Mapping Medically Underserved AAPI Communities (MUACs): A Preliminary Analysis

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Presented at the APHA Annual Conference
Washington DC
November 8, 2004

Project Goals

- Provide a preliminary awareness of geographical areas in which AAPIs are in need of health services

- Provide information to assist the President's AAPI Executive Order to improve the health status of underserved AAPIs (#13216) and Initiative to double the number of community health centers in the US by 2006 (Community and Migrant Health Centers Initiative).

Background

- AAPIs are one of the fastest growing minority groups in the nation, increasing 48% between 1990 and 2000 and expected to reach 41 million by 2050.
- AAPIs are socioeconomically disadvantaged compared to non-Hispanic Whites.
  - AAPIs have 14% poverty rate vs. 8% whites
  - AAPIs have 18% uninsured rate vs 11% whites
  - AAPIs have 50% limited English proficient rates
  - Approximately 2/3 of AAPIs are foreign-born
  - AAPIs experience health disparities (e.g. higher prevalence rates of tuberculosis and hepatitis B than other racial groups)

Project Steps

- Develop a definition and multi-component index of underserved AAPI community
- Conduct a search on existing data and literature
- Request data from state and county health departments
- Prioritize available data and variables
- Decide on methods including variable weights based on existing literature
- Conduct analysis to identify underserved areas
- Research background of underserved areas for validation
- Generate GIS maps to highlight underserved AAPI communities

Definition of Medically Underserved AAPI Community (MUAC)

- County in which AAPI population is underserved in terms of ability to access health care, including facilities and providers
- Based on understanding that medical underservice is a function of:
  - Limited resources
  - Financial barriers
  - Other barriers related to language, cultural sensitivity
  - Excessive health needs emanating from poor health status

Variables included in MUAC Index

Measure	Source
AAPI Population	**Census 2000**
Primary Care Physician FTEs per 1,000 patients	**Bureau of Primary Health Care, 2003**
AAPI Limited-English Proficiency (LEP)	**Census 2000**
AAPI Poverty	**Census 2000**

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Weights

Indicator	Weight
Poverty	.40
LEP	.25
AAPI % Population	.20
Provider to Patient Ratio	.15
Total	100%

MUAC Index

- **Medically Underserved AAPI Communities (MUAC) =**

  (.40)*% Poverty + (.25)*% Limited English Proficiency + (.20)*% AAPI Population + (.15)*Primary-Care-Provider to 1000 Patient Ratio

- As a comparison: BPHC MUA =

  (.25)*% Poverty + (.20)* Population 65 and over + (.26)*Infant Mortality Rate + (.29)*Primary-Care-Physician to 1000 Patient Ratio

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MUAC Sample

- US Counties (N=2191)
- Selection Criteria: Counties with data for all 4 Indicators (Poverty, LEP, AAPIs, Primary Care Physician to Patient Ratio) of MUAC Index
- Limitations: County Level Health and Social Data Limited

Procedures

- Weights and underserved standard scores were calculated for each variable
- Sum of weights provided the MUAC score for each county
- Sum of underserved standard scores provided the criteria for underserved county
- MUAC scale ranged from 0 to 100 (where 0 = most underserved and 100 = best served or least underserved)

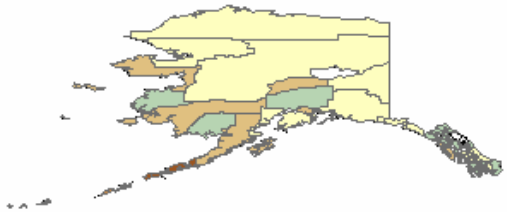
Results

Measure (%)	N	Mean (%)	SD (%)	Max Weight (%)	Weighted Underserved Value
Poverty	2999	14	18	40	11.43
LEP	3005	30	20	25	15.91
AAPI Population	3141	1	3	20	5.45
Physician to Patient Ratio	2301	.40 (ratio)	.28	15	12.75
Total Underserved Standard Weighted/MUAC Score					45.5

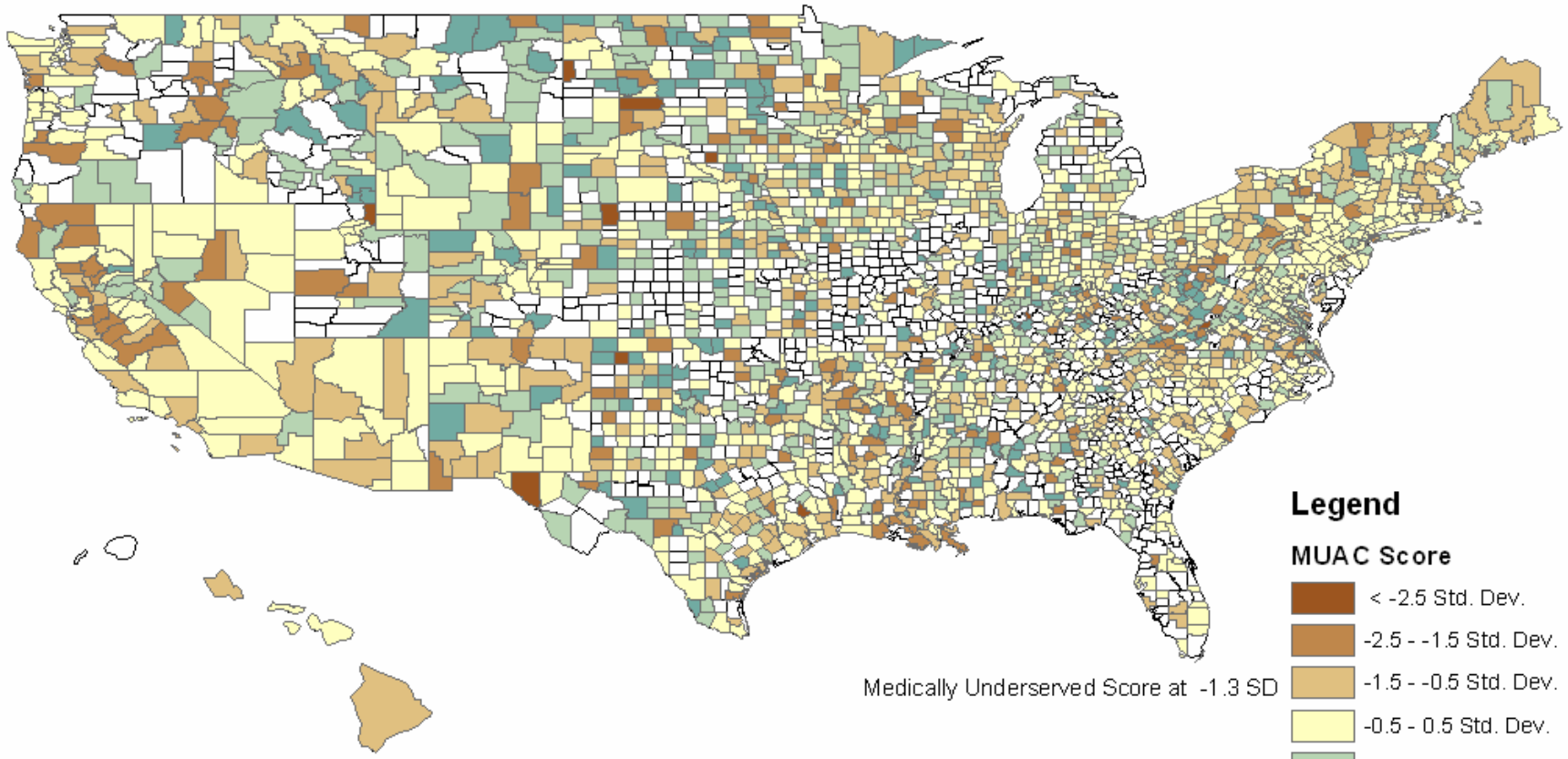
MUAC

- Mean = 67.1
- SD = 16.7
- Range = 9.1 – 98.2
- 12% (266/2191) of all counties are medically underserved areas for AAPIs

Medically Underserved AAPI Communities By County



Top 5 Medically Underserved Counties (N = 894)	MUAC Score (Mean Score = 67.1)	Standard Deviations from Mean (SD = 16.7)
Aleutians East, Alaska	9.1	-3.5 SD
Golden Valley, North Dakota	18.2	-2.9 SD
Corson, South Dakota	18.2	-2.9
Hudspeth, Texas	18.2	-2.9
Rich, Utah	18.2	-2.9



Sources: Bureau of Primary Health Care and U.S. Census 2000

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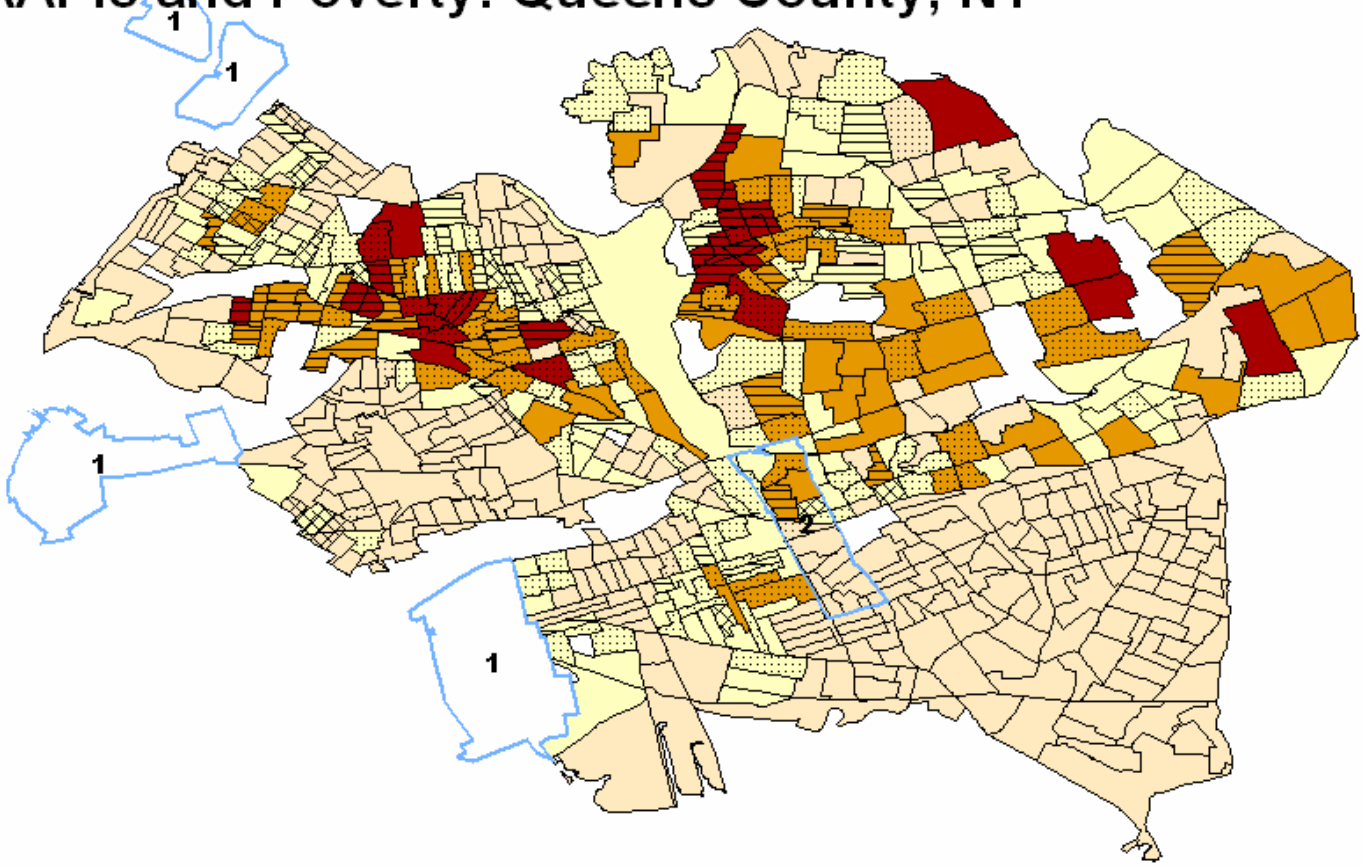
Top 5 Underserved Counties with Largest AAPI Population

County	# AAPI	# LEP	# below Poverty	FTE/Pop Ratio	MUAC Score (mean=67.1)
Queens, NY	392,831 17.6%	183,346 49.5%	62,460 15.8%	0.26402 1:3,800	44.9
Alameda, CA	304,360 21.1%	111,945 40.0%	33,487 11.2%	0.05057 1:19,800	41.3
San Francisco, CA	243,409 31.3%	120,459 51.6%	26,429 10.9%	0.06026 1:16,600	33.1
Kings, NY	187,283 7.6%	105,215 60.3%	48,464 26.0%	.19272 1:5,200	33.7
New York, NY	145,607 9.5%	67,988 48.8%	32,742 23.5%	.21293 1:4,700	42.1

Highlighted scores are below the standard underserved subscores.

AAPIs and Poverty: Queens County, NY



Legend

AAPIs Per Census Tract

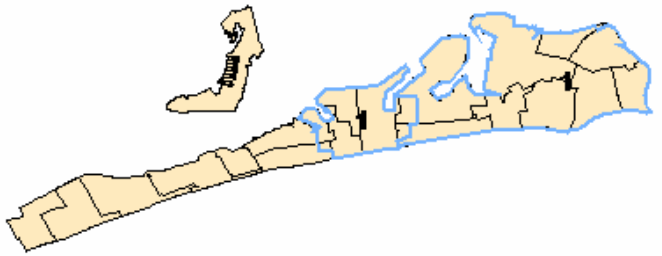
- 0 - 400
- 400 - 1,000
- 1,000 - 2,250
- > 2,250

Percent of AAPIs in Poverty

- 0% - 10%
- 10% - 20%
- 20% - 30%
- > 30%

\# Number of Free or Low-Cost Primary Care Facilities in Zip Code Area

MUAC Score	34.71
Number of AAPIs in Queens	392,831
Percent of AAPIs in Queens	17.6%
Percent of AAPIs with LEP	49.5%
Percent of AAPIs in Poverty	48.1%
Patient to Primary Care Provider Ratio	3,800 per FTE



Sources: Bureau of Primary Health Care 2003, Community Health Care Association of New York 2004, and U.S. Census 2000

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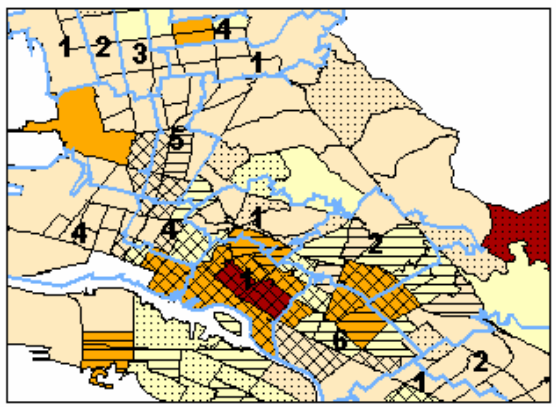
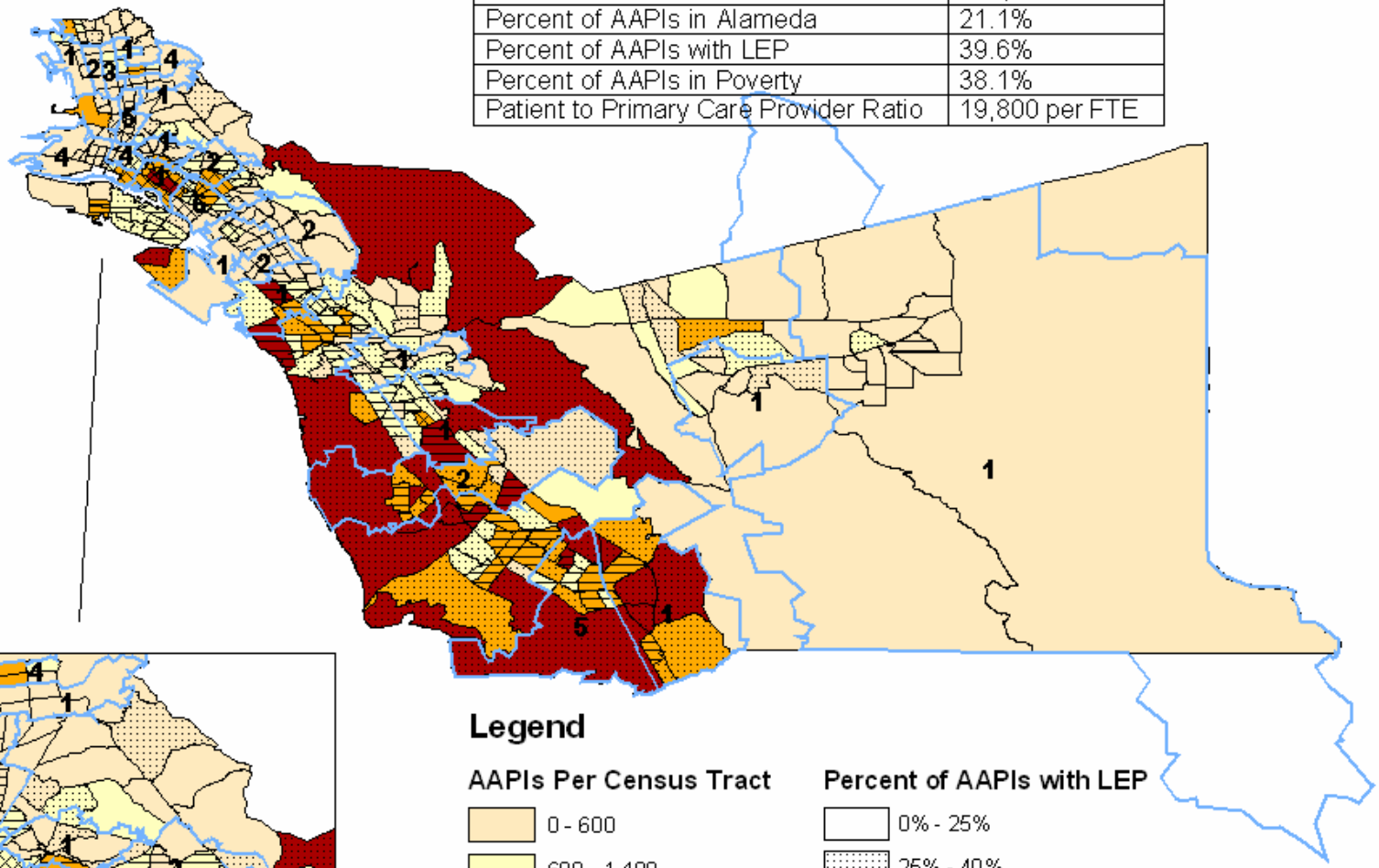
Queens, NY

- 15% of Asians in Queens had needed medical care at least once in the last 12 months and could not get it, compared to 7.8% of Whites.
- 33% of Asian women ages 40 and older, compared to 22% of Whites, have not had a mammogram within the last 2 years.
- Per capita income for Asians and NHOPIs were $16,902 and $12,957, compared to $26,156 for non-Hispanic Whites.
- 80% of AAPIs are foreign-born.
- 1 of 4 AAPIs 25 years and older have less than a high school education.
- 5.7% of AAPI civilians were unemployed in 1999.
- 15% of Queens residents were uninsured in 2002.

AAPIs and Limited-English Proficiency: Alameda County, CA

MUAC Score	32.04
Number of AAPIs in Alameda	304,360
Percent of AAPIs in Alameda	21.1%
Percent of AAPIs with LEP	39.6%
Percent of AAPIs in Poverty	38.1%
Patient to Primary Care Provider Ratio	19,800 per FTE





Legend

AAPIs Per Census Tract

- 0 - 600
- 600 - 1,400
- 1,400 - 2,500
- > 2,500

Percent of AAPIs with LEP

- 0% - 25%
- 25% - 40%
- 40% - 60%
- > 60%

\# Number of Free or Low-Cost Primary Care Facilities in Zip Code Area

Sources: Bureau of Primary Health Care 2003, CA Office of Statewide Health Planning and Development 2003, and U.S. Census 2000

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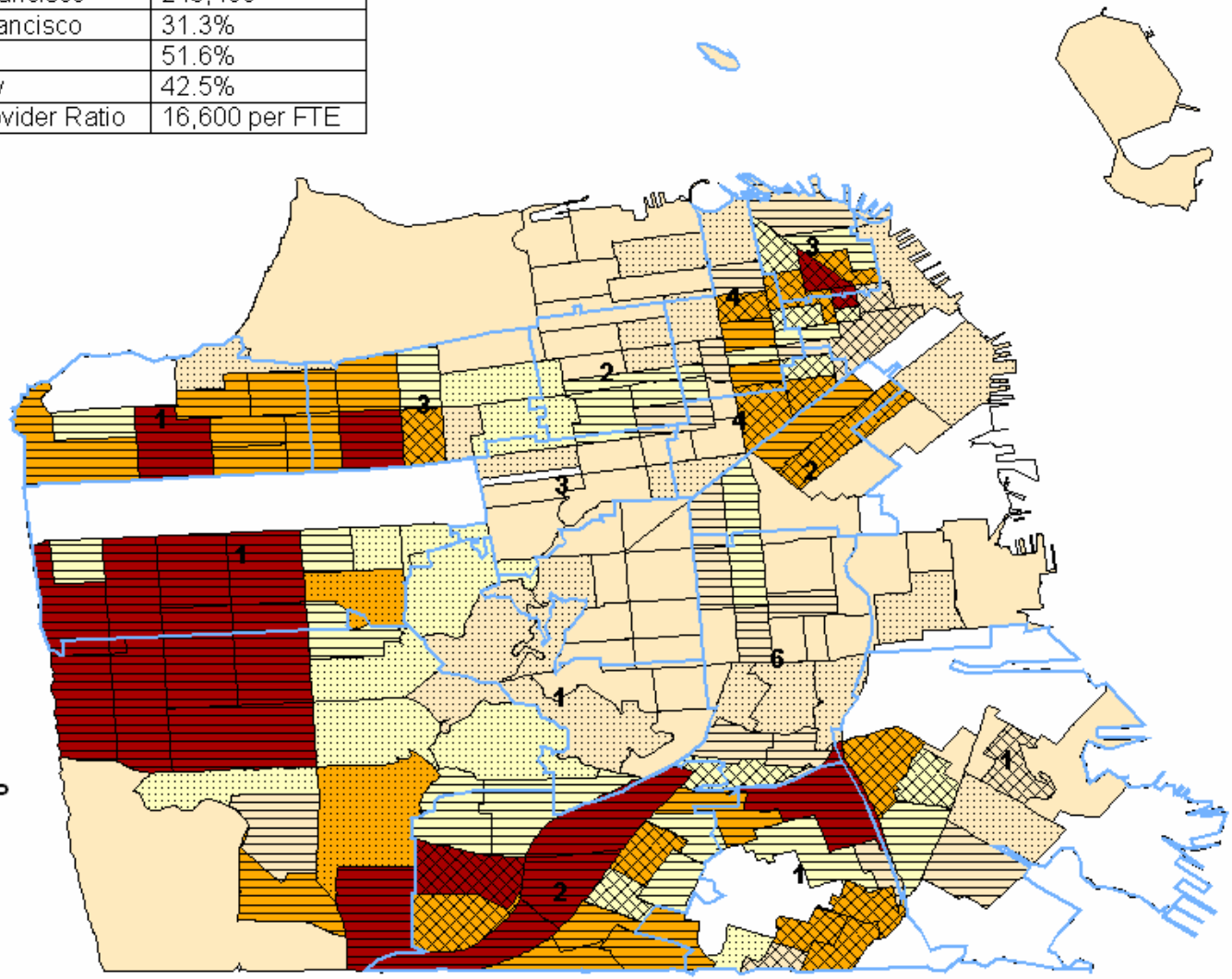
Alameda, CA

- 18% of Asians in Alameda County were uninsured in 1997, compared to 11% of Non-Latino Whites.
- 82% of births to Cambodian women, 61% of births to Vietnamese women, and 43% of births to Pacific Islander women in Alameda were funded by Medi-Cal, dramatically exceeding the White rate at 16%.
- The rate of stroke deaths among AAPIs is 31.2, drastically exceeding the Healthy People 2000 objective of 20 or less.
- 45% and 31% of non-citizen children and citizen children with non-citizen parents were uninsured in 1997.
- 66% of AAPIs in Alameda are foreign-born.

AAPIs and Limited-English Proficiency: San Francisco County, CA

MUAC Score	22.58
Number of AAPIs in San Francisco	243,409
Percent of AAPIs in San Francisco	31.3%
Percent of AAPIs with LEP	51.6%
Percent of AAPIs in Poverty	42.5%
Patient to Primary Care Provider Ratio	16,600 per FTE



Sources: Bureau of Primary Health Care 2003, CA Office of Statewide Health Planning, and Development 2003 and U.S. Census 2000

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San Francisco, CA

- AAPIs represent the 2nd largest, and fastest growing racial/ethnic group.
- 33% have less than a high school education.
- 64% of families with children living in single-room occupancy hotels (low-income housing) are Asian families. Health problems associated with living in these hotels are increased breathing/respiratory problems, lack of light, and sleep deprivation.
- 69% of AAPIs are foreign-born.
- 12% of Filipino mothers gave birth to a child with low birthweight, compared to 5% of White mothers.

Conclusions & Implications

- Results can be used to address AAPI health needs (e.g. CHC expansion, improvement of health literacy)
- Reducing health disparities for AAPIs starts by increasing community health services in medically underserved AAPI communities
- Need more specific AAPI health data to better address the health component in index (e.g. health insurance, infant mortality)
- Need disaggregated AAPI data to address wide variety of AAPI ethnicities
- Index is specific to AAPIs. However, it can be applied to populations with similar characteristics.

Limitations

- Project was limited by data that were publicly available by county. Index would improve with better data on AAPI health.
- Poverty may be confounded for AAPIs as they tend to be concentrated in larger areas that have higher cost of living, thus possibly underestimating the number of AAPIs in poverty

Future Studies

- Use data with multiple-year averages
- Continue to seek and use more recent data
- Compare AAPIs with other racial groups
- Conduct analysis with AAPI subgroups (limited data)
- If appropriate data, conduct GIS spatial analyses
- Use different levels of analysis

Thank you

- Junko Honma, AAPCHO
- All the government and community staff who provided us with data