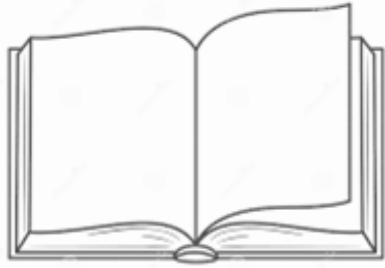


Service Evaluation of a Value-based Heart Failure Cardiac Rehabilitation Pilot Programme in Cwm Taf Morgannwg University Health Board.

CTM/1835/23 & CTM/2120/24

RUBY JAMES, SARA DREW, ALISON ALLEN & HANNAH DAVIES

Background

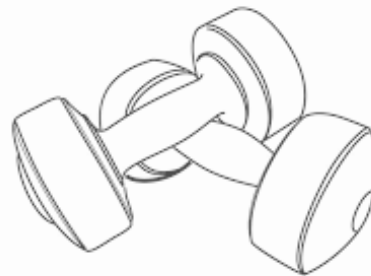


- The evidence supporting the need for Cardiac Rehabilitation for Heart failure patients is robust:

- NCEPOD (2018) Report: Failure to Function
- Quality Standards [QS9] NICE (2011)
- [NG106] NICE (2018)
- British Association for Cardiovascular Prevention and Rehabilitation Standards and Core Components (2023)



- Heart Failure is a complex condition characterised by the heart's inability to pump sufficient blood to meet the body's metabolic demands.
- Less than 5% of Heart Failure patients in Wales have access to Cardiac Rehabilitation.



- Cardiac Rehabilitation has emerged as an essential component of comprehensive care for patients with Heart Failure.

(Cowie 2017; NHS Wales 2017; Heo et al. 2018; Bozkurt et al. 2021; BHF 2022 ; Taylor et al. 2022; Bellanca et al. 2023; Taylor et al. 2023).

Situation



- CTM UHB identified Heart Failure as a priority area.
- Cardiac Rehabilitation for patients with Heart Failure identified as 1 of the 5 priority areas of the Value Based Healthcare Heart Failure Pathway.
- A Heart Failure Cardiac Rehabilitation programme was established as a pilot project running for a year from September 2022- September 2023.



The Heart Failure Cardiac Rehabilitation Team

Ruby James, Specialist Occupational Therapist

Alison Allen

Lead Cardiac Rehabilitation
Nurse Specialist



Hannah Davies
Specialist Physiotherapist

Sara Drew

Lead Cardiac Rehabilitation
Nurse Specialist

& all our wonderful Heart Failure Cardiac Rehabilitation Patients!

(Written consent provided by patients to use pictures)



To evaluate the aims, outcomes, feasibility, and clinical effectiveness of the Heart Failure Cardiac Rehabilitation pilot programme and assess its potential as a sustainable model for expansion across CTMUHB.

Objectives:

- Conduct an *outcome* evaluation of the HFCR pilot programme.
- Assess the *impact* of the HFCR pilot programme on patients Quality of Life (as part of Ruby James's Cardiff University MSc dissertation).



Methods

Outcome Evaluation

- PROMs:
 - Hospital Anxiety and Depression Scale (HADS)
 - Dartmouth Cooperative QoL Index
- CROMs:
 - 6-Minute Walk Test (6MWT)
 - Incremental Shuttle Walk Test (ISWT)
 - Grip strength
 - Sit to Stand Test
 - AusTOMs
 - Ejection fraction (EF%)
 - Hospital Readmissions
- PREMs:
 - Questionnaires
 - 3 Patient Stories

Impact Evaluation

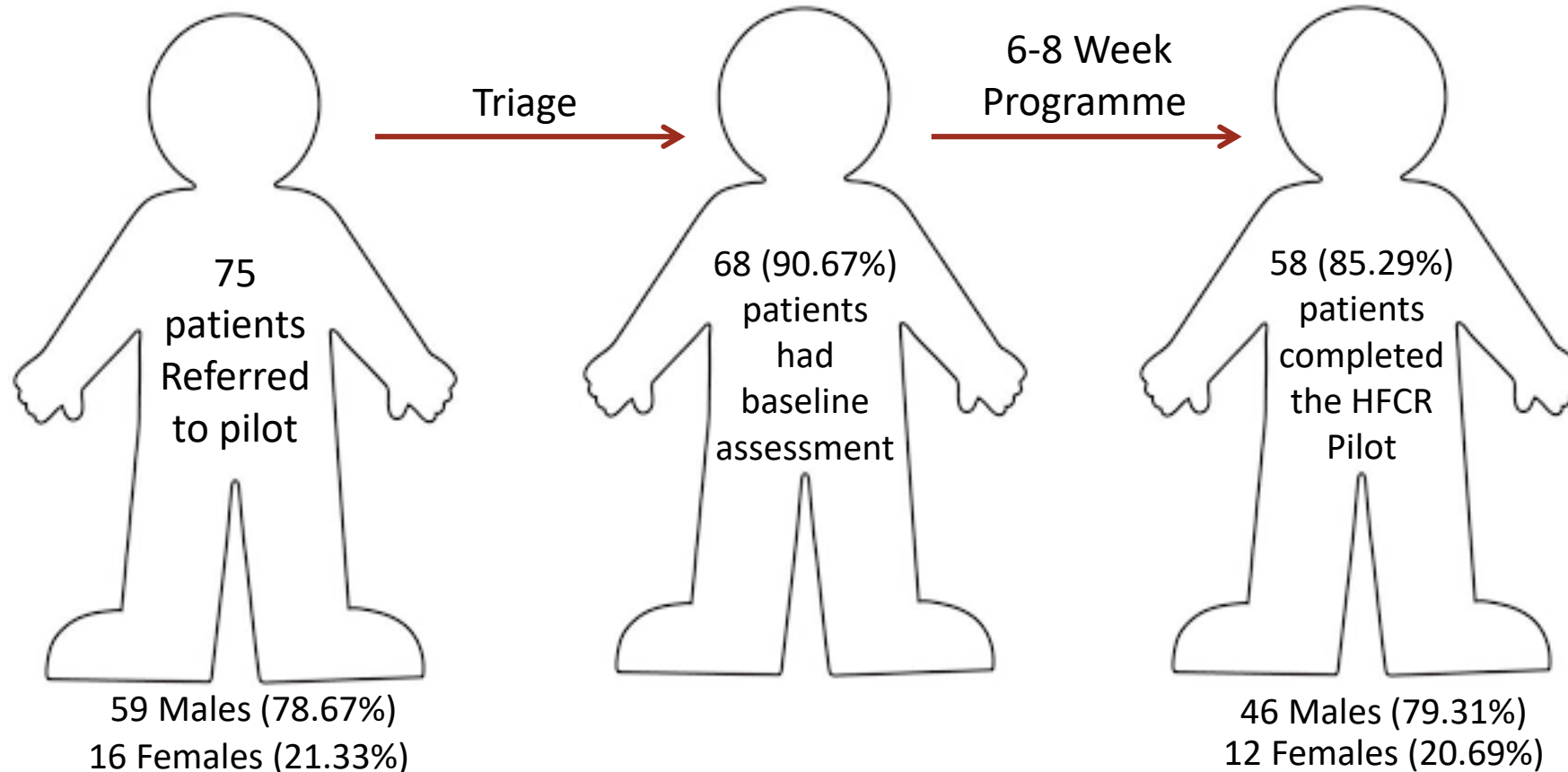
- PROMs:
 - Hospital Anxiety and Depression Scale (HADS)
 - Dartmouth Cooperative QoL Index
- CROMs:
 - AusTOMs
- PREMs:
 - 3 Patient Stories
 - 5 Focus Groups

Ethical Approval

- CTM UHB R&D Approval Obtained for both Outcome & Impact Evaluations.
- Ethical approval granted by Cardiff University School of Healthcare Sciences for Impact Evaluation as part of MSc Dissertation.

Heart Failure Cardiac Rehabilitation Pilot Data

Pilot Project Timeline: Recruitment of patients began in October 2022



Average age of patients who completed the HF CR pilot: **68 years**



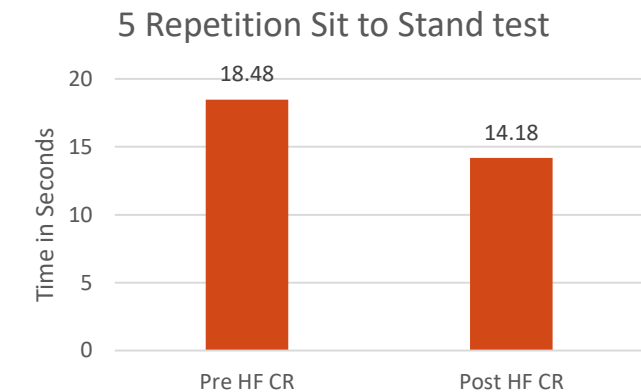
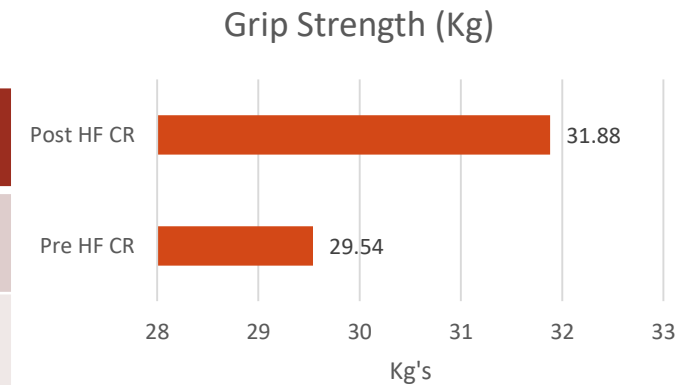
Average duration of patient engagement with programme: **14.04 weeks.**

CROMs Results- Functional Outcomes.

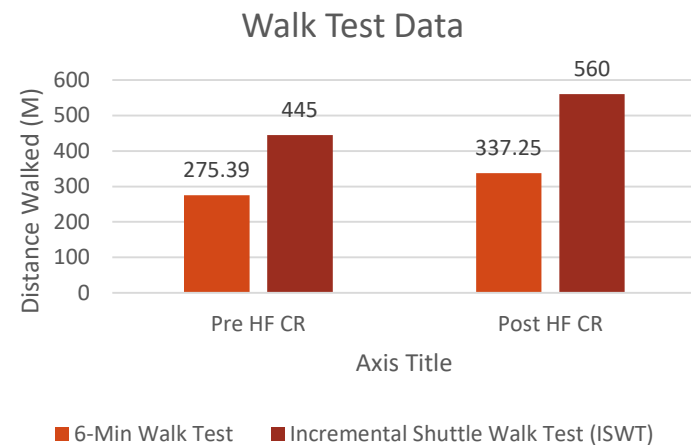


Functional Outcome Measures

Clinical test	Pre HF CR	Post HF CR	Average Increase	Percentage Change
6 min walk Test (6MWT)	275.39m	337.25m	62 m	22%
Incremental Shuttle Walk Test (ISWT) Distance Walked (M)	455m	560m	105 m	23%
Grip Strength (Kg)	29.54 kg	31.88 kg	2.43 kg	8%
5 Repetition Sit to Stand test (Time taken in Seconds)	18.48 s	14.18 s	4.3 s	-23%



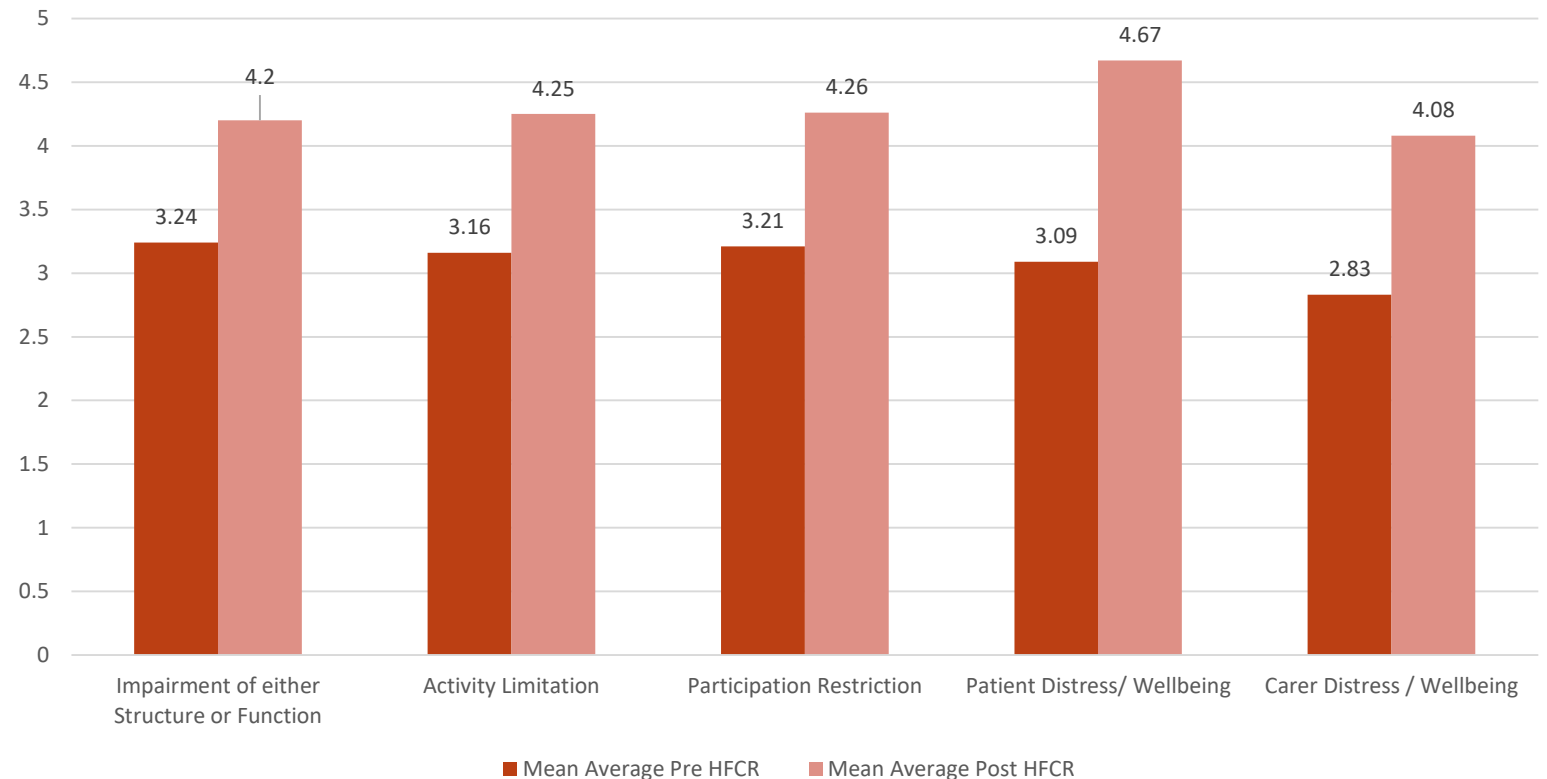
(Bohannon 2011; Leong et al. 2015)



CROMs Results- OT Outcomes.

AusTOMs

A graph showing the mean average in pre and post-patient AusTOMs Scales.



	Mean Average Pre HFCR	Mean Average Post HFCR	Difference
Impairment of either Structure or Function	3.24	4.2	0.96
Activity Limitation	3.16	4.25	1.09
Participation Restriction	3.21	4.26	1.05
Patient Distress/ Wellbeing	3.09	4.67	1.58
Carer Distress / Wellbeing	2.83	4.08	1.25

CROMs Results- Clinical Outcomes.



Ejection fraction (EF%)

Echocardiogram: Improvements in Heart Function (EF%)

Heart Failure Patient Outcomes After Programme:

- 87.5% of patients showed an overall improvement in Ejection Fraction (Heart Function).
- 8.9% remained unchanged and severely impaired.
- 3.6% deteriorated.

Hospital Readmissions

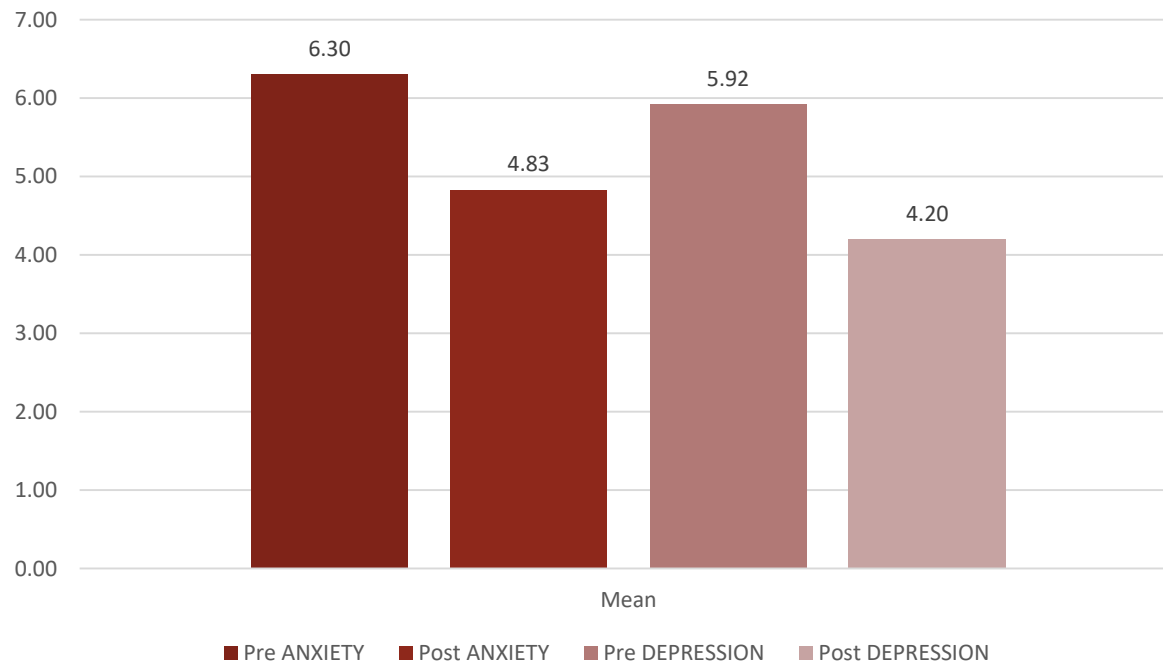
- *No readmissions* for patients who participated in the Heart Failure Cardiac Rehabilitation pilot programme following discharge as of July 15th, 2024.



PROMs Results- Psychosocial Outcomes.

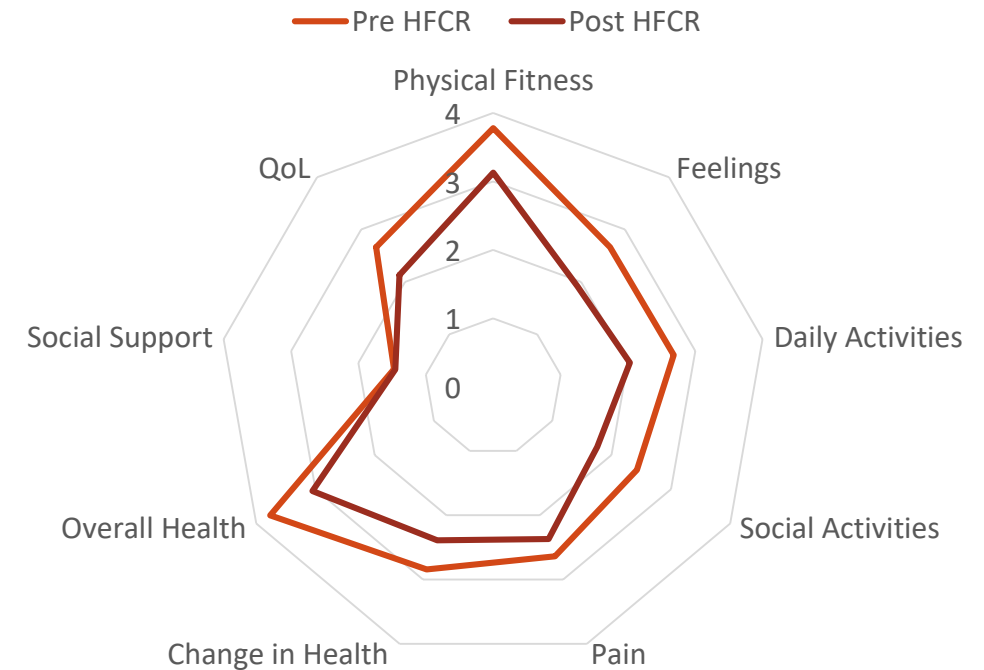
Hospital Anxiety and Depression Scale (HADS)

A Graph showing Mean Pre and Post HADs Scores



Dartmouth Cooperative QoL Index

Radar diagram showing the Dartmouth COOP QoL Index Mean Average scores across all nine domains.



PREMs Results.

PREMs Questionnaires

Patient Stories

Heart Failure Rehab PREM - Overview
January 2023 – October 2023 Report

Total number of responses: **55**

Attend Group Sessions: **50**

Attended Home Based session: **4**

Independent programme: **1**

Majority of respondents were aged between 51 - 75 years (60.78%), heterosexual or straight (96.08%), white (100%) and male (76.92%).

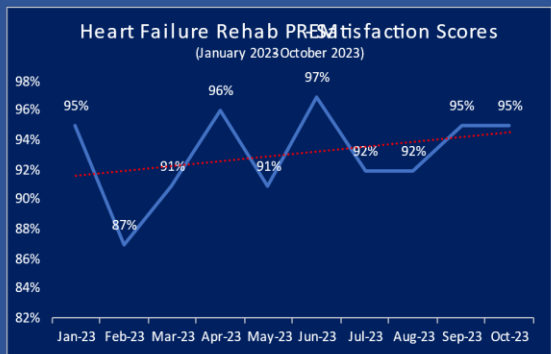
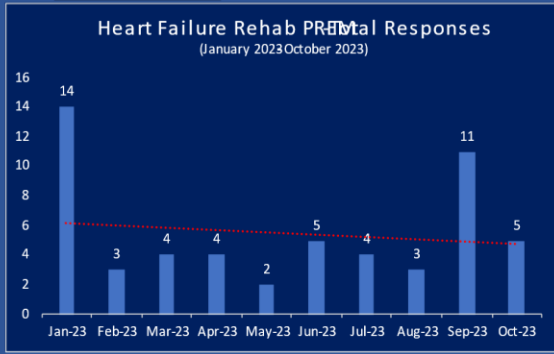
The overall satisfaction score of 94% covers the period of January 1st 2023 to 31st October 2023.

The word cloud is based on the comments received (January 2023 and October 2023) in our feedback from all feedback within the surveys. The green highlights positive sentiments and the red highlights negative sentiments.

Patients communicated via the PREM survey that they would 100% recommend the service to a friend/ colleague/ family member if they needed cardiac rehabilitation.

Majority of respondents confirmed the programme was close to home or a short journey to the appointment. With 1 respondent stating they had to travel some distance.

Patients were given paper copies of the survey at the end of the programme and the feedback was entered onto the People experience platform retrospectively.



Initial Codes from Patient Stories:

- HF Symptoms
- No Expectation of CR
- New to Structured Exercise
- Gender
- Health Improvement (Physical & Psychological)
- MDT Support
- Confidence
- Return to Occupations
- Peer Support
- Recommend HFCR Programme



14 male (66.67%)
5 female (23.81%)
2 spouses (9.52%)

PREMs Results- Focus Groups.

5 Major Themes:

1. Journey Following Heart Failure Diagnosis
2. Empowerment and Support
3. Adapting to Life with Heart Failure: Shifts in Lifestyle and Priorities
4. Overcoming Challenges: Pathways to Improved Quality of Life
5. The Role and Importance of Heart Failure Cardiac Rehabilitation

"I was shocked when it was confirmed that I had Heart Failure."

"This time last year I was struggling. Last week I was in Bluestone going down a water shoot with my granddaughter."

"I went to bed action man, and I got up and I wouldn't have been able to arm wrestle Barbie."

"It's given me my life back. It's changed everything."

"I was afraid to push myself. And then through the course, I started to push myself because of all the support."

"The rehab gave me a future....It gave me confidence."

"This definitely needs to be funded....I will tell anybody who gets an offer to go on it to go on it because its brilliant!"

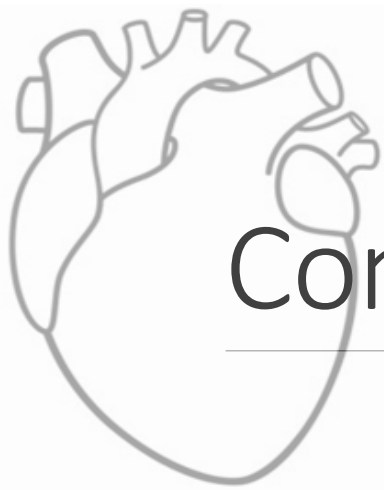
Lessons Learned

Challenges

- Temporary funding
- Backfill of staff to support substantive roles.
- Short project timeline created a fast-paced environment for staff
- Limited support with data analysis from programme outset
- Due to the time and funding limitations additional MDT support from CR colleagues such as psychologists, dietitians, pharmacists, exercise instructors, and physiologists was not feasible.

Success

- High engagement among patients, with low default and DNA rates.
- High patient satisfaction:
 - 94% overall satisfaction score
 - 100% of patients reported they would recommend the service to family or friends if they were in need of cardiac rehabilitation.
- Positive Outcomes: PROMs, CROMs & PREMs
- High response rate to focus groups
- We worked well as an MDT
- MSc Dissertation- Passed.



Conclusion

The Heart Failure Cardiac Rehabilitation pilot programme successfully demonstrated improved clinical outcomes, functional capacity and Quality of Life for patients with Heart Failure.

The Heart Failure Cardiac Rehabilitation programme should be considered for long-term funding to address the current gap in patient care and align with national rehabilitation standards and guidelines.



Next Steps



**BUSINESS
AS USUAL**



A special thanks to the HFCR patients for participating in the programme and for their engagement in the focus groups!

The Value Based Healthcare Team

Cardiac Rehabilitation Team

Heart Failure Nurses

CTM Cardiology

CTM R&D Team

& all project partners for their contributions.

Acknowledgements





Thank you- Any Questions?

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