Heart Science Amplified
Transitions in Care

Tuesday November 8, 2016
12:00pm – 1:00pm Central

Presenter: Nancy Albert, PhD, RN, CCNS, CHFN, CCRN, NE-BC, FAHA, FCCM, FAAN

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Transitions in Care

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Disclosures

• Nancy M. Albert PhD, RN
  —Chair of the Patient Navigator Program, an ACC-led program
Transitions in Care

Objectives:
• Explain why transitions in care are needed, especially from hospital-to-home
• Describe transition care programs that work and do not work
• Discuss what transition care factors seem to be most important
Change in All-Cause Readmission 2009-2013

HF: ↓ 6.6% per 100 index stays
  Aggregate costs ↓ 8.3%
AMI: ↓ 13.1% per 100 index stays
  Aggregate costs ↓ 5.0%

<table>
<thead>
<tr>
<th>Payers</th>
<th>Changes $ (%)</th>
<th>2009-2013</th>
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<tbody>
<tr>
<td>Medicare</td>
<td>-8.6 / -3.6</td>
<td></td>
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<tr>
<td>Medicaid</td>
<td>-2.3 / 3.6</td>
<td></td>
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<tr>
<td>Private</td>
<td>-20.4 / -17.6</td>
<td></td>
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<tr>
<td>Uninsured</td>
<td>10.4 / 4.0</td>
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HF Readmission in 30 Days 2007-2009; N=1,330,157


329,308 rehospitalization; 24.8%
HF Readmission in 30 Days

Readmissions:
Days 0-3 = 44,257
Days 0-7 = 104,362
Days 0-15 = 201,005
Days 0-30 = 329,308
# Clinical Predictors of 30-Day Rehospitalization

<table>
<thead>
<tr>
<th>Factors</th>
<th>GWTG-HF; N=33,349&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Medicaid Pts; N=4548&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Elders N=2176&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Alberta CA N=18,590&lt;sup&gt;4&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal troponin</td>
<td>1.15 (1.1-1.2)</td>
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<tr>
<td>Black race (vs. white)</td>
<td>1.11 (1.0-1.2)</td>
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<tr>
<td>↑ creatinine-Kid. Dis.</td>
<td>1.12 (1.1-1.2)</td>
<td>1.45 (1.1-1.9)</td>
<td>1.72 (1.3-2.2)</td>
<td>1.43 (1.2-1.7)</td>
</tr>
<tr>
<td>Medicaid (vs. comm.)</td>
<td></td>
<td>1.68 (1.3-2.2)</td>
<td>1.25 (1.1-1.5)</td>
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<tr>
<td>Prior adm. &lt; 1 yr.</td>
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<tr>
<td>Diabetes</td>
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<td>1.17 (0.9-1.4)</td>
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<tr>
<td>Atrial Fibrillation</td>
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<td>1.14 (1.0-1.3)</td>
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<tr>
<td>Age ≥ 75 yrs</td>
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<td>1.43 (1.0-2.0)</td>
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</tbody>
</table>

Patient-Identified Factors of HF Hospitalization

• Interviews; Reasons for rehosp ≤ 6 months
  – 28 patients
    – 8 from community hospitals
    – 20 from academic centers

No differences in themes between those admitted ≤ 30 days vs. > 30 days from their last admission

  – Unavoidable progression of illness
  – Influence of psychosocial factors
  – Good but imperfect self-care
  – Health system failures
# Behavioral Predictors of 30-Day Rehospitalization; N=729


<table>
<thead>
<tr>
<th>Predictor</th>
<th>Univariate Regression</th>
<th>Multivariable Regression</th>
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<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
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<tr>
<td>Service decline/refusal</td>
<td>2.21</td>
<td>1.42-3.43</td>
</tr>
<tr>
<td>Nonadherence</td>
<td>1.99</td>
<td>1.28-3.10</td>
</tr>
<tr>
<td>Dementia</td>
<td>1.91</td>
<td>1.08-3.40</td>
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<tr>
<td>Depression</td>
<td>1.55</td>
<td>1.00-2.40</td>
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<tr>
<td>Missed appointment</td>
<td>1.99</td>
<td>1.28-3.09</td>
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</table>
Complexity of HF Care

Patient-Identified Factors of HF Hospitalization

*Health system failures* – 5 sub-themes

- **Suboptimal health care delivery**
  - Premature discharge (1/3)
    - Recognition of this by clinicians at the readmission
    - Not stabilized on a diuretic regimen that would be sustainable at home
  - Limitations of the health care system to improve their health status

Patient-Identified Factors of HF Hospitalization

*Health system failures – 5 sub-themes*

- Highly variable contact w healthcare providers in-between hospitalizations
  - Nature and timeliness of appointments was questioned by patients
  - Acute care was often needed before the appt.
  - When appt. happened, it was difficult to determine if the provider was able to recognize and reverse events
  - Home care, palliative or hospice care was rarely mentioned
Patient-Identified Factors of HF Hospitalization

Health system failures – 5 sub-themes

• Broad/general issues
  – Better care coordination
  – Better communication between patient/providers
  – Attitudes and insensitivity of providers

• Education
  – Assistance with menu planning
  – Better communication about test results
  – Better use of resources (d/t ED inefficiencies)
  – Pt: Better convey exp. of living with HF to providers

• Providers need to be more efficient/knowledgeable about managing HF

# Transition of Care - Heterogeneous Programs

## Caregivers and Interventions of Transition of Care Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Healthcare Providers</th>
<th>Intervention Themes</th>
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<tbody>
<tr>
<td></td>
<td>Nurse</td>
<td>Social Worker</td>
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<td>Bridge model</td>
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<tr>
<td>Care Transitions</td>
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<td>Care Transitions</td>
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<td>EDPP</td>
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<td>PCCHF</td>
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<td>PCCHF</td>
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<td>PDCT</td>
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<td>Project BOOST</td>
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<td>Project Red</td>
<td>▪</td>
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<tr>
<td>STAAR</td>
<td>▪</td>
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<tr>
<td>Transitional Care model</td>
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</table>

*BOOST indicates Better Outcomes for Older Adults Through Safe Transitions; EDPP, Enhanced Discharge Planning Program; PCCHF, Patients in Care for Congestive Heart Failure; PDCT, Postdischarge Care Transition; and STAAR, State Action on Avoidable Rehospitalization.*
Heart Failure Readmission Risk Factors

- Clinical
- Patient Centric
- Behavioral
Multidisciplinary HF Post-Hospitalization Program

- Multidisciplinary HF clinics reduce readmissions, but no reports in the immediate post-discharge period
- Retrospective cohort study; N = 277 pts
  - Control pts from 2009 vs.
  - Post discharge pts from 2010-2012
    - 6 visits w PA, pharmacist specialist & case manager; overseen by cardiology
    - Optimizing treatment, medication titration, education, med adherence & identify hospital factors

Multidisciplinary HF Post-Hospitalization Program

• RESULTS
  —90-day readmission adjusted HR:
    —0.17 (95% CI: 0.07, 0.41); \( p < 0.001 \)
    —Absolute risk reduction, 15.7%; NNT = 7
  —Clinic pts had lower 90-day time-to-first HF readmission or all-cause mortality
    —Adjusted HR: 0.28 (0.06, 0.31), \( p < 0.001 \)
    —Absolute risk reduction, 19.6%; NNT = 6

A Mobile Health Intervention Supporting HF Pts & Their Informal Caregivers

• 331 HF pts from Department of Veterans Affairs outpatient clinics
  — + a Care Partner (CP) outside their household
• Standard mHealth; n=165
  — 12 months of weekly interactive voice response (IVR) calls (~ 10 min)
    including health & self-management questions
  — + tailored self-management advice
  — + Healthcare team fax alerts of serious health concerns
• mHealth+CP; n=166
  — Standard mHealth + automated emails to CP after each IVR call
    — Inc. feedback on patient status and suggestions for supportive care
• Outcome: Self-care and symptoms

Piette JD, et al. A Mobile Health Intervention Supporting Heart Failure Patients and Their Informal Caregivers: A Randomized Comparative Effectiveness Trial J Med Internet Res. 2015;17:e142.
Piette JD, et al. A Mobile Health Intervention Supporting Heart Failure Patients and Their Informal Caregivers: A Randomized Comparative Effectiveness Trial J Med Internet Res. 2015;17:e142.
Care Transition Pharmacist intervention (no randomization):

• Follow-up with pts by phone within 72 hours
  — Reinforcement of plan of care (67%)
  — Addressed specific med-related issues (9%)
  — Contacted physician for Tx plan clarification or care gap (9%)
  — Reinforced scheduling of the PCP FU appointment (8%)
  — Referral of patient to another caregiver (6%)

• Results: ↓ 30-day hospital admission or ED visit

Shared (Group) Multidisciplinary Visits

N=198; UC or UC plus multidisciplinary group clinics
• Focus: HF self management skills
  – 8 weeks post discharge
• 4 weekly clinic visits + 1 booster clinic at month 6
• From 2-7 months post randomization, longer hospital-free time
  – HR, 0.45 (95% CI, 0.21–0.98); P=0.04

Pt. Navigator Intervention

- RCT; N=1510 of high risk, safety net adults with 1+ risk factor:
  - (1) age ≥ 60 years, (2) previous admission in the past 6 months, (3) length of stay ≥ 3 days, (4) admission diagnosis of HF or COPD

- Intervention:
  - Coaching / assistance navigating from hospital to home
  - Hospital visits and weekly phone outreach
  - Discharge prep, med. management, scheduled FU appointments, communication w PCP, and symptom management

Pt. Navigator Intervention

• RESULTS:
  – *No difference* in 30-day readmission rate
  – Intervention patients > 60 years showed an adjusted absolute 4.1% ↓ [95% CI: -8.0%, -0.2%] in readmission with an ↑ in 30-day outpatient follow-up
  – Intervention patients ≤ 60 years showed an adjusted absolute 11.8% ↑ [95% CI: 4.4%, 19.0%] in readmission with no change in 30-day outpatient follow-up

Text Messaging Intervention

• Pre-post pilot study- short message service
  – Automated cell phone messages of:
    – Self-care reminders
    – Education on diet, symptom recognition & health care navigation
  – RESULTS:
    – Improved 4-week self care maintenance \( (p=0.003) \) & management \( (p=0.002) \)
    – HF rehospitalization not assessed

Patient Centered Disease Management Intervention

Multisite, RCT; N=392 patents with HF and KCCQ overall summary scores < 60 (heavy symptom burden/ poor QoL/ impaired NYHA FC)

- Collaborative care by multidisciplinary team
  - Nurse coordinator, cardiologist, psychiatrist and PCP
  - Home telemonitoring
  - Patient self-management support
  - Screening and Tx for comorbid depression

Bekelman DB, et al. Primary Results of the Patient-Centered Disease Management (PCDM) for Heart Failure Study: A Randomized Clinical Trial. JAMA Intern Med 2015;175:725-32.
Pt Centered DM Intervention

• RESULTS at 1 year; intervention group vs usual care group:
  – Improved KCCQ overall summary scores in both groups (ns)
  – No differences when analyzing the effect over time at 3, 6 and 12 months (ns)
  – Fewer deaths: 4.3% vs. 9.6%; \( p=0.04 \)
  – Greater improvement in depression scores; \( p=0.01 \)
  – No difference in hospitalization rates

Bekelman DB, et al. Primary Results of the Patient-Centered Disease Management (PCDM) for Heart Failure Study: A Randomized Clinical Trial. *JAMA Intern Med* 2015;175:725-32.
Strengths and Issues of Current Knowledge

• Programs that worked and didn’t work had some of the same features
  – Some larger RCT were ineffective in reducing 3-12 month HF readmissions
  – Some effective research interventions used pragmatic study designs
    – Minimized exclusion criteria
    – Approximated real-world settings
• Some were small proof of concept projects
  – ? evolve into large-scale multicenter RCTs
Recommendations for Research

• Find the most effective, economically sound, broadly applicable transition of care interventions;
• Include cost-effective or cost-saving analyses in assessments of interventions;
• Choose outcomes after discussion with multiple key stakeholders, including patients;
• Minimize site contamination by using site-level randomization

Before discharge & at EACH post discharge visit:

a) Initiate GDMT (if not done or contraindicated)\(^1\)
   — HF doses may be reduced in hospital
   — Up-titrate before discharge when possible
   — Fill prescription before discharge or call-in prescription
   — ARNI Tx: use NT-proBNP (not BNP) to assess HF status\(^2\)
   — MRA and hydralazine/nitrate Tx underutilized

b) Address HF cause, barriers to care, & limitations in support
   — Complex!

---


Before discharge & at EACH post discharge visit:

**c)** Assess volume status and BP; adjust HF therapy
- May have hemodynamic congestion even though clinical congestion is gone
- Low BP does not define HF medication use, unless symptomatic

**d)** Optimize chronic oral HF therapy
- May require low K+ diet or potassium inhibitor
- Consider medication pre-authorization and cost

Before discharge & at EACH post discharge visit:¹

e) Assess renal function and electrolytes
   - Renal function may improve when on ACE-I/ARB
   - PARADIGM-HF²: > 50% ↑ in creatinine
     - enalapril: 1.4%; sacubitril/valsartan: 2.2% (Run-in)
     - Both agents: 16% (double blind period)
   - AVOID: ACE-I + ARB + MRA

2013 ACCF/AHA HF Guidelines

Before discharge & at EACH post discharge visit:

f) Manage comorbid conditions:
   — Cardiac related (CAD, AF, HTN)
   — Mimics of HF symptoms: anemia, COPD, CRI…

g) Ensure HF education, self-care, emergency plans, and adherence
   — Discuss “how”, not just “what”

h) Discuss palliative or hospice care

GUIDELINES on End-of-Life

<table>
<thead>
<tr>
<th>Determination of Prognosis</th>
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<tbody>
<tr>
<td>**ACC/AHA (2013)**¹</td>
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<tr>
<td>Use of clinical risk prediction tools and/or biomarkers to identify patients at higher risk for post discharge clinical events is reasonable</td>
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² HFSA. J Cardiac Fail 2010;12:10-38.
<table>
<thead>
<tr>
<th>ACHF Measure</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>ACHF-01: Beta-Blocker Therapy Prescribed at Discharge</td>
<td>bisoprolol, carvedilol or metoprolol succinate</td>
</tr>
<tr>
<td>ACHF-02: Post-Discharge Appointment for Heart Failure Patients</td>
<td>scheduled within 7 days of discharge &amp; documented inc. date, location &amp; time</td>
</tr>
<tr>
<td>ACHF-03: Care Transition Record Transmitted</td>
<td>...to a next provider <em>within 7 days</em> of discharge and contains 5 elements</td>
</tr>
<tr>
<td>ACHF-04: Discussion of Advance Directives / Advanced Care Planning</td>
<td>documentation of one-time discussion of advance directives/care plans</td>
</tr>
<tr>
<td>ACHF-05: Advance Directive Executed</td>
<td>documentation that advance directives were executed</td>
</tr>
<tr>
<td>ACHF-06: Post-Discharge Evaluation for Heart Failure Patients</td>
<td>re-evaluate for worsening symptoms and treatment adherence by a program team member within 72 hours after inpatient discharge</td>
</tr>
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TJC/AHA Advanced Certification in HF

http://www.jointcommission.org/certification/heart_failure.aspx
TJC-AHA Advanced HF Management Certification

Care Transition Record – 5 Transmitted elements:

- Reason for hospitalization
- Procedures performed during hosp.
- Services/treatments provided during hosp.
- Discharge meds inc. dose and indication for use
- Follow-up services/treatments needed

http://www.jointcommission.org/certification/heart_failure.aspx
10 H2H Strategies to Reduce HF Hospitalization

<table>
<thead>
<tr>
<th>Quality Improvement (QI) resources and performance monitoring</th>
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<tbody>
<tr>
<td>1) ≥ 1 QI team for reducing readmission for HF</td>
</tr>
<tr>
<td>2) Monitor proportion of discharged patients with follow-up</td>
</tr>
<tr>
<td>appointment within 7 days</td>
</tr>
<tr>
<td>3) Monitor 30-day readmission rates</td>
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QI Practices in Heart Failure

Force a deeper look into actions and practices
• Requires:
  — Leadership
  — Evidence-based clinical decision support
    — Algorithms; pocket cards, order sets
  — Patient education resources
  — Regular review of data & benchmarking
  — Process improvement model of change
    — Learning from what we do every day
• Collaborative care practices (CM/care transitions)
### 10 H2H Strategies to Reduce HF Hospitalization

#### Medication Management

4) **Provide info about medications -- purpose + which were:**
   - (a) new, (b) changed [dose/frequency], (c) stopped

5) **Have pharmacist conduct medication reconciliation at discharge**

6) **Have pharmacy tech obtain med. Hx as part of med. reconciliation process**

#### Discharge and follow-up

7) **Provide pts./caregivers direct MD contact info (for emergencies)**

8) **Arrange an OPD FU appointment **before** patients leave the hospital**

9) **Ensure outpatient MDs are alerted to a patient’s discharge **within 48 hours**

10) **Call pts. regularly post discharge; FU on needs or to provide education**
Discussing Heart Failure

• Understand how patients and families experience heart failure
  —Assess quality of life
• Sensitive communication style
Best Practice - Transparency
Pieces of The Solution

- Screening
- Engaging Older Adults & Caregivers
- Managing Symptoms
- Educating/ Promoting Self-Management
- Collaborating
- Assuring Continuity
- Coordinating Care
- Maintaining Relationship

Patient & Clinicians
Pieces of The Solution

- Screening
- Engaging Older Adults & Caregivers
- Managing Symptoms
- Educating/ Promoting Self-Management
- Collaborating
- Assuring Continuity
- Coordinating Care
- Maintaining Relationship

Hospital Performance

Patient & Clinicians
SUMMARY

• Reduction of HF readmission programs should:
  1. Use evidence-based physician-guided medical and device therapy
  2. Facilitate institutional programs for effective care transitions
  3. Promote strategies aimed to improve disease management
  4. Engage patients in self-care
THANK YOU

More Questions about Get With The Guidelines?
Visit heart.org/QualityHF to find your local Get With The Guidelines representative.

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Program Manager, Get With The Guidelines® - Resuscitation & Heart Failure
Liz.Olson@heart.org Phone 214-706-1528
Amgen Cardiovascular is a proud sponsor of the AHA's Get With the Guidelines-Heart Failure.