

Heart Failure Continuum of Care: A New Model of Care Heart Failure Patients

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Provided by Beacon Collaborative
www.beaconcollaborative.org

Learning objectives

- To understand the essential components of care transitions
- To be able to identify factors to decrease Heart Failure readmission
- To understand the value of creating a continuum of care that is seamless to the patient and improves hand-offs between providers



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What is Heart Failure?

- Is a clinical syndrome which structural or functional alterations have occurred from any cardiac disorder that impairs the ability of the ventricle to eject blood

“Heart is not pumping enough blood to meet the needs of the body”



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2008 AHA: Heart Disease & Stroke Statistics for Heart Failure (HF)

released 1/08

- Approximately 5.3 million (>20 yo)
- 10/1000 > 65 yo
- 660,000 new cases/yr > 45 yo
- At 40 yo, the lifetime risk of developing HF for both men & women 1:5
- Annual expenditure – direct & indirect costs
2008: \$34.8 billion+ (5.4% of healthcare budget)
- For Medicare alone: costs exceed all costs for myocardial infarction or all types of cancer



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Utilization

- 171% increase in hospital d/c from 1979-2005 (400,00 to 1,084,000)
- Most frequent cause of hospitalization
80% > 65 y/o
- 22% males & 46% females with MI will be disabled with HF within 6 yrs
- 1999-2000 MD office visits, Hospital outpt departments, & ER visits
– **3.4 million visits**



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Mortality

- 2004 HF total-mention mortality was 284,365, and was “underlying cause” in 57,120
- 1:8 death certificates mention HF
- 80% men & 70% women <65 will die within 8 years
- Survival rate is lower in men than women, but < 15% women survive >8-12 yrs
- Sudden cardiac death 6-9x > than general population



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The Challenge

- How can we prevent new cases?
- How can we decrease readmission rates?
- How can we provide appropriate care (“evidence based & best practice”) in a cost effective manor?



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Preventing New Cases

New AHA Scientific Statement: Prevention of Heart Failure
(4/7/08)

Major factors

- Prevent Hypertension & good blood pressure control for those with HTN
- Prevent Diabetes & good Diabetes management once DM Dx
- Decrease Obesity
- Prevent Cardiovascular Disease & reduce risk factors for CVD Dx



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Prevention

Minor Factors

- Alcohol intake
- Dyslipidemia
- Renal insufficiency
- Anemia
- Sleep disorders
- Systemic biomarkers
 - Microalbuminuria, albuminuria, homocysteine, cytokines, C-reactive protein, B-type natriuretic peptide



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Preventable Readmissions?

- 17% of admissions result in readmissions within 30 days
 - 6% in 7 days
- 9% to 48% of readmissions are judged preventable
- 12% to 75% of all readmissions can be prevented by
 - Patient education, pre-discharge assessment, post hospital care



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Readmission risk factors

Non-modifiable

- Marital status
- Sex
- Ethnicity
- Valvular disease
- Atrial fibrillation
- Oxygen dependent
- Psychiatric illness
- Depression
- Diabetes
- Hypertension
- Chronic Lung disease
- Ischemic Heart disease
- Renal insufficiency with BUN ≥ 40 and/or CR ≥ 2.5



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Readmission risk factors Modifiable

- Non-adherence to medical regime
- Non-adherence to dietary regime
- Inadequate discharge planning & follow-up
- Inadequate social support
- Failure to seek medical attention when symptoms occur
- Lack of knowledge in self-management
- Fragmented care ~ silos
- No medical insurance



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Interventions to Reduce Readmission

- **Telemanagement** – *RN/APN structured phone support*
- **Telemonitoring** – *home monitoring with video or device, RN surveillance via remote monitoring*
- **Home Visits** – *home visits after hospital d/c*
- **Disease management** – *multidisciplinary management*
- **Care Transitions models** – *ensuring care & continuity as patient moves from provider to provider*



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Telemanagement

- Phone contact & support
- Provide education
 - Low sodium diet
 - Medications
 - Signs & symptoms to monitor – including daily wt
 - Activity
 - Self management of disease
- Monitoring of signs & symptoms
- Motivation interviewing and coaching for behavior changes



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Telemanagement

- Has been well researched
- A recent large study by GESICA investigators – BJM 2005
 - Centralized phone intervention to reduce mortality and readmission
 - Large multicenter, randomized controlled, attending cardiologist selected pts - 1518 pts
 - 51 centers – 760 intervention, 758 control



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GESICA

- Purpose: To educate & monitor pt
- Intervention based on 5 main objectives:
 - adherence to diet
 - adherence to drug tx
 - monitoring of symptoms
 - control signs of fluid retention
 - daily physical activity
- First 4 calls were made q 2wks, then based on established criteria f/u calls were made



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GESICA

- Primary endpoints:
 - All cause mortality or admission to hospital for HF
 - Secondary endpoints total mortality
 - All cause hospital admit, admit for HF, CV admit, overall admission
 - QOL with Minnesota living
- Study results:
 - Follow-up to 27 months (mean 16 mo)
 - 29% relative risk reduction in HF re-admits
 - Intervention group had better quality of life based on the Minnesota living with HF – (30.6 vs. 35, $p=0.001$)



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Telemonitoring

- Less research completed
 - Similar results as telemanagement
- When compared to telemanagement in the TEN-HMS study 2002
 - 26% reduction in hospital days per pt compared to telemanagement
 - The ROI was 10% cost savings based on the decreased LOS



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Meta-analysis Comparing Telemanagement & Telemonitoring

- BMJ 4/07 – Robyn A. Clark, et. al.
- Reviewed & analyzed 14 randomized controlled trials (2001-2005) – 4264 pts
- Compared telemanagement to telemonitoring
- All cause mortality (14 studies) overall 20% reduction & telemonitoring had greater benefit, but not statistically significant

Meta-analysis

- All cause readmission (8 studies) – none showed statistically significant results even when the data was pooled
- HF readmissions (10 studies) – pooled results showed a 21% decrease, and not significant difference between. All trials showed similar relative reductions
- Quality of life (6 studies) – 3 studies reported improved at the end of f/u



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Meta-analysis

- Cost (4 studies) – all telemanagement 3/4 reported lower cost
- Patient acceptance (3 studies) – 1 telemonitoring study pts considered not useful (video), other 2 found it useful

Meta-analysis

- Overall evaluation
 - Significant effect with telemanagement with HF readmit
 - Telemonitoring may have a better effect on early detection of symptoms due to daily reporting
 - Telemonitoring can cause false alarms & pre-emptive admits thus the shortened stay results
 - Lack of effect on remote monitoring on all cause admits requires further study



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Home Visits

- A few small studies completed
- MD or Pharmacist + RN/APN
- Reduction in readmit (60%-62%)
- Decrease in hospital days (77%-85%)
- Decreased cost of care with decreased readmit & LOS

Disease Management

- Coordination of health care interventions & communication for patient who have significant self care management of their disease
- Emphasizes prevention of exacerbations & complications using evidence-based practice guidelines & patient empowerment strategies



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Disease Management

- Six component of an effective program
 - Population identification process
 - Use of evidence-based practice guidelines
 - Collaborative practice models between physician & providers
 - Patient self management education
 - Process & outcomes measurement, evaluation, & management
 - Routine reporting/feedback loop



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Disease Management

- Additional program components
 - Involving family & caregivers
 - Promoting communication between physicians, specialists, and the multidisciplinary team



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Disease Management in HF: Patient Education

- **It is recommended** that patients with HF and their family members or caregivers receive individualized education and counseling that emphasizes self-care.
- This education and counseling should be delivered by providers using a team approach.
- Teaching should include skill building and target behaviors.

Strength of Evidence = B



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Sutter 2006 HF Clinical Practice Guideline (Sec. X)
HFSA 2006 Practice Guideline (8.7)
ACC/AHA 2005 HF Guideline Update (Section VIII.)

Disease Management Programs

- **Three categories:**
 - Heart failure clinics
 - Home care
 - Telemonitoring
- **Patients recently hospitalized for HF and other patients at high risk **should be considered/are recommended** for referral to a comprehensive HF disease management program that delivers individualized care.**

Care Transitions

- National Focus
- Many new studies and creation of models of care – Coleman & Naylor
- Why? To reduce readmission rates
- Heart Failure Continuum of Care



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Care Transitions

- National attention
 - Institute of Medicine – priority area
 - National quality forum – care coordination measures out of hosp & in the ambulatory arena
 - Medicare Payment advisory commission (MedPAC) – change in payment – hosp with higher readmit rates lower payments
- Professional societies
 - American board of internal medicine foundation – “stepping up to the plate”
 - American college of physicians, society for general internal medicine, society for hospital medicine – consensus 7/07 with standards of practice released spring 08



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Care Transitions

- National quality
 - Joint commission
 - Continuity Assessment record & Evaluation (CARE) – web based tool currently being tested
 - Advanced care medical home – white paper with a strong emphasis on care coordination
 - Quality improvement organizations (QIO) – Lumetra
- National Collaborative & toolkits
 - National transitions of care coalition (NTOCC)
 - Society for hospital medicine
 - Institute for health care improvement (IHI) – 5 million lives campaign



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Care Transitions

- National Collaborative & toolkits - cont
 - Untied hospital fund – for caregivers & families
 - Pacific business group on health – improving the pt experience collaborative – care coordination priority area 1 of 3
 - Reducing acute care hospitalization (ReACH) – home care
 - RWJF pursuing perfection “the Esther project” – reduced hospital admits & LOS
 - 6 goals for coordination



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Care Transitions Models

- Mary Naylor – “APN model” coordination of care
- Eric Coleman – “Transitions Coach” empower and coach



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Mary Naylor

- Advanced practice nurse (NP/CNS) – using their skills for assessing & problem solving
- Hospital visit, home visit, phone contact – caring for the patient across the continuum
- Identifies high-risk factors
 - Multiple chronic conditions, depression, cognitive impairment, pt perception/rating or poor health, concerns of social support, history of readmit
- Early identification of problems



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Mary Naylor

- Medication reconciliation
- Collaborates & coordinates with all providers – inpatient & outpatient
- Continuity of care across the continuum



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Eric Coleman

- Patient self management
 - Medications – knowledge of medication, method for management, reconciliation
 - Worsening signs & symptoms
- Personal health record
 - Demographic with MD's
 - Medical History
 - Medications
 - Checklist of items needed prior to d/c
 - Questions for health care providers section



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Eric Coleman

- Primary care physician f/u
- Transitions coach
 - Facilitates multidiscipline collaboration
 - Ensures continuity of care
 - Supports self management of illness
 - Encourages the pt to take a more active role in their disease management and care decisions



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Creating the Model

- Evidence-based
- Care transitions models have begun to test bringing some of the research together
- We combined all the research to create a model “*Continuum of Care*” that brings it all together



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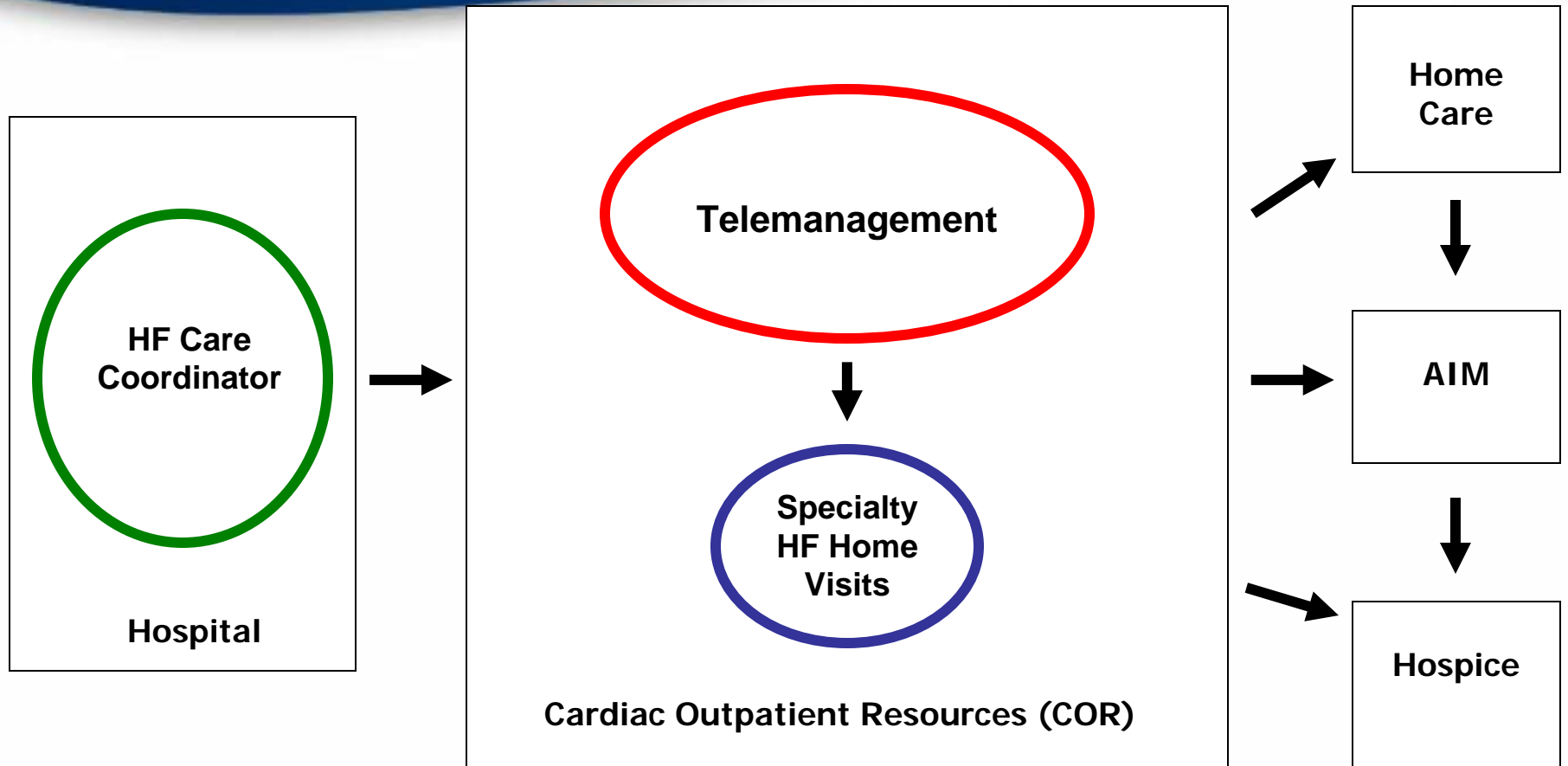
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Gordon & Betty Moore Foundation

- Grant funded project – add on to a Sutter patient safety grant for the Sutter Bay Area hospitals
- October 2007 – April 2010
- Create a sustainable inpatient-outpatient continuum of care model for heart failure patients
- Project outcome – to decrease readmission rates:
 - 30 day by 30%
 - 90 day by 30%
 - 1 year by 15%

Heart Failure Continuum of Care



Program Objectives

- To ensure the appropriate level of care based on severity & personal goals
- To teach heart failure patients and families to self-manage their disease
- Decrease fragmentation of care
- Improve care transitions
- To improve patient satisfaction
- To improve affordability



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Program Components

- **Hospital - Alta Bates & Summit Medical Centers**
 - Heart Failure Care Coordinator – RN
- **Outpatient - Cardiac Outpatient Resources (COR), Sutter VNA & Hospice**
 - COR RN
 - COR LVN
 - COR assistant
 - COR MSW



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Inpatient Interventions

- Pt assessment & evaluation of discharge needs to self manage successfully ~ start planning on admission
- Risk stratification ~ readmission & mortality
- Treatment - Evidenced based medicine
- The Joint Commission Core Measures
- Care Management ~ Care Transition ~ Care Coordination
- Education ~ survival skills for self management
- Teach back
- Tools for home management ~ scale, transportation



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Inpatient Interventions

- Medication Reconciliation on admission & at discharge
- Include family and caregivers in planning
- Assess patients physical and cognitive functional status ~ does this match where he/she will be discharged to?
- Patient friendly discharge information sheet
- Keep the patients informed of their discharge date



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Readmission Risk Tool

■ Philbin Tool plus added criteria

- ♥ African American
 - ♥ Home care in the past
 - ♥ Diabetes
 - ♥ Chronic lung disease
 - ♥ Prior cardiac surgery
 - ♥ Medicare/Medicaid
 - ♥ Ischemic heart disease
 - ♥ Renal disease
 - ♥ Idiopathic Cardiomyopathy
 - ♥ Use of telemetry
-
- ♥ Any hospital admission in the past year
 - ♥ Admission for heart failure in past year
 - ♥ Non-compliance with medical regime
 - ♥ New onset/diagnosis of heart failure



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Lee Mortality Risk Tool

- ♥ Age
- ♥ Respiratory rate
- ♥ Systolic blood pressure
- ♥ BUN
- ♥ Sodium
- ♥ Hemoglobin < 10 g/dl
- ♥ CVD
- ♥ Dementia
- ♥ Chronic obstructive pulmonary disease
- ♥ Hepatic cirrhosis
- ♥ Cancer



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Patient Discharge Information



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Cardiac Outpatient Resources Program
(510) 450-8722

PATIENT LABEL

DISCHARGE INFORMATION/INSTRUCTION SHEET

I was in the hospital because _____
The medical term/word for this condition is _____
I also have these medical conditions _____

Follow-up

- My primary care provider is _____
His/her phone number is _____
My appt date/time _____
- My cardiologist is _____
His/her phone number is _____
My appt date/time _____
- My home care agency is _____
The phone number there is _____

Issues/Tests I need to talk with my doctor about the following things at my clinic visit:

1. _____
2. _____
3. _____

When I get home, I need to _____

Tests While I was in the hospital I had these tests:

which showed _____

Treatment While I was in the hospital I was treated with _____

The purpose of this treatment was _____

Medications

- I will receive a list of medicines I should be taking when I am discharged. I will bring this list and my medications with me to all my appointments.
- I have a scale and know that I must weigh myself daily and record these weights.

TAKE THIS DOCUMENT WITH YOU TO YOUR DOCTOR'S VISITS



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COR Interventions

- Telemanagement
- Specialty Home visits



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COR Interventions

■ Telemanagement

- Initial contact 24-48 hours, then close follow up until meet criteria to decrease calls
- Medication reconciliation
- Educate on what it means to have HF, signs & symptoms monitoring, diet, self management skills, medication management
- Teach back
- Health Literacy – education & written materials
- MD follow-up
- Navigating the health care system
- Psychosocial needs
- Set personal goals
- Motivational interviewing

Assess, educate, motivate



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COR Interventions

- **Specialty Home Visits**
 - RN visit
 - MSW case management visit
- High risk patients
- Readmitted patients
- Face to face assessments & interventions (same as what is completed in telemanagement)
- Assess home environment
- Estimate 2-4 visits



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Program Tools

- **Apollo Database**
- **Tablet PC with MiForms platform interfacing with Apollo**
- **HF Registry**
 - History
 - Risk factors
 - Baseline information
- **HF Daily Flowsheet**
 - Hospital information
 - Physical assessment
 - Readmit & mortality risk assessment
 - Ability to capture information related to care – care coordination & transition



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Data Collection



Tablets in Action . . .

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Program Tools

- COR Database in Apollo
 - Same database platform as registry
 - Able to receive ADT feed from hospitals & cardiology information from facilities
 - HF specific assessment & follow-up



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Outcomes to Date

- Alta Bates Medical Center
- Summit Medical Center
- COR program patients



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Alta Bates Medical Center



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Summit Medical Center



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COR Program Patients



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HF Continuum of Care

- No more silos
- Everyone that has contact with the patient lives/works for one employer
- Working from the outpatient arena or patient's home where the patient spends most of his/her time
- Building bridges & links with Medical practices, IPA's, and foundations



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Sustainability

- Medical groups & Insurers are paying disease management companies for these services which are fragmented
- APN's for home visits are potentially reimbursable
- Sutter system support - affordability
- Potential for changing Medicare reimbursement?



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Questions?



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