IMPLEMENTATION OF TRANSITION OF CARE MODEL IN CHF TO REDUCE REHOSPITALIZATION RATES

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DISCLOSURES

- VA HSRD CHF QUERI
- VA HSRD DM QUERI
- American Heart Association
- Rhode Island Foundation
BACKGROUND

- More than 1/3 of heart failure patients require frequent hospitalizations or placement in long term care
- Approximately 50% of the readmissions were possibly or probably preventable
  - Individual factors
  - System factors

Krumholz, Arch Int Med1997
Fried, J Am Ger Soc1997
BACKGROUND

- Individual factors:
  - Noncompliance with medications (15%)
  - Diet (18%)
  - Failed social support system (21%)
  - Failure to seek medical attention promptly when symptoms recurred (20%)

Vinson, J Am Ger Soc 1990
Oddone, J Gen Int Med 1996
BACKGROUND

- System factors:
  - Inadequate discharge planning (15%)
  - Inadequate follow-up (20%)
  - Lack of patient and caregiver education
  - Poor continuity of care
    - lack of inpatient – outpatient provider communication
  - Limited access

Vinson, J Am Ger Soc 1990
Oddone, J Gen Int Med 1996
OBJECTIVE

To implement a hospital-wide, pharmacist-led CHF Transition of Care Program (CHF-TCP) to reduce 30-day rehospitalization rates
METHODS

- Operational partners:
  - Chiefs of Medical Service and Cardiology
  - Mandatory referral to CHF-TCP for all patients admitted with presumed CHF diagnosis within 24h of admission.
  - Telehealth
  - Discharge Planning

- Team:
  - Pharm D
  - NP
  - RN
METHODS

CHF-TCP consisted of:

- Medication reconciliation prior to discharge
- Self-management education prior to discharge
- Communication of discharge medication to PCP
- Open access clinic visit for medication reconciliation and dose optimization in CHF within 2 wks post discharge
# Theoretical Underpinning of CHF-TCP Intervention

Alignment of VA Resources with **Service Delivery Constructs** of the Chronic Care Model

Intervention Constructs Drawn from the Patient-Centered Medical Home principles

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<th>Chronic Care Model</th>
<th>TCP Intervention</th>
<th>Determinants of CHF Readmission</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| Self-Management Support | - Education about disease self-management  
                           - Education of family and support members | Patient level  
- Noncompliance with diet/medication  
- Failed social support  
- Poor knowledge of disease and treatment  
- Failure to promptly seek medical attention during worsening of symptoms | Individual  
- Rehospitalization risk |
| Care Delivery Redesign | - Whole person approach  
                           - Mandatory referral  
                           - Medication case management by clinical pharmacists  
                           - Open-access, 24/7 point of contact | Organization level  
- Inadequate discharge planning/follow-up  
- Inadequate patient and caregiver education  
- Failed communication to outpatient and inpatient physicians  
- Limited access to services  
- Poor coordination of care | Institutional  
- Rehospitalization rates |
| Link to Community resources | - Education on community resources  
                           - Exposure to VA resources  
                           - Telehealth referral  
                           - Home care referral |                                                                                      |          |
| Provider Decision Support | - Medication reconciliation, on admission and discharge  
                           - Monitoring of adherence, side effects of medications and volume status  
                           - Communication of treatment plan to personal physicians at discharge |                                                                                      |          |
| Electronic Medical Record & Commitment to quality | - VA standard  
                           - Performance measures  
                           - Periodical outcome assessments |                                                                                      |          |
ANALYSIS

- Compare risk-adjusted 30-day rehospitalization rates before (up to one-year) and during the implementation of CHF-TCP at both the patient and the hospital levels.
- Patient level data: chart abstraction
- Hospital level data: VA datasets - PTF
RESULTS – Patient Level

- Time Frame of the intervention
  - 3/1-2011 – 2/28/2012

- Unique patients treated
  - 67

- Encounters
  - Inpatient: 82
  - Outpatient: 192

- Crude 30-day readmission rate:
  - 16/67 = 23.9%
RESULTS – Hospital Level

- Dataset time frame:
  - Treatment group: 3/1/2011 – 1/31/2012

- Unique patients:
  - Control group: 167
    - 147 after exclusion of death <30 days (12.0%)
  - Treatment group: 115
    - 98 after exclusion of death <30 days (14.8%)
RESULTS – Hospital Level

- Crude 30-day rehospitalization rates
  - Control group: 25.9%
  - Treatment group: 26.5%

- Adjusted risk of 30-day rehospitalization:
  - Adjusted Odds Ratio = 0.85 (95%CI 0.44-1.65)
  - Excluding NH discharge:
    - Adjusted Odds Ratio = 0.78 (95%CI 0.38-1.60)
RESULTS – Hospital Level

- Risk Adjustment Model:
  - Age
  - Hematocrit
  - Creatinine clearance
  - Charlson comorbidity score
  - CHF admissions prior 6 months
  - Hospitalizations prior 6 months
CONCLUSIONS

- Implementation of the CHF-TCP was successful at Providence VAMC
- Given partnership with operational partners and use of pre-existing staff, the model is potentially sustainable
- CHF-TCP is still currently active at Providence VAMC
CONCLUSIONS

- We were unable to show a statistical significant impact due to limited sample size.
- Results displayed important trends on the potential positive impact of a transition of care program in CHF to reduce 30-day readmission rates.
- Results also serve as pilot data for the design of studies with broader implementation of CHF-TCP programs.
Organization of CHF Care

- Hospitalization
- Transition of Care CHF
- Heart Failure Clinic
  - CHF-SMA
  - IV diuretic clinic
  - HBPC
  - Telehealth
- Referrals:
  - Cardiology clinic
  - ED
  - Primary Care
Co-Investigators

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