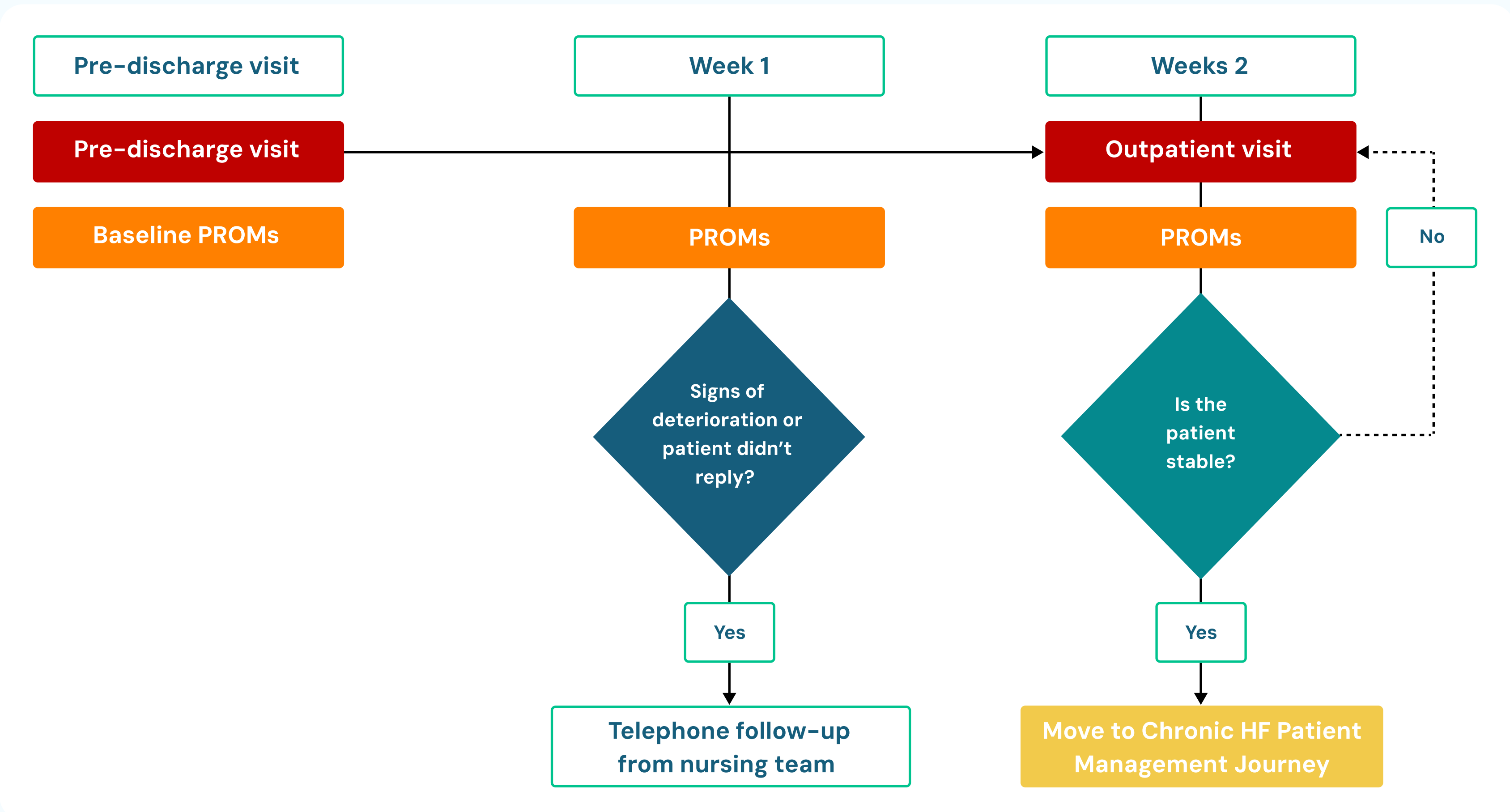


Fig 1. Post-acute Heart Failure Patient Journey

	Baseline	Week 1 Post Discharge	Week 2 Post Discharge	Week 4 Post Discharge	Week 6 Post Discharge	Every 4 Weeks	Every 4 Weeks
Notifications	Welcome						
CROMS		As available in standard of care					
In house questionnaire					X		X
EQ-5D (PROM)	X		X		X		X
KCCQ-12 (PROM)	X		X		X		X
MAT (PROM)		X		X		X	
PRO-CTCAE (PROM)		X		X		X	
PHQ-9 (PROM)	X				X		X
EHFScBS (PROM)			X				
Education Content	Educational Patient Guide						

Table 1. PROMs collection timeline

4 Results

Patients

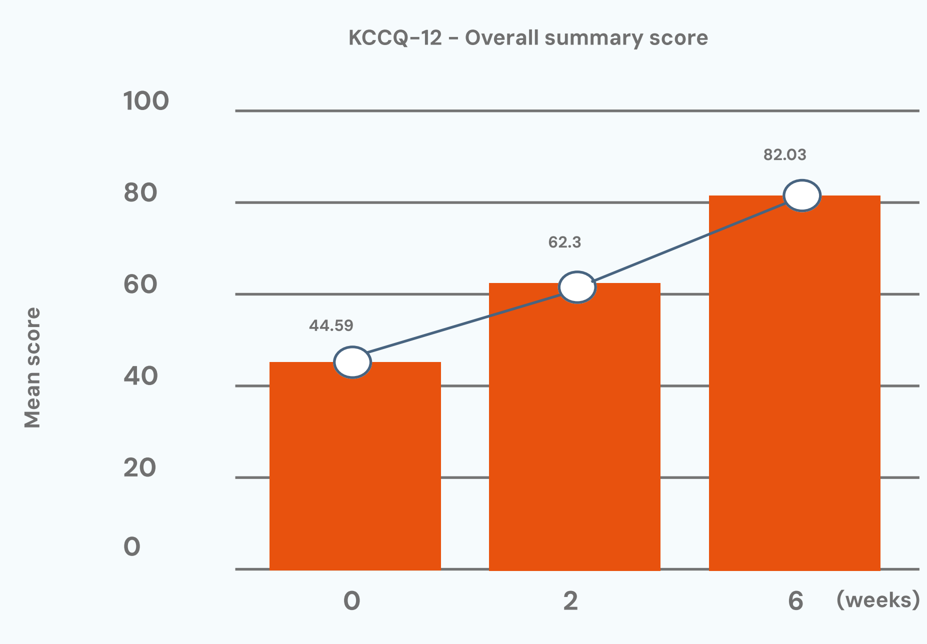
29 patients were enrolled so far
15 patients (52%) were female
Mean age was 80.8±10.4 years and 18 patients (62%) were >= 80 years.

Adherence to digital PROs collection

24 patients completed the first week digital interaction. Most of the patients (66.7%) attained clinical stability at 4 weeks post-discharge and were transferred to the chronic HF clinic; 89% of them completed the digital questionnaires at this timepoint. Of the remaining patients, 75% and 100 % responded to the digital questionnaires at 6 and 8 weeks of follow-up, respectively.

PROs evolution during follow-up

- Patients improved mean KCCQ overall summary score from baseline to 2nd (44.59±25.42 to 62.30±23.24, p=0.002) and 6th week of follow-up (to 82.03±16.04, p=0.063). (Fig 2)
- The EQ-5D values also improved from baseline (0.70±0.28) to 2nd (0.77±0.24) and 6th week (0.81±0.13) of follow-up, albeit non-significantly.



Timepoint (weeks post-dischage)	Patients included in the journey (n)	Responders (n,%)
0	24	21 (87,5%)
2	22	20 (90%)
6	8	6 (75%)

Fig 2. KCCQ-12 Evolution from baseline to 2 and 6 weeks post-discharge

5 Conclusion

Our preliminary data demonstrate the feasibility of implementing a structured post-discharge care pathway for elderly patients following acute HF hospitalization, utilizing digital platforms for the collection of PROs and telehealth services.