Role of Population Health in Heart Failure Management

Dr. Paul Heidenreich
How Can We Deliver Population Health Care for Future Heart Failure?

Paul Heidenreich MD, MS
No Conflicts of Interest

VA and Stanford Health Care Employee
Outline

- The case for population health for heart failure
- Implementing population health (examples)
  - Notes to providers for ICDs
  - Reminders in echo reports
  - Patient outreach for cholesterol testing
  - Nurse titration clinics
- Questions
Achieving Coordinated Identification, Detection and Treatment of Heart Failure Summit
April 12th, Hyatt Regency Bethesda, MD

GWTG-HF: Achievement Measures

* Modified to include Beta Blocker at Discharge and Discharge Instructions rather than Evidence-Based Beta Blocker at D/C and Post Discharge Appointment
Baseline = Admissions Jan2005 – Dec2005
October 2016
Current = Overall
GWTG-HF: Quality Measures (1)

Baseline vs Current

<table>
<thead>
<tr>
<th>QUALITY MEASURE</th>
<th>Baseline</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin at D/C</td>
<td>57.30%</td>
<td>84.61%</td>
</tr>
<tr>
<td>Aldosterone antagonist at D/C for LVSD</td>
<td>19.90%</td>
<td>39.62%</td>
</tr>
<tr>
<td>Hydralazine/Isosorbide at D/C for AA</td>
<td>10.80%</td>
<td>29.14%</td>
</tr>
<tr>
<td>ICD Counseling or ICD placed or prescribed at D/C</td>
<td>31.30%</td>
<td>54.10%</td>
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Baseline = Admissions Jan2005 – Dec2005
October 2016
Current = Overall
GWTG-HF: Quality Measures (2)

<table>
<thead>
<tr>
<th>QUALITY MEASURE</th>
<th>Baseline</th>
<th>Current</th>
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</thead>
<tbody>
<tr>
<td>Pneumococcal Vaccine</td>
<td>22.90%</td>
<td>67.50%</td>
</tr>
<tr>
<td>Influenza Vaccine</td>
<td>17.70%</td>
<td>78.00%</td>
</tr>
<tr>
<td>Follow-up visit within 7 days</td>
<td>61.90%</td>
<td>79.03%</td>
</tr>
<tr>
<td>DVT Management</td>
<td>25.40%</td>
<td>85.42%</td>
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<tr>
<td>CRT placed or prescribed at discharge</td>
<td>39.90%</td>
<td>49.78%</td>
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</tbody>
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Baseline = Admissions Jan2009 – Dec2009
October 2016
Current = Overall
Heart Failure Clinics Can See only a Minority of HF Patients

Recommendations by the Heat Failure Society of America:

- Patients recently hospitalized for heart failure
- Persistent New York Heart Association Class III or IV symptoms
- Frequent hospitalizations for any cause
- Renal insufficiency
- Diabetes
- Chronic obstructive pulmonary disease
- Elderly patients and other patients with multiple active comorbidities
- A history or depression, cognitive impairment, persistent nonadherence to therapeutic regimens, or inadequate social or economic support

Hauptman, J Card Failure 2008
Population Health vs. Traditional Care

- Traditional Care
  - Health Care Team reactive
  - Patient must bring problems to the attention of the team
  - Number of HF patients in the system unknown

- Population Health
  - Health Care Team identifies all patients in the system with heart failure
  - Patients possibly in need of care identified and contacted
  - Number of HF patients known-registry
Population Health Steps

1. **Database Creation**
   - HF codes (e.g. ICD10)
   - LV ejection fraction (may require natural language processing)

2. **Link to available data**
   - Pharmacy
   - Lab
   - Encounters (inpatient and outpatient)
   - Devices

2. **Determine possibly under/over treated patients**

3. **Prioritize**

4. **Intervene (depending on resources)**
   - Computer Reminders, Patient mailings (inexpensive, small effect)
   - Patient calls, new visits/clinics (expensive, larger effect)
Impact of ICD Note in the Medical Record

LVEF <=35% and age < 80 years, not in ICD clinic

Gupta, Circ HF, 2013
Other Impacts of ICD Note

- Improvement in medication use through referral to cardiology
- More discussion of end of life plans
- ? Mortality benefit

Gupta, Circ HF, 2013
VA Beta-Blocker Reminder Study

Could a clinical reminder attached to the echocardiography report (that provides ejection fraction data) be effective in increasing prescriptions for beta-blockers?
Reminder in the Echo Report for Beta-blockers

Heidenreich, Circulation 2007;115:2829
Primary Care Provider Survey

Heidenreich, Circulation 2007;115:2829
Patient Outreach: Cholesterol Screening

- **No CVD and no Lipid test in 5 years (Persell J Eval Clin Pract. 2016)**
  - 480 Patient randomized
  - **Intervention** (mailing, testing available without appointment)
  - **Outcome** (cholesterol testing)
    - 13% (intervention) vs. 11% (control, p=NS)

- **High risk Patients without CVD (Persell, Circ CVO, 2015)**
  - 646 randomized
  - **Intervention** (mailing and telephone calls)
  - **Outcome**: Discussion with primary care provider
    - 13% (intervention) vs. 11% (control, p<0.01)
  - **Outcome**: Statin Use
    - 10% (intervention) vs 6% (control, p=NS)
Nurse Medication Titration Clinic

169 patients randomized (beta-blocker candidates) to:
Nurse Clinic, Reminder/Notification, or Usual Care
Population Health Questions

- Which patients should be tracked?
- What treatments (underuse, overuse) are most important?
  - Impact on outcome, gap in care, cost
- What interventions?
- What is the business case for population health in HF?
Implementation of the Reminder:
51 Echocardiography Labs: 3 Months Post-Intervention