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Middle East Forum on Quality & Safety in Healthcare **2023**

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Reducing 30-Day Hospital Readmissions for Patients Presenting with Heart Failure: A Multidisciplinary Quality Improvement Initiative

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Reducing 30-Day Hospital Readmissions for Patients Presenting with Heart Failure: A Multidisciplinary Quality Improvement Initiative

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Institute for Healthcare Improvement

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Quality Improvement Team for this Project

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Mr. Parthasarathi Thangaraj- Occupational Therapist
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Presenters

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Consultant cardiologist and Heart failure

Mr. Sharin Koshy Varghese
Heart Failure Clinical Nurse Specialists

Ms. Indirani Savarimuthu
Head Nurse

Conflict of Interest

The speaker(s) or presenter(s) in this session has/have no conflict of interest or disclosure in relation to this presentation.

Learning Objectives

At the end of this session, participants will be able to:

1. Understand the elements that prevent and reduce 30 days of heart failure readmission.
2. Discuss methods, tools, and improvements which lead to success.
3. Demonstrate involvement in a multidisciplinary team approach and the outcomes.
4. Develop a process to sustain and look for further improvement.

Introduction

Heart failure is a chronic, progressive disease that occurs when the heart muscle becomes weak or stiff and is unable to pump blood to meet the body's need sufficiently.

Introduction (Cont..)

Multi-faceted and life-threatening syndrome characterized by significant **morbidity and mortality**, **poor functional capacity**, and **quality of life**

Potentially fatal and one of the **commonest causes** of hospitalization

Introduction (Cont..)

Review > Cardiovasc Res. 2023 Jan 18;118(17):3272-3287. doi: 10.1093/cvr/cvac013.

Global burden of heart failure: a comprehensive and updated review of epidemiology

Gianluigi Savarese [1 2], Peter Moritz Becher [1 3], Lars H Lund [1 2], Petar Seferovic [4 5], Giuseppe M C Rosano [6 7], Andrew J S Coats [8]

HF affects more than 64 million people worldwide

Introduction (Cont..)

Nearly 1 in 4 heart failure (HF) patients are readmitted within 30 days of discharge and approximately half are readmitted within 6 months

It has been suggested that about one quarter of HF readmissions may be **preventable**

Trends in 30- and 90-Day Readmission Rates for Heart Failure. Circ Heart Fail. 2021 Apr;14(4):e008335.

Introduction (Cont.)

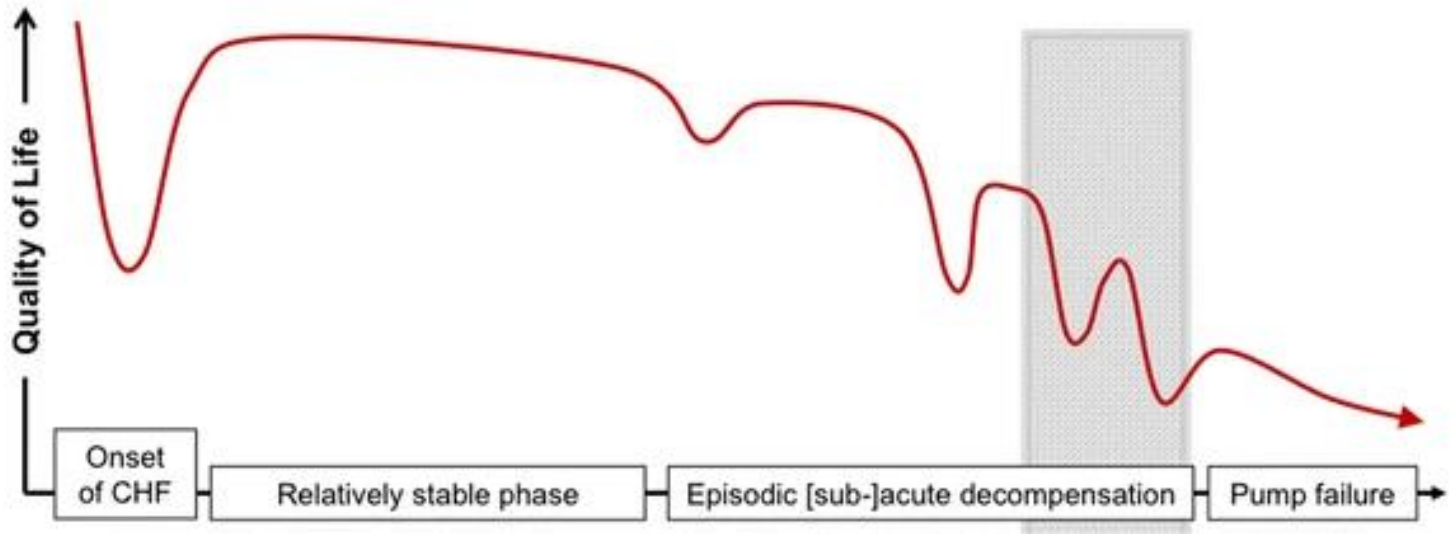
Readmissions not only impose significant distress on the patients and their families but also increase the burden on the health system and are challenging for healthcare providers. (Bergethon et al., 2016).

Hospitalization for HF represents a breaking event

Readmission rates for HF patients are high due to

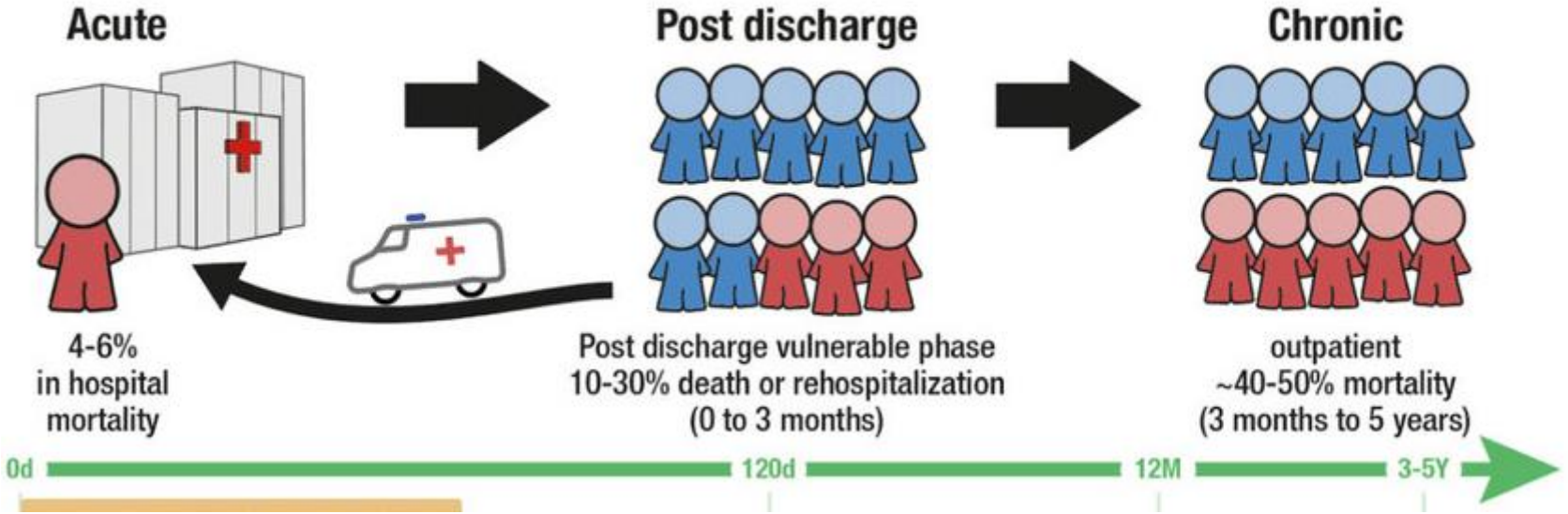
- ❑ *worsening of heart condition*
- ❑ *lack of access to medical assistance*
- ❑ *low medication adherence, sedentary lifestyle*
- ❑ *lack of awareness*
- ❑ *poor self-monitoring*
- ❑ *irregular follow-up care.*

Quality of Life



Understanding heart failure; explaining telehealth - a hermeneutic systematic review. BMC Cardiovasc Disord. 2017 Jun 14;17(1):156.

Mortality along the journey of heart failure patients



'Time is prognosis' in heart failure: time-to-treatment initiation as a modifiable risk factor. ESC Heart Fail. 2021 Dec;8(6):4444-4453.

Introduction (Cont..)

HF patients require more assistance after they get discharged from the hospital, and they need to stay connected with the Health care providers(HCP) throughout.

To prevent and reduce readmission, the majority of which relate to patients' education/awareness and improving coordination, communication, and cooperation with the HCP.

The effort initiation by the multi-disciplinary team and approach to reduce HF readmissions within 30 days of discharge might improve patient outcomes and quality of life.

Introduction Cont..

RESEARCH ARTICLE: QUALITY IMPROVEMENT STUDY

Multidisciplinary rounds in prevention of 30-day readmissions and decreasing length of stay in heart failure patients

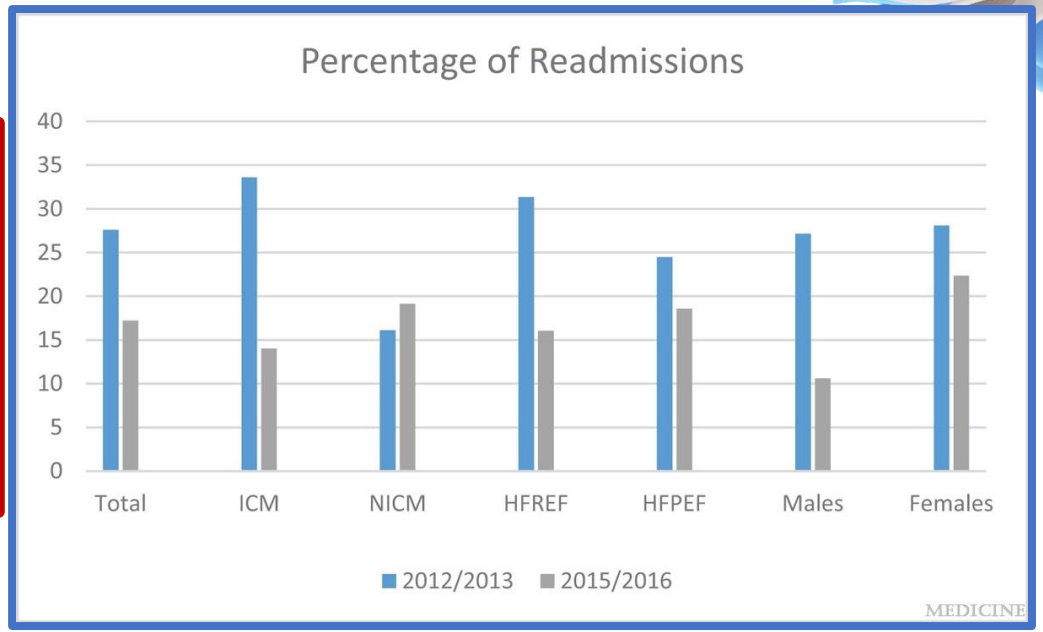
A community hospital based retrospective study

Chava, Raghuram MD[a,*]; Karki, Nabin MD[b]; Ketlogetswe, Kerunne MD, MHS[b]; Ayala, Tomas MD[b]

Editor(s): Baltatu., Ovidiu Constantin

Author Information

Medicine 98(27):p e16233, July 2019. | **DOI:** 10.1097/MD.0000000000016233



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Problem Description

- Patients are more at risk of returning to the hospital immediately following discharge.
  (E.g.: new medication or lifestyle changes)

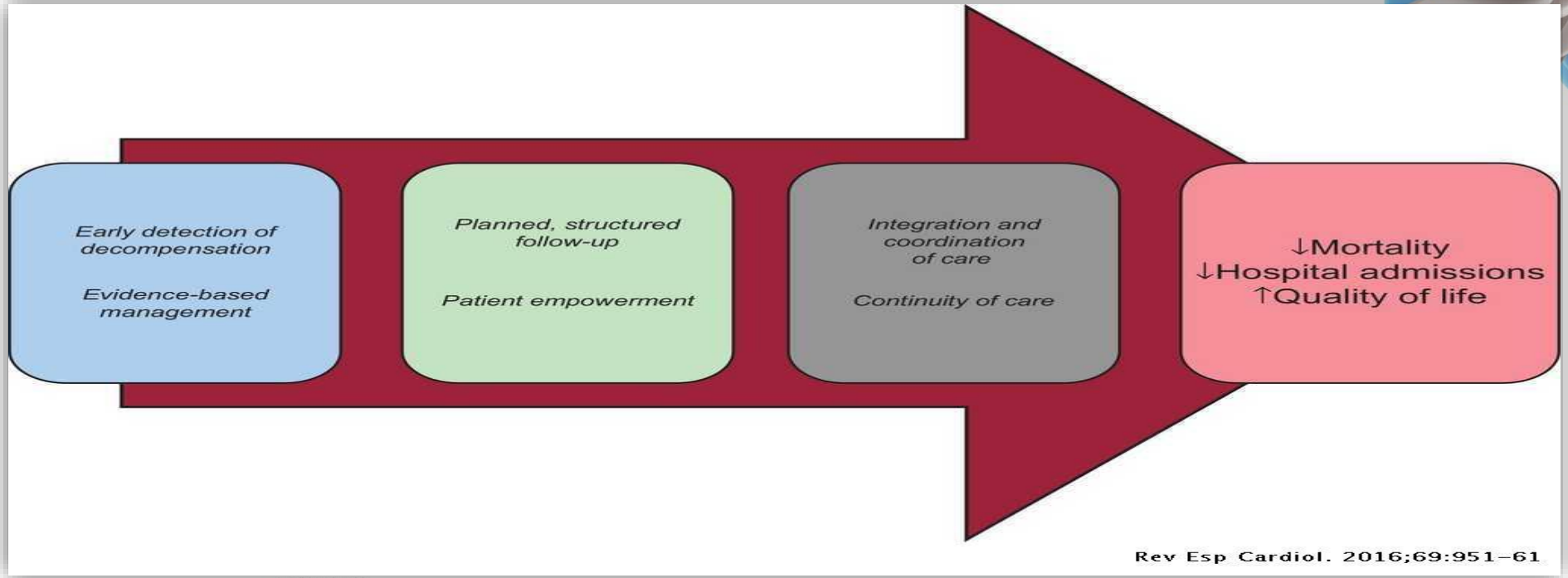
- We found a similar situation in our High Dependency Unit-C (HDU-C), in Heart Hospital, a tertiary cardiac care center in the State of Qatar

- A baseline report was generated to analyze the 30 days Heart Failure readmission rate in 2019.
  It was noted that our unit rate was high i.e., 25%, which is above the international benchmark of 21%.

Problem Description (Cont.)

- A multi-disciplinary team involving Physicians, Clinical Nurse Specialists, Nurses, Dieticians, Clinical pharmacists, physiotherapists, and Occupational Therapists was developed in mid-2019 to reduce the number of preventable 30 days readmissions and improve patient outcomes by initiating the value improvement project (IHI).
- The team came up with an action plan to reduce 30 days Heart Failure patient readmission rate through appropriate health education, coaching for the patient and their family, and early clinic follow-up.

What are we trying to achieve?



Rev Esp Cardiol. 2016;69:951–61

Setting

The HDU-C is a specialized unit with 20 beds that focus, treats, and cares for heart failure patients started up in 2016 at Heart Hospital in Qatar.

Every year, this unit discharges around 200 HF patients admitted with a principal diagnosis of heart failure.

Rationale

The rise in hospital readmissions is a global concern, placing a considerable burden on patients, treatment costs, and hospital resources

Every year there is an increase in heart failure patients getting readmitted to the heart hospital within 30 days of discharge.

Noticed gap in practice in the care continuum of patients with HF during the transition from hospital to home.

Studies have shown that education and reinforcement are pivotal in reducing HF readmissions (Horne et al., 2020).

The readmission project was initiated in 2019 to improve tailored care, communication, and care coordination in order to have better patient engagement, involve patients and caregivers in discharge plans and, thereby, reduce avoidable readmissions (Morton, Masters & Cowburn, 2018).

Aim Statement

To reduce the number of heart failure patients 30 days readmission rate by 10% by the end of Dec 2020, and further to 20% by December 2021 admitted to the HDU C in Heart Hospital, HMC

Eligibility Criteria

INCLUSION CRITERIA

- ❑ Patients admitted and discharged from HDU C
- ❑ Principal diagnosis of HF
- ❑ Readmitted within 30 days of discharge in any facilities of Hamad Medical Cooperation with the principal diagnosis of HF

EXCLUSION CRITERIA

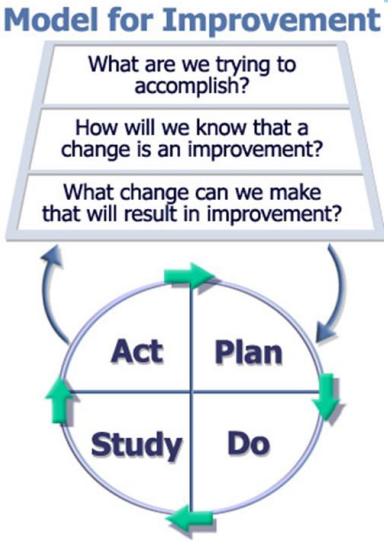
- ❑ Patients with HF readmitted with other principal diagnosis
- ❑ Deceased,
- ❑ Discharged against Medical Advice (DAMA)
- ❑ Traveled aboard, no information,
- ❑ No HF clinic follow-up.

Methods

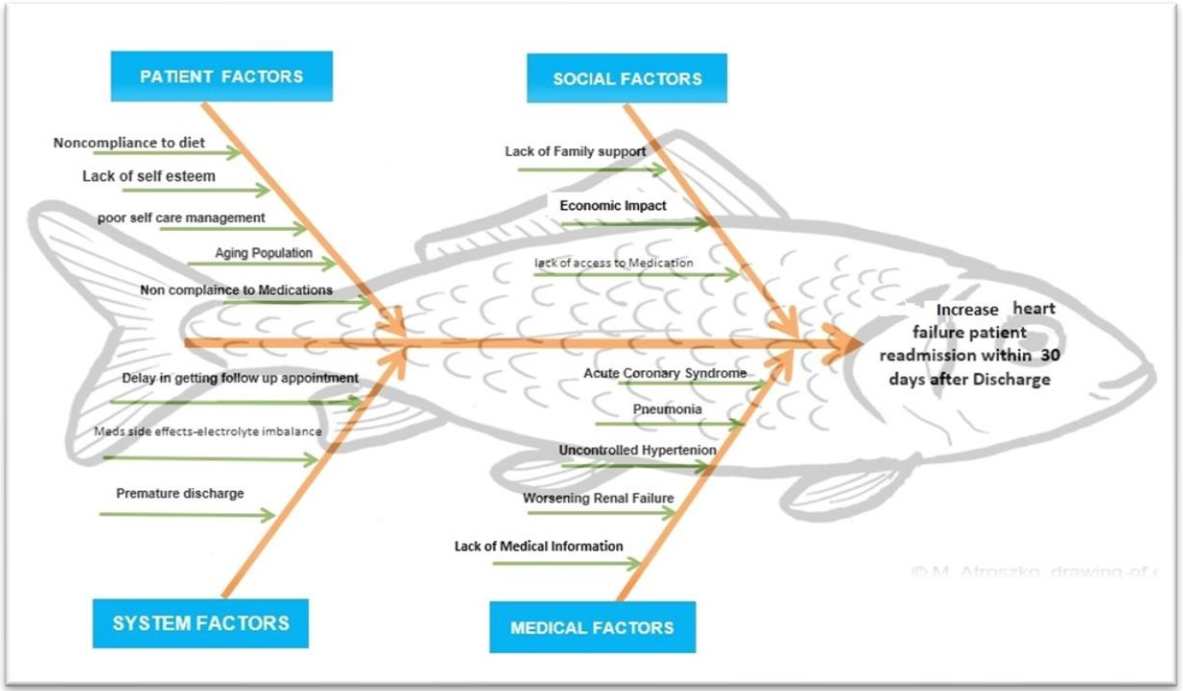
Root cause and Pareto analysis for HF readmission were carried out by the task force team in HDU C and identified significant gaps.

A model for improvement framework was used to drive continuous improvement.

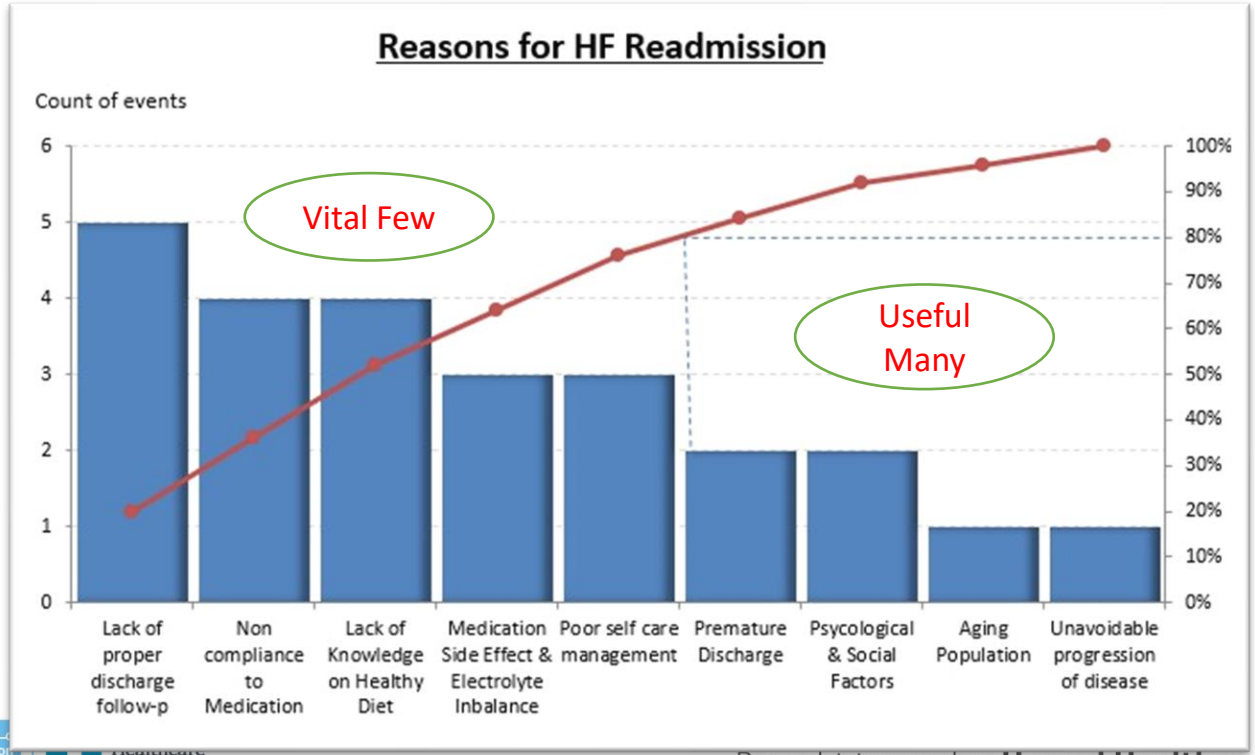
Subsequently, Plan–Do–Study–Act (PDSA) cycles were used to test changes.



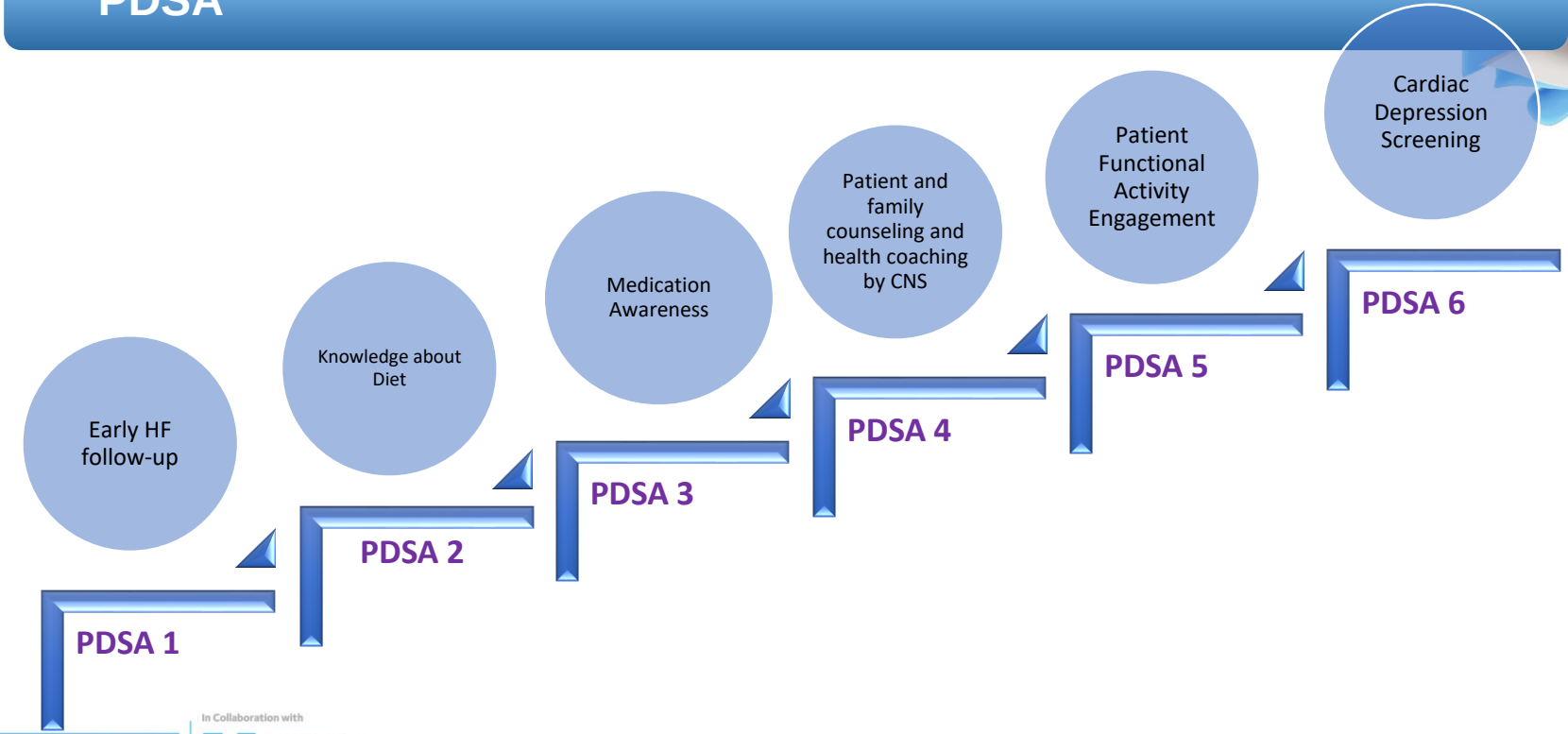
Cause and Effect Diagram



Pareto Analysis was Performed To Prioritize The Diagram



PDSA

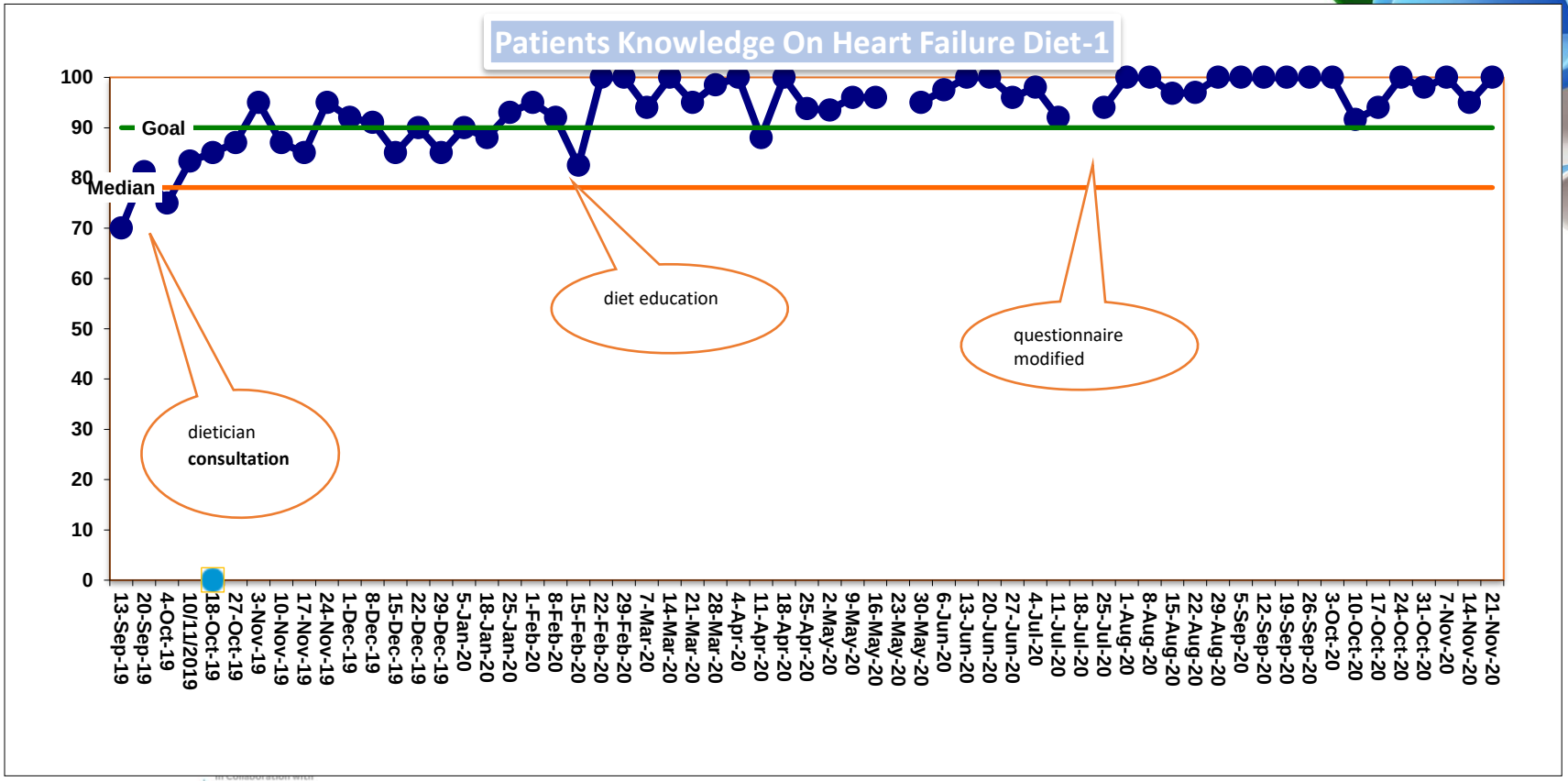

Early HF follow-up
Knowledge about Diet
Medication Awareness
Patient and family counseling and health coaching by CNS
Patient Functional Activity Engagement
Cardiac Depression Screening
PDSA 1
PDSA 2
PDSA 3
PDSA 4
PDSA 5
PDSA 6

PDSA 1: Early HF Follow-up

- Initially, heart failure (HF) patients had a routine follow-up in a general cardiology clinic; subsequently, a heart failure clinic was established in 2015, but with no time frame.
- All HF patients who were discharged eventually started getting early appointments within 1-2 weeks of their discharge. Further, follow up decided according to the patient's condition.
- The **primary HF consultant** receives follow-up from the HF team in the outpatient clinic to ensure the continuity of care.
- Contact information for the CNS and HF Clinic is provided as a focal point on the day of discharge. Early teleconsultations were made by CNS based on the patient's condition.

PDSA 2: Knowledge about Diet

- A Dietician referral is given to all HF patients on admission for nutritional screening and assessment.
- The assigned Dietician provides each patient with a clear, detailed, and evidence-based plan of care which is been updated regularly and shared with the members of the healthcare team in the unit.
- Educated the patient about nutritional therapy and recommends salt and fluid restrictions.
- Provided dietary educational brochures.
- Reinforcement about the diet is also done by the Nurses and CNSs.


Patients Knowledge On Heart Failure Diet-1
100
90
80
70
60
50
40
30
20
10
0
Goal
Median
dietician
consultation
diet education
questionnaire
modified
13-Sep-19
20-Sep-19
4-Oct-19
10/11/2019
18-Oct-19
27-Oct-19
3-Nov-19
10-Nov-19
17-Nov-19
24-Nov-19
1-Dec-19
8-Dec-19
15-Dec-19
22-Dec-19
29-Dec-19
5-Jan-20
18-Jan-20
25-Jan-20
1-Feb-20
8-Feb-20
15-Feb-20
22-Feb-20
29-Feb-20
7-Mar-20
14-Mar-20
21-Mar-20
28-Mar-20
4-Apr-20
11-Apr-20
18-Apr-20
25-Apr-20
2-May-20
9-May-20
16-May-20
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22-Aug-20
29-Aug-20
5-Sep-20
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19-Sep-20
26-Sep-20
3-Oct-20
10-Oct-20
17-Oct-20
24-Oct-20
31-Oct-20
7-Nov-20
14-Nov-20
21-Nov-20

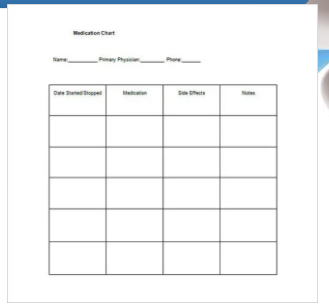
PDSA 3: Medication Awareness

- Implementation of multidisciplinary healthcare team rounds, including physicians, clinical pharmacists (CP), CNS, Nurses, dieticians, OT, etc., are essential for best care practices.

- At the time of admission, the dedicated CP evaluates and reviews the patient's home medications and evaluates medication compliance, and educates the patient and the family day to day while the patient is hospitalized and on the day of discharge.

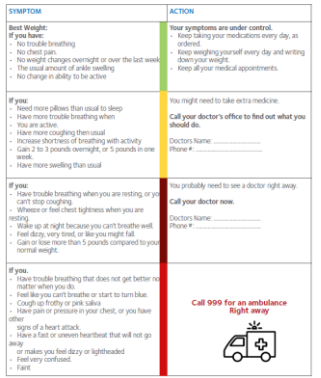
- Education was provided according to their level of literacy.

- Achieved positive outcomes with the involvement of CP's collaborative medication management with the HF Consultant and the team.


Medication Chart

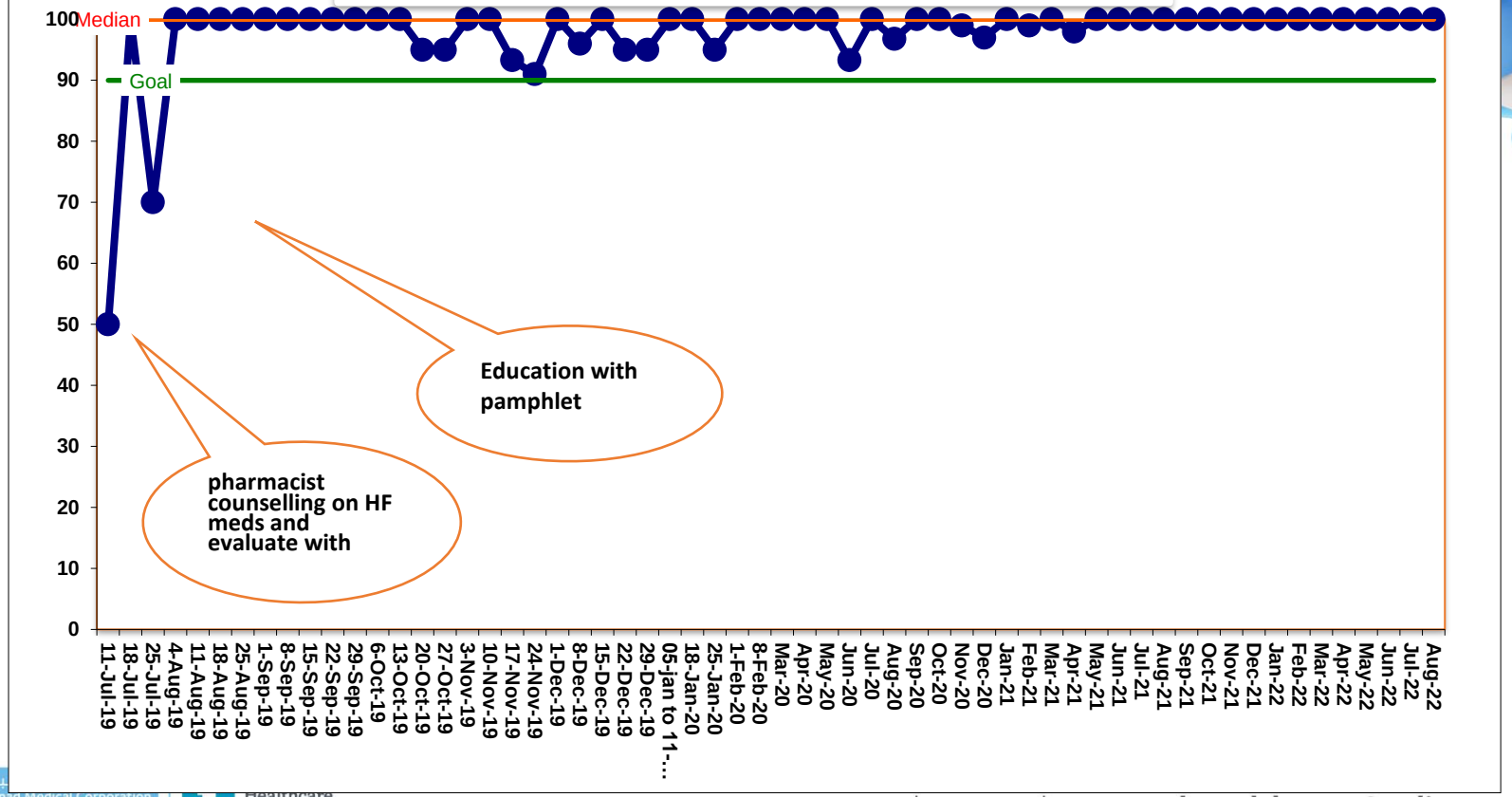
Name:_____Primary Physician:_____ Phone:_____

Date Started/Stopped	Medication	Side Effects	Notes


HEART FAILURE ACTION PLAN:

SYMPTOM	ACTION
Best Weight: If you have: • No trouble breathing • No chest pain • No weight changes overnight or over the last week • The usual amount of ankle swelling • No change in ability to be active	Your symptoms are under control. • Keep taking your medications every day, as ordered • Keep weighing yourself every day and writing down your weight. • Keep all your medical appointments.
If you: • Need more pillows than usual to sleep • Have more trouble breathing when • You are active • Have more coughing then usual • Increase shortness of breathing with activity • Gain 2 to 3 pounds overnight, or 5 pounds in one week • Have more swelling than usual	You might need to take extra medicine. Call your doctor's office to find out what you should do. Doctors Name: ..... Phone # .....
If you: • Have trouble breathing when you are resting, or you can't stop coughing. • Wheeze or feel chest tightness when you are resting • Wake up at night because you can't breathe well. • Feel dizzy, very tired, or like you might fall. • Gain or lose more than 5 pounds compared to your normal weight.	You probably need to see a doctor right away. Call your doctor now. Doctors Name: ..... Phone # .....
If you, • Have trouble breathing that does not get better no matter when you do. • Feel like you can't breathe or start to turn blue. • Cough up frothy or pink saliva • Have pain or pressure in your chest, or you have other signs of a heart attack. • Have a fast or uneven heartbeat that will not go away or makes you feel dizzy or lightheaded • Feel very confused. • Faint	Call 999 for an ambulance Right away

Patients Knowledge On Heart Failure Medication



PDSA 4: Patient and Family counselling and health coaching by CNS

- HF patients are been referred to Heart Failure Clinical Nurse Specialists (CNS) on admission to HDU-C
- In the HF team, CNS is set as the focal point, link to patients and families, and healthcare professionals.
- CNS provides one-to-one inpatient education, counseling, and coaching, using the teach-back approach.
- CNS performs the Six-Minute Walk Test before discharge and follow-up in the outpatient clinic to reassess the progression.
- Continuity of care provided even after discharge through in-person/ telephonic consultation and Make follow-up calls within 1-2 weeks of post-discharge.
- Tele-Triage and facilitate within the HF team for the walk-in clinic.

WHAT SHOULD I DO ON A REGULAR BASIS?

Every morning, when you get up, check how are doing. Look for:

Changes in breathing
Ask yourself:
- Can I breathe as well as I usually can?
- Am I getting out of breath doing things I can normally do without a problem?
- Am I coughing more than usual?
- Did I use more pillow than usual to sleep last night?

Changes in weight
Weight yourself every morning after urinating but before eating.
Write down weight on a calendar. Then ask yourself:
- Has my weight gone up or gone down compare to yesterday?
- Has my weight gone up or gone down compared to a week ago?
- If so, by how many pounds?

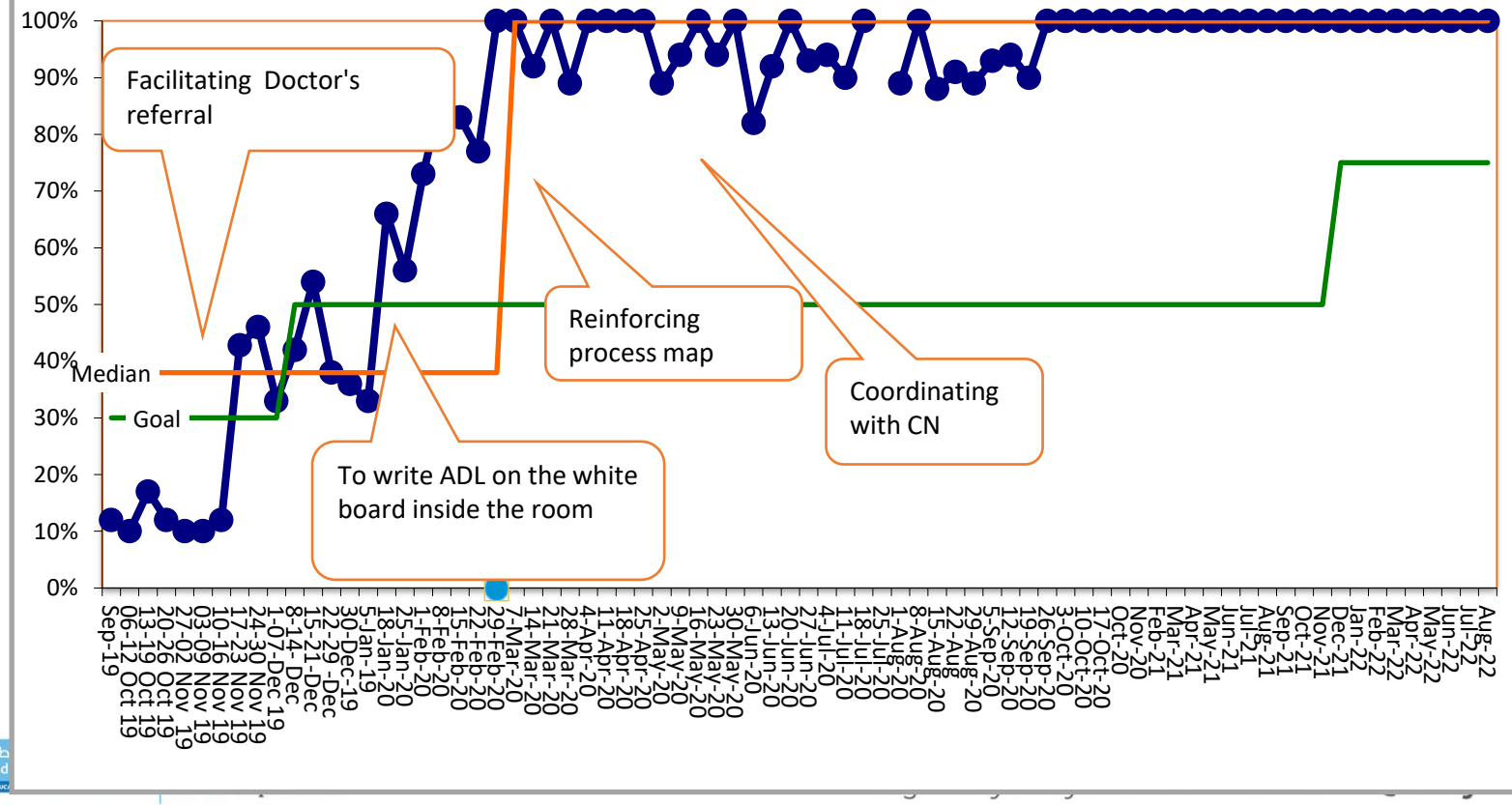
New or worse swelling
Ask yourself:
- Are my ankles more swollen than usual?
- Do my socks or shoes feel tighter?
- Do my clothes feel tighter at the waist?
- Do my rings fit more snugly?

Change in your ability to do everyday things
Ask yourself:
- Can I do all the things I normally do, such as get dressed on my own, make meals, or go for walks?
- Do I feel dizzy or more tired than usual?
- Do I have any new symptoms, like pressure or pain in my chest?
- Does my heartbeat feel strange or irregular?
- Do I feel like I might pass out?

PDSA 5: Patient Functional Activity Engagement

- Heart failure patient's early active engagement in basic functioning daily activities to monitor and improve patient functional status during in-patient.
- This promotes early out-of-bed for self-care and leisure activities.
- This approach enhances heart failure patients those who are active with high functional status during discharge are less likely to be readmitted.

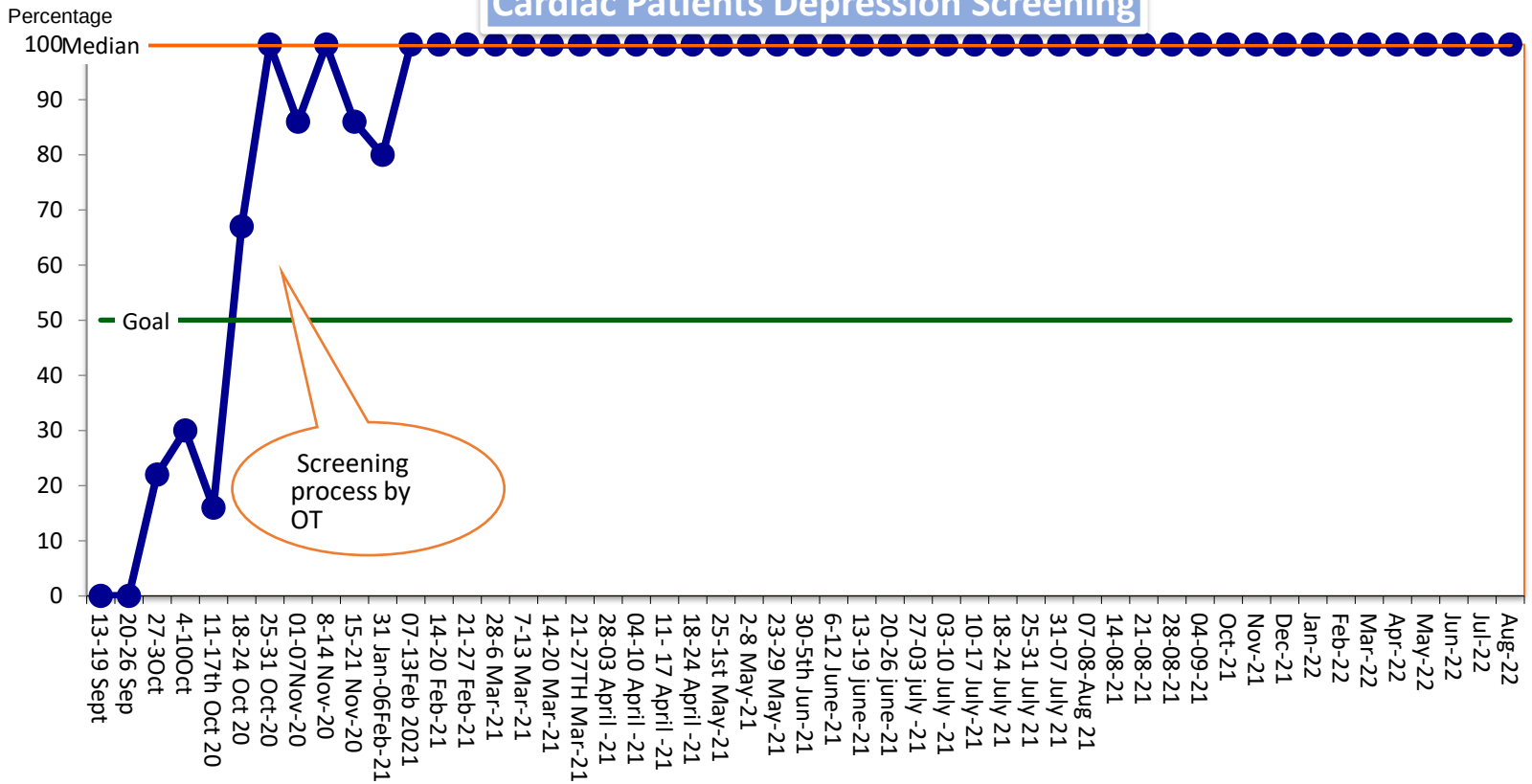
Patient's engagement on Functional Activities



PDSA 6: Cardiac Depression Screening

- Cardiac depression screening was initiated by the occupational therapist to identify psychosocial issues, particularly signs of depression that may affect adherence or functional engagement.
- A standardized tool, the “Cardiac Depression Scale” (CDS) – was used.
- Early detection and facilitate psychiatrist referral who scores high in level of depression are vital to receive appropriate care at the early stage of the care continuum.

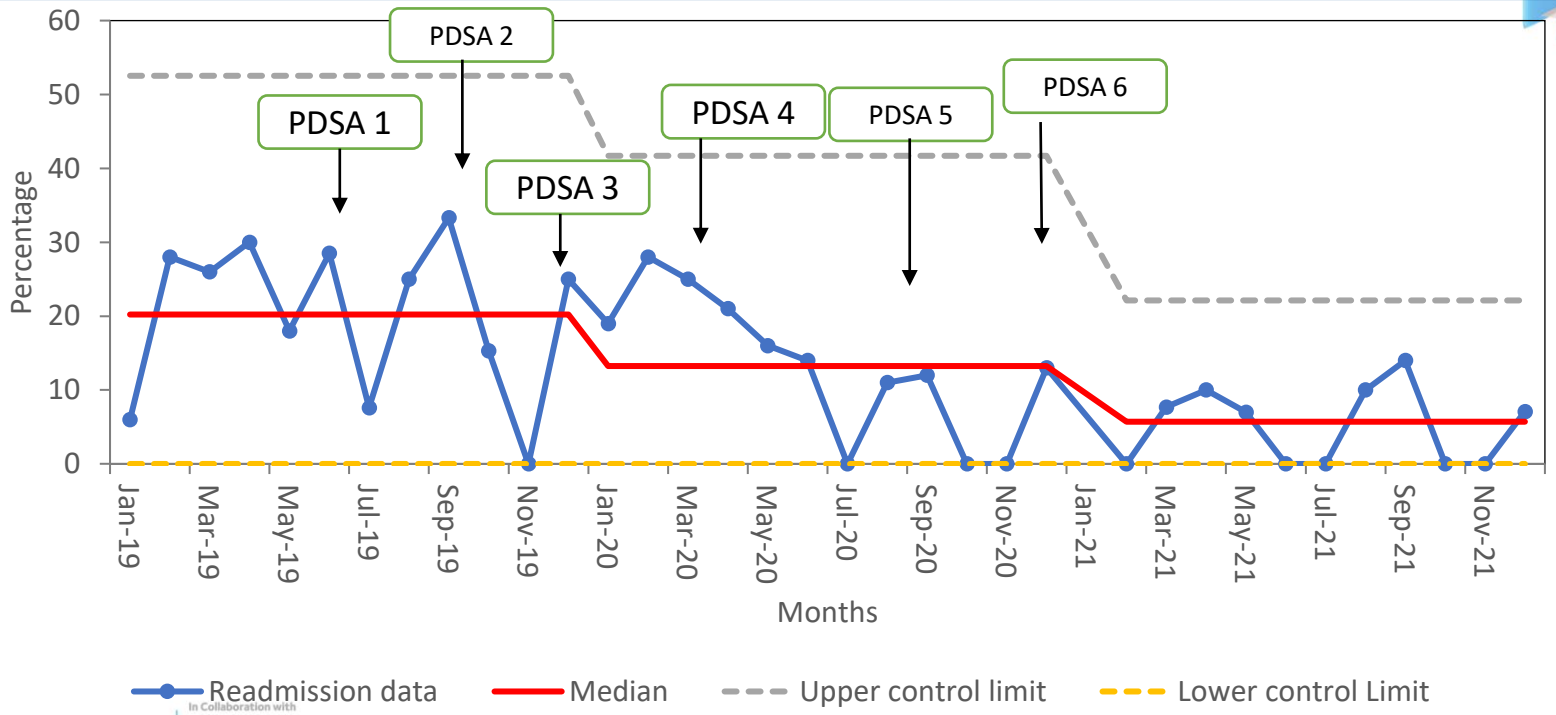
Cardiac Patients Depression Screening



Statistical analysis

- With the help of the SPSS 20 software package, the collected data was analyzed.
- In descriptive statistics, percentage analysis was carried out.
- In the inferential statistics, the chi-square test was used to assess the difference in readmission of heart failure patients in the years 2019, 2020, and 2021.

Heart Failure Readmission data - HDU C



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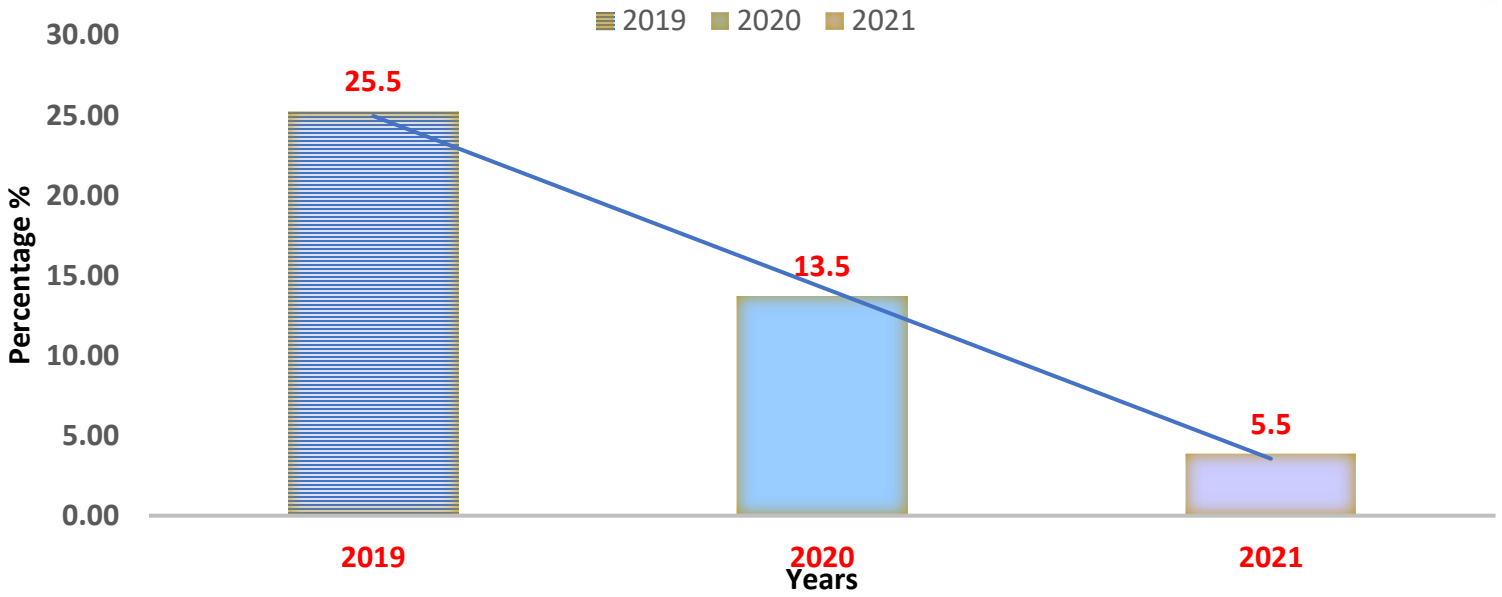
Heart failure population in HDU C, Heart Hospital

Annual data for 30 days readmission rates ,HDU-C



Primary outcomes

The Multidisciplinary approach could reduce heart failure readmission in HDU C from >25% in 2019 – 13.5 % in 2020, further reduced to 5.5% in 2021.

Adverse outcomes

No adverse events reported related to our project.

Limitations

- In the present study, there was no control over the extraneous variables (E.g., social issues)
- Extraneous variables might influence after the discharge of the patients, and it would influence the actual results of the multidisciplinary treatment plan.
- The present study considered a One-month readmission time to determine the effectiveness of a multidisciplinary treatment plan, A trial after 30 days, 6 months, and 12 months could also be considered signifying the sustainable implications of the treatment model.
- Patients with HF and other co-morbidities may not be coded under the HF diagnostic-related group (DRG).

Recommendations

- To do further quality improvement projects on Monitoring and enhancement of patient compliance in in-patient, outpatient heart failure clinics and in the community setting.
- Further studies shall be considered monitoring the readmission rate within 6 months and 12 months.
- In addition, to involve the home healthcare team to be a part of the project.

Keys to success

- Multidisciplinary Teamwork
- Feedback
- Education – quality improvement courses
- Cooperation and coordination
- Weekly huddles
- Data collection
- Weekly updating the visual management board
- Leadership support and encouragement

Multidisciplinary Teamwork

Conclusion

- The incidence of heart failure readmission rate is alarming.
- It is, therefore, incumbent on MDT to evaluate their heart failure practices and to incorporate the most current knowledge of patient care.
- Multidisciplinary team approach and targeted interventions such as the specialized plan of care, patient education, patient functional activity engagement, and ensuring scheduled follow-up appointments before discharge led to substantial reductions in the readmission rates of heart failure (HF) patients.
- An integrated and innovative approach to the management of heart failure patients based on the interventions can contribute to improved patient outcomes, reduced morbidity rates, improved functional status and quality of life, enhanced compliance, reduced rates of rehospitalization, reduced costs, and prolonged survival.

References

1. Bergethon, K. E., Ju, C., DeVore, A. D., Hardy, N. C., Fonarow, G. C., Yancy, C. W., Heidenreich, P. A., Bhatt, D. L., Peterson, E. D., & Hernandez, A. F. (2016, June). Trends in 30-Day Readmission Rates for Patients Hospitalized With Heart Failure. *Circulation: Heart Failure*, *9*(6). https://doi.org/10.1161/circheartfailure.115.002594

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Any Questions

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