

An Intervention to Improve Quality of Life and Lower Readmissions in Veterans Discharged after Heart Failure

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Presenter Disclosure Information

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FINANCIAL DISCLOSURE:

Grants/Research Support: VA Quality Enhancement Research Initiative

UNLABELED/UNAPPROVED USES DISCLOSURE:

None

Heart Failure (HF)

- **Affects nearly 10 million Americans**
Prevalence nearly 10% in the elderly
- **Hospitalizations for HF**
Nearly tripled since 1970 (> 1 million/year)
Leading discharge diagnosis in the VA
- **Readmissions in Heart Failure**
Poor dietary sodium restriction
Poor medication adherence
- **Quality of Life in Heart Failure**
HF has enormous effect on quality of life
Relief of symptoms is key reason for therapy

Framework to Improve Heart Failure Outcomes after Discharge

To optimize HF treatment, it is crucial to

1. Use “teachable” moment to intervene

Counsel during hospitalization and follow-up

2. Optimize provider and system processes

Use simple methods to optimize care

3. Assess readiness to adhere and barriers

Apply health behavior advances using readily available technology

Robust, easily applicable models

Work through the home context

Intervention to Improve Heart Failure Outcomes after Discharge

The Quality Improvement Program (QIP):

1. During “teachable” hospitalization period
 - i. Provide basic education
 - ii. Teach self-monitoring and provide self-care tools
2. Optimize provider and system processes
 - i. Use interdisciplinary checklists and templates to optimize care
3. Assess readiness and use patient self-monitoring to counsel them by phone
 - i. Transtheoretical model and self-regulation theory
 - ii. Counsel patients at home

Primary Specific Aim and Main Hypothesis

Aim: Determine whether the quality improvement program (QIP) is effective in improving quality of life at 3 months post-discharge compared to the current best practice (CBP) group in patients being discharged after admission for heart failure

Hypothesis: The QIP group will have better QOL than the CBP group at 3 months from discharge

Secondary & Exploratory Aims

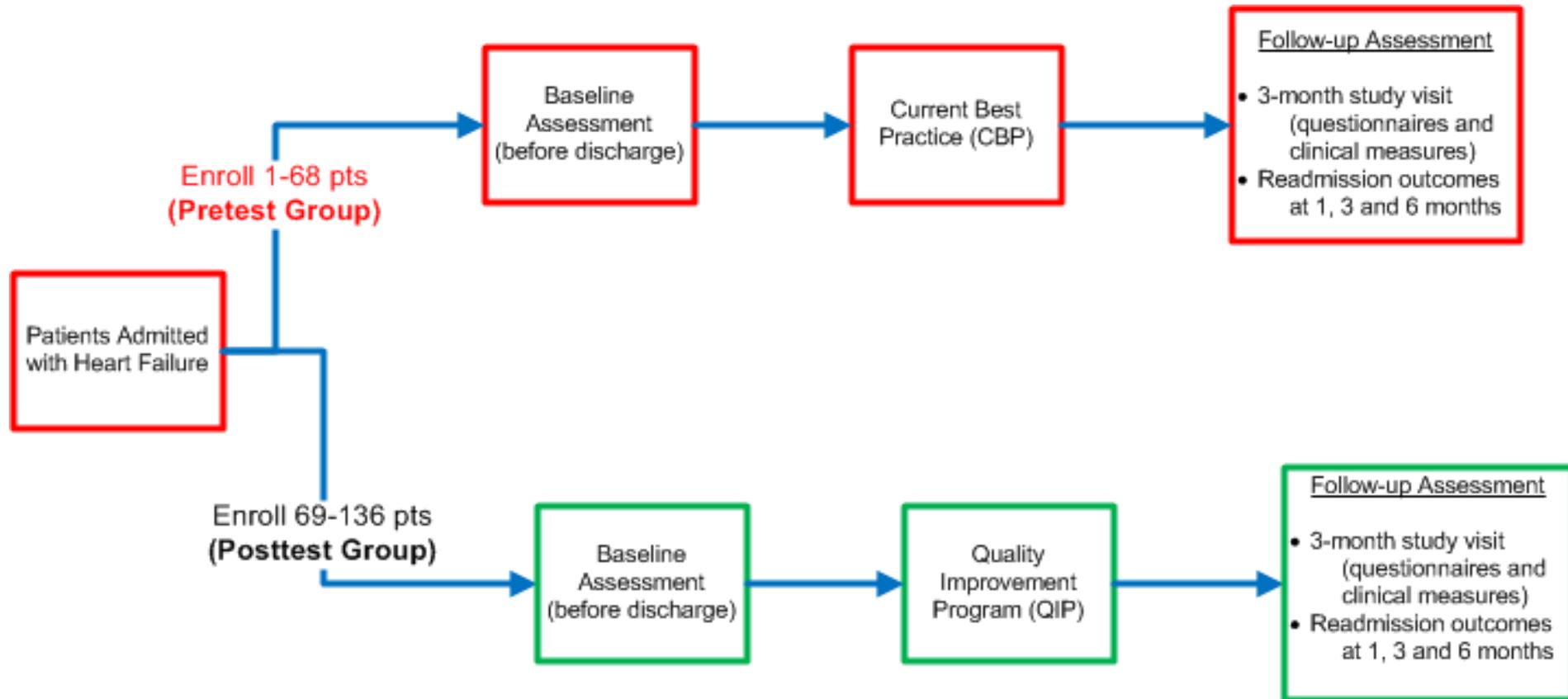
Secondary Aims

- 1) To evaluate the effect of QIP on medication adherence at 3 months
- 2) To evaluate the effect of QIP on diet adherence at 3 months

Exploratory Aim

To examine the effect of QIP on HF readmissions

Study Design: Prospective pretest-posttest control group study



Study Eligibility

- Inclusion Criteria

- Heart identification → daily prospective manual search of hospital admission records
- Reachable by phone

- Exclusion Criteria

- Poor short-term survival (< 3 months)
- Recent major surgery (< 1 month)
- Severe dementia or other serious psychiatric illness
- Temporarily in the area, unable to provide consent, refusal to participate, and logistic or discretionary reasons (including participation in another study)

Intervention Arms

Quality Improvement Program (QIP)

- Interdisciplinary checklists and templates to optimize provider and system processes
- Educate patients during “teachable” period on HF care, self-monitoring and self-care tools
- Tailored counseling for diet and medications using Transtheoretical Model and self-care

Current Best Practice (CBP)

- Current standard of care for heart failure

Intervene at “Teachable” Period

- Identify Veterans with HF admission, inform about study, get consent and educate on HF
 - Heart failure team → communicate diagnosis
 - Self-monitoring education and self-care tools
- Coordinate patient care through checklists and templates
 - Tailored → house staff, nursing, nutrition, pharmacy, social work and outpatient staff
 - Inpatient health professional discharge checklist

Interdisciplinary Heart Failure Discharge Checklist

(Please make sure your component is completed & cosign note. If not complete, please note in addendum)

HOUESTAFF (intern or resident)

1. LV Functional Assessment (EF %) [Current or recent echocardiogram in chart]
2. ACE or ARB prescribed for LVSD (EF less than 40%) [If not, contraindication documented]
3. Beta blocker prescribed for LVSD (EF less than 40%) [If not, contraindication documented]
4. If cigarette smoker within last month, smoking cessation options reviewed
5. Refer for nutrition counseling
6. Follow-up appointment made within 7-10 days of discharge; communicate follow-up studies needed
7. Convey management plan to patient, any anticipated problems, suggested interventions and who to call
8. Discharge summary (Presenting problem, Key findings and test results, Brief Hospital Course, Final Primary and Secondary Diagnoses, Follow-up plans)
9. Telehealth referral (please note in addendum if not eligible)
10. Weighing scale prescribed (please note in addendum if pt has one already)

PHARMACIST

1. Medication reconciliation completed and discharge medication list provided to patient/family
2. Written schedule of medications, Comparison with pre-admission medications (new, changes in dose/freq, unchanged, "meds should no longer take")
3. Documentation of patient education and understanding of medications

NUTRITIONIST

1. CHF diet counseling (including fluid restriction and sodium restriction)
2. Diet counseling for other comorbid conditions (diabetes, hypertension, etc.)

NURSE

1. Documentation of patient education and understanding of diet, weight, activity goals
2. Education regarding signs and symptoms of heart failure, and response to such signs/symptoms
3. Condition at discharge, including functional status and cognitive status

SOCIAL WORKER

1. Travel plans for follow-up visits arranged
2. Homecare services including Visiting Nurse Services (note in addendum if not eligible)

FOLLOW-UP CLINICIAN

1. Acknowledge discharge plan and Follow-up studies after discharge (PC Provider)

Provide Self-Management Tools: Patient Personal Checklist

- Educate, activate and motivate patients to self-monitor their care
 - Weight
 - Symptoms
 - Medications
 - Diet
 - Exercise

Patient Personal Checklist

Doctor/Nurse's #:

October 2011

Daily Instructions	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Write morning weight here. Call doctor or nurse if you gained 2-3 pounds in 1 day or 5 pounds in 1 week.	Weight: _____						
Check here if swelling occurs in feet, legs, hands, arms or belly in the morning. Call doctor or nurse if this occurs.	Swelling <input type="checkbox"/>						
Check here if you experience <u>new</u> or <u>worsened</u> symptoms. Call doctor or nurse if this occurs.*	Symptoms <input type="checkbox"/>						
Write your new or worsened symptoms: shortness of breath, irregular or fast heartbeat, frothy or pink spit, feeling faint, exhaustion, nausea, trouble sleeping lying flat on back, etc.	_____	_____	_____	_____	_____	_____	_____
Check here if you called your doctor or nurse due to weight gain, swelling, or other symptoms.	Called In <input type="checkbox"/>						
Check here if you kept your fluid intake under 2 liters or quarts.	Fluids <input type="checkbox"/>						
Check here if you did not add salt to any of your food.	Salt Goal 1 <input type="checkbox"/>						
Check here if you soaked contents of canned foods in water and drained thoroughly before eating.	Salt Goal 2 <input type="checkbox"/>						
**Med 1: Carvedilol as prescribed	Med 1 <input type="checkbox"/>						
**Med 2: Furosemide as prescribed	Med 2 <input type="checkbox"/>						
**Med 3: Lisinopril as prescribed	Med 3 <input type="checkbox"/>						
**Med:	Med <input type="checkbox"/>						
**Med:	Med <input type="checkbox"/>						
Check here if you did any form of exercise. Exercise only if your doctor says you are ready.	Exercise <input type="checkbox"/>						

*Call 911 if you have 1) chest discomfort or pain that lasts more than 15 minutes that is not relieved with rest or nitroglycerin, 2) severe, persistent shortness of breath, and/or 3) fainted or passed out.

**If any of your heart failure medications are changed and/or if you are prescribed new heart failure medications, please cross out old medication names on checklist and fill in new names. Please indicate the dates your doctor or nurse made these changes.

Post-Discharge Intervention

HF management counseling

- Manualized computer-based phone-delivered intervention grounded in the Transtheoretical Model
- Education and counseling on HF and treatment recommendations
- Consisted of 3 monthly 30-minute calls

Self-management tools

- Weekly personalized patient personal checklists mailed monthly
- Patients were asked to send completed checklists back for feedback during the next counseling call

Post-Discharge Intervention: Counseling Content

- Transtheoretical Model for diet and medications
 - Tailored to stage of change, decisional balance and self efficacy
- Patient self-monitoring
 - Tailored feedback based on symptoms and patient personal checklists
- Prospect theory for behavior change
 - Gain frames for preventive health behaviors
 - Loss frames for health detection behaviors

Key Measurements

- Health-related Quality of Life (HRQOL)
 - a) Veterans SF-36
 - b) Minnesota Living with HF Questionnaire
- Medication Adherence
 - a) Morisky adherence assessment
 - b) Refill frequency
- Readmissions
 - a) Patient survey at 3 and 6 months
 - b) Review of CPRS (Computerized Patient Record System)

Statistical Analysis

- Outcomes: QOL, Medication adherence, Readmissions
- Descriptive statistics – Chi-squared tests (or Fischer exact test) and Wilcoxon rank sum test
- Determined differences in 3-month QOL between QIP and CBP → Wilcoxon rank sum test
- Assessed time to readmission from baseline to 1, 3 and 6 months by arm using Lifetable analysis

Baseline Characteristics (n=136)

	CBP	QIP
# Participants	68	68
Age in years, median	75.3	74.8
Men, %	97.1	100.0
White, %	54.4	44.1
≤ High School, %	50.0	46.3
Married, %	22.1	26.5
Employed, %	8.8	5.9
Manhattan Campus, %	73.5	66.2

P = NS for all comparisons

Baseline Characteristics (cont.)

	CBP	QIP
Living Alone, %	61.8	48.5
Current Smoker, %	7.4	16.7
Stroke/TIA, %	22.1	22.1
Diabetes, %	51.5	57.4
Anemia, %	30.9	39.7
Coronary Artery Disease,%	57.4	61.8
COPD, %	42.7	30.9
Renal Failure, %	45.6	36.8

n=136

P = NS for all comparisons

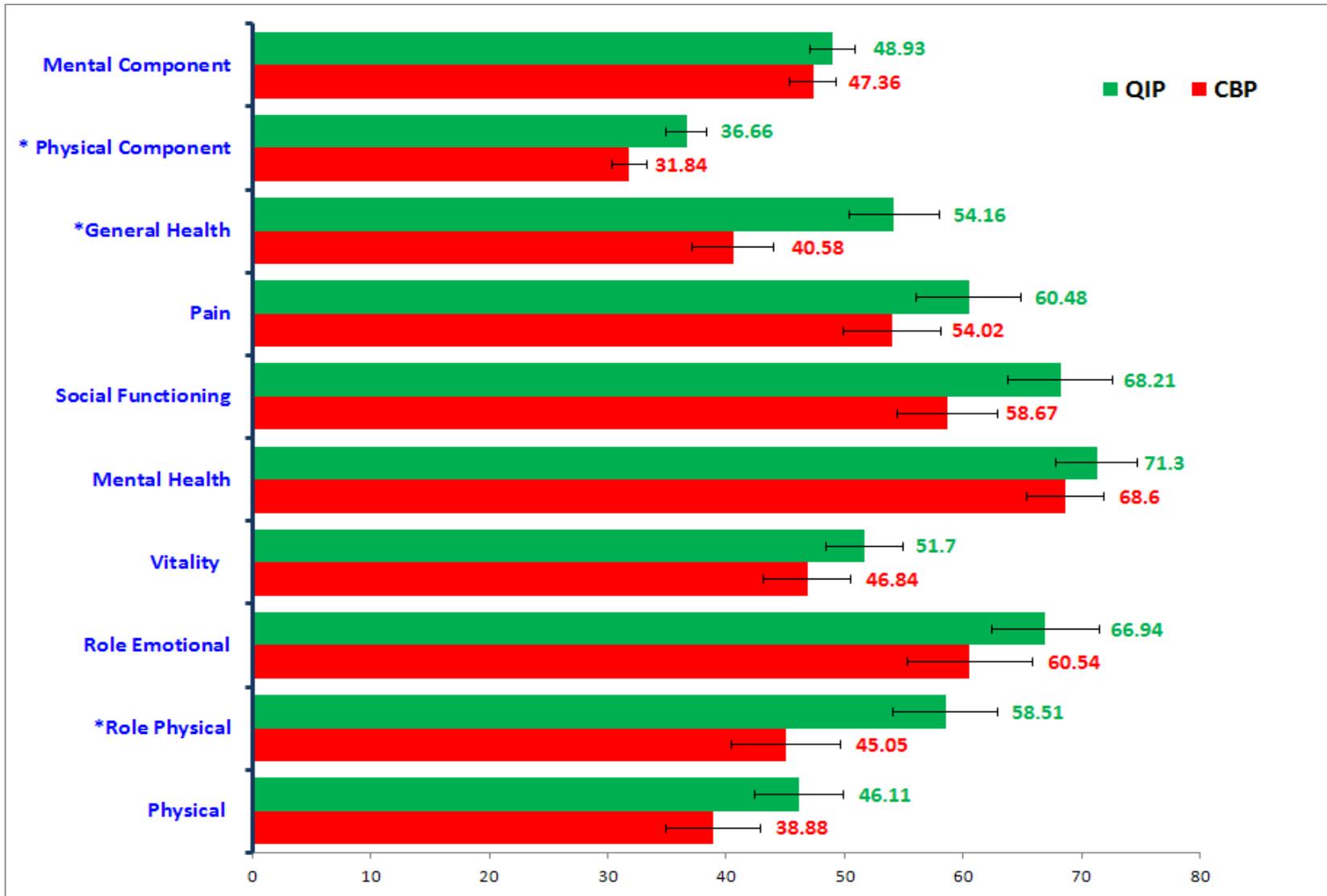
Baseline Characteristics (cont.)

	CBP	QIP
Cancer, %	29.4	30.9
Cardiac Arrest, %	0.0	0.0
Aortic Stenosis, %	1.5	7.35
Normal Cognitive Functioning, %	91.2	83.8
Length of Stay (days), median	6	6
BNP, median	645	739
No. of HF Meds, median	3.0	3.0
Body Mass Index, median	28.4	28.5

n=136

P = NS for all comparisons

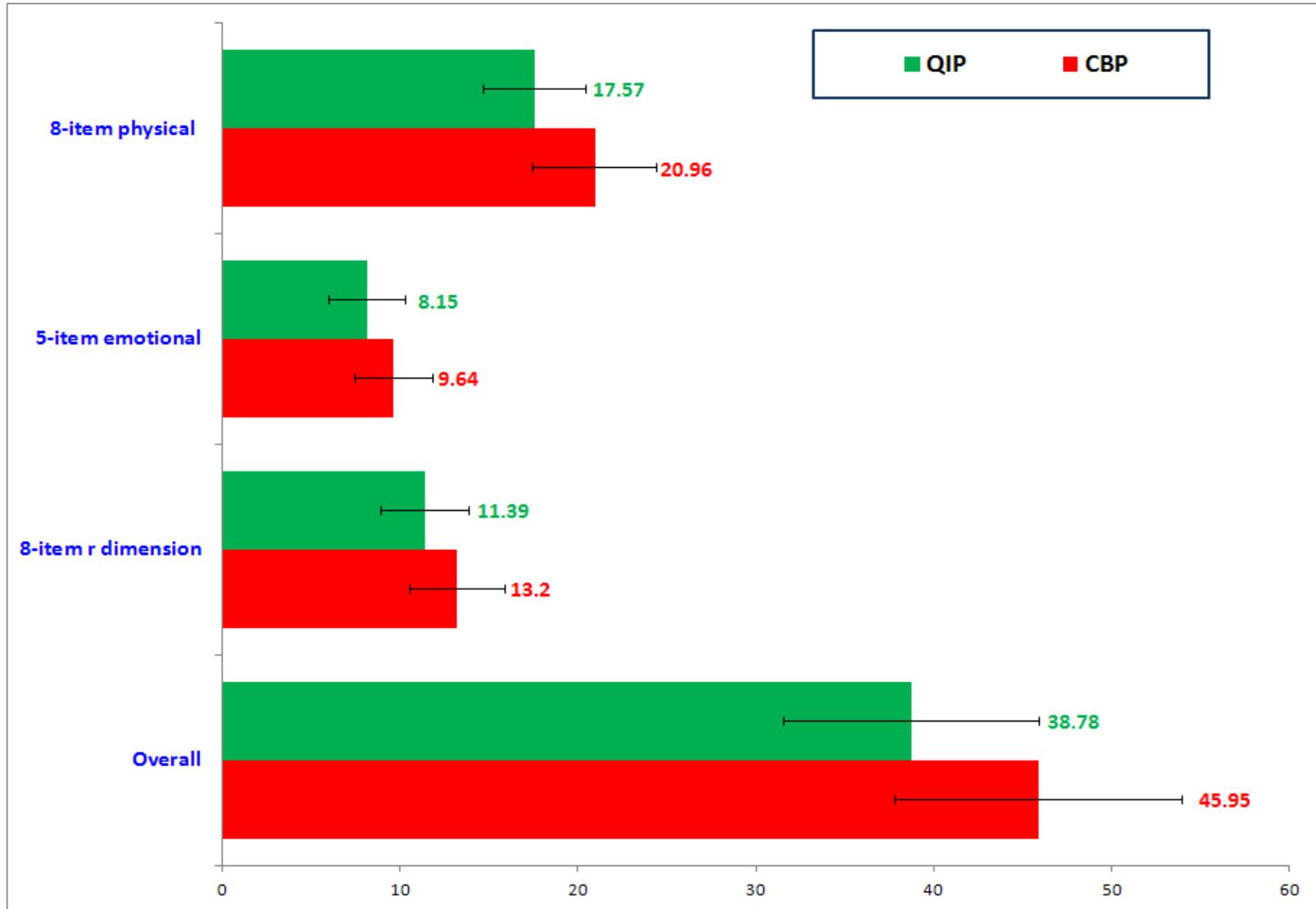
General Quality of Life: SF-36V



Higher scores indicate better QOL

* p < 0.05

Disease-specific QOL: MLHFQ

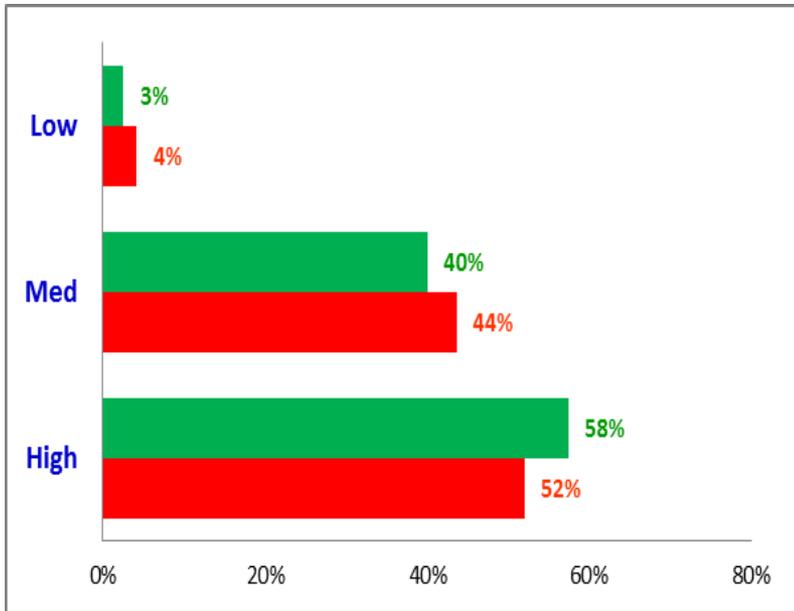


Lower scores indicate better QOL

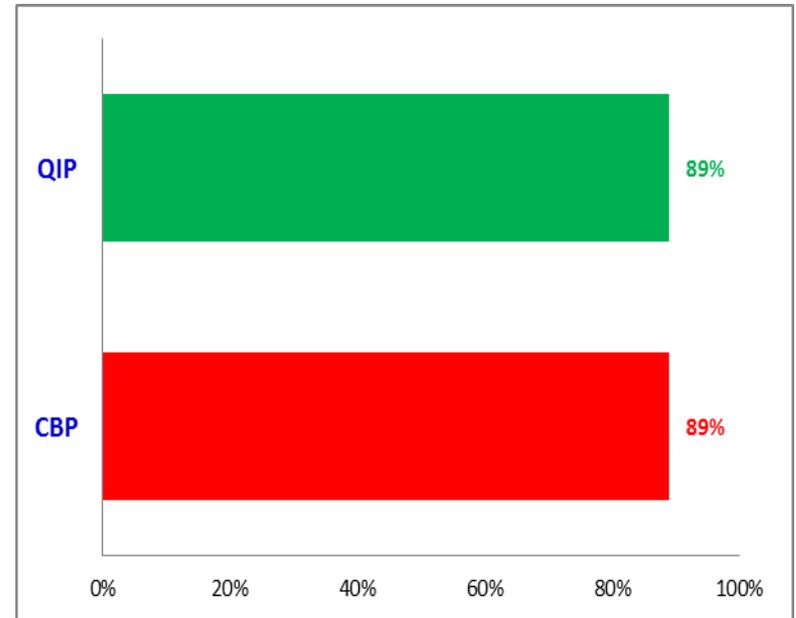
* $p < 0.05$

Medication Adherence

Morisky Score

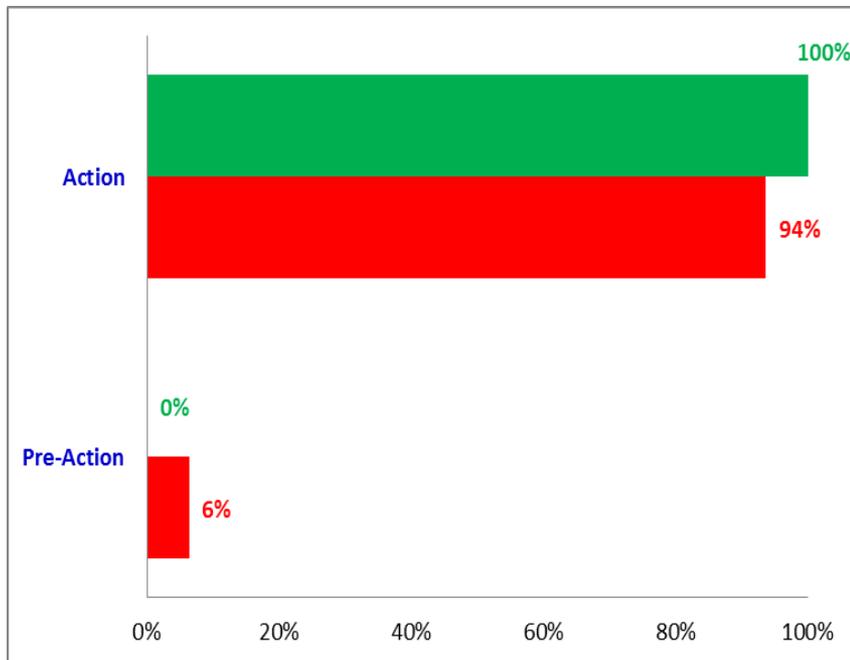


Refill Compliance (median)

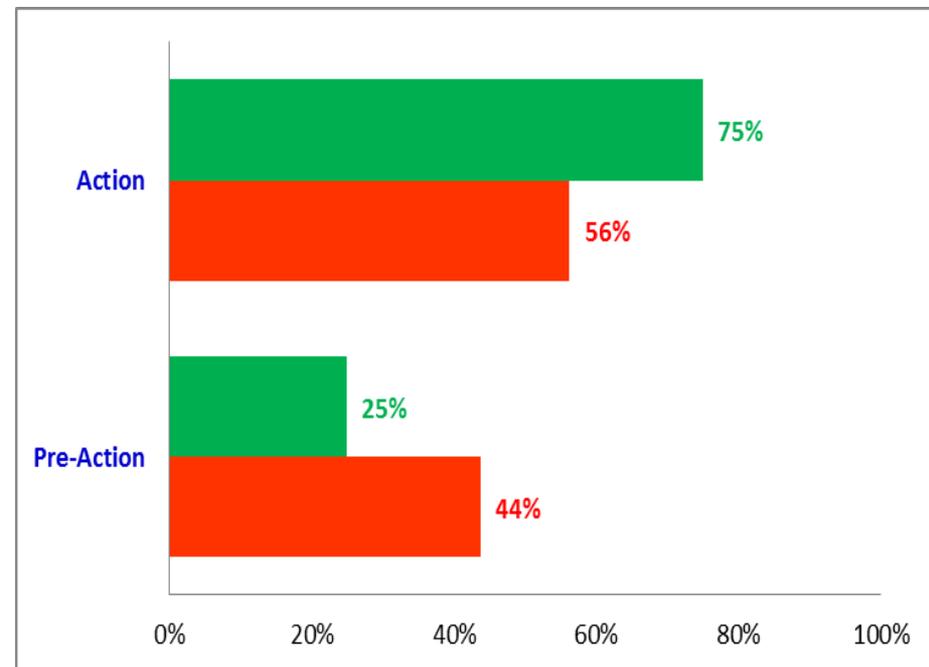


Effect on Stage of Change

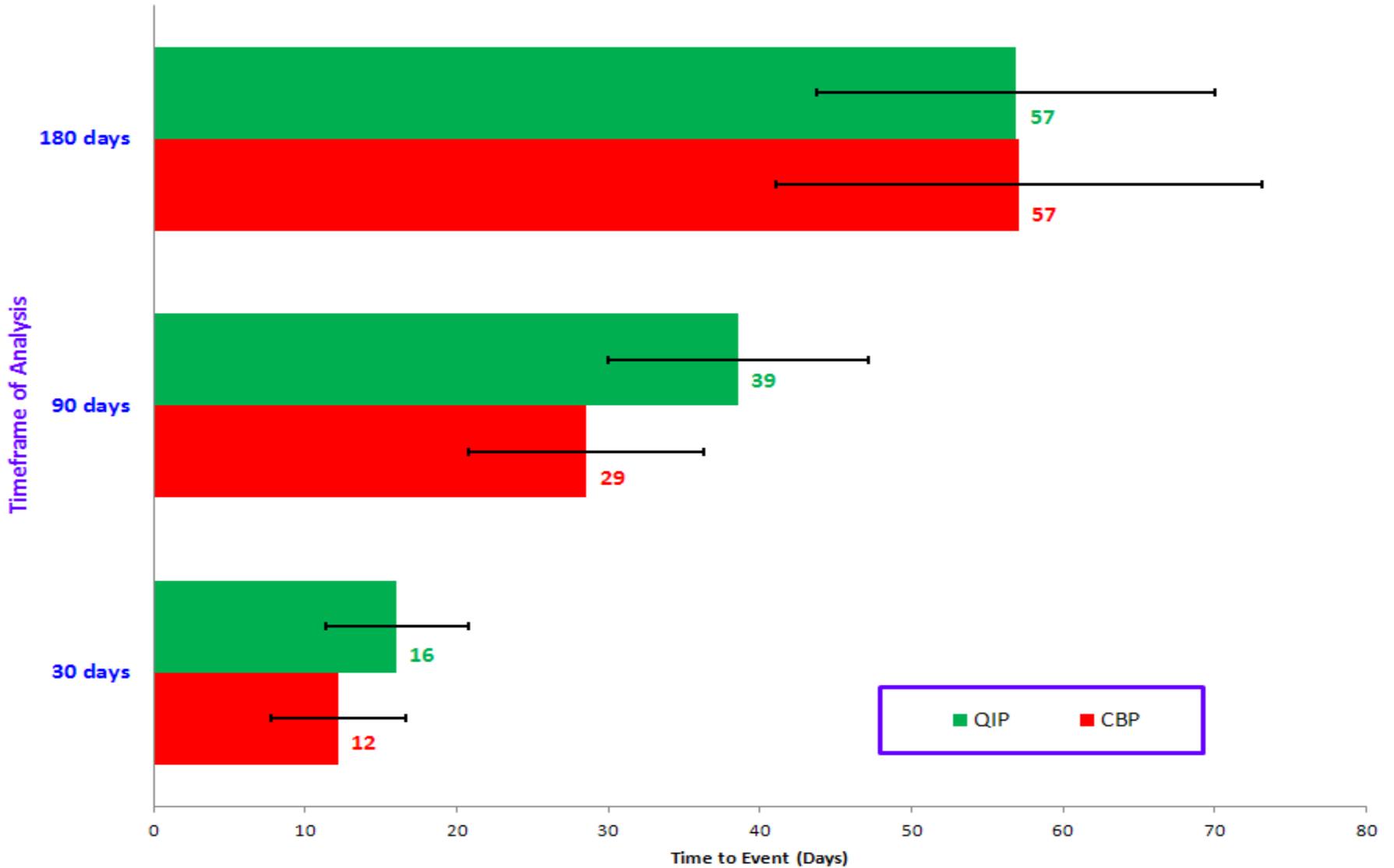
Medication



Diet



Time to Readmission



Limitations

- Non-randomized design
- Missing data
- Relatively short follow-up
- Medication adherence
- Disruption of care (Superstorm Sandy)

Summary

- The Quality Improvement Program (QIP) improved quality of life compared to Current Best Practice (CBP)
- The Quality Improvement Program (QIP) also increased time to readmission at 1, 3 and 6 months compared to Current Best Practice (CBP)

Conclusion

- A multicomponent intervention showed promise for improving quality of life and reducing readmissions
- This intervention may be a new, potent and potentially cost-effective approach to augment care for patients being discharged after being admitted for heart failure

Acknowledgements

- Patients
- Hospital and Clinic Staff
- Research Staff
- Collaborators
- NYHHS Administration
- VA QUERI RRP