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Los Angeles Cancer Surveillance Program
Stomach Cancer Facts

- 5th most common cancer in world (Lung, breast, CRC, prostate)
  - 1st in 1975 (rates declining)
- 952,000 new cases in 2012 (6.8% of total number of all cancers)
- Over 70% of cases occur in developing countries
  - half the world total occurs in Eastern Asia
- Risk for men is twice as high as for women
- 3rd leading cause of cancer death worldwide (Lung, liver)
Stomach CA AAIR’s for Asian subgroups are lower in US than in country of origin

![Bar chart showing Stomach CA AAIR's for Asian subgroups in US compared to their country of origin.](chart.png)
Stomach Cancer Risk Factors

• Gender/Age/Ethnicity/Geography
• Helicobacter pylori (H pylori) infection (lower part)
• Diet (smoked, salted, pickled, cured vs. fresh vegetables and fruits)
• Tobacco use (doubling in smokers, upper part)
• Some types of stomach polyps
• Inherited cancer syndromes (HNPCC, FAP, BRCA1, BRCA2)
• Family history
• Certain occupations (in coal, metal, and rubber industries)
Incidence among immigrants within the US is changing due to shift in origins of foreign born population from Europe to Latin America/Asia.

Change in Foreign-Born Population by Region of Birth

1960
- Europe: 75%
- Northern America: 10%, 2%
- Latin America: 9%
- Asia: 5%
- Other: 1%

2010
- Europe: 12%
- Northern America: 10%, 2%
- Latin America: 53%
- Asia: 28%
- Other: 5%

Source: U.S. Census Bureau, 1960 Decennial Census.
Source: U.S. Census Bureau, 2010 American Community Survey.
Among the foreign born population in the US, California is home to the largest percentage from several countries


<table>
<thead>
<tr>
<th>Country of birth</th>
<th>Percent living in California</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>34.1</td>
</tr>
<tr>
<td>India</td>
<td>20.5</td>
</tr>
<tr>
<td>Philipines</td>
<td>44.8</td>
</tr>
<tr>
<td>Vietnam</td>
<td>38.5</td>
</tr>
<tr>
<td>Korea</td>
<td>30.9</td>
</tr>
</tbody>
</table>
Materials and Methods


• Invasive stomach cancer (ICD-O-3, C160-C169)

• Calculated AAIR (US 2000), ASIR, AAPC, M:F rate ratio

  • By gender, diagnosis year or time period

  • 11 Race/ethnicity groups: NHW, NHB, HISPANIC, NHAPI, NHAIAN, Chinese, Filipino, Japanese, Korean, South Asian, Vietnamese
## Average Annual Percent Change (AAPC) by age, gender, and race/ethnicity

<table>
<thead>
<tr>
<th></th>
<th>&lt;40</th>
<th>40-54</th>
<th>55-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>NHW</td>
<td>1.4</td>
<td>-0.1</td>
<td>-0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>NHB</td>
<td>-3.5</td>
<td>^</td>
<td>-4.7</td>
<td></td>
</tr>
<tr>
<td>HISPANIC</td>
<td>0.1</td>
<td>0.9</td>
<td>-0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>NHAPI</td>
<td>-3.6</td>
<td>^</td>
<td>-3.1</td>
<td></td>
</tr>
<tr>
<td>NHAIAN</td>
<td>~</td>
<td>1.5</td>
<td></td>
<td>0.4</td>
</tr>
<tr>
<td>Chinese</td>
<td>-10.2</td>
<td>-3.0</td>
<td>-0.3</td>
<td>-0.8</td>
</tr>
<tr>
<td>Filipino</td>
<td>-0.4</td>
<td>-2.8</td>
<td>-2.3</td>
<td>-2.0</td>
</tr>
<tr>
<td>Japanese</td>
<td>~</td>
<td>~</td>
<td>-4.6</td>
<td>-4.7</td>
</tr>
<tr>
<td>Korean</td>
<td>-8.0</td>
<td>-5.5</td>
<td>-2.9</td>
<td>^</td>
</tr>
<tr>
<td>South Asian</td>
<td>-2.0</td>
<td>-4.4</td>
<td>-1.9</td>
<td>0.7</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>-1.5</td>
<td>-3.6</td>
<td>-1.3</td>
<td>-2.6</td>
</tr>
</tbody>
</table>

^: Indicate statistical significance at 95% confidence level.
Male/Female Rate Ratio for Stomach Cancer AAIR’s by Race/Ethnicity
Age-Specific Male/Female Rate Ratios for Stomach CA by Race/Ethnicity

The graph shows the age-specific male/female rate ratios for stomach cancer by race/ethnicity. The x-axis represents different age groups (<40, 40-54, 55-64, 65+), and the y-axis represents the M:F rate ratio. Various lines represent different racial/ethnic groups, including NHW, NHB, HISPANIC, NHAPI, NHAIAN, Chinese, Filipino, Japanese, Korean, South Asian, and Vietnamese.
Conclusions

• Dramatic variations in incidence rates, trends, and M:F ratios by race/ethnicity help generate hypothesis for etiologic investigation and targeted outreach to reduce stomach cancer disparities

• While stomach cancer incidence continues to decline for most populations examined, the rising trends in AAPC for Hispanics and NH Whites under age 55 deserves further scrutiny

• Population-based cancer surveillance of racially and ethnically diverse US populations can offer critical insights for stomach cancer research and control in the world
Thank You!

All CTRs and CCR/CSP/registry staff