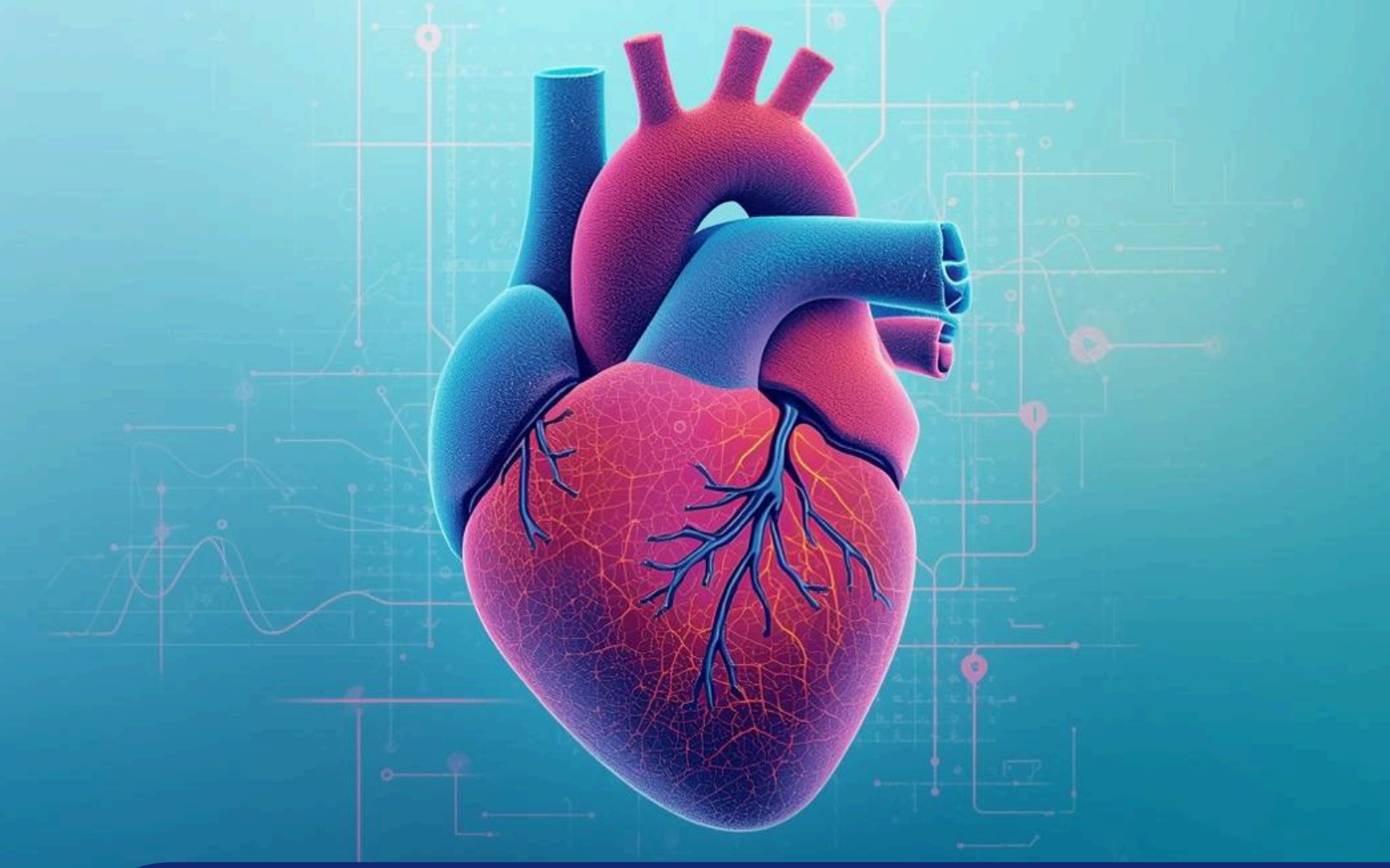


CASE STUDY

Zero Readmissions in Advanced Heart Failure Patients

How a leading provider of cardiovascular care eliminated readmissions over a six month period and improved care quality with remote patient monitoring.

Dr. Teresa Sieck, MPAS, PA-C, PhD

Background

Heart failure (HF) is a serious condition in which the heart cannot pump blood efficiently enough to meet the body's needs. It doesn't mean the heart has stopped working, but rather that it's struggling to function as it should.

Types of HF include left-sided heart failure, when the heart cannot pump out blood effectively (systolic failure, or HFrEF) or cannot relax and fill properly (diastolic failure, or HFpEF), right-sided heart failure, caused by left-sided failure or lung disease (cor pulmonale), and congestive heart failure (CHF), when fluid builds up in the lungs and other tissues.

Advanced heart failure refers to the later stages of the disease, typically **Stage D** in the American College of Cardiology/American Heart Association classification, when standard medical therapies no longer adequately control symptoms or improve cardiac performance. Advanced heart failure is also characterized by poor quality of life and prognosis, and frequent hospitalizations for HF decompensation. This stage generally corresponds to **New York Heart Association (NYHA) functional class III-IV.**

Causes of Heart Failure:

- Coronary artery disease (CAD)
- Heart attack (myocardial infarction)
- High blood pressure (hypertension)
- Valve disease
- Excessive alcohol or drug use
- Arrhythmias
- Diabetes
- Obesity
- Cardiomyopathy (diseased heart muscle)

Common symptoms of HF include:

- Shortness of breath
- Fatigue and weakness
- Rapid or irregular heartbeat
- Swelling in the legs, ankles, feet, or abdomen (edema)
- Increased need to urinate at night
- Difficulty concentrating or confusion
- Persistent cough or wheezing (may produce pink, frothy sputum)

Heart failure treatment options include **lifestyle changes, medications, implantable devices, and surgery**. Demographic disparities and regional differences remain important for targeting interventions.

The stages of HF defined by the ACC and AHA focus on **structural changes and risk factors**, even before symptoms begin.

ACC/AHA Stages

Stage A: At risk for heart failure	No symptoms or structural heart disease; has risk factors like hypertension, diabetes, obesity, or family history
Stage B: Pre-heart failure	Structural heart disease (e.g., previous heart attack, valve disease) but no symptoms.
Stage C: Symptomatic heart failure	Structural heart disease with current or prior symptoms (e.g., fatigue, shortness of breath).
Stage D: Advanced heart failure	Severe symptoms at rest or with minimal exertion; often requires specialized interventions like mechanical support or transplant.

The **NYHA Functional Classification** is used to assess the severity of heart failure based on a patient's symptoms and physical activity limitations.

NYHA Functional Classes

Class I	No symptoms and no limitation in ordinary physical activity (e.g., walking, climbing stairs).
Class II	Mild symptoms (mild shortness of breath and/or angina) and slight limitation during ordinary activity.
Class III	Noticeable limitations in activity due to symptoms, even during less-than-ordinary activity (e.g., walking short distances). Comfortable only at rest.
Class IV	Severe limitations. Experiences symptoms even while at rest. Mostly bed bound or unable to carry out any physical activity without discomfort.

Challenge

HF drives substantial hospital utilization and healthcare costs, particularly driven by frequent readmissions and high hospital utilization volume among older adults. Comorbidities significantly increase utilization and follow-up costs post-discharge.

Patients with HF are four times more likely to be hospitalized compared to those without the condition, and approximately **half of these patients are readmitted within six months.**

HF Utilization Statistics (U.S.)

- 5-6 day average length of stay
- Average cost per hospitalization is ~$13,000 - $14,000
- Mean patient age is 72 years
- Overall HF-related spending reaches over $30 billion annually

Heart failure (HF) remains one of the most resource-intensive chronic conditions in the United States. Each year, nearly **1 million hospitalizations** occur with HF as the primary diagnosis. Despite significant advances in therapy, **30-day readmission rates** remain high (24–31%), costing the U.S. healthcare system over **$13 billion** annually.

Heart failure represents 1-2% of total U.S. healthcare spending, with inpatient admissions accounting for about half of HF expenditures.

In the Medicare fee-for-service population, HF patients account for **1,307 admissions per 1,000 beneficiaries a year.**

Inpatient care for these HF patients accounts for **51.6% of the total allowed cost**, versus 39.5%. in the general Medicare population.

It is known that post-hospitalization resource use (outpatient visits, prescriptions, hospital encounters) is concentrated in the first months after a worsening HF event then steadily decreases over the next year. This highlights the potential impact of optimized post-discharge care and preventive strategies such as Remote Patient Monitoring (RPM).

Objective

MercyOne Iowa Heart Center, a leading provider of cardiovascular care, sought to break the cycle of HF patient readmissions through continuous, technology-enabled monitoring. With a population of more than **9,000 heart failure patients**, the organization identified **450 of its most complex cases** as the initial enrollment cohort.

To address persistent gaps, MercyOne partnered with **CoachCare** to deliver a structured **Remote Patient Monitoring program** aimed at improving patient outcomes beyond traditional medical management.

The objective of this evaluation was to determine whether an RPM program, implemented alongside routine advanced heart failure care, could reduce hospital readmissions and improve adherence to Guideline-Directed Medical Therapy (GDMT). Special focus was placed on ER visits, hospitalizations, readmissions, and GDMT care gaps among patients classified as **NYHA Functional Class III–IV, Stage C and D.**

Prior to implementing RPM, **the hospital readmission rate for this study group was 18%**, establishing a clear benchmark for improvement.

Methodology

A six-month evaluation was conducted with 450 advanced heart failure patients enrolled in the RPM program and undergoing standard clinical management. Patients were adult males and females aged 18-100 years and diagnosed with Stage C or D heart failure. Daily vitals—including blood pressure, heart rate, and weight—were transmitted through connected devices, enabling the care team to identify early warning signs and intervene before complications escalated.

Clinicians received real-time alerts, escalating care as needed and identifying gaps in guideline-directed medical therapy (GDMT). while monthly check-ins reinforced adherence and identified care gaps.

All participants provided informed consent, and patient privacy was maintained in accordance with HIPAA standards.

Data Collection Methods:

- **Baseline assessment:** Blood pressure, heart rate and body weight, app questionnaire
- **Intervention:** Enrolled in Heart Failure RPM program along with continued medication management and lifestyle plan per clinic instructions.
- **Follow-Up:** Daily blood pressure, heart rate, body weight, questionnaires on app. Must be active on program for the entire 6-month study period.
- **Qualitative Interviews:** Minimum of once monthly phone interaction with patient to encourage adherence and accountability.

Study Focus

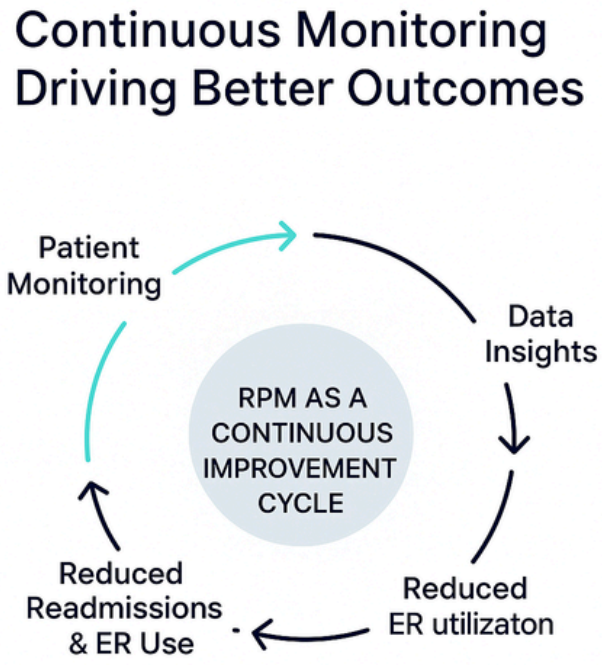
The center's focus was threefold:

- **Reduce hospital readmissions** for heart failure–specific and all-cause hospitalizations.
- **Improve medication adherence** through identification and closure of GDMT care gaps.
- **Minimize ER utilization** by detecting early signs of patient instability.

By integrating continuous monitoring, alert-based triage, and guided follow-up, Iowa Heart created a sustainable model for proactive cardiac care that extended well beyond traditional clinical boundaries.

"By combining **data visibility** with **personalized outreach**, the Iowa Heart Center turned reactive care into **proactive intervention**."

- Dr. Sieck, Chief Medical Officer

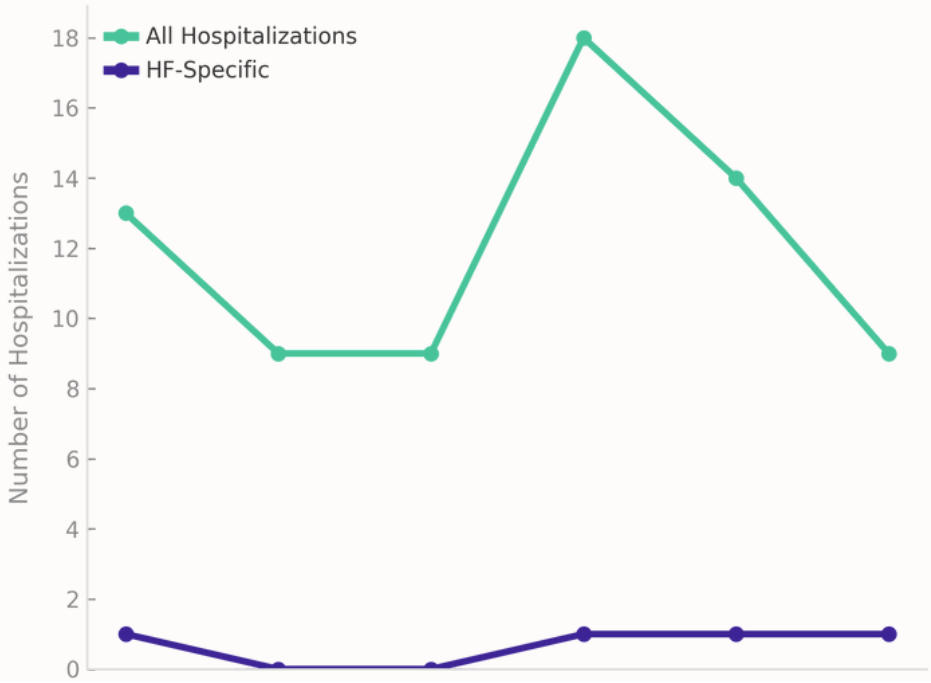


Continuous Monitoring
Driving Better Outcomes

The Results: Six Months. Zero Readmissions.

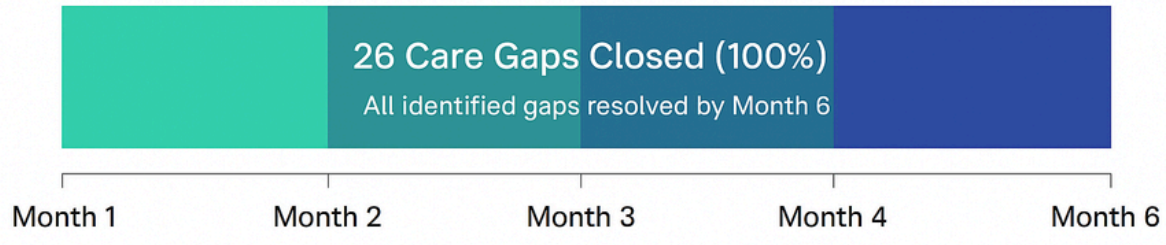
Across six months, the Iowa Heart Center achieved **0% readmissions** compared to an **18% 30-day readmission benchmark of the same patient panel**, preventing an estimated **81 readmissions.**

Hospitalizations Over Six Months



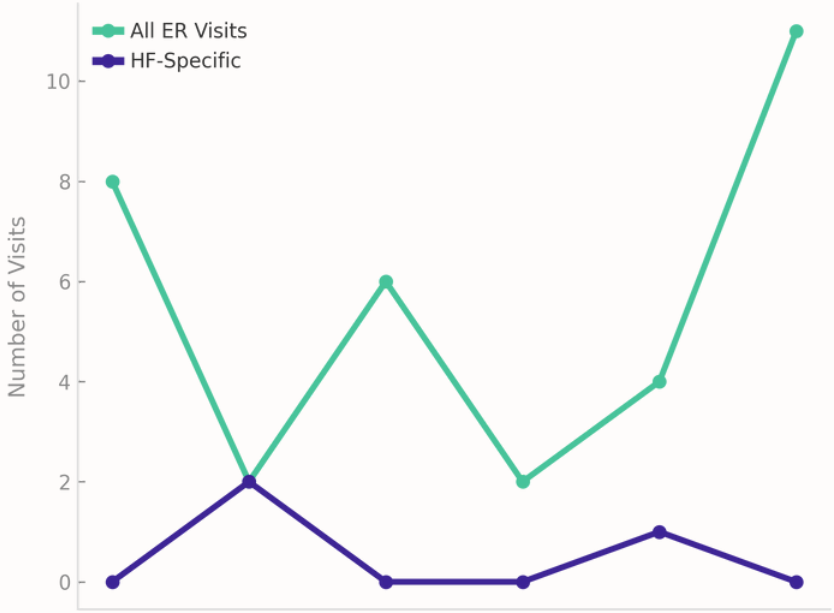
Only four heart failure–related hospitalizations occurred among 450 patients, and **26 GDMT care gaps were identified and closed.**

GDMT Care-Gap Closure Over Six Months



HF-specific ER visits remained minimal throughout the study period, with only three patients visiting the emergency room for heart failure exacerbations in six-months.

ER Visits Over Six Months



Conclusion

Integrating CoachCare's RPM solution into advanced heart failure care led to transformative outcomes—eliminating readmissions, improving guideline adherence, and lowering total cost of care.

This model demonstrates the measurable value of continuous monitoring in complex chronic disease management.

Impact Summary

26
Care Gaps Closed

96%
Reduction in HF Hospitalizations

100%
Reduction in 30-Day and 6-Month Readmissions