So, what’s the problem?

- Heart failure is the leading cause of hospitalization among adults 65 years of age in the United States.
- Annually, 1 million patients are hospitalized with a primary diagnosis of HF, accounting for a total Medicare expenditure exceeding $17 billion.
- 50% of patients with an index hospitalization of HF are readmitted to the hospital within 6 months of discharge.
- In 2009, the Center for Medicare & Medicaid Services began public reporting of all-cause readmission rates after heart failure hospitalization.
- In 2010, CMS enacted the Patient Protection and Affordable Care Act and established financial penalties for hospitals with the highest readmission rates during the first 30 days after discharge.

Readmissions is a big one

- Discharge from a heart failure hospitalization is followed by a readmission within 30 days in 24% of cases.
- Recurrent heart failure and related cardiovascular conditions account for only about half of readmissions in patients with heart failure - other comorbid conditions account for the rest.
- Although the proportion of noncardiovascular admissions is higher in those with preserved ejection fraction (EF), overall readmission rates for heart failure remain similar, whether the heart failure occurs with reduced or preserved EF.
High risk phases for readmissions

- Chun et al outlined a 3-phase terrain of lifetime risk for readmission based on analysis of a cohort of 8543 newly discharged Canadian patients with heart failure.
- In this community-dwelling population, 30% of all cardiovascular readmissions occurred within the first 2 months of hospital discharge, and 50% occurred within the 2 months before death, with much lower admission rates (15%–20%) observed in the intercurrent plateau phase.

The Transition Phase: From Hospital to Home

- Early readmissions after hospital discharge are often assumed to indicate incomplete treatment in hospital, poor coordination of services or communication of plans at discharge, or inadequate access to care in early follow-up.
- Rates of 30-day admission vary widely across hospitals from 10% to 50%, and it is estimated that up to 75% of these early readmissions may be preventable.
- Half of heart failure readmissions occurred before the first ambulatory visit.
- Comprehensive discharge planning, including patient and caregiver education, guidance regarding sodium and fluid restriction, collaboration with visiting nurses, and planned follow-up, may reduce early readmission rates by as much as 25%.
### KPNCC HF LoS (days) 2014Q2

<table>
<thead>
<tr>
<th>Service Area</th>
<th>HF Discharges</th>
<th>HF Patient Days</th>
<th>ALOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Valley</td>
<td>245</td>
<td>1,084</td>
<td>4.4</td>
</tr>
<tr>
<td>DSA</td>
<td>434</td>
<td>2,087</td>
<td>4.8</td>
</tr>
<tr>
<td>EBA</td>
<td>136</td>
<td>1,697</td>
<td>5.1</td>
</tr>
<tr>
<td>Fresno</td>
<td>192</td>
<td>1,069</td>
<td>5.1</td>
</tr>
<tr>
<td>GSA LA</td>
<td>250</td>
<td>1,396</td>
<td>4.7</td>
</tr>
<tr>
<td>North Valley</td>
<td>424</td>
<td>1,417</td>
<td>3.3</td>
</tr>
<tr>
<td>Redwood City</td>
<td>136</td>
<td>803</td>
<td>6.9</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>404</td>
<td>2,365</td>
<td>5.9</td>
</tr>
<tr>
<td>San Francisco</td>
<td>188</td>
<td>1,090</td>
<td>5.8</td>
</tr>
<tr>
<td>San Jose</td>
<td>189</td>
<td>852</td>
<td>4.5</td>
</tr>
<tr>
<td>San Rafael</td>
<td>126</td>
<td>968</td>
<td>4.5</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>123</td>
<td>930</td>
<td>4.1</td>
</tr>
<tr>
<td>S. Sacramento</td>
<td>219</td>
<td>944</td>
<td>4.3</td>
</tr>
<tr>
<td>S. San Francisco</td>
<td>166</td>
<td>798</td>
<td>4.8</td>
</tr>
<tr>
<td>Regional Total</td>
<td>3,636</td>
<td>17,011</td>
<td>4.7</td>
</tr>
</tbody>
</table>

### KPHI HF LoS (days)

#### Monthly Breakdown of Chronic Heart Failure Patients Length of Stay

### KPHI HF Readmission (days)

#### Quarterly Breakdown of 30-day Readmission for Heart Failure Patients

### KPHI HF (days)

#### Quarterly Breakdown of 30-day Readmission for Heart Failure Patients
10/27/2014

Why are readmissions so important?
- High prevalence
- Costly
- Increased regulatory oversight
- Preventable

Why the change in measurement?
- Need an industry standard approach
- Risk adjustment allows fairer comparisons to be made between med centers.

Why 30 days?
- Balances accountabilities between the discharging hospital and post-discharge follow-up care.

Background and Overview

HEDIS Plan All-Cause Readmission (PCR) Definition
- For members 18 years of age and older, the number of acute inpatient stays during the measurement year that were followed by an acute readmission for any diagnosis within 30 days and the predicted probability of an acute readmission.
- Data are reported in the following categories:
  - Count of Index Hospital Stays (IHS) (denominator)
  - Count of 30-Day Readmissions (numerator)
  - Average Adjusted Probability of Readmission
Denominator

- All acute inpatient stays with a discharge date on or between January 1 and December 1 of the measurement year for commercial health plan members 18–64 years of age as of the index discharge date, and for Medicare and Special Needs Plan (SNP) members 18 years and older as of the index discharge date.
- Members must have been continuously enrolled in the plan for 365 days prior to the discharge date through 30 days after the discharge date. There may not be more than one gap of 45 days or less within the 365 days prior to the discharge date, and no gap during the 30 days following the discharge date.
- Exclusions made for:
  - maternity related stays
  - admission to a long-term care facility, including long-term, nonacute hospitals, rehabilitation facilities and nursing homes
  - if the patient died during the admission or readmission stay for admissions where the index admission date is the same as the index discharge date.
  - The denominator of the measure is based on discharges rather than on members.

Numerator

- At least one acute readmission for any diagnosis, with an admission date on or between January 2 and December 31 of the measurement year, within 30 days of the index discharge date.
- Acute inpatient discharges with a principal diagnosis for codes that identify maternity-related inpatient stays are excluded.

Risk Adjustment

- Factors used to calculate predicted probability of readmission; i.e., the “Expected” Rate:
  - Age and Gender
  - Surgery
  - Discharge Hierarchical Condition Categories (HCC)*
  - Comorbid Hierarchical Condition Categories (HCC)*

Formulas

- Observed Rate = Numerator / Denominator
- Observed / Expected Ratio = Observed Rate / Expected Rate
- Lower is better:
  - If O/E ratio is less than 1.00, that means we’re performing better than our expected probability of readmission.
  - SCAL Regional Readmission Target = 0.80

All Cause 30-Day HEDIS CHF Readmissions O/E by Region
(Commercial & Medicare)

<table>
<thead>
<tr>
<th></th>
<th>2011 Q4</th>
<th>2011 Q1</th>
<th>2012 Q2</th>
<th>2012 Q3</th>
<th>2012 Q4</th>
<th>2012 Q1</th>
<th>2012 Q2</th>
<th>2012 Q3</th>
<th>2012 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser Permanente</td>
<td>0.88</td>
<td>0.89</td>
<td>0.87</td>
<td>0.87</td>
<td>0.85</td>
<td>0.84</td>
<td>0.82</td>
<td>0.78</td>
<td>0.80</td>
</tr>
<tr>
<td>Northern California</td>
<td>0.92</td>
<td>0.98</td>
<td>1.02</td>
<td>1.02</td>
<td>1.03</td>
<td>0.94</td>
<td>0.89</td>
<td>0.83</td>
<td>0.81</td>
</tr>
<tr>
<td>Southern California</td>
<td>0.97</td>
<td>0.94</td>
<td>0.88</td>
<td>0.87</td>
<td>0.82</td>
<td>0.85</td>
<td>0.86</td>
<td>0.83</td>
<td>0.87</td>
</tr>
<tr>
<td>Colorado</td>
<td>0.64</td>
<td>0.62</td>
<td>0.48</td>
<td>0.59</td>
<td>0.60</td>
<td>0.55</td>
<td>0.56</td>
<td>0.62</td>
<td>0.62</td>
</tr>
<tr>
<td>Georgia</td>
<td>0.52</td>
<td>0.55</td>
<td>0.59</td>
<td>0.54</td>
<td>0.54</td>
<td>0.55</td>
<td>0.55</td>
<td>0.66</td>
<td>0.66</td>
</tr>
<tr>
<td>Hawaii</td>
<td>0.63</td>
<td>0.72</td>
<td>0.66</td>
<td>0.75</td>
<td>0.80</td>
<td>0.87</td>
<td>0.90</td>
<td>0.98</td>
<td>0.75</td>
</tr>
<tr>
<td>Northwest</td>
<td>0.53</td>
<td>0.53</td>
<td>0.58</td>
<td>0.57</td>
<td>0.68</td>
<td>0.72</td>
<td>0.47</td>
<td>0.43</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Regional Variations

Panelist Presentations

1. Mingsum Lee, MD (KPSC)
2. Anthony Steimle, MD (KPNC)
3. Kevin Kwaku, MD (KPHI)
4. Timothy Jacobson, MD (KPNW)