# Thyroid cancer incidence trend among Asian and Pacific Islander women in the U.S.

## Background

Thyroid cancer incidence has been increasing steadily in the US since the 1970s, and high rates have been shown in non-Hispanic whites and Asian and Pacific Islander (API) women. However, within the API ethnic group, the trends of thyroid cancer have not been well-addressed.

Asian American is a heterogeneous group. This population has been identified as an aggregate group in the SEER database; however, each ethnic group represents different languages as well cultural background.

## Objectives

- To quantify national thyroid cancer burden among API ethnic groups
- To investigate trends of thyroid cancer among API females

## Data source & Methods

### Data source:
Thyroid cancer data was obtained from new SEER API database for female thyroid cancer patients diagnosed from 1990-2008

### SEER API database:
SEER have sufficiently sized Asian American and Native Hawaiians and Pacific Islanders (NNPH) populations. The database includes 10 SEER areas (California, Connecticut, Atlanta-Metropolitan, Detroit-Metropolitan, Hawaii, Iowa, New Jersey, New Mexico, Seattle-Puget Sound, and Utah.)

### Methods:
Trends in thyroid cancer incidence for each API group (Chinese, Filipino, Korean, Japanese, Asian Indian or Pakistani, Vietnamese) were estimated by age, stage, and tumor size using joinpoint analysis. Annual-percent-change (APC) for each group was estimated to evaluate the change in trends.

## Results

### Results – Joinpoint analysis

#### Figure 1. Thyroid cancer case count API women in the US, 1990-2008 (cases)

Of 6,533 Asian women with thyroid cancer, 2,530 (39.0%) cases were Filipino, 1,310 (20.0%) were Chinese, and 695 (10.6%) were Vietnamese.

#### Figure 2. Thyroid cancer incidence by age among API women, 1990-2008

Compare NH to white women, most API women have a later onset (50 years of age or older)

### Table 1. Age-adjusted thyroid cancer incidence rates among API women, US, 1990-2008 (cases/100,000 women)

<table>
<thead>
<tr>
<th>Tumor size (cm)</th>
<th>Chinese</th>
<th>Japanese</th>
<th>Filipino</th>
<th>Hawaiian</th>
<th>Korean</th>
<th>Asian Indian, Pakistani</th>
<th>Vietnamese</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;4.0</td>
<td>4.8</td>
<td>5.4</td>
<td>5.8</td>
<td>6.4</td>
<td>8.3</td>
<td>8.4</td>
<td>7.5</td>
</tr>
<tr>
<td>2.0-3.0</td>
<td>2.3</td>
<td>2.1</td>
<td>1.9</td>
<td>2.3</td>
<td>3.3</td>
<td>3.8</td>
<td>3.6</td>
</tr>
<tr>
<td>0.5-1.9</td>
<td>1.5</td>
<td>1.2</td>
<td>1.0</td>
<td>1.3</td>
<td>2.0</td>
<td>2.2</td>
<td>2.5</td>
</tr>
<tr>
<td>&lt;0.5</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

#### Table 2. Age-adjusted thyroid cancer rates by stage at diagnosis and tumor size (APC) from 1990-2008

A significant increase in thyroid cancer rates was evident in all the API women, and the largest increase occurred among the Asian Indian and Pakistani group and the smallest increase among the Vietnamese group.

### Conclusions

- High rates in Filipino and Hawaiian women could suggest differential socioeconomic and/or dietary influence.
- The variation in thyroid cancer incidence and across API groups by tumor stage and tumor size was intriguing.
- Consistent increase in all stages and tumor size, but more pronounced in early stage and smaller tumor size could suggest technology advancement in x-ray or fine-needle aspiration also influence API women access for thyroid cancer diagnosis.
- Asian American is a heterogeneous group. Differences in cultural, language, and perception of health could explain the differences in thyroid cancer rates.

## References

- Federal Hospital Authority. (2000). Thyroid cancer rates vary significantly by birthplace in Asian American women. BMAA, Orlando, FL.
- Joanne T. Chang, MPH, Annie-Michelle Noon, MS, and Hyunsoon Cho, PhD. SEER Program, Division of Cancer Control and Population Sciences, National Cancer Institute, National Institutes of Health, Bethesda, Maryland, USA.
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