

# Health Disparities in King County: How do we compare? (work in progress)

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# Background

- Federal stimulus grant proposals
- Obesity and smoking prevention
- Looked at disparities in HEAL, smoking compared to other metro counties
- What we found surprised us
- Not finished work; start of discussion

# Data sources, analysis software

## Data sources:

- Behavioral Risk Factor Surveillance System, Selected Metropolitan/Micropolitan Areas
- National Center for Health Statistics
- American Community Survey, US Census Bureau

## Analysis:

- VistaPHw (PHSKC) (births, deaths)
- Stata, Version 10 (BRFSS)

# Indicators

- No Health Insurance
- Chronic Disease
  - Obesity
  - No Leisure-time Physical Activity in Past Month
  - Current Smoker
  - Diabetes Prevalence
  - Fruit/Vegetable Consumption

Maternal & Child Health

Low Birth Weight

Infant Mortality

Preterm Birth

Late/no Prenatal Care

Life Expectancy

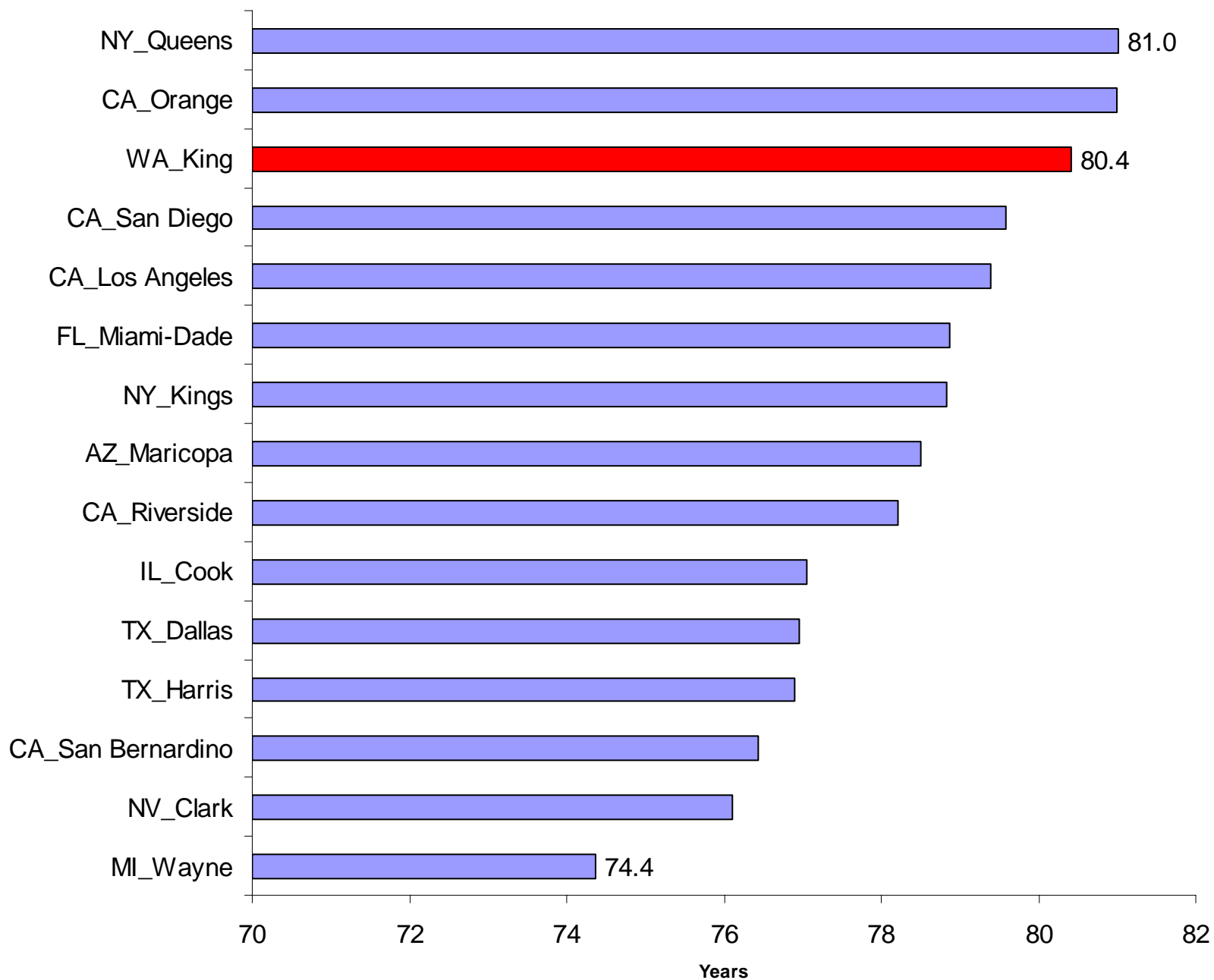
# Comparison: 15 Largest U.S. Counties

- Clark, Nevada--Las Vegas
- Cook, Illinois--Chicago
- Dallas, Texas--Dallas
- Harris, Texas--Houston
- King, Washington
- Kings, New York— Brooklyn, NYC
- Los Angeles, California
- Maricopa, Arizona-- Phoenix
- Miami-Dade, Florida
- Orange, California-- Anaheim, Santa Ana, Irvine
- Queens, New York—Queens, NYC
- Riverside, California--Riverside
- San Bernardino, California--San Bernardino
- San Diego, California-- San Diego
- Wayne, Michigan—Detroit

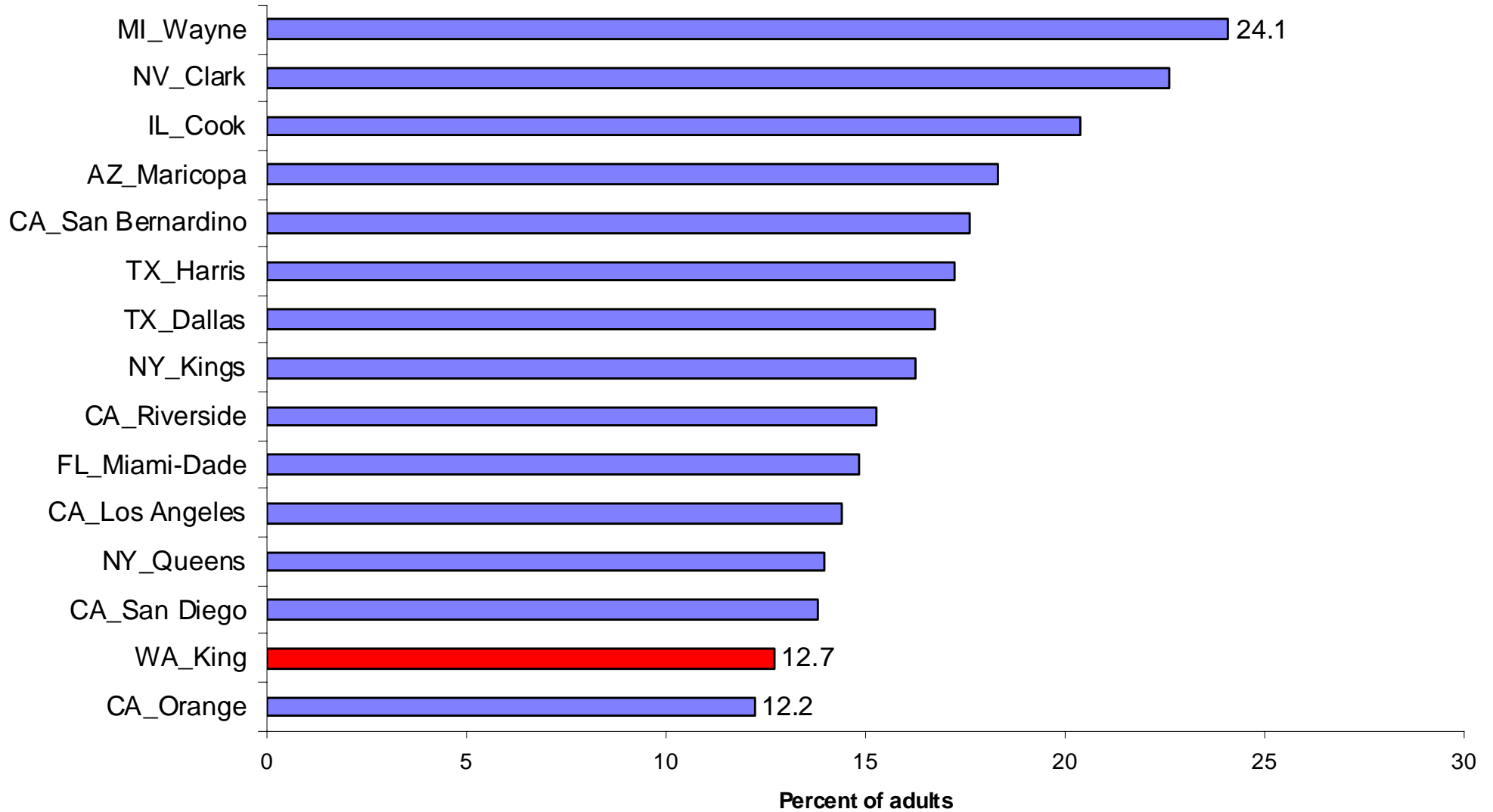
# Methodology

- Examined rates and rate ratios by
  - Race/ethnicity
  - Income
  - Education
  - Poverty
- Ranked 15 largest counties by rate ratio
- Dropped counties from ranking if <50 respondents/group
- Explored other disparities measures

**Favorable rates in King County:**  
**Life expectancy at birth, 15 largest U.S. counties, 2005**



**Favorable rates in King County: Current smokers, Age 18 and older,  
15 largest U.S. counties, 2004-2008 average**



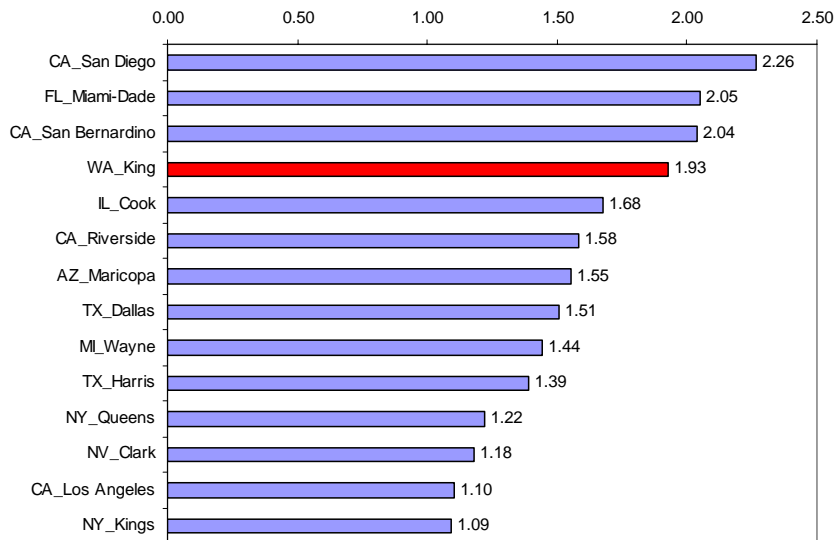


# Calculation of rate ratios

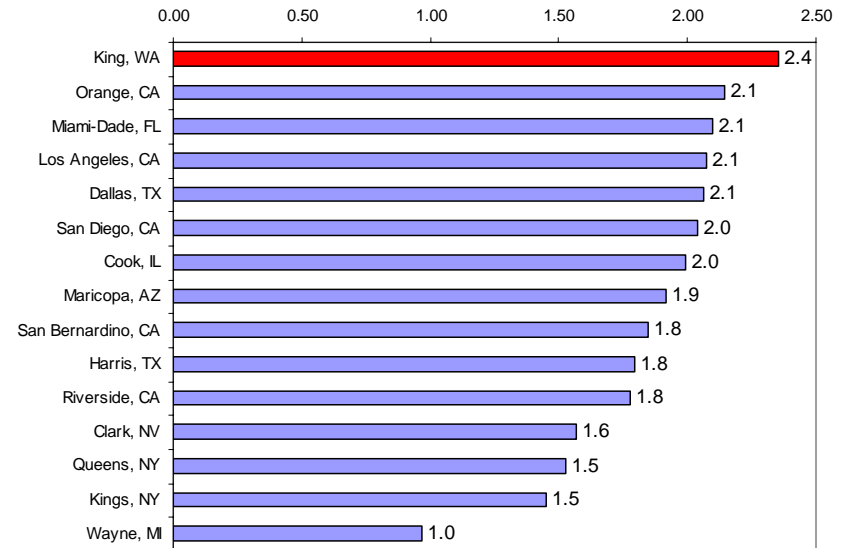
- One rate divided by another
- More advantaged group is the denominator or “reference group”
- If rate ratio = 1, the two rates are equal
- If rate ratio > 1, indicates disparities
- Higher rate ratio means more relative disparity

# Ratio of Adult Physical Inactivity Prevalence, by Race/Ethnicity, Poverty and Education, 15 Largest Counties in US, 2004-2008 Average

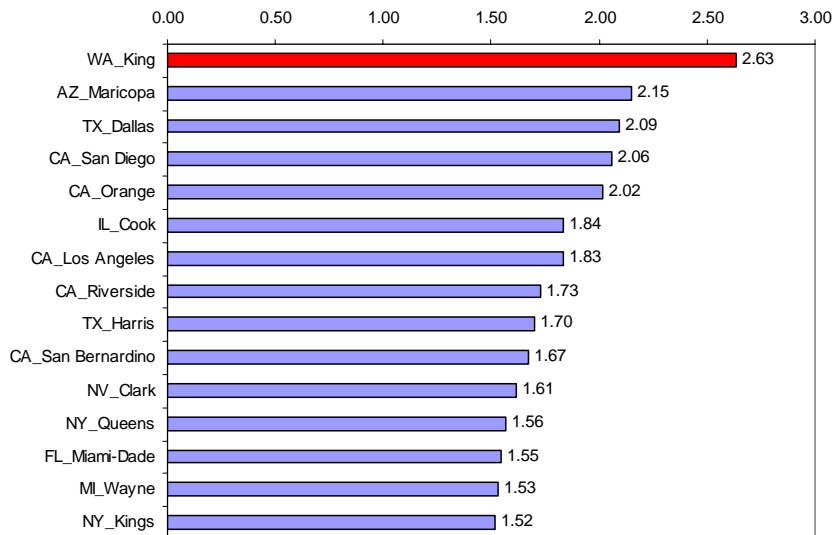
Ratio of Physical Inactivity, Black NH to white NH, 15 Largest Counties in US, 2004-2008



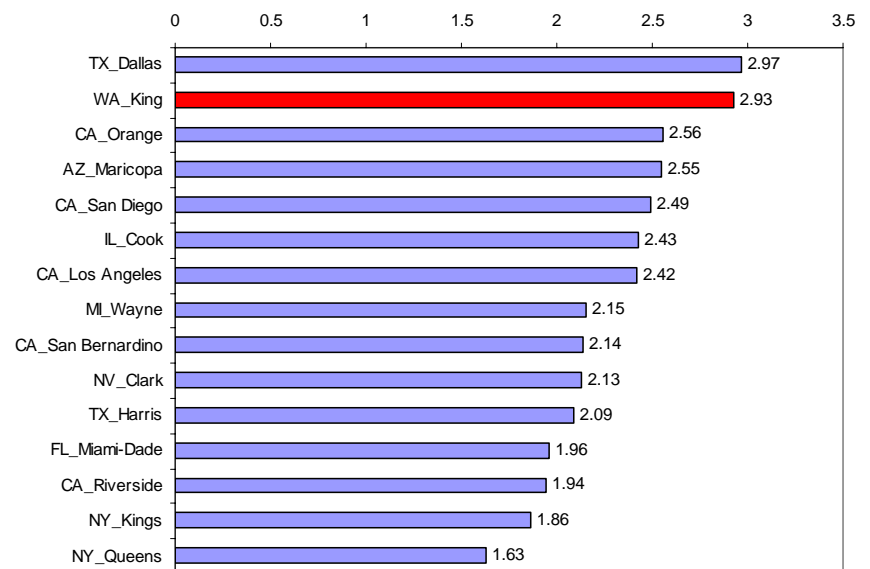
Ratio of Adult Physical Inactivity Prevalence, Hispanic/Latino to white non-Hispanic, 15 Largest Counties in US, 2004-2008 Average



Ratio of Physical Inactivity, Below to Above Poverty, 15 Largest Counties in US, 2004-2008



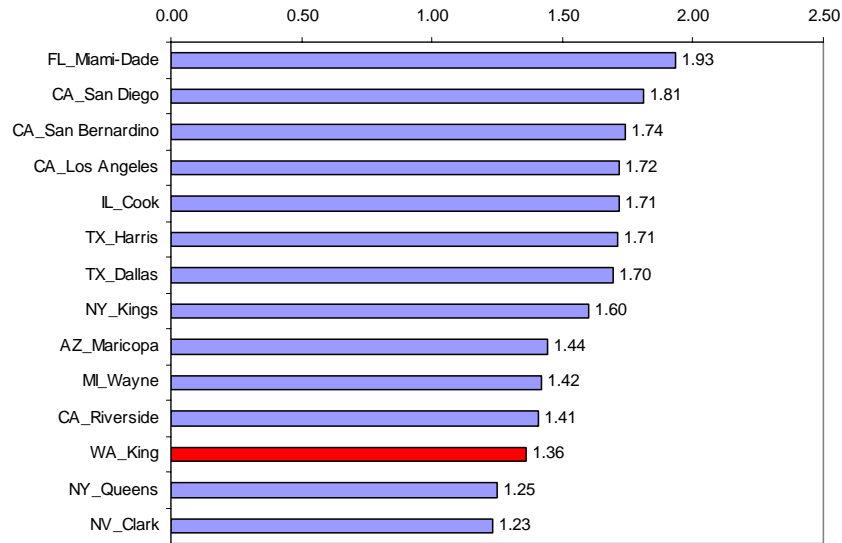
Ratio of Physical Inactivity, High School or Less vs. College Educated, 15 Largest Counties in US, 2004-2008



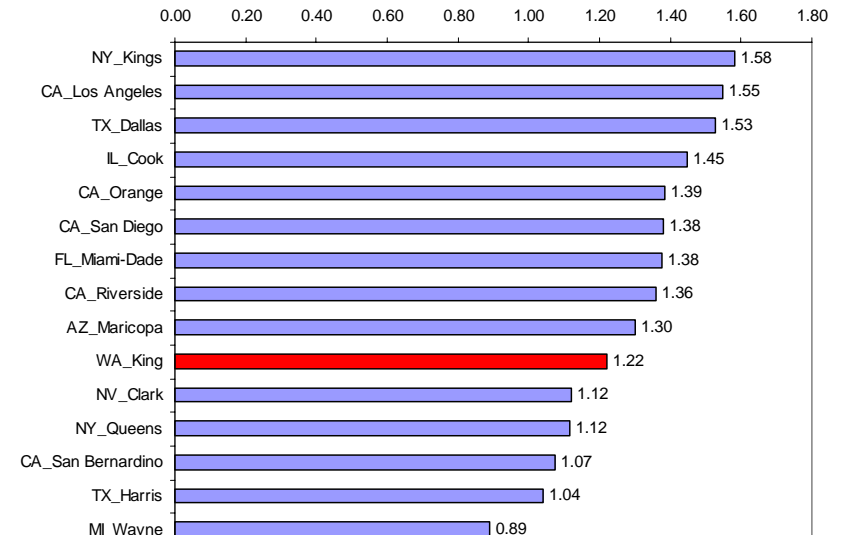
Only large counties with >50 respondents by race shown. Data Source: Behavioral Risk includes oversamples not included in national dataset.

# Ratio of Adult Obesity Prevalence, by Race/Ethnicity, Poverty and Education, 15 Largest Counties in US, 2004-2008 Average

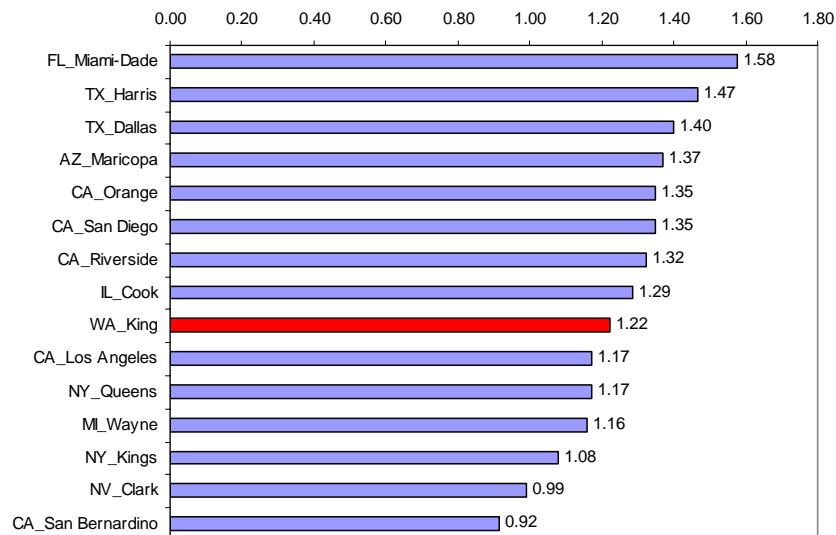
**Ratio of Obesity Prevalence, Black NH to white NH, 15 Largest Counties in US, 2004-2008**



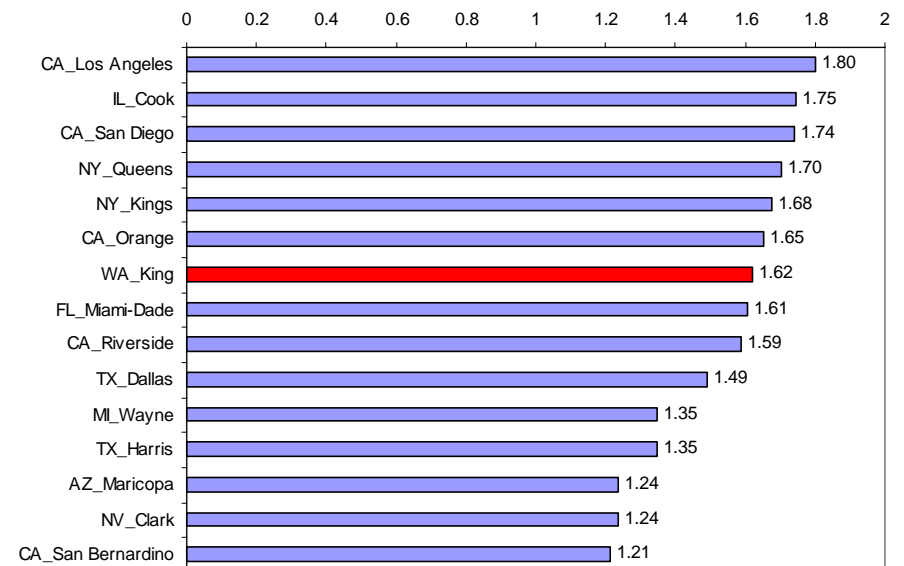
**Ratio of Obesity Prevalence, Hispanic/Latino to white NH, 15 Largest Counties in US, 2004-2008**



**Ratio of Obesity Prevalence, Below to Above Poverty, 15 Largest Counties in US, 2004-2008**

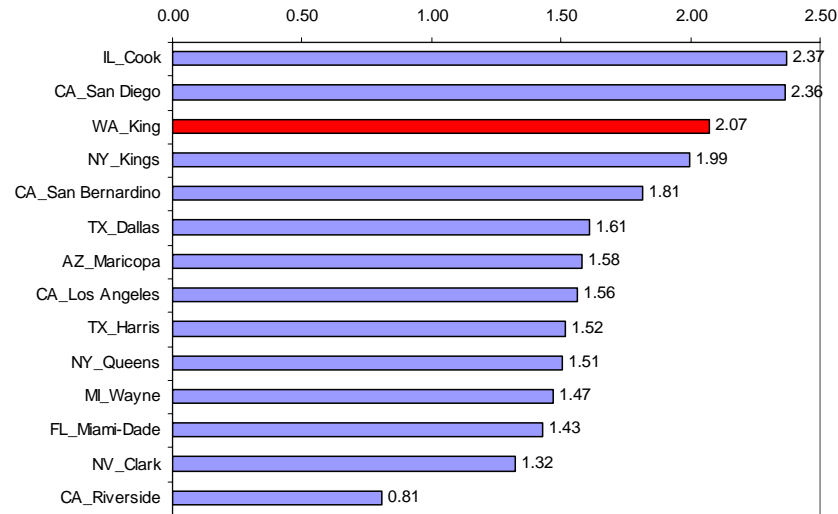


**Ratio of Obesity Prevalence, High School or Less vs. College Educated, 15 Largest Counties in US, 2004-2008**

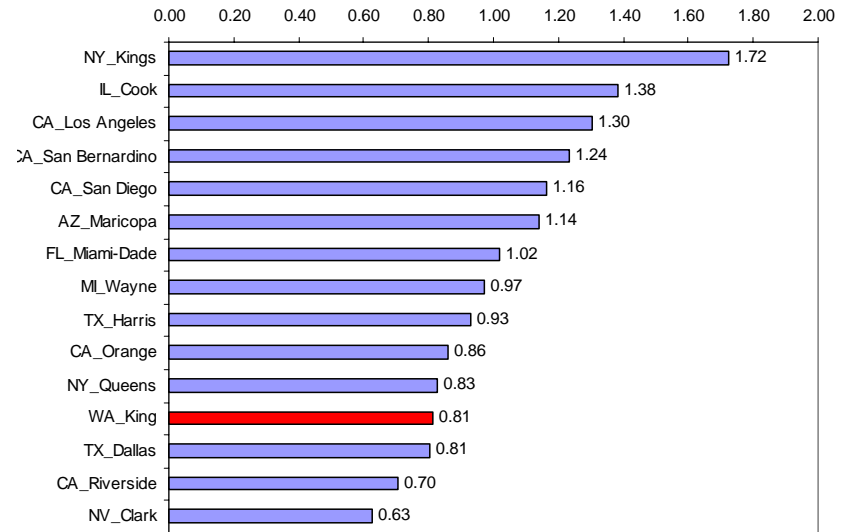


# Ratio of Adult Diabetes Prevalence, by Race/Ethnicity, Poverty and Education, 15 Largest Counties in US, 2004-2008 Average

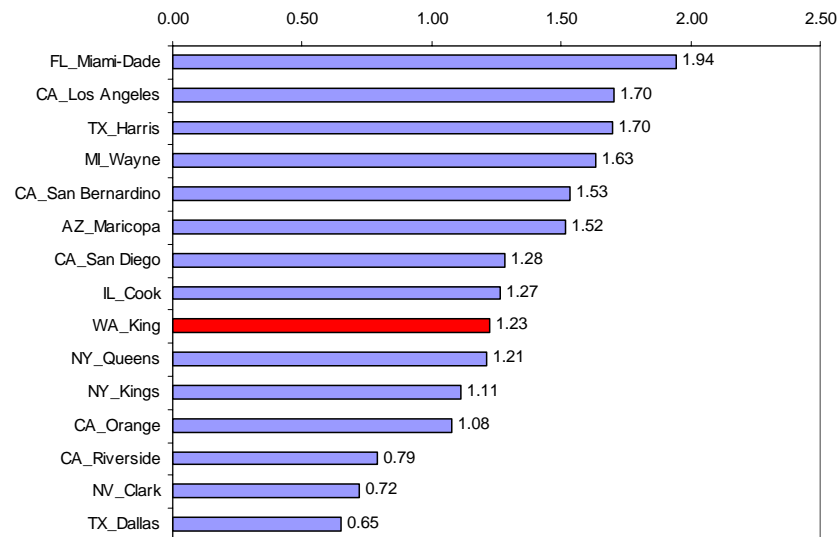
**Ratio of Diabetes Prevalence, Black NH to white NH, 15 Largest Counties in US, 2004-2008**



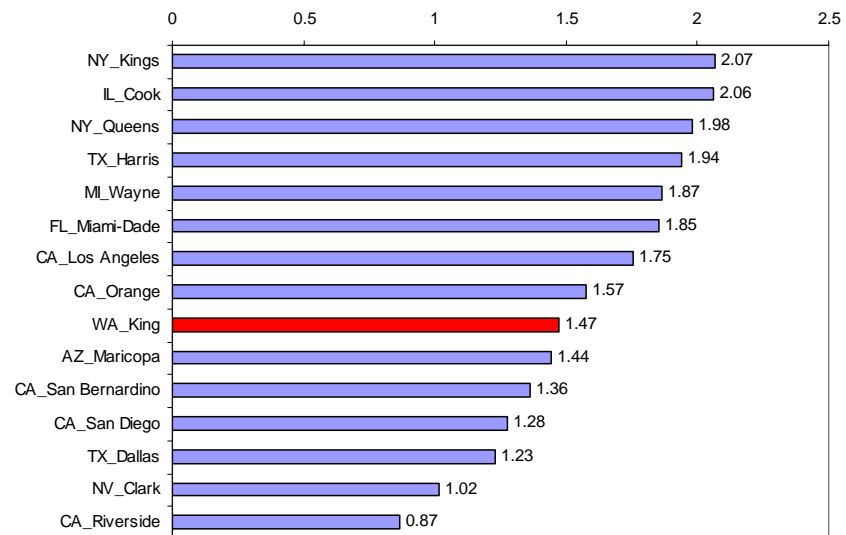
**Ratio of Diabetes Prevalence, Hispanic/Latino to white NH, 15 Largest Counties in US, 2004-2008**



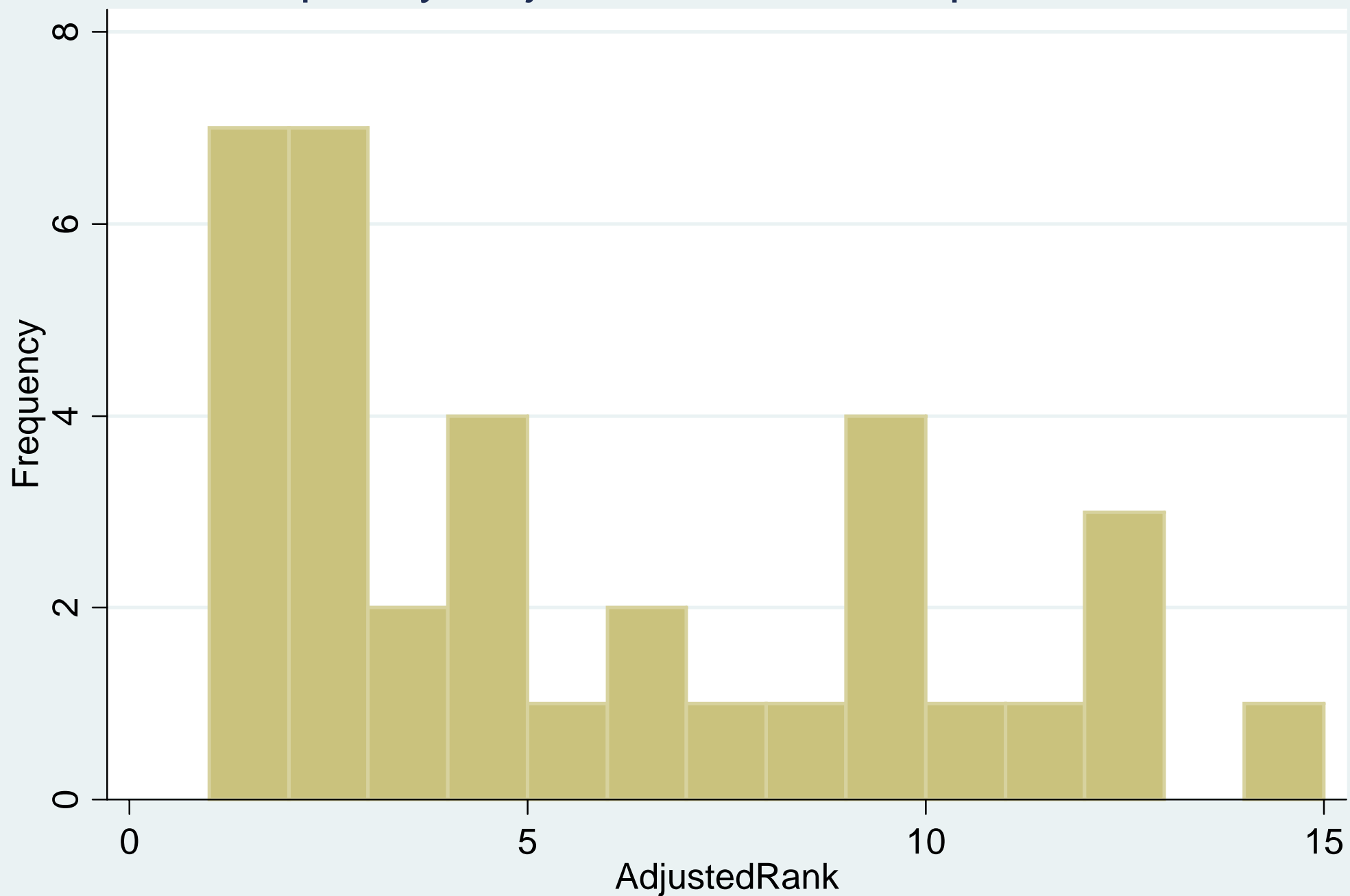
**Ratio of Diabetes Prevalence, Below to Above Poverty, 15 Largest Counties in US, 2004-2008**



**Ratio of Diabetes Prevalence, High School or Less vs. College Educated, 15 Largest Counties in US, 2004-2008**



## Frequency, adjusted ranks, all disparities ratios



# Rate Ratio Ranks (I)

Measure	Ratio	Rank (adj.)
Life Exp.	Black/white	5
Life Exp.	Hispanic/white	2
Low birthweight	Black/white	6
Low birthweight	Hispanic/white	4
Preterm birth	Black/white	15
Preterm birth	Hispanic/white	9
Late/no Prenatal Care	Black/white	6
Late/no Prenatal Care	Hispanic/white	3
Infant Mortality	Black/white	12
Infant Mortality	Hispanic/white	2
Obesity	Black/white	13
Obesity	Hispanic/white	10
Obesity	Low/High Income	11
Obesity	Poverty/Not Poverty	9
Obesity	HS/College Deg.	7
Diabetes	Black/white	3
Diabetes	Hispanic/white	12
Diabetes	Low/High Income	8
Diabetes	Poverty/Not Poverty	9
Diabetes	HS/College Deg.	9

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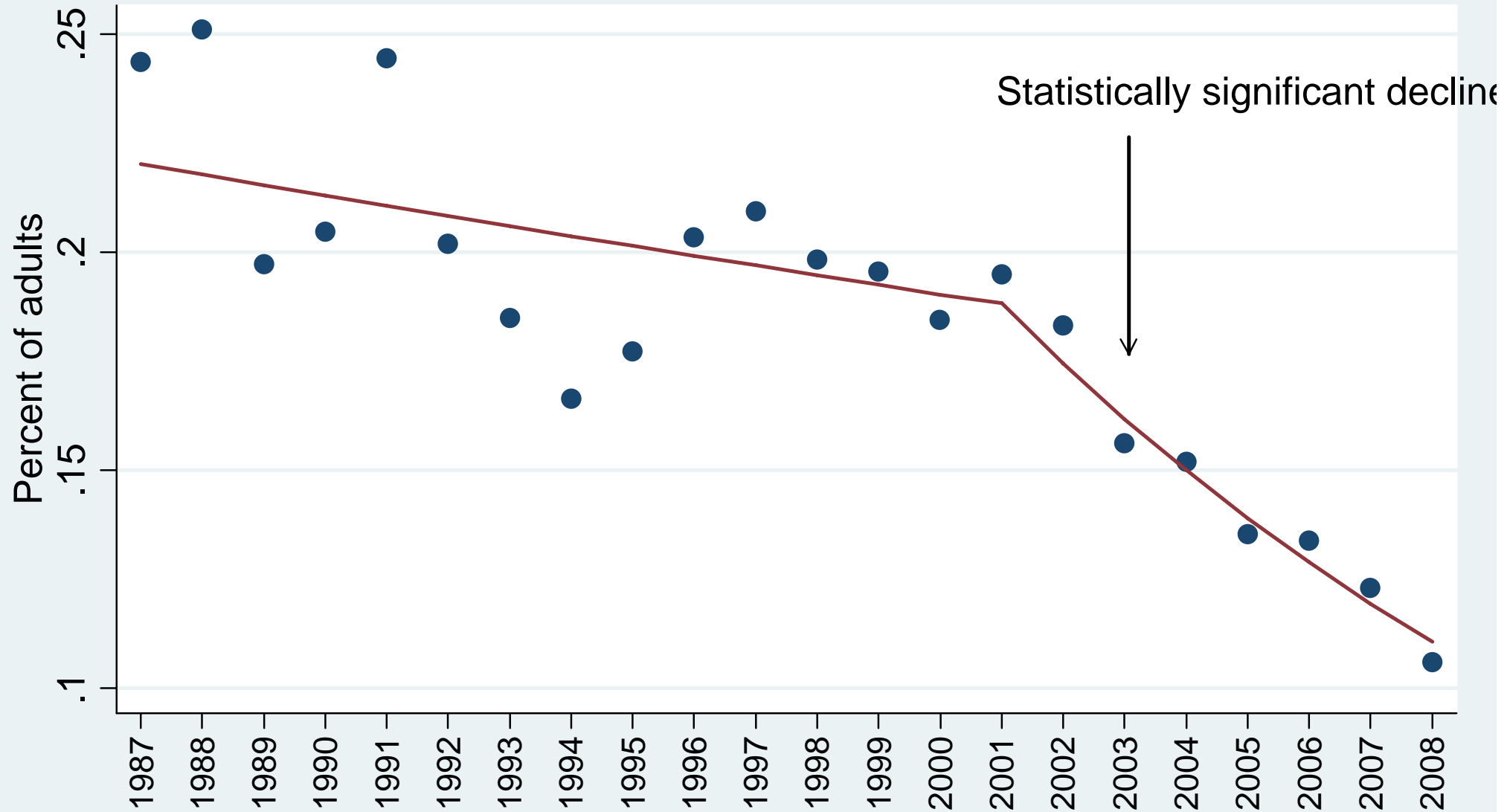
# Rate Ratio Ranks (II)

Measure	Ratio	Rank (adj.)
No physical act.	Black/white	4
No physical act.	Hispanic/white	1
No physical act.	Low/High Income	4
No physical act.	Poverty/Not Poverty	1
No physical act.	HS/College Deg.	2
Smoker	Black/white	1
Smoker	Hispanic/white	2
Smoker	Low/High Income	1
Smoker	Poverty/Not Poverty	2
Smoker	HS/College Deg.	1
Uninsured	Black/white	1
Uninsured	Hispanic/white	2
Uninsured	Low/High Income	2
Uninsured	Poverty/Not Poverty	1
Uninsured	HS/College Deg.	4

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# Smoking Prevalence, Adults

King County, 1987-2008

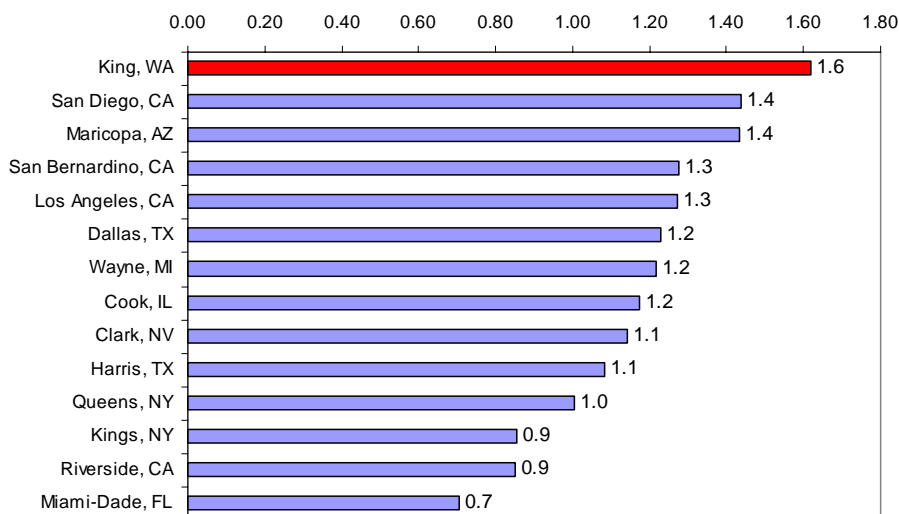


Source: BRFSS

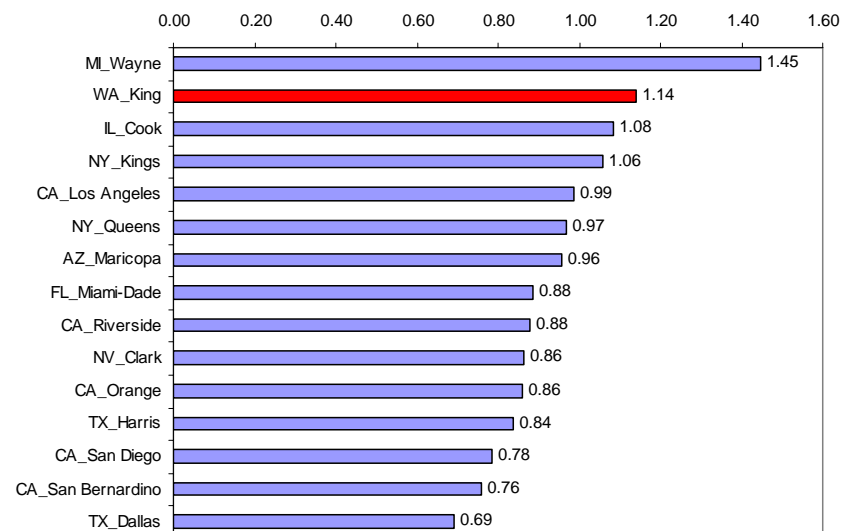


# Ratio of Adult Smoking Prevalence, by Race/Ethnicity, Poverty, Income and Education, 15 Largest Counties in US, 2004-2008 Average

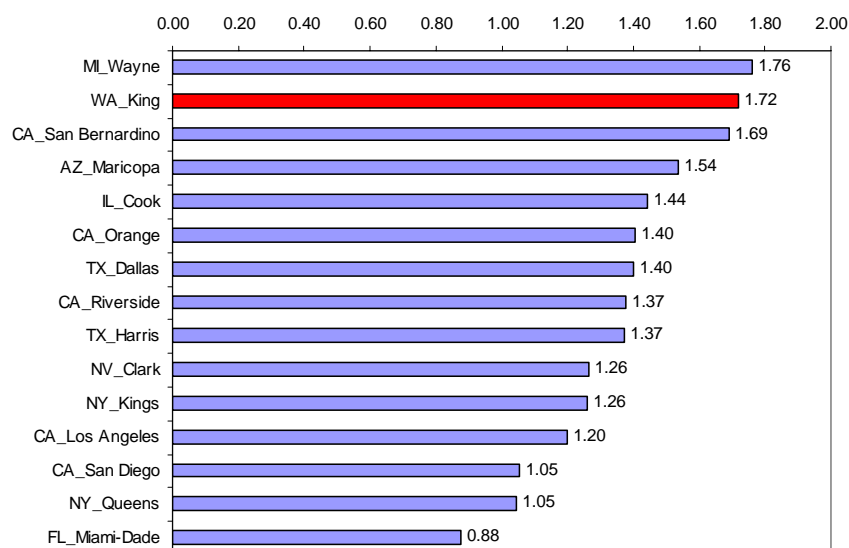
**Ratio of Adults Smoking Prevalence, Black/African-American non-Hispanics to white non-Hispanics, 15 Largest Counties in US, 2004-2008 Average**



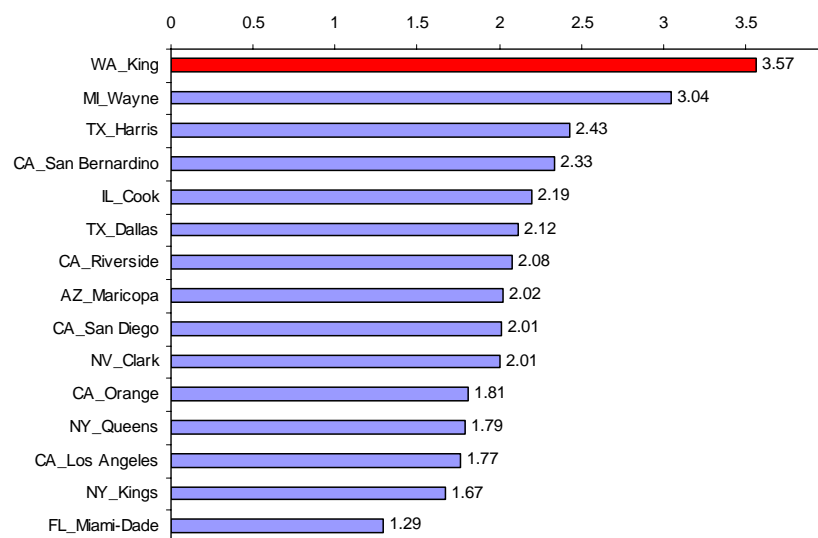
**Ratio of Current Smokers, Hispanic/Latino to white NH, 15 Largest Counties in US, 2004-2008**



**Ratio of Current Smokers, Households Below to Above Poverty Level, 15 Largest Counties in US, 2004-2008**

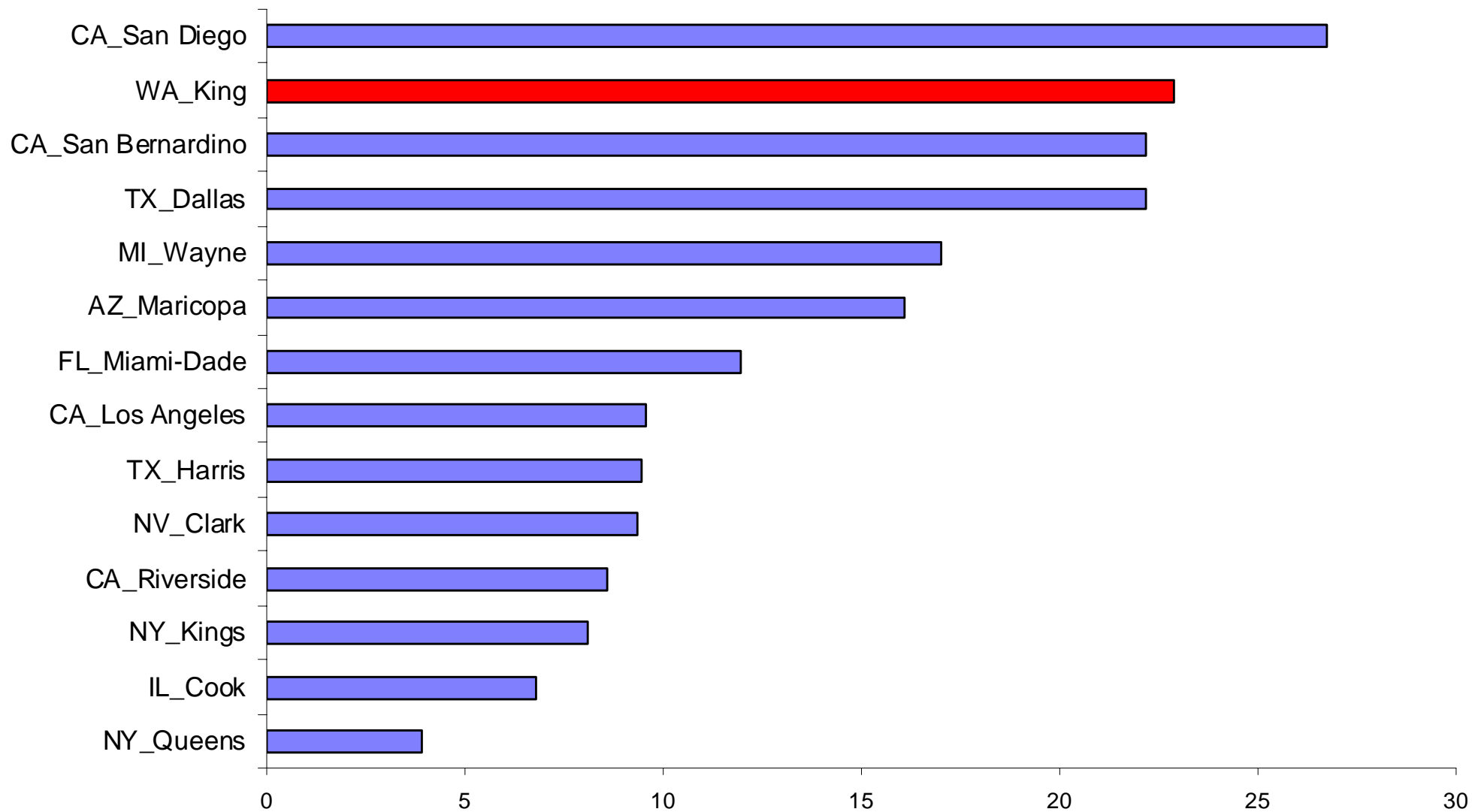


**Ratio of Adult Smokers, High School or Less vs. College Educated, 15 Largest Counties in US, 2004-2008**

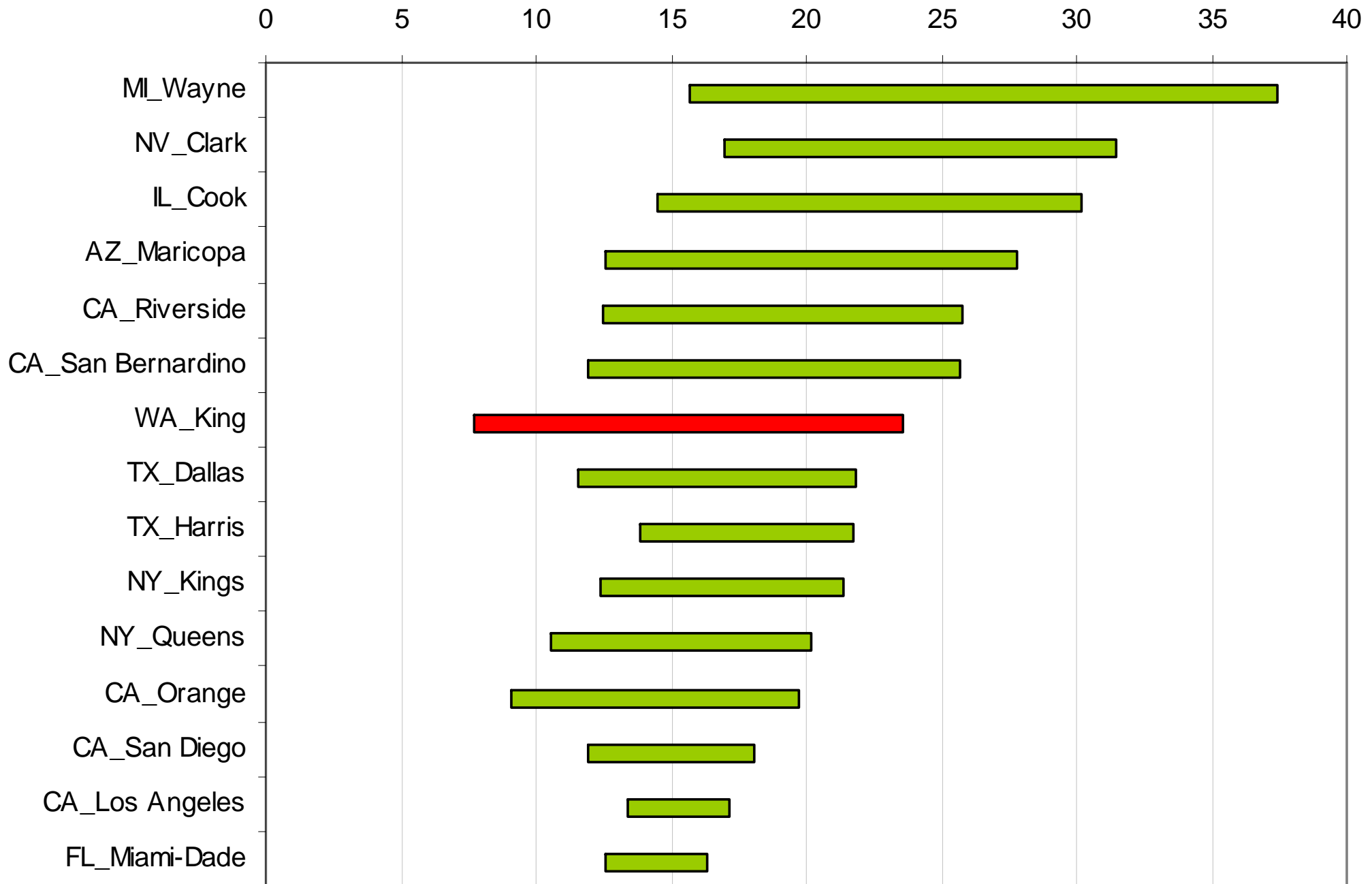


Only large counties with >50 respondents by race shown. Data Source: Behavioral Risk Factor Surveillance System, CDC. PHSKC results may differ as local dataset includes oversamples not included in national dataset.

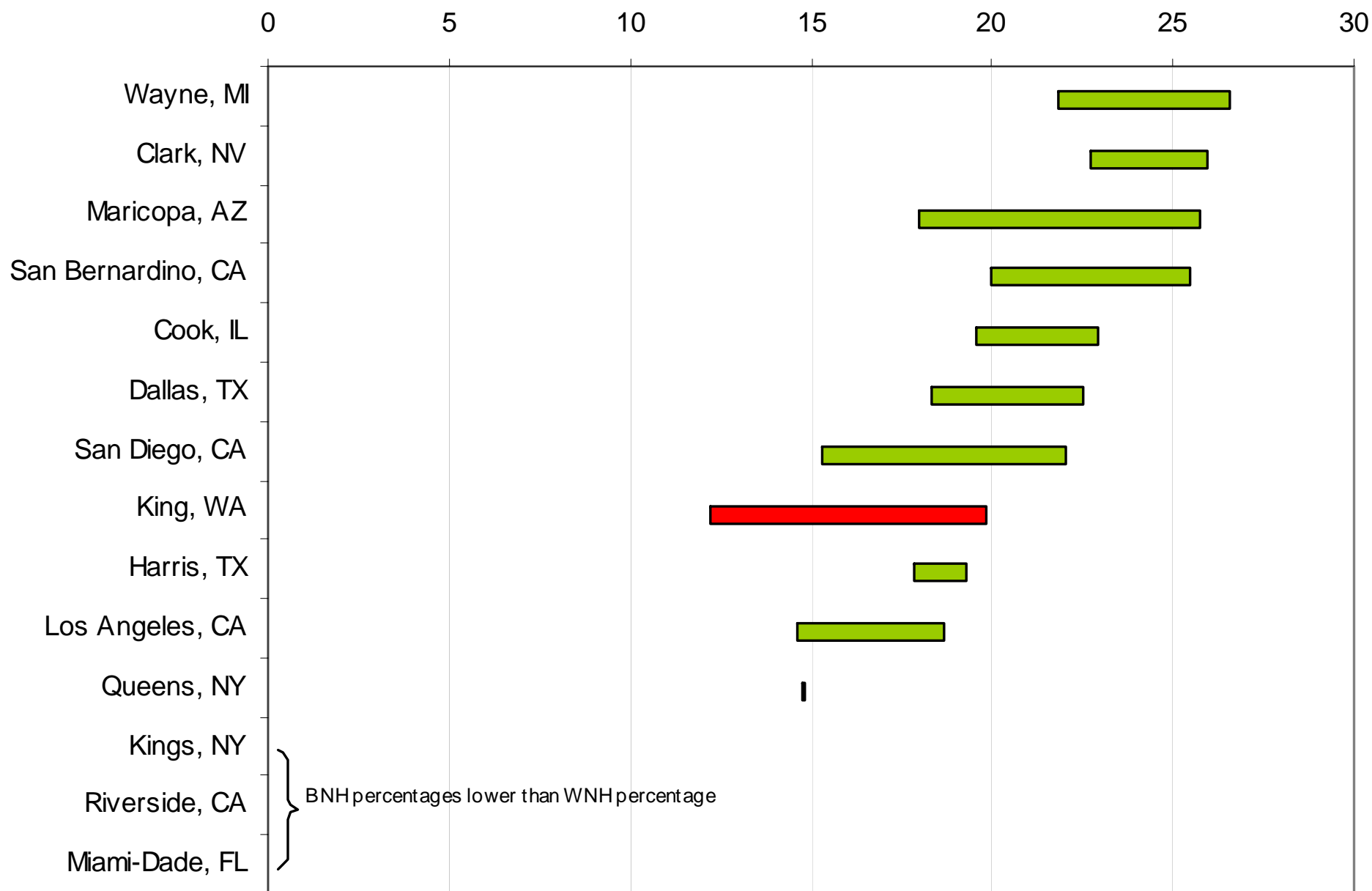
# Index of Racial Disparity, Adult Smoking Prevalence, 15 Largest U.S. Counties, 2004-2008 Average



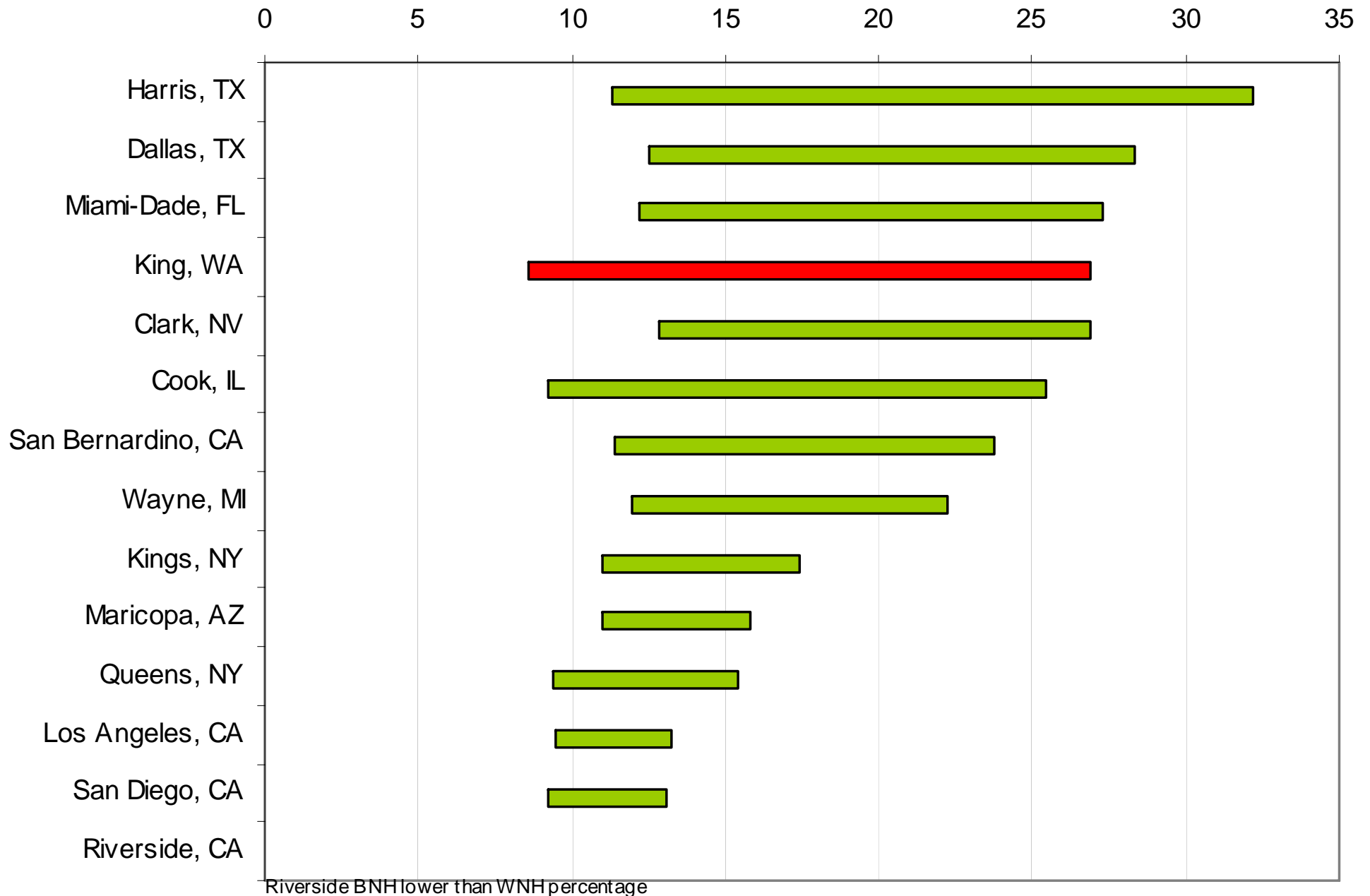
# Percent of Adults Smokers, Annual Household Income <\$15,000 and \$75,000+, 15 Largest Counties in US, 2004-2008



# Percent of Adults Smokers, Black NH and white NH, 15 Largest Counties in US, 2004-2008

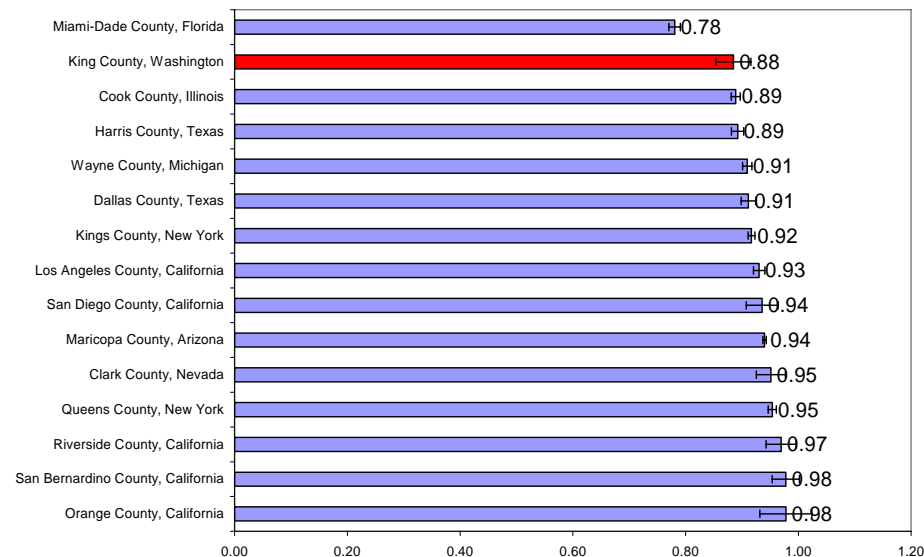


# Percent of Adults 18-64 Uninsured, Black NH and White NH, 15 Largest Counties in US, 2004-2008



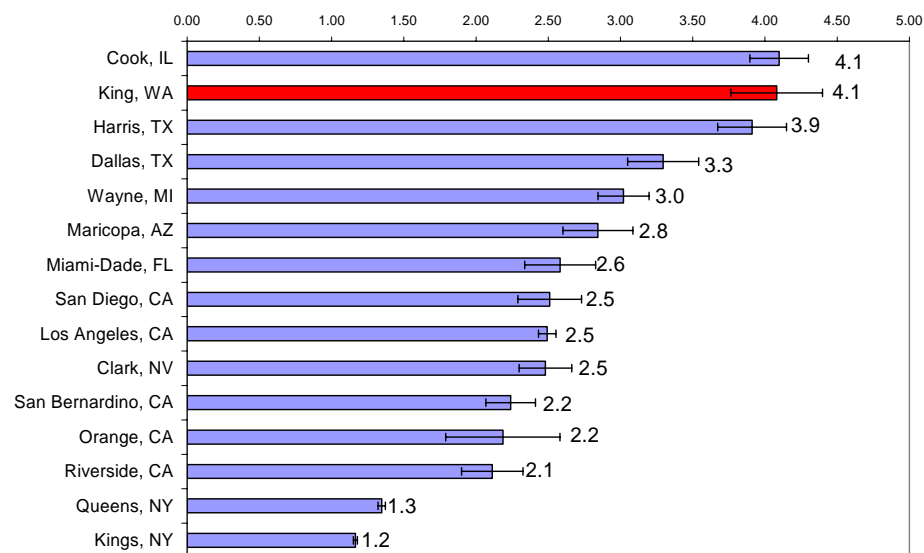
# Ratio of Educational Attainment, Income, Poverty

**Ratio of Percent Attaining High School Degree or Higher Education, Black/African American to White Non-Hispanic, 15 Largest Counties in United States, 2006-2008 Average**



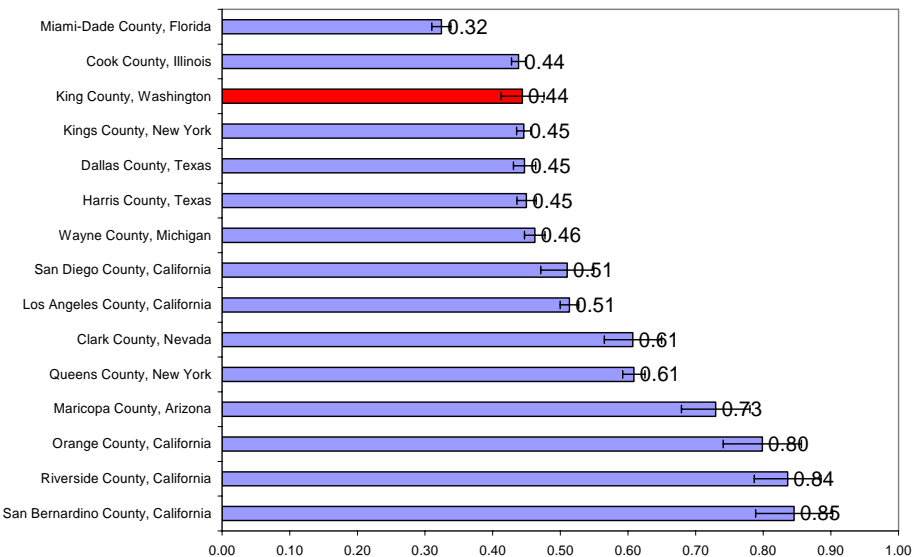
Data source: 2006-2008 American Community Survey, US Census Bureau

**Ratio of Percent in Poverty, Black/African-American to White non-Hispanic, 15 Largest Counties in US, 2006-2008 Average**



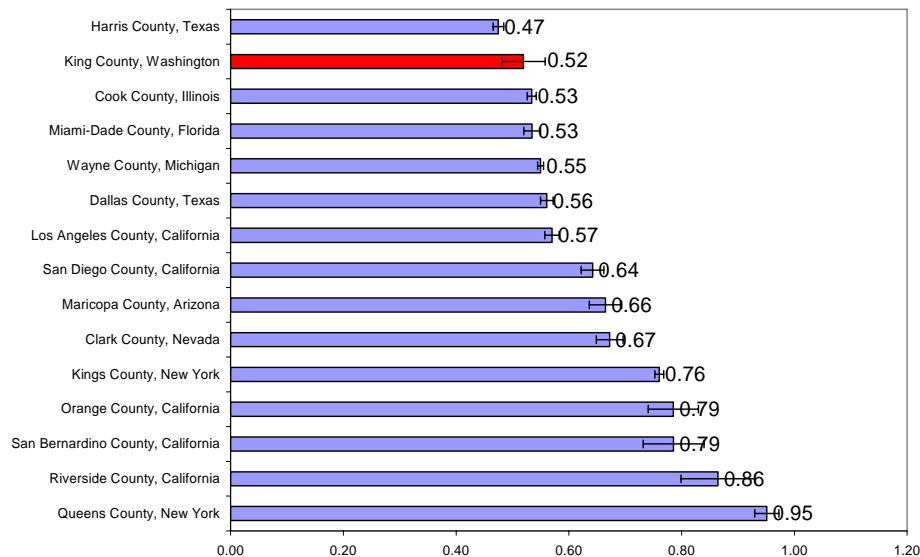
Data source: 2006-2008 American Community Survey, US Census Bureau

**Ratio of Percent Attaining Bachelors Degree or Higher Education, Black/African American to White Non-Hispanic, 15 Largest Counties in United States, 2006-2008 Average**



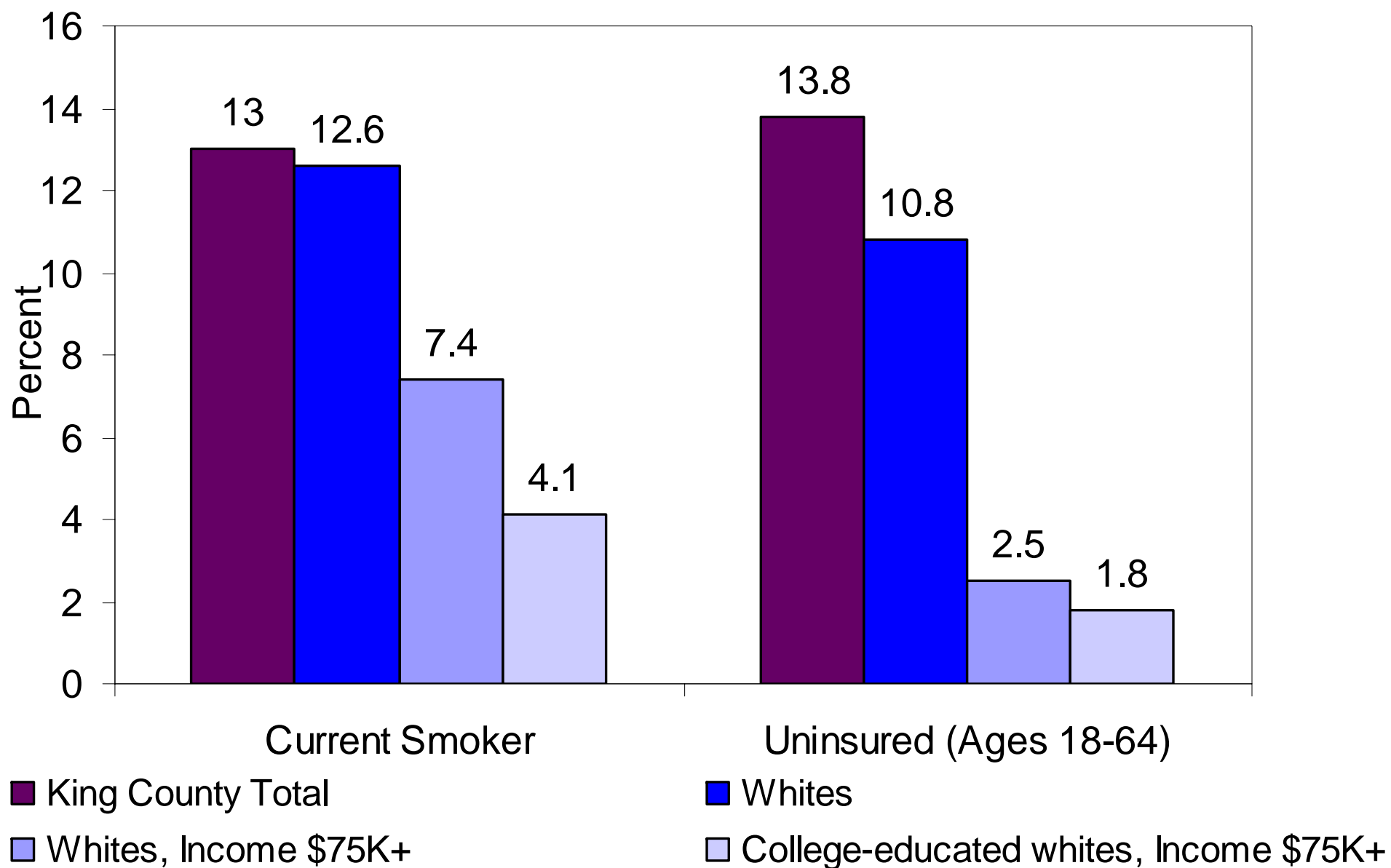
Data source: 2006-2008 American Community Survey, US Census Bureau

**Ratio of Median Household Income, Black/African American to White Non-Hispanic, 15 Largest Counties in United States, 2006-2008 Average**

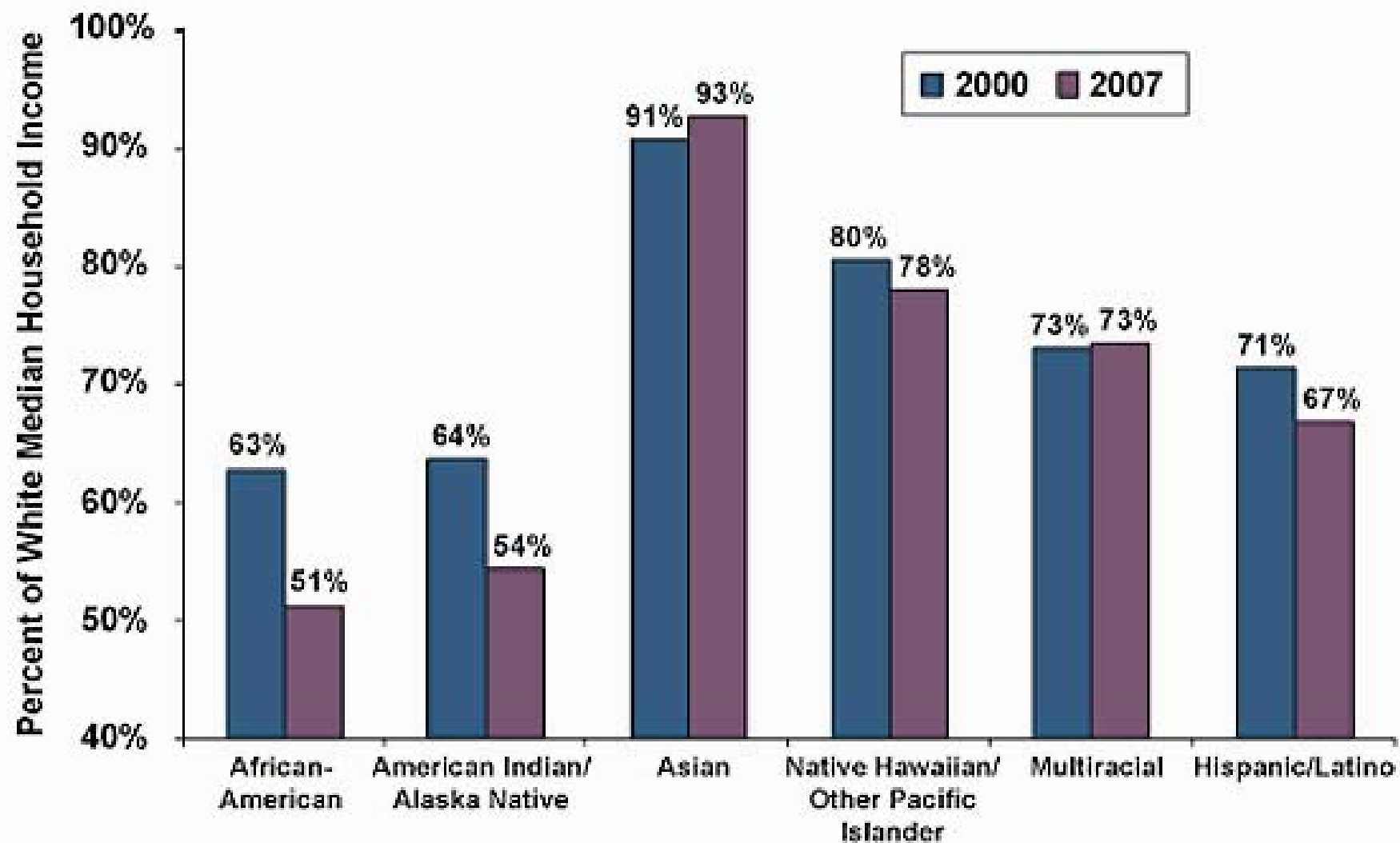


Data source: 2006-2008 American Community Survey, US Census Bureau

## Smoking and Uninsurance Among Adults Ages 18+, King County 2004-2008

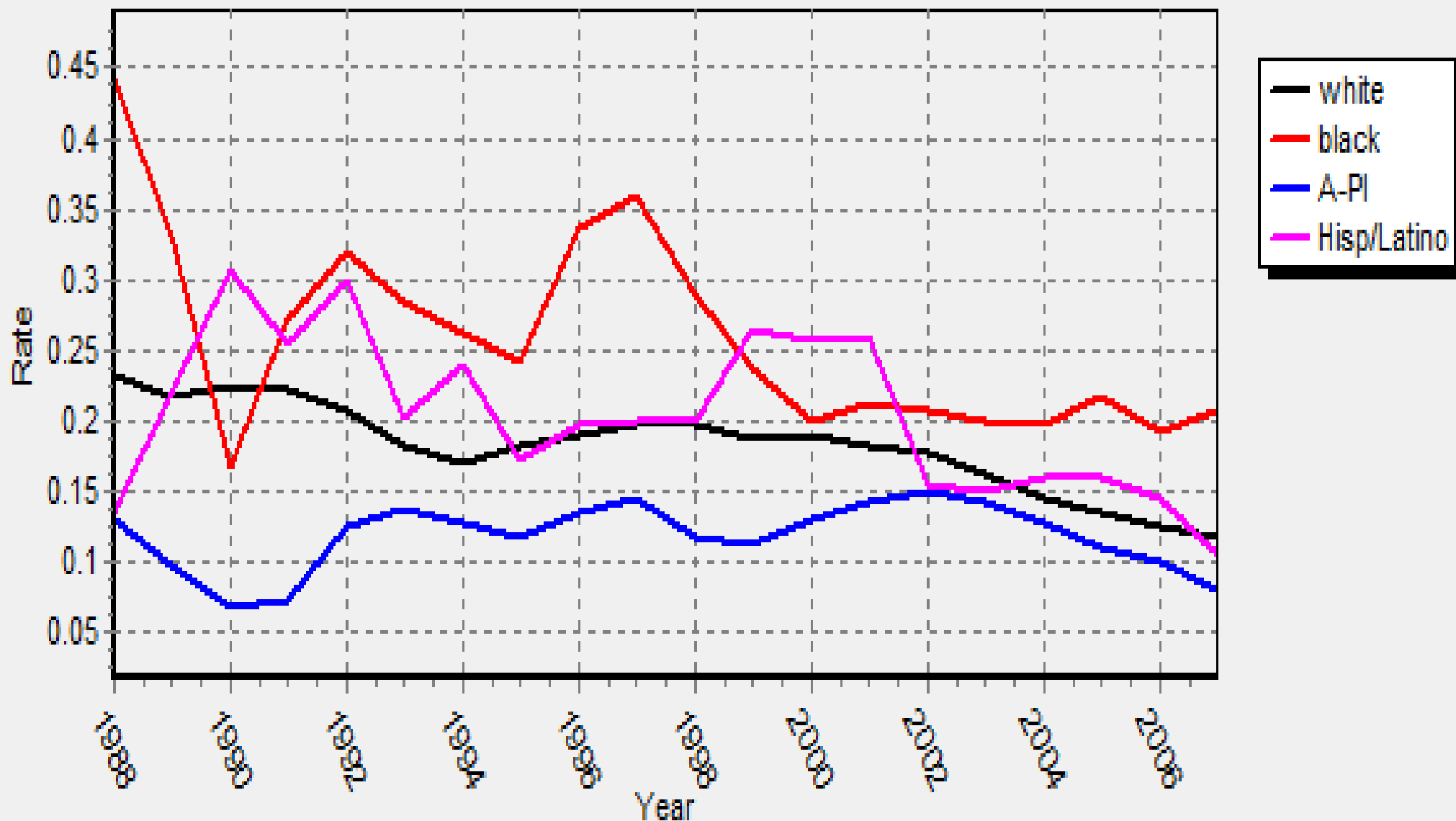


# Median Income by Race/Ethnicity, as a Percent of White Median Household Income King County, 2000 & 2007

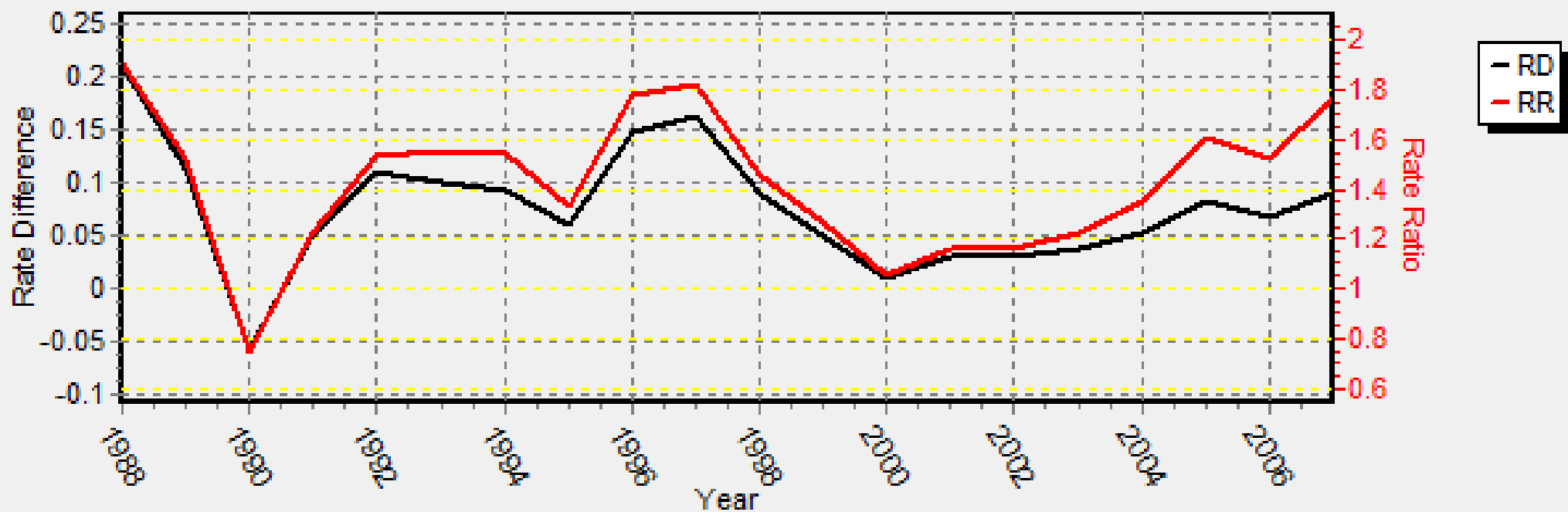




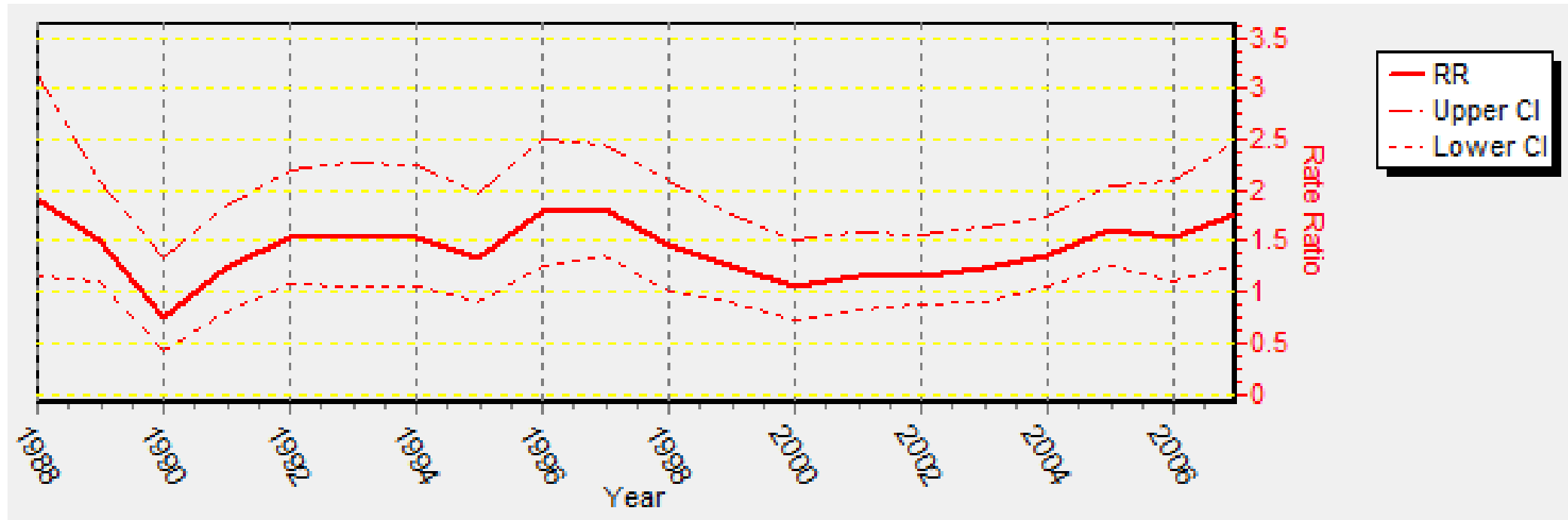
# Smoking prevalence by race, age 18 and older, King County, 3-year rolling averages, 1987-2008



# Rate difference (RD) and rate ratio (RR), black:white smoking rates



# Rate ratio (RR) with 95% confidence intervals (CI), black:white smoking rates



# Discussion

- Advantaged population may be early adopters of anti-smoking message, contribute to anti-smoking norms among peers
- Black/white income gap is growing, may fuel larger disparities
- Smoking disparities may also be growing, but trend is probably not statistically significant

# Take-home messages:

## Compared to other large counties...

- King County's low overall rates are driven by its relatively advantaged population
- White, well-off, highly educated population is doing well
- The tide is rising, but some boats are falling behind in an affluent county
- All information supports focus on disadvantaged populations

# Future directions...and caveats

- More analysis with absolute measures of disparity
- Explore other indicators
- Look at disparities in place
- Find method for measuring sig. of trend
- Caveats: rate ratios present an incomplete picture; not all disadvantaged groups included because of small numbers; indicators were selected

# Questions

- What disparities measures will resonate with communities, policymakers and electeds?
- How to treat small populations?
- Population-weight or not?
- Who should make the value judgments that decide these issues?

Your comments are welcome!