Right Care Initiative

Clinical Quality Improvement Leadership Collaborative

Sacramento County CVD Hot Spot: Heart Disease and Stroke

“Spreading Evidence-based Strategies to Reduce Premature Disability and Death from Heart Disease and Strokes”

Hattie Rees Hanley, MPP
Director, Right Care Initiative
UCB School of Public Health

Susan L. Ivey, MD, MHSA
Professor, School of Public Health
University of California, Berkeley
Summer 2017
Demographics of California and Sacramento County

<table>
<thead>
<tr>
<th>Race/Ethnic Group</th>
<th>California</th>
<th>Sacramento</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>39.20</td>
<td>47.80</td>
</tr>
<tr>
<td>African American</td>
<td>5.80</td>
<td>10.00</td>
</tr>
<tr>
<td>Hispanic</td>
<td>38.70</td>
<td>22.00</td>
</tr>
<tr>
<td>Asian and Pacific Islander</td>
<td>13.30</td>
<td>15.20</td>
</tr>
<tr>
<td>American Indian and Alaskan Native</td>
<td>0.40</td>
<td>0.60</td>
</tr>
<tr>
<td>Multi-Race</td>
<td>2.60</td>
<td>4.40</td>
</tr>
</tbody>
</table>

Higher Rates of Stroke and Heart Attack among Sacramento County Residents

**Stroke Hospitalizations (w/ TIA) per 100,000 population in 2014**

- Sacramento County: 234
- California: 208

**Heart Attack Hospitalizations per 100,000 population in 2014**

- Sacramento County: 185
- California: 132

Source: Office of Statewide Health Planning and Development, 2014
Higher Rates of Stroke (w/ TIA) among Sacramento County Residents – by Race/Ethnicity

Source: Office of Statewide Health Planning and Development, 2014
Higher Rates of Heart Attack among Sacramento County Residents – by Race/Ethnicity

Heart Attack Hospitalizations per 100,000 population by race/ethnicity

- **All**: Sacramento County 185, California 132
- **Native American**: Sacramento County 64, California 124
- **Asian/PI**: Sacramento County 98, California 98
- **Hispanic**: Sacramento County 179, California 124
- **Black**: Sacramento County 251, California 180
- **White**: Sacramento County 173, California 133

Source: Office of Statewide Health Planning and Development, 2014
Stroke Hospitalization Rates over time in Sacramento County vs. California

Source: Office of Statewide Health Planning and Development, 2007-2014
Self-Reported Cardiovascular Risk Factors – Sacramento County compared to California, 2011-14

Hypertension
Obese (BMI>30)
Smoking
Diabetes (type I and II)
Diabetes (type II)

California
27.20
25.22
12.98
8.38
7.05

Sacramento
29.47
29.41
16.29
8.82
7.74

Source: California Health Interview Survey 2011-2014
Self-Reported Cardiovascular Risk Factors in Sacramento County by Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Hypertension</th>
<th>Obesity (BMI &gt; 30)</th>
<th>Smoking</th>
<th>Diabetes (type I and II)</th>
<th>Diabetes (type II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American Only, non-hispanic</td>
<td>44.09</td>
<td>32.41</td>
<td>17.21</td>
<td>4.97</td>
<td>3.69</td>
</tr>
<tr>
<td>Asian Only</td>
<td>36.76</td>
<td>17.47</td>
<td>3.49</td>
<td>11.23</td>
<td>11.23</td>
</tr>
<tr>
<td>Hispanic</td>
<td>30.05</td>
<td>39.19</td>
<td>12.63</td>
<td>14.59</td>
<td>14.59</td>
</tr>
<tr>
<td>White, non Hispanic</td>
<td>28.71</td>
<td>27.36</td>
<td>17.76</td>
<td>6.88</td>
<td>5.62</td>
</tr>
</tbody>
</table>

Source: California Health Interview Survey 2011-2014
Links between air quality and CVD

Can this known linkage help explain the extremely poor health indices for CVD and other cardiometabolic conditions in Sacramento County and other Central Valley counties?
Poor Air Quality as a Cardiovascular Risk Factor

• Statewide, over 35 million Californians (91%) live in counties affected by unhealthy air during the year, compared to national rate of 38.9%

• Ozone Pollution Poses Serious Health Threats including:
  • Respiratory harm (asthma, chronic obstructive pulmonary disease, bronchitis)
  • **Cardiovascular harm** (heart failure, stroke, heart disease)
    • Ozone Air Pollution Is Associated With Acute Myocardial Infarction*
  • Reproductive and developmental harm

• Vulnerable populations:
  • People with cardiovascular disease
  • People with existing lung diseases
  • Anyone 65 and older, children and teens

Sacramento’s Poor Air Quality

- While the United States has seen continued improvement in air quality,

- Sacramento is currently
  - Ranked as the 8th worst in the nation for ozone pollution out of 228 metropolitan areas (rank 6 in 2016).
  - Ranked as the 14th worst in the nation for particle pollution out of 186 metropolitan areas

Comments on the Effects of Air Pollution on Public Health – Harvard Magazine

• “Data showed that people living in cities with the dirtiest air died on average two years earlier than residents of cities with the cleanest air”

• “People were losing lung function, but what was killing them were cardiovascular events[…] it was fine particles from power plants and other combustion sources such as automobiles and home heating that showed the strongest associations with these deaths”

Source: Clearing the Air. Harvard Magazine, May-June issue, 2005
Higher Mortality Rates for Coronary Heart Disease and Stroke in Sacramento County (2013-2015)

Source: California Department of Public Health.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Deaths per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary Heart Disease (CHD)</td>
<td>93.2</td>
</tr>
<tr>
<td>Sacramento</td>
<td>106</td>
</tr>
<tr>
<td>California</td>
<td>34.7</td>
</tr>
<tr>
<td>Stroke</td>
<td>40.8</td>
</tr>
</tbody>
</table>

Source: California Department of Public Health. County Health Status Profiles 2017
How are medical groups performing on hypertension and diabetes in Sacramento County?

The following yellow bar charts are the publicly reported performance data collected voluntarily from each medical group in California that contracts with managed health care plans. The data are published annually on the State of California Health and Human Services Office of the Patient Advocate’s Website.

Note: Independent Practice Association and other medical groups that continue to rely on paper records rather than robust electronic records may indicate lower performance than actual due to data collection issues.
Gold Bar Performance - Sacramento area Medical Groups
Controlling High Blood Pressure at < 140/90 mmHg

U.S. 90th Percentile Performance for high blood pressure control < 140/90

Source: Performance data for managed care patients, CA Office of the Patient Advocate Report, 2016
Gold Bar Performance - Sacramento area Medical Groups Controlling High Blood Pressure for People with Diabetes

U.S. 90th Percentile Performance for controlling high blood pressure for people with diabetes < 140/90

<table>
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<tr>
<th>Organization</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hill Physicians - Sac.</td>
<td>72%</td>
</tr>
<tr>
<td>Kaiser - Roseville/Sac.</td>
<td>75%</td>
</tr>
<tr>
<td>Kaiser - South Sac.</td>
<td>78%</td>
</tr>
<tr>
<td>Mercy/Dignity</td>
<td>71%</td>
</tr>
<tr>
<td>Sutter</td>
<td>68%</td>
</tr>
<tr>
<td>Sutter Independent</td>
<td>60%</td>
</tr>
<tr>
<td>UC Davis</td>
<td>63%</td>
</tr>
<tr>
<td>Woodland Healthcare</td>
<td>36%</td>
</tr>
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</table>

Source: Performance data for managed care patients, CA Office of the Patient Advocate Report, 2016
Gold Bar Performance - Sacramento area Medical Groups Controlling HbA1c for Diabetes Patients

U.S. 90th Percentile Performance for controlling blood sugar for diabetes patients (HbA1c level of less than 8%)

<table>
<thead>
<tr>
<th>Health Care Provider</th>
<th>Performance (%)</th>
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<tbody>
<tr>
<td>Hill Physicians - Sac.</td>
<td>68%</td>
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Source: Performance data for managed care patients, CA Office of the Patient Advocate Report, 2016
How are other California counties doing compared to Sacramento?

Do the other counties which are a focus of the Right Care Initiative offer relevant lessons for helping Sacramento to improve?
Hospitalization Rate – Myocardial Infarction

Comparing Counties – Myocardial Infarction Hospitalization Rate

Source: 2010-2014 Data from Office of Statewide Health Planning and Development
Hospitalization Rate – Stroke with TIA

Comparing Counties - Stroke with TIA Hospitalization Rate

- Sacramento
- San Diego
- Los Angeles
- Statewide

Source: 2010-2014 Data from Office of Statewide Health Planning and Development
Hospitalization Rate - Stroke without TIA

Comparing Counties - Stroke without TIA Hospitalization Rate

Source: 2010-2014 Data from Office of Statewide Health Planning and Development
Before and After Right Care Initiative initiated San Diego University of Best Practices

San Diego Medical Group Cholesterol Control for People with Heart Disease

Performance Year 2007

Performance Year 2012

82% 72%

61% 60%

67% 61%

58% 56%

40%

79% 79%

76% 71%

67% 68%

64% 61%

64% 58%

63% 63%

61% 61%

58% 52%

52% 40%

48%

Source: California Health Care Quality Report Card 2009 & 2014 Editions
- data from performance years 2007 & 2012
Cost of Cardiovascular Disease and Stroke

• CVD costs more than any other diagnostic group.
  • In 2009, direct and indirect costs of cardiovascular diseases and stroke are estimated to total more than $316 billion (includes health expenditures and lost productivity)
  • By comparison, in 2008, the estimated cost of all cancer and benign neoplasms was $228 billion.
  • Heart attacks ($11.5 billion) and Coronary Heart Disease ($10.4 billion) were 2 of the 10 most expensive hospital principal discharge diagnoses.

Cost of Cardiovascular Disease and Stroke

- In 2009, ≈1 of every 6 hospital stays resulted from CVD. The total inpatient hospital cost for CVD ($71.2 billion) was approximately one fourth of the total cost of inpatient hospital care in the United States.

- In 2009, the average cost per hospitalization for CVD was ≈41% higher than the average cost for all stays.

- Indirect costs for all CVD are projected to increase by 52% (from $202.5 billion to $308.2 billion) between 2013 and 2030. Of these indirect costs, CHD is projected to account for ≈43% and has the largest indirect costs.

What can we act on in Sacramento?

- **Higher rates of smoking than the state average**
  - Encourage primary care physicians to ask about smoking as a vital sign during every visit.
  - Provide brief cessation counseling for smokers which can also help physicians meet meaningful use\(^1\).

- **Higher rates of obesity than the state average**
  - Encourage measurement of BMI regularly in primary care; ensure patients are aware of obesity-related risks\(^2\).
  - Develop a plan with patients for addressing obesity; provide solid evidence to promote diet and physical activity changes.
  - Work to ensure all communities have access to safe, affordable options for healthy diets and physical activity in their neighborhoods.\(^3\)

- **Higher rates of hypertension than the state average; high rates of uncontrolled hypertension, especially for African Americans**
  - Improve community outreach about hypertension as a silent killer targeting places where people meet – churches, synagogues, barbershops, community and senior centers among others.
  - Improve medication adherence by using health coaches to activate patients via motivational interviewing and evidence-based media messaging. Consider having pharmacists more actively engaged on the care team.
  - Provide information about best practices for treating hypertension to local primary care providers.
  - Ensure that the most recent medication protocols and guidelines for hypertension are actively being upheld by care teams including monitoring of quality indicators and promotion of evidence-based treatment.
What can we act on in Sacramento?

- Disparities in hypertension among different race/ethnicities; African American, API and Hispanic rates of hypertension are much higher than the rest of the state while White rates are only a little higher.
  - Act to address key disparities in hypertension among different race/ethnicities.
  - Help physicians learn about, and learn to ask their patients about social determinants of health including whether medication costs are within budget.
  - Provide medical practices information about how to use culturally aligned, linguistically appropriate health coaches to bridge the gaps in care, to enable better care for specific populations we serve.
  - Form connections between medical practices and community programs that can expand outreach and care (senior centers, community-based organizations, parish nurses) about hypertension and diabetes.
  - Apply elements of the Right Care triangle in Sacramento county including use of medication protocols for control of cholesterol and blood pressure and blood sugar among patients diagnosed with cardiovascular disease and/or diabetes.
Right Care Initiative Intervention Triangle

**Patient Activation**
- Stress reduction, medication adherence, healthy sleep, nutrition & physical activity, smoking cessation
- Evidence-based patient education (e.g., Project DULCE; Stanford Patient Self-Management)
- Motivational interviewing and evidence-based media messaging

**Patient Centered Practice Redesign**
- Medical Home
- Team-Based
- Un-blinded Performance Feedback
- Web Supported
- High-Tech Enabled
- Timely Continuous Care—Not Episodic
- Optimized Clinical Connectivity For Rapid Treatment

**Clinical Pharmacists on Care Team**
- HRSA.gov/patientsafety

**Intensive Ambulatory Care**

**Medication Protocols**
- Nationally Endorsed Guidelines (JNC, ADA)
- European Union Guidelines
- ALL/PHASE (Kaiser)
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Professor Susan L. Ivey, MD, MHSA
Sivey@Berkeley.edu
Hattie Rees Hanley, MPP
HattieHanley@Berkeley.edu

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Bryan Vuong
Bryan.Vuong@Berkeley.edu
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