Nurse-Led Programs/Services to Enhance Cardiovascular Care and Clinical Outcomes

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Objectives:

At the end of the activity, participants will be able to:

- Describe the types of nurse and team-led programs that improve CV mortality and heart failure rehospitalization
- State the value of nurse participation in team-based care
- Discuss examples of programs led by nurses and subsequent outcomes
### Background on Heart Failure

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>2011-2014</td>
<td>6,500,000 (2.5%)</td>
<td>960,000 / Yr.</td>
<td>68,626/308,976</td>
<td>1,023,000</td>
<td>$30.7 billion</td>
</tr>
</tbody>
</table>

**Projected costs of HF in US**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total $, Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>20</td>
</tr>
<tr>
<td>2020</td>
<td>30</td>
</tr>
<tr>
<td>2025</td>
<td>40</td>
</tr>
<tr>
<td>2030</td>
<td>50</td>
</tr>
</tbody>
</table>

Complexity of HF Care

- **MEDICATION MANAGEMENT**
  - Cost
  - No HCP contact
  - Reconciliation issues
  - Too many HCPs without one taking charge
  - Lack of patient awareness

- **FOLLOW-UP APPOINTMENT**
  - Lack of transportation
  - Unclear instructions
  - Patient Unaware
  - No HCP contact
  - Economic issues

- **TRANSPORTATION ISSUES**
  - Unclear discharge instructions
  - Lack of patient understanding of rationale for visit
  - Pt unsure of location

- **HCP COMMUNICATION**
  - No pharmacist or nutritionist prior to discharge
  - Insufficient patient education
  - Incomplete documentation
  - Pt is missing HCP contact info
  - Poor understanding

- **NON-MEDICATION SIGNS/SYMPTOM (S/S) MANAGEMENT**
  - Depression
  - Uncertainty about actions
  - Non-adherence to diet, activity, exercise and fluid management
  - Social and cultural barriers

- **Lack of self-confidence in self monitoring**
- **Economic issues**
- **Lack of HCP assessment and repetition in education**

Heart Failure – Treatments by Ejection Fraction (EF)

Complicated by: aging & lack of physical fitness

Medications
- Treat symptoms

Internal devices
- Treat symptoms

Self-care
- Treat symptoms

4 Nurse-Led Programs

- 1 nurse-led program (clinical nurses w BSNs) on patient mortality
- A systematic review of nurse-led titration of angiotensin converting enzyme inhibitor or angiotensin receptor blocker (ACEi or ARB) and beta-blocker therapies in HF w reduced ejection fraction
- Nurse-led multidisciplinary heart failure group clinic appointments
- RN-led education using the Common Sense Model of Illness
Nurse-Led Program – Patient Mortality

• Retrospective study of a nurse-led (physician supervised) cardiac disease-management program on all-cause mortality
  - Tertiary care cardiac center
  - Nurse roles
    • Early follow-up after hospitalization with symptom evaluation
    • Optimization of medical therapy
    • Intensive patient education
    • Psychological support

Nurse-Led Program – Patient Mortality

- Nurses received in-house HF disease management training program w competencies
- Nurses’ key functions
  - Patient and family education, with emphasis on self-management
  - Increased access to care
  - Drug titration with protocol guidelines
  - Coordination of care with multidisciplinary teams

Nurse-Led Program- Mortality

Nurse training (BSN, 3 yrs. cardiac experience) pre-independent practice:
• Advanced ECG interpretation
• Echocardiogram report interpretation
• CXR interpretation
• Advanced cardiovascular physical assessment
• Cardiovascular medications
• Cardiovascular risk modification targets
• Diabetes management

Support from: cardiac rehab nurses, diabetes nurses and dieticians

Nurse-Led Program – Patient Mortality

413 consecutive patients; all seen by nurse specialist in hospital

- HF Program (N=199): Pts. asked to enroll in nurse-led program
  - Visit frequency: 3 days to 3 months
  - Visit length: 30-45 minutes each
- Usual care (N=214): unwilling to participate
  - Follow-up in general cardiology clinic
  - Treating physician determined the plan of care and frequency of visitation

Nurse-Led Program – Patient Mortality

Patients in HF Program:
- Had lower all-cause mortality, $p<0.0001$

Nurse-Led Program – Patient Mortality

Predictors of mortality: Older age, not being on ACEi/ARB or β-B at discharge, not participating in the HF program, lower systolic BP and higher BUN

Multivariate predictors of death:

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Hazard Ratio</th>
<th>P</th>
<th>95% HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.029</td>
<td>.024</td>
<td>1.004–1.054</td>
</tr>
<tr>
<td>NYHA – per 1 class increase</td>
<td>1.435</td>
<td>.76</td>
<td>0.963–2.14</td>
</tr>
<tr>
<td>BUN – per 1 mmol/L increase</td>
<td>1.019</td>
<td>.001</td>
<td>1.02–1.079</td>
</tr>
<tr>
<td>Ischemic</td>
<td>1.78</td>
<td>.048</td>
<td>1.004–3.14</td>
</tr>
<tr>
<td>SBP</td>
<td>0.97</td>
<td>&lt;.0001</td>
<td>0.953–0.983</td>
</tr>
<tr>
<td>ACEI or ARB on discharge</td>
<td>0.51</td>
<td>.09</td>
<td>0.24–1.11</td>
</tr>
<tr>
<td>BB on discharge</td>
<td>0.25</td>
<td>&lt;.0001</td>
<td>0.137–0.439</td>
</tr>
<tr>
<td>HFP</td>
<td>0.4</td>
<td>.008</td>
<td>0.203–0.788</td>
</tr>
</tbody>
</table>

Nurse-Led Program – Pt. Mortality

Incremental prognostic value of HF Program

Clinical model factors: age, gender, race, ischemic cause, diabetes, ejection fraction, NYHA classification, heart rate, systolic BP, ischemic etiology, BUN and sodium

Nurse-Led Program – Patient Mortality

Summary and Limitations

• Nurse-led program was associated with improved mortality, even after controlling for differences between patient groups.

• Risk of bias is moderate due to unstudied clinical and non-clinical factors that could have influenced patients’ desire to enroll in the program.

Systematic Review - Nurse-Led Drug Titration in HFrEF

- 7 randomized controlled studies; 1684 participants
  - Primary care/OPD clinics x 6 reports
  - Residential care facility x 1 report
- Outcomes:
  - All-cause hospitalization
  - All-cause mortality
  - All-cause and HF-related event free survival

Driscoll A et al. *Cochrane Database of Sys Reviews* 2015, Iss 12. Art. No.: CD009889
# Systematic Review - Nurse-Led Drug Titration in HFrEF

<table>
<thead>
<tr>
<th>Outcome*</th>
<th>N (# studies)</th>
<th>Relative Risk</th>
<th>95% CI</th>
<th>Quality of Evidence (GRADE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-cause hospitalization</td>
<td>560 (4)</td>
<td>0.80</td>
<td>0.72, 0.88</td>
<td>High</td>
</tr>
<tr>
<td>HF-related hospitalization</td>
<td>642 (4)</td>
<td>0.51</td>
<td>0.36, 0.72</td>
<td>Moderate</td>
</tr>
<tr>
<td>All-cause mortality</td>
<td>902 (6)</td>
<td>0.66</td>
<td>0.48, 0.92</td>
<td>Moderate</td>
</tr>
<tr>
<td>All-cause event free survival</td>
<td>370 (3)</td>
<td>0.60</td>
<td>0.46, 0.77</td>
<td>Moderate</td>
</tr>
<tr>
<td>Proportion reaching target β-blocker dose</td>
<td>966 (5)</td>
<td>1.99</td>
<td>1.61, 2.47</td>
<td>Low</td>
</tr>
</tbody>
</table>

*, median, 12 months

Driscoll A et al. *Cochrane Database of Sys Reviews* 2015, Iss 12. Art. No.: CD009889
Systematic Review of Nurse-Led Drug Titration in HFrEF

Summary and Limitations:
• All clinical outcomes were improved with nurse-led titration
• ~ 27 deaths (median, 12 months) could be avoided for every 1000 people receiving nurse-led titration of β-Bs, ACEIs, and ARBs
• Substantial heterogeneity in the pooled analysis
• Risk of bias was high d/t incomplete data, inability to blind participants and personnel & lack of reporting adverse events

Driscol A et al. Cochrane Database of Sys Reviews 2015, Iss 12. Art. No.: CD009889
Self-Management and Care of Heart Failure (SMAC-HF) Program Visits

N=198; UC (N=106) vs. UC + SMAC clinics (N=92)

- Focus: HF self management skills initiated 8-weeks post discharge via *group visits*
  - 4 weekly visits + 1 booster visit at month 6

- Actions:
  1. Take the best available medication at the right doses regularly
  2. Optimal salt and fluid management
  3. Action plan for exercise
  4. Improve self-management of HF

Self-Management and Care of Heart Failure (SMAC-HF) Program Visits

*Trained* multidisciplinary health professionals:
- HF management nurse practitioner
- Mental health clinical nurse specialist
- Social worker
- Dietician

Each group visit:
- Depression screening assessed at each visit
- Brief HF self-management exam of weight, VS and chart review of current medications
- Patients completed diaries

SMAC Group
Multidisciplinary Visits

<table>
<thead>
<tr>
<th>Medication Type</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACE-Inhibitor or Angiotensin Receptor Blocker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta Blocker</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Aldosterone Antagonist</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Hydralazine &amp; Nitrate</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Rating of HF Self-Management Skills Assessment**

- **WEIGH DAILY**: Has patient weighed himself/herself daily since discharge or the last meeting?
- **SMOKING**: Has patient smoked since discharge or the last meeting?
- **EXERCISE**: Has patient participated in a prescribed exercise per MD since discharge or the last meeting?
- **-SALT DIET**: Has patient followed a low-salt (2000 mg sodium/24 hr) diet since discharge or the last meeting?
- **MEDICATIONS**: Has patient taken his/her medication as prescribed since discharge or last meeting?
- **REPORT HF SYMPTOMS**: Has patient reported worsening symptoms (…list these…) to primary MD or RN within 24 hours?

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Meeting 1</th>
<th>Meeting 2</th>
<th>Meeting 3</th>
<th>Meeting 4</th>
</tr>
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<tbody>
<tr>
<td>Weight</td>
<td>Date:</td>
<td>Date:</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td>Wt change</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Heart Rate</td>
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<tr>
<td>Blood Pressure</td>
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<td></td>
</tr>
<tr>
<td>Depression Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Worker Assists</td>
<td>Assistance with:</td>
<td>Assistance with:</td>
<td>Assistance with:</td>
<td>Assistance with:</td>
</tr>
<tr>
<td>Self-Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Medications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-Salt Diet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking, Stress, Exercise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem-Solving Concerns</td>
<td></td>
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</tr>
</tbody>
</table>

### Group Clinic Appointment Agenda

<table>
<thead>
<tr>
<th>Minutes</th>
<th>2 hour Agenda Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Brief HF self-management exam of weight, VS and chart review of current medications</td>
</tr>
<tr>
<td>5</td>
<td>Intros; first name and confidentiality pledge</td>
</tr>
<tr>
<td>15</td>
<td>View short DVD for that week and HF home care skills identified</td>
</tr>
<tr>
<td>70</td>
<td>Facilitated group discussions: Patient problem identification w solutions generated from patients and professionals practice of HF home care skills</td>
</tr>
<tr>
<td>15</td>
<td>Ended w completion of HF self-management summary report inc. patient/provider action recommendations</td>
</tr>
</tbody>
</table>

RESULTS

- Intervention pts attended 4.6 of 5 visits
- Kaplan-Meier time to 1st HF rehospitalizat. or death: no differences over 12 months

RESULTS

• Longer hosp.-free time from 2-7 months
  - HR, 0.45 (95% CI, 0.21–0.98); $P=0.04$

• No between groups differences between months 8-12

• Total cost of 5 group appointments was $243.58/patient

Shared (Group) Multidisciplinary Visits

Summary and Limitations

- SMAC clinic visits were associated with greater adherence to selected HF medications and longer hospitalization-free survival during the time that the intervention was underway.
- Single center study; small sample size based on an event rate that was lower than expected.
- Early (1st 8 weeks) rehospitalization lost d/t time needed to set up group visits.
- SMAC benefits could have been from DVD video alone.

Pt Education Using the Common Sense Model of Illness Beliefs

CSM, by H Leventhal PhD

a, objectively  
b, subjectively  
*, health threat imposed by HF

Illness Representation Attributes:
- Identity
- Timeline
- Cause
- Consequences
- Cure/Control

Pt Education Using the Common Sense Model

- Nurse-delivered intervention involved in-person 1:1 education before discharge
- CSM facilitated by 2 handouts
  1. Discussed illness beliefs about HF
     - Attention given to the importance of being in control of self-care
  2. Discussed monitoring and managing fluid status changes based on change in weight
     - Diet
     - Fluid restriction

Pt Education Using the Common Sense Model

Methods & Outcomes

- Comparative study (2 group, pre-post design)
- 244 subjects; 6 month follow-up
- Research question: In the first 6 months after hospital discharge, does unscheduled patient health care consumption decrease after implementing a focused education program using the Common Sense Model of Illness?
  - Rehospitalization
  - Emergency department visits
  - Unplanned office visits

Pt Education using the CSM

Multivariate results at 6 months:

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Odds Ratio or Coefficient</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Hospitalization, d/t HF</td>
<td>0.54</td>
<td>0.31, 0.97</td>
<td>0.039</td>
</tr>
<tr>
<td>ED visit d/t HF decompensation</td>
<td>0.29</td>
<td>0.13, 0.62</td>
<td>0.001</td>
</tr>
<tr>
<td>ED visit, total number</td>
<td>-0.28</td>
<td>--</td>
<td>0.025</td>
</tr>
<tr>
<td>First ED visit and re-hospitalized</td>
<td>0.52</td>
<td>0.21, 1.32</td>
<td>0.17</td>
</tr>
<tr>
<td>Unplanned (Urgent) office visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>-0.32</td>
<td>--</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Total, d/t HF decompensation</td>
<td>-0.09</td>
<td>--</td>
<td>0.016</td>
</tr>
<tr>
<td>Total, other than HF</td>
<td>-0.28</td>
<td>--</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Total, other cardiac causes</td>
<td>-0.06</td>
<td>--</td>
<td>0.015</td>
</tr>
</tbody>
</table>

Pt Education using the CSM

Summary and Limitations

- CSM education (inc. 2 handouts), delivered by trained clinical nurses reduced total ED visits and visits due to HF decompensation, first hospitalization due to HF decompensation and unplanned (urgent) office visits
- Single center study, pre-post design is weaker than RCT (no randomization; threats to internal validity) and unstudied factors could have led to differences in outcomes

4 Nurse-Led Service Themes

- Self-care education; HF medication delivery
- Multidisciplinary (team) care
- Follow-up care, communication, collaboration
### Transition of Care Heterogeneous Programs

<table>
<thead>
<tr>
<th>Healthcare Providers</th>
<th>Intervention Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early Admission Assessment</td>
</tr>
<tr>
<td>Program</td>
<td>Nurse</td>
</tr>
<tr>
<td>Bridge model&lt;sup&gt;17&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Care Transitions&lt;sup&gt;18&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Care Transitions&lt;sup&gt;19&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>EDPP&lt;sup&gt;20&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>PCCHF&lt;sup&gt;21&lt;/sup&gt;</td>
<td></td>
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<tr>
<td>PCCHF&lt;sup&gt;22&lt;/sup&gt;</td>
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<tr>
<td>PDCT&lt;sup&gt;23&lt;/sup&gt;</td>
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<tr>
<td>Project BOOST&lt;sup&gt;24&lt;/sup&gt;</td>
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<tr>
<td>Project Red&lt;sup&gt;25&lt;/sup&gt;</td>
<td></td>
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<tr>
<td>STAAR&lt;sup&gt;26&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Transitional Care model&lt;sup&gt;27-29&lt;/sup&gt;</td>
<td></td>
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</tbody>
</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.

Comparative Effectiveness of Transitional Care Services in HF: Systematic Review / Network Meta-Analysis

<table>
<thead>
<tr>
<th>Published papers from 2000-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provided 1+ mo. FU &amp; reported all-cause mortality or all-cause readmissions</td>
</tr>
<tr>
<td>• 53 RCT; 12,356 pts</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Education alone</td>
</tr>
<tr>
<td>• Pharmacist interventions</td>
</tr>
<tr>
<td>• Telemonitoring</td>
</tr>
<tr>
<td>• Telephone support</td>
</tr>
<tr>
<td>• Nurse home visits</td>
</tr>
<tr>
<td>• Nurse case management</td>
</tr>
<tr>
<td>• Disease management clinics</td>
</tr>
</tbody>
</table>

### Comparative Effectiveness of Transitional Care Services in HF: Systematic Review and Network Meta-Analysis

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Random Effects Model</th>
<th>RR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease management clinics</td>
<td></td>
<td>0.80</td>
<td>[0.67; 0.97]</td>
</tr>
<tr>
<td>Education alone</td>
<td></td>
<td>0.99</td>
<td>[0.40; 2.46]</td>
</tr>
<tr>
<td>Nurse case management</td>
<td></td>
<td>0.86</td>
<td>[0.71; 1.05]</td>
</tr>
<tr>
<td>Nurse home visits</td>
<td></td>
<td>0.78</td>
<td>[0.62; 0.98]</td>
</tr>
<tr>
<td>Pharmacist interventions</td>
<td></td>
<td>0.82</td>
<td>[0.56; 1.20]</td>
</tr>
</tbody>
</table>

Although nursing home visits were MOST effective in decreasing all-cause mortality, no significant difference in their comparative effectiveness on mortality

Van Spall HG et al. *Eur J Heart Fail.* 2017 Feb 24 ePUB.
Comparative Effectiveness of Transitional Care Services in HF: Systematic Review and Network Meta-Analysis


Although nursing home visits were MOST effective in decreasing readmissions, no significant difference in their comparative effectiveness on the outcome.
Value of Nurses in Team-Based Cardiovascular Care

- Have broad training and skills
  - PLUS, in DMC: usually APNs with HF expertise
- Provide clinical care / education + consult with/deliver resources related to SES, frailty or psychological issues
- Create individualized, customized, person-focused care using team-based interventions
- Promote shared decision making
- Multiple environments of care, inc. home, SNF
Nurses Need to Take Steps to Enhance CV Care and Clinical Outcomes

- Do you understand self-care maintenance and management?
- Are YOU knowledgeable about specific aspects of cardiovascular care?
- Do you make time and feel comfortable educating patients (and family members)?
- Do you assess for patient activation?
  - Take steps to increase activation?
- Do you use a shared-decision making approach?
Self Care: Naturalistic Decision-Making

- Conflict vs synergy with personal goals or family goals
- Decision characteristics
  - Uncertainty
  - Ambiguity
  - High/low stakes
  - Illness characteristics
  - Others’ involvement

Mental simulation of actions

Experiences or Illness beliefs
- Identity
- Cause
- Timeline
- Consequences
- Cure/Control

Situational Awareness

What is Self Care in HF?

Self Care Maintenance: Routine actions to maintain best quality of life and health status
- Monitoring weight
- Low sodium diet
- Take medications as planned
- Monitoring for new or worsening S & S
- Be active / exercise
- Maintain the follow-up schedule with a doctor or nurse

Self Care Management: Actions with new or worsening heart failure signs and symptoms
- Restrict fluid intake
- Enhance sodium intake restrictions
- Communicate with health care providers
- As needed diuretic use
PATIENT MISPERCEPTIONS

- Do not connect HF with symptoms
- Don’t recognize worsening symptoms & take action:
  - Don’t understand what caused symptoms, or link symptoms to external forces (stress)
  - Don’t routinely prevent exacerbation
  - Symptoms are vague/bothersome…not monitored
  - Don’t recognize/address escalating symptoms
    * Restrict Na+ in diet…but think its due to HTN
  - Don’t understand rationale for weighting self
  - Don’t perceive the need to seek help as symptoms become worse
  - Don’t believe they can control symptoms
    * Believe its the doctors job to control symptoms

COACH study: Self Care Compliance

Assessed compliance in:
1) Sodium-restricted diet*
2) Fluid restriction*
3) Exercise*
4) Weight monitoring**
* scored mostly or always
** 3 x/week to daily

Cum survival

Time to primary endpoint***, days

Overall non-compliant
Overall compliant
HR 1.40 (1.08-182); P=0.01

Compliance measured 1 month after hospital discharge & followed for 18 months; 48% (N=830 patients)

***, all-cause death or HF rehospitalization

COACH study: Self-Care Compliance

Compliance with advice on weight monitoring, low sodium diet, fluid restriction and exercise

* $P < 0.01$; ** $P < 0.05$

Van der Wal MH, et al. *Eur Heart J* 2010;31:1486-1493
Self Management (based on SCHFI) & Event-Free Survival Risk

Survival Free from All-cause Mortality, Hospitalization or ER Admision

Above Average vs. Below Average HR= 0.441, P< .05
Symptom-Free vs. Below Average HR= 0.481, P< .05

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>.967 (.941, .995)</td>
</tr>
<tr>
<td>Depression</td>
<td>1.074 (1.04, 1.11)</td>
</tr>
<tr>
<td>β-Blocker</td>
<td>.346 (.187, .641)</td>
</tr>
<tr>
<td>DASI Score</td>
<td>.960 (.930, .991)</td>
</tr>
<tr>
<td>Symptom free</td>
<td>.481 (.238, .971)</td>
</tr>
<tr>
<td>Above average SCM score</td>
<td>.441 (.222, .877)</td>
</tr>
</tbody>
</table>

Time to Emergency Department Visit Based on Accuracy of Illness Beliefs about HF


**Illness beliefs: Identity, timeline, consequences and control**
The “Work” of Adherence to a Chronic HF Regimen- Qualitative Research

Physician Perception
- Instructions are “easy”
- Pts as non participatory
- Pts do NOT understand

Patient Perception
- Do understand but need help in carrying out

Repeating “What”
Knowing “What”
Asking, “How?”

Nurse’s Knowledge - 6 studies

Kalowes P et al. *Heart Lung* 2011;40:362 (A)

*, Community nurses
**, Home care nurses
***, Hospital nurses

Mean score

<table>
<thead>
<tr>
<th>Nurse</th>
<th>N</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fowler</td>
<td>61*</td>
<td></td>
</tr>
<tr>
<td>Kalowes</td>
<td>157***</td>
<td></td>
</tr>
<tr>
<td>Delaney</td>
<td>94**</td>
<td></td>
</tr>
<tr>
<td>Willette</td>
<td>49***</td>
<td></td>
</tr>
<tr>
<td>Washburn</td>
<td>55***</td>
<td></td>
</tr>
<tr>
<td>Albert</td>
<td>300**,** ***</td>
<td>85-87.5% pass rate</td>
</tr>
</tbody>
</table>
Nursing Time Spent in Delivering HF Discharge Education

# RESULTS

<table>
<thead>
<tr>
<th>Comfort Factor</th>
<th>n</th>
<th>Mean (SD)</th>
<th>Frequency Factor</th>
<th>n</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>118</td>
<td>81.4 (11.3)</td>
<td>Overall</td>
<td>118</td>
<td>57.7 (24.4)</td>
</tr>
<tr>
<td>Weight monitoring</td>
<td>117</td>
<td>90.0 (12.0)</td>
<td>S/S worsen cond.</td>
<td>116</td>
<td>71.5 (29.0)</td>
</tr>
<tr>
<td>S/S worsen cond.</td>
<td>117</td>
<td>88.8 (11.8)</td>
<td>S/S fluid overload</td>
<td>116</td>
<td>70.1 (30.5)</td>
</tr>
<tr>
<td>S/S fluid overload</td>
<td>116</td>
<td>88.5 (12.2)</td>
<td>Weight monitoring</td>
<td>117</td>
<td>69.8 (29.8)</td>
</tr>
<tr>
<td>Fluid restriction</td>
<td>117</td>
<td>88.3 (12.7)</td>
<td>Fluid restriction</td>
<td>116</td>
<td>68.5 (29.2)</td>
</tr>
<tr>
<td>HF Beliefs</td>
<td>117</td>
<td>83.2 (14.9)</td>
<td>HF Beliefs</td>
<td>117</td>
<td>59.9 (29.4)</td>
</tr>
<tr>
<td>Low Na+ Diet</td>
<td>117</td>
<td>80.0 (14.5)</td>
<td>Medications</td>
<td>116</td>
<td>56.8 (25.5)</td>
</tr>
<tr>
<td>Medications</td>
<td>117</td>
<td>78.0 (13.8)</td>
<td>Low Na+ Diet</td>
<td>117</td>
<td>48.0 (29.2)</td>
</tr>
<tr>
<td>Activity/Exercise</td>
<td>117</td>
<td>73.0 (19.3)</td>
<td>Activity/Exercise</td>
<td>117</td>
<td>42.7 (29.4)</td>
</tr>
</tbody>
</table>

Cond., condition; S/S, signs/symptoms; wt, weight

Medications

Patient Activation

• Patients who are “activated” have skills, ability, and willingness to manage their own health and health care
  - They experienced better health outcomes at lower costs compared to less activated patients

• Patient activation measure: 13-items; values range from 38.6 to 53 (rescaled on a 0-100 point scale)
  - 4 levels (1, lowest; 4 highest)- tool scores the degree to which someone sees himself or herself as a manager of his or her health and care

• Active role is important
  - Confidence & knowledge to take action
  - Taking action
  - Staying the course under stress

Patient Activation in Heart Failure

- At Mayo Clinic in ADHF, 302 patients studied; mean age 77.3 yrs

- Patients with lower activation were older, less educated; had lower patient satisfaction, and worse health literacy

Enhancing Patient Activation

84 patients w HF randomized to UC or Heart PACT Program then reassessed at 3- and 6-months.
Enhancing Patient Activation

Who is in Charge?

• Patients are in control
  - No matter what we as health professionals do or say, patients are in control of important self-management decisions
  - When patients leave the clinic or office, they can and do veto recommendations their healthcare provider makes

• Shared decision making allows patients and providers to make health care decisions together, taking into account the best scientific evidence available, as well as the patient’s values and preferences

# Strategies for Shared Decision Making

<table>
<thead>
<tr>
<th>Clinician</th>
<th>Patient and Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>Personal experience of illness</td>
</tr>
<tr>
<td>Pathology</td>
<td>How patient feels</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Social and family context</td>
</tr>
<tr>
<td>Treatment options</td>
<td>Values</td>
</tr>
<tr>
<td>Treatment Outcome</td>
<td>Preferences</td>
</tr>
<tr>
<td>Risk/benefit associated with each outcome</td>
<td>Attitudes/feelings regarding risks</td>
</tr>
</tbody>
</table>

Patients are the most underutilized RESOURCE, and they have the most at stake!

http://www.informedmedicaldecisions.org/
Caring for Patients with HF

Engagement in care assessed via qualitative interviews
- 60 patients, 22 caregivers, and 11 healthcare providers

• Key themes of patients & caregivers:
  1. Education on disease specifics
  2. Guidance to enhance quality of life
  3. Learning to cope with HF
  4. Future outlook and care decisions

• Themes of “greatest impact” by healthcare providers:
  1. Knowledge is powerful
  2. Adherence to treatment plan
  3. Compliance with medication

Patient Engagement Strategies

- Must be prepared to do MORE than just deliver intense, repeated education and reinforce post-discharge follow-up appointments
  - Flip the script and empower patients to care for themselves
  - MUST see the person behind the patient
"You have to learn about thousands of diseases, but I only have to focus on fixing what’s wrong with ME! Now which one of us do you think is the expert?"
Tailoring health care to meet your patients' needs

Expect results that measure up.
Creates Sustainable Linkages
Health Care Providers
Collaboration - Teamwork