



Q-DART

Tools for Assessing & Responding  
to Disparities in Health Care Quality

***Mapping Quality of Care:  
Assessing Gender Gaps in DM and CVD Care in a  
California Health Care Plan***

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VA Cyberseminar  
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# Outline

- Review of Gender Differences in CVD and DM
- What Can Mapping Provide?
- Study Design
- What Does Conventional Analysis Tell Us?
- What Does Mapping Add?
- Where Do We Go From Here?

# Poll Question #1

- What is your primary role in VA?
  - Student, Trainee, or Fellow
  - Clinician
  - Researcher
  - Manager or Policy-maker
  - Other

# Poll Question #2

- Which best describes your research experience?
  - have not done research
  - have collaborated on research
  - have conducted research myself
  - have applied for research funding
  - have led a funded research grant

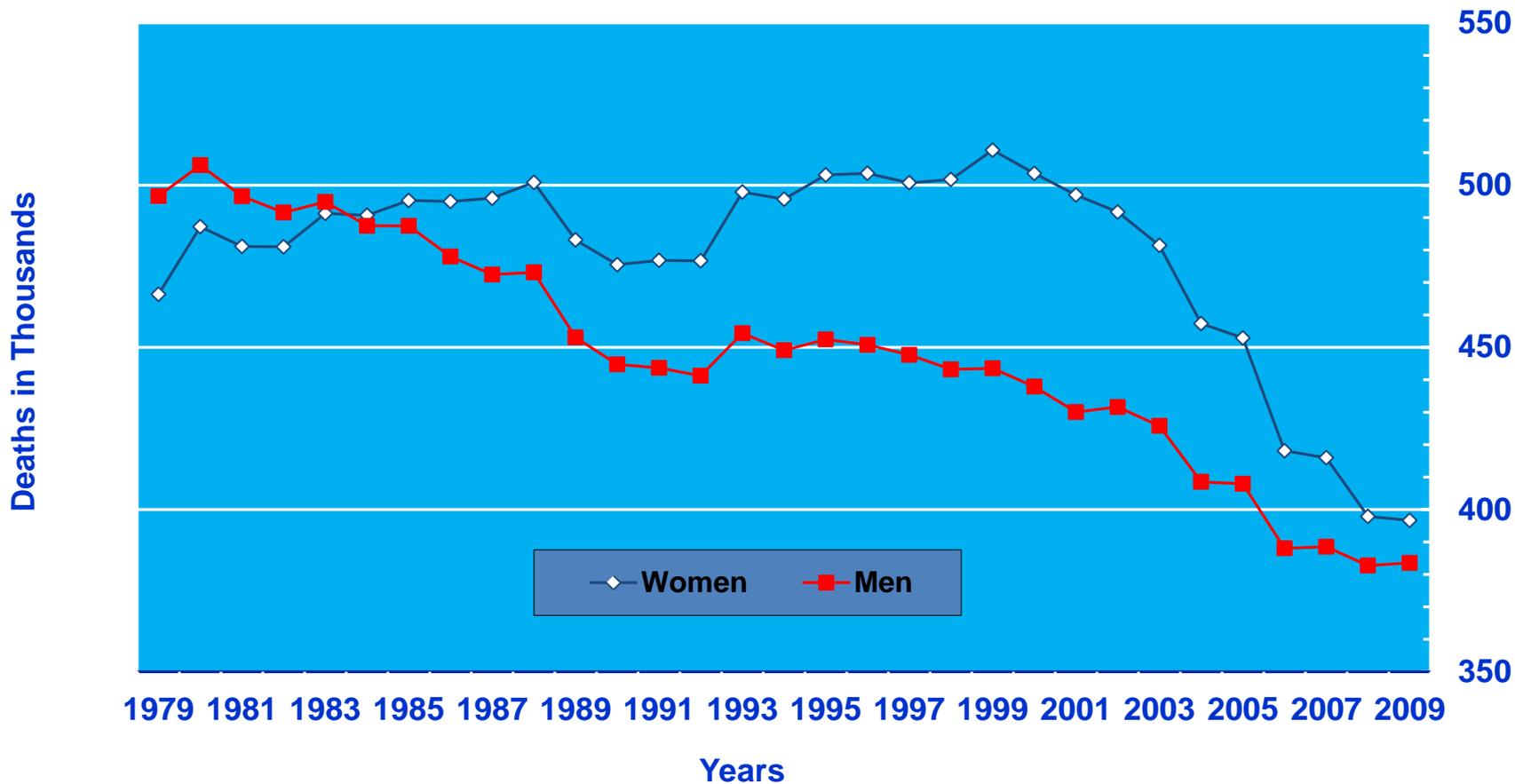
# Gender Differences in CVD Prevalence

- Counted separately, heart disease is the #1 cause of death among women and vascular disease is #3
- Worldwide, heart disease and stroke kill 8.6 million women annually – accounting for 1 in 3 deaths among women
- Prevalence and age-adjusted CVD death rate greater for men

# Gender Differences in CVD Prevalence (continued)

- Yet, women spend more years living with CVD than do men
- Since 1984 more women than men have died of CVD
- DM, a major risk factor for CVD, increases women's CVD risk far more than men's
- Whereas 1 in 7 women develops breast cancer, more than 1 in 3 women has some form of CVD

# Gender Gap in CVD Mortality Widened in the 1980s and 1990s



# CVD in Women is Different

- Women do not tend to have the “TV heart attack”
  - their symptoms are often more subtle and less specific
  - women can present with symptoms like throat pain or a sore back
- 64% of women who die suddenly from heart disease had no previous symptoms at all

# Impact of Differences in Women's CVD

- Tests aimed at identifying major coronary artery blockage are less informative on cardiac risk in women than in men
- At least half of women's MIs are caused by coronary microvascular disease, leading to narrowing or damage to *smaller* arteries in the heart
  - small vessel disease makes diagnosis challenging and poses problems for treatment
- Moreover, 26% of women over age 45 will die within a year of having a heart attack, compared with 19% of men.

# Gender Gaps in Quality of Care Contribute to Differential Outcomes

- A variety of studies of managed care and care within the VA have demonstrated gender differences in QoC for CVD and DM
- Large multistate studies of gender differences in QoC failed to stimulate efforts to identify and address gaps
- However, the VA has demonstrated that identifying gaps can open opportunities to improve QoC and reduce differences in men's and women's care

# Most Disparities Favored Men

Measure	N of Plans	N of Plans with $\geq 5$ percent performance difference n (%)	
		In Favor of Men	In Favor of Women
<b><i>Commercial</i></b>			
DM LDL < 100	46	25 (54.3)	0 (0.0)
CVD LDL <100	35	22 (62.9)	0 (0.0)
HTN BP <140/90	45	9 (20.0)	8 (17.8)
<b><i>Medicare</i></b>			
DM LDL < 100	146	89 (61.0)	3 (2.1)
CVD LDL <100	94	68 (72.3)	3 (3.2)
HTN BP <140/90	140	54 (38.6)	7 (5.0)

Chou, Wong, Weisman et al. *Women's Health Issues* (2007)

## Small Average Differences in Performance Rates May Understate Relative Impact Depending on Overall Rate

- ❖ **Absolute differences of 5 to 11 percentage points translates to rates of control that are between 26 and 19% lower for women than men**

Measure	Men	Women	Difference	RR (95% CI)
DM LDL < 130	41.3	33.4	7.9	.81 (.64 – .99)
CVD LDL < 130	45.5	35.0	10.5	.75 (.54 – 1.03)
BP < 140/90	35.4	30.3	5.1	.64 (.72 – 1.0)

Bird, Fremont, Bierman et al. *Women's Health Issues* (2007) 131.138

# What Can Mapping Provide?

- Statistical models typically assess average QoC and only control for gender, while those that examine gender differences in QoC focus on averages
- Average answers have not engaged health plans or other stake holders to take action
- Mapping can identify
  - whether gender differences are uniform or vary geographically
  - Identify hotspots where women face above average disparities and coldspots where women receive better care

# Study Design

- Data are from one of the a large regional California managed care plans
- We examined care for two populations of individuals. Those who:
  - had documented Ischemic Vascular Disease, or experienced a cardiovascular event (acute MI, PTCA, or CABG) in the prior year (n~30,000)
  - had a diagnosis of diabetes (n~155,000)

# HEDIS Measures

- Measures of CVD and DM quality are part of the National Center for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS)
- Measures report the percentage of eligible patients who received the indicated care after excluding those with contraindications
- HEDIS measures allow direct comparisons across populations

# Other Measures

- Gender
- Age in years
- Insurance Type: Medicare, Commercial HMO, Commercial PPO, or Medicaid
- Region: 8 regions used in HEDIS reporting
- County
- Zipcode
- Area Income

# Quality Scores are Reported for HMO Patients for 8 Regions of P4P Program\*

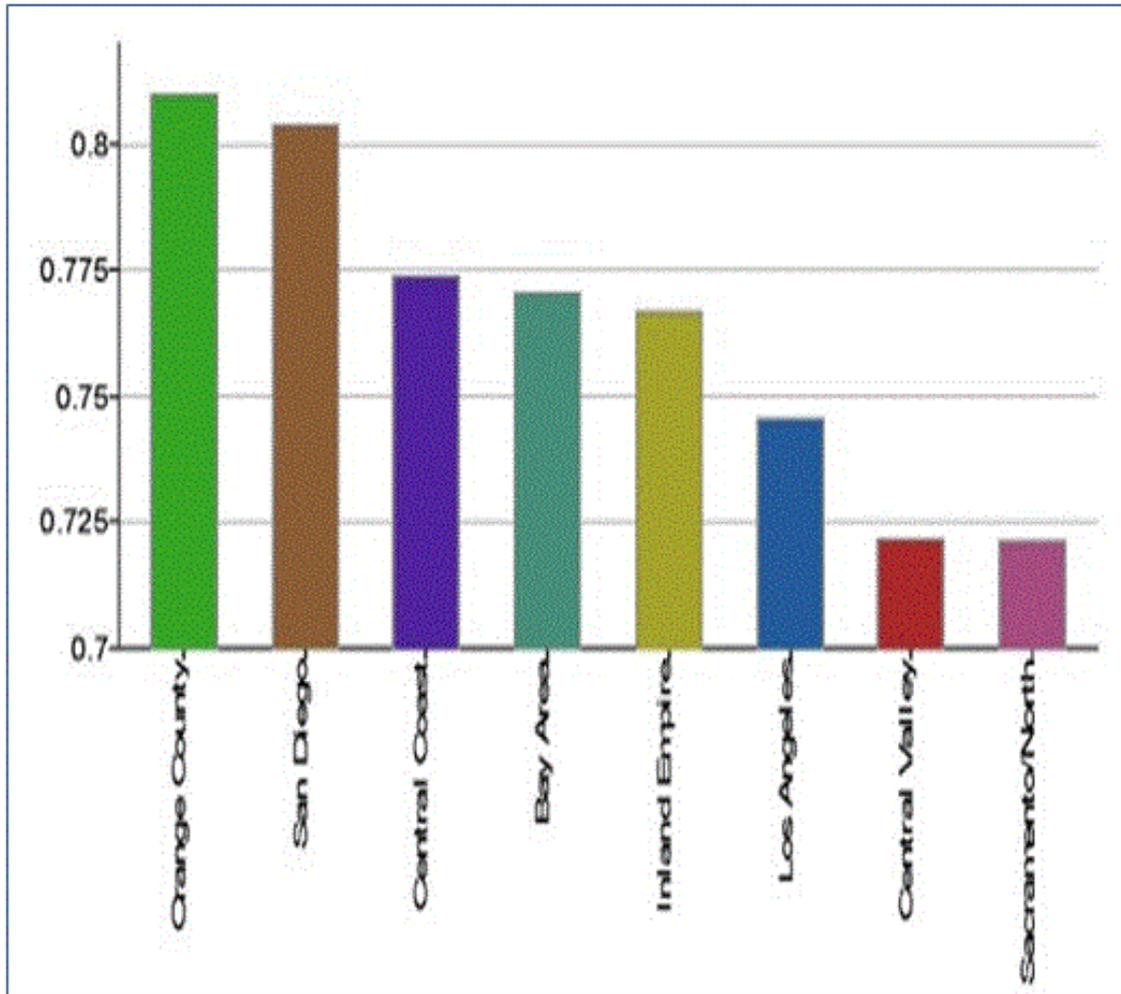


\* Calif. P4P Program run by Integrated Healthcare Alliance (IHA)

# What Does Conventional Analysis Tell Us?

- Among adults who had experienced a CVD event, 77.7% of men and 72.8% of women received the indicated LDL screening.
- The gap was smaller among those with DM, with 76.3% of men and 74.2% of women receiving indicated screening.
- Overall QoC also varied significantly across the geographic regions of the state and across business lines, with higher quality among HMO than PPO patients.

# LDL Screening for DM Patients Varied by Region

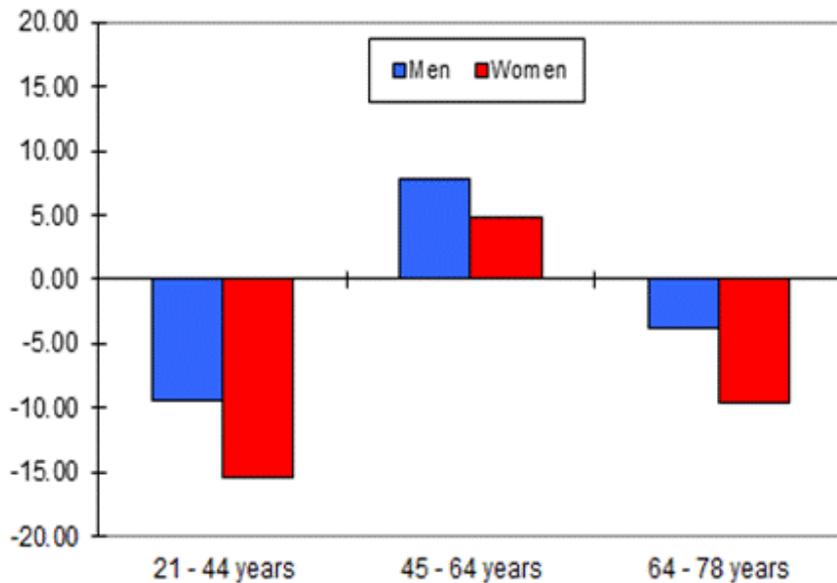


IHA Regions in California

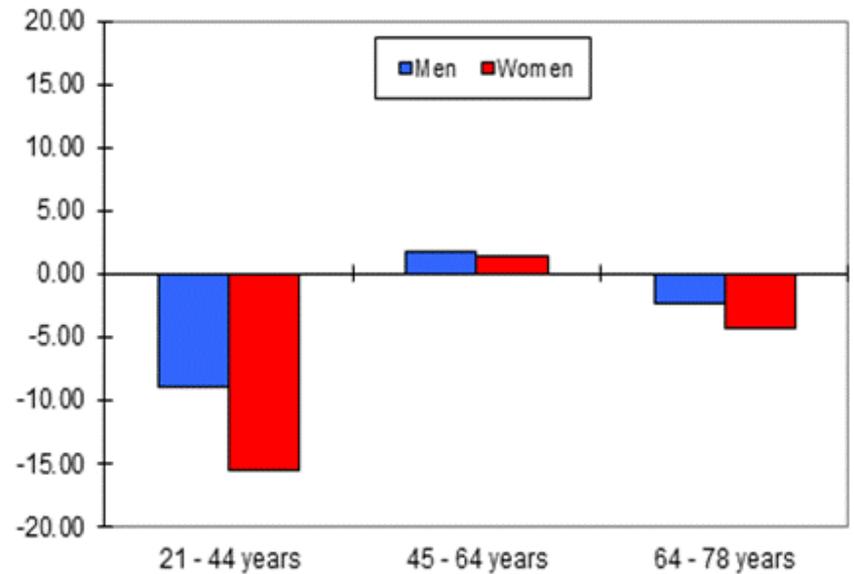


# Gender Gaps in LDL Screening also Vary by Age for CVD and DM Patients

Percentage Point Difference from Average Screening Rate



CVD: LDL Test



DM: LDL Test

# Gender Gaps Persist

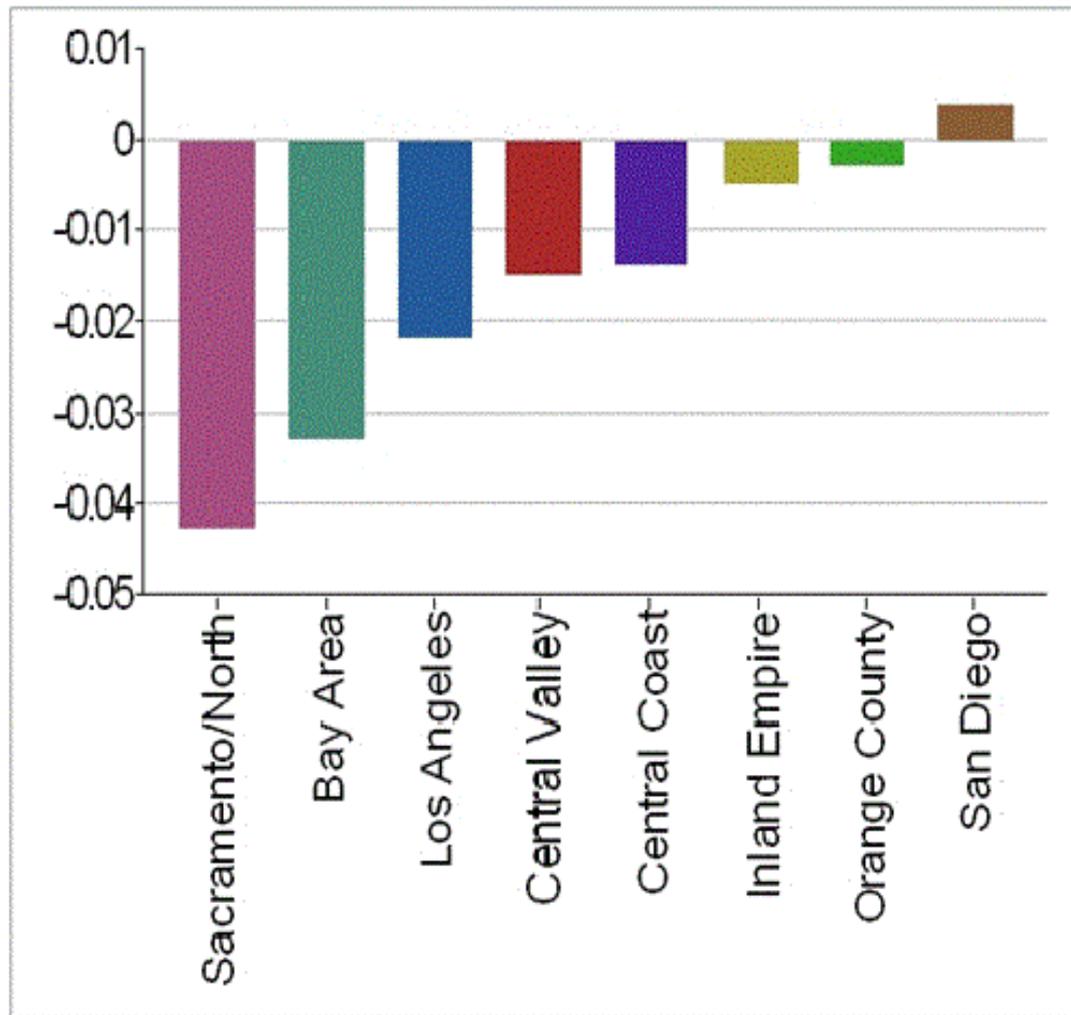
- Adjusting for age, insurance type, region, and area income
  - women were 80.5 % as likely as men to receive indicated LDL screening
  - women with diabetes were 94.3 % as likely as men to receive the indicated screening
- Also, HMO patients remained more likely than PPO patients to receive LDL screening in both CVD and DM populations

# Gender Gap Varied by Insurance Type

- In adjusted models run separately by insurance type
  - Women in PPOs with CVD were 93% as likely as men to receive LDL test, but equally likely in HMOs
  - Women in PPOs with DM were 97% as likely as men to receive LDL test, but equally likely in HMOs
- Suggesting that in addition to providing higher quality ambulatory care, managed care can address the gender gap

- What Does Mapping Add?

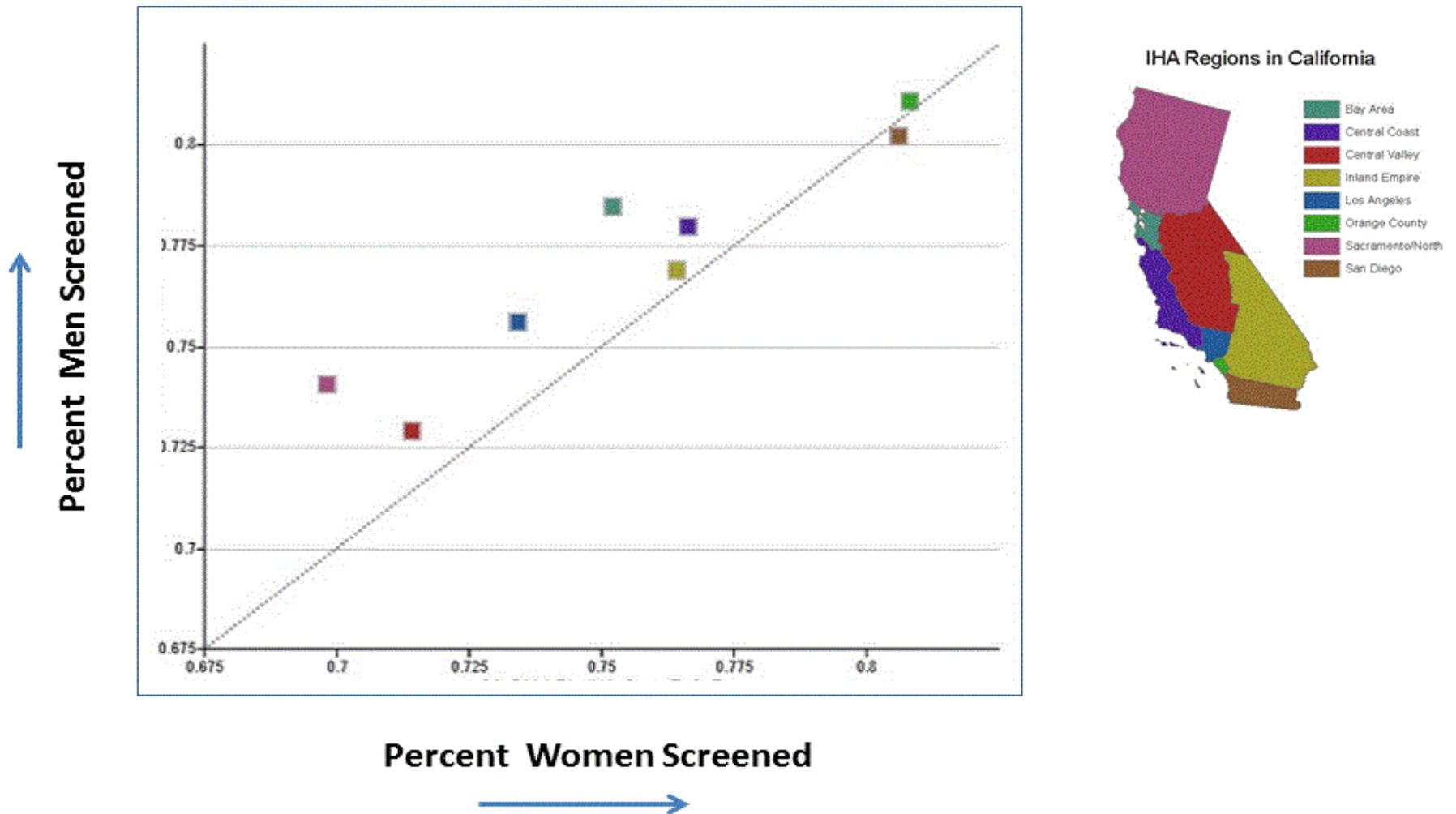
# Gender Gaps in DM: LDL Screening Rate Varied by Region



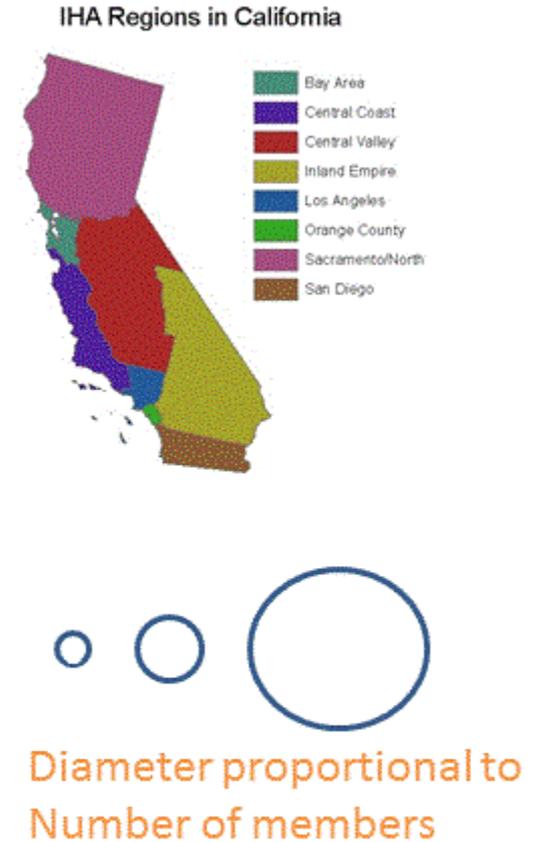
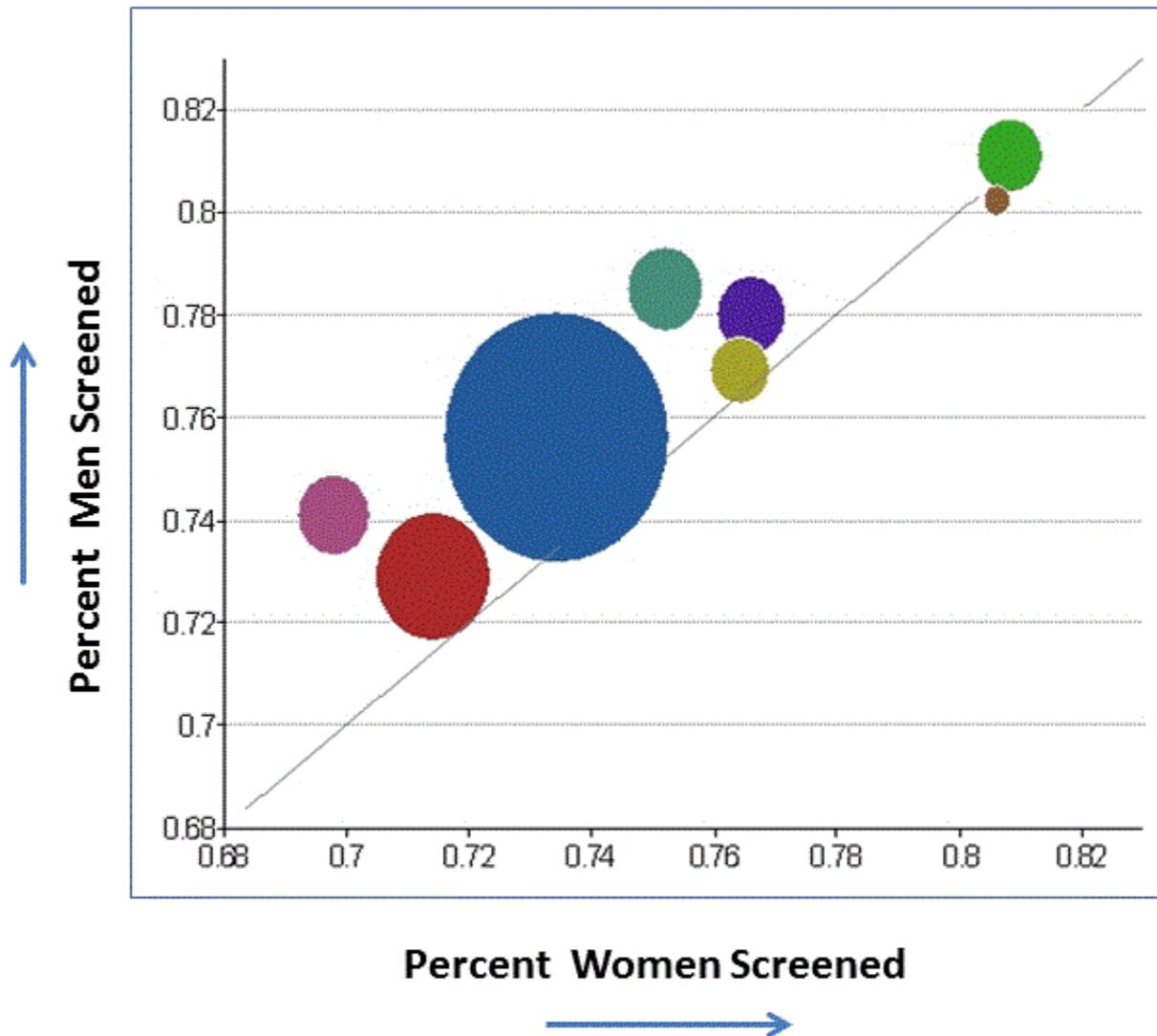
IHA Regions in California



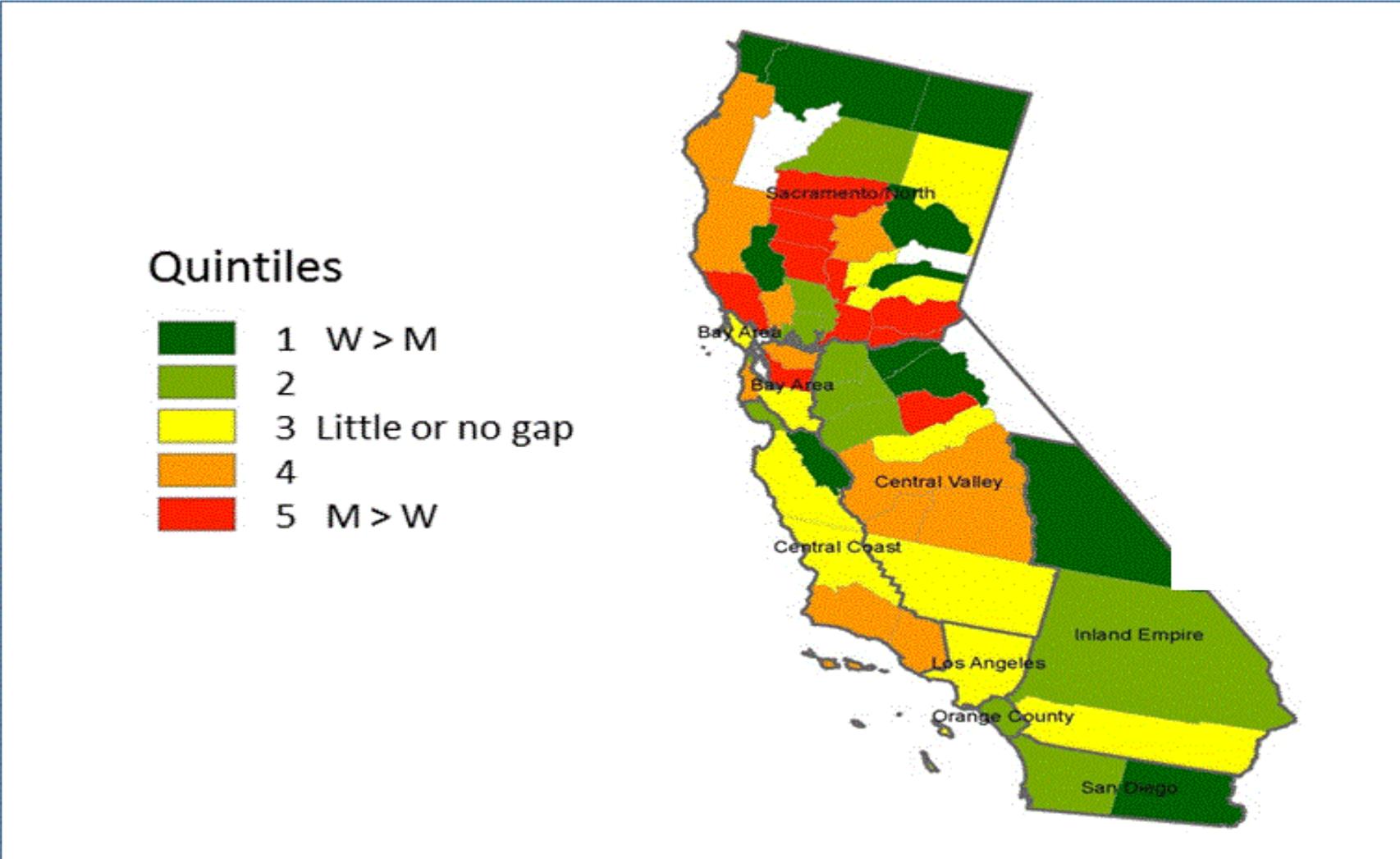
# DM: LDL Screening Rate by Region and Gender



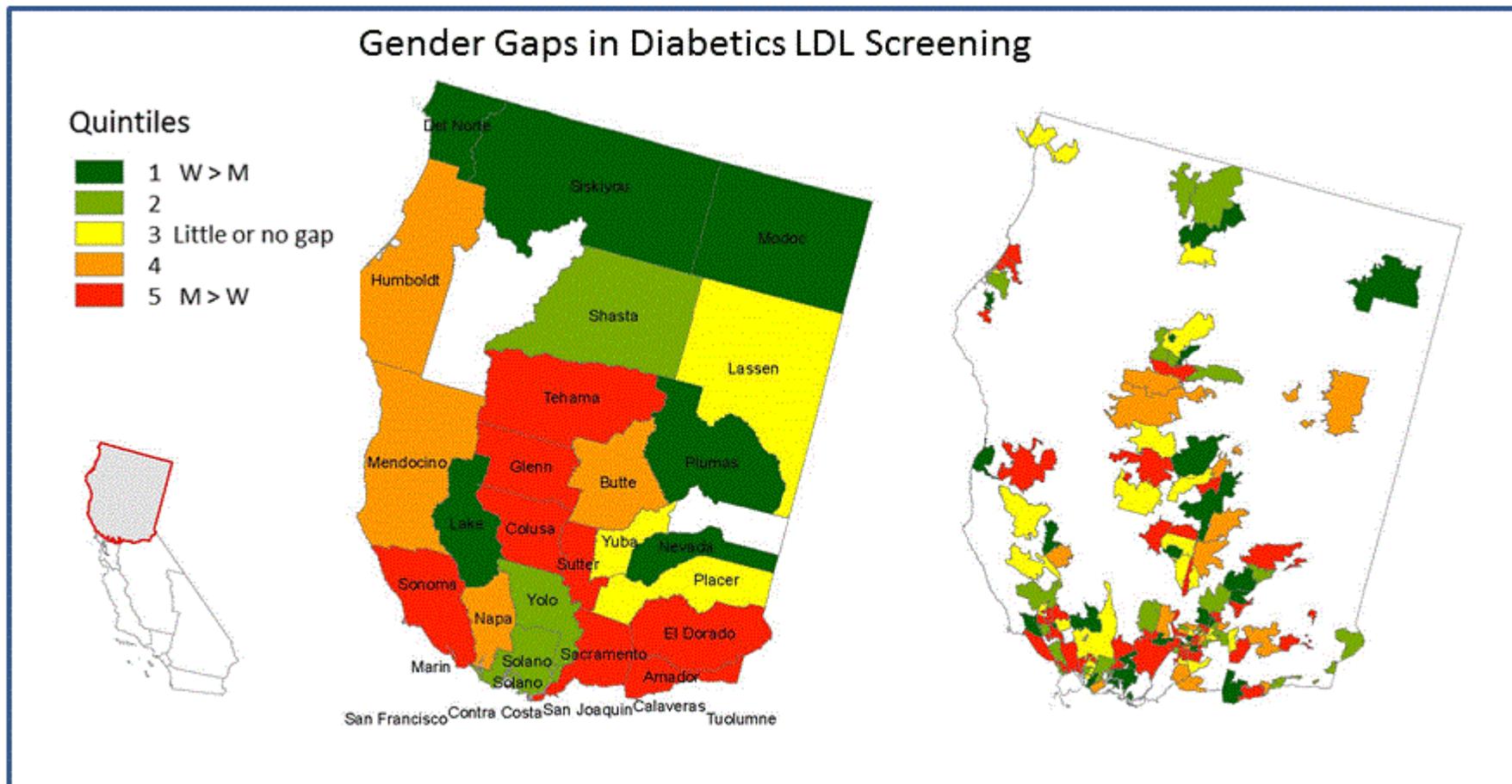
# DM: LDL Screening Rate by Region and Gender



# Gender Gap in DM: LDL Screening Rate by County

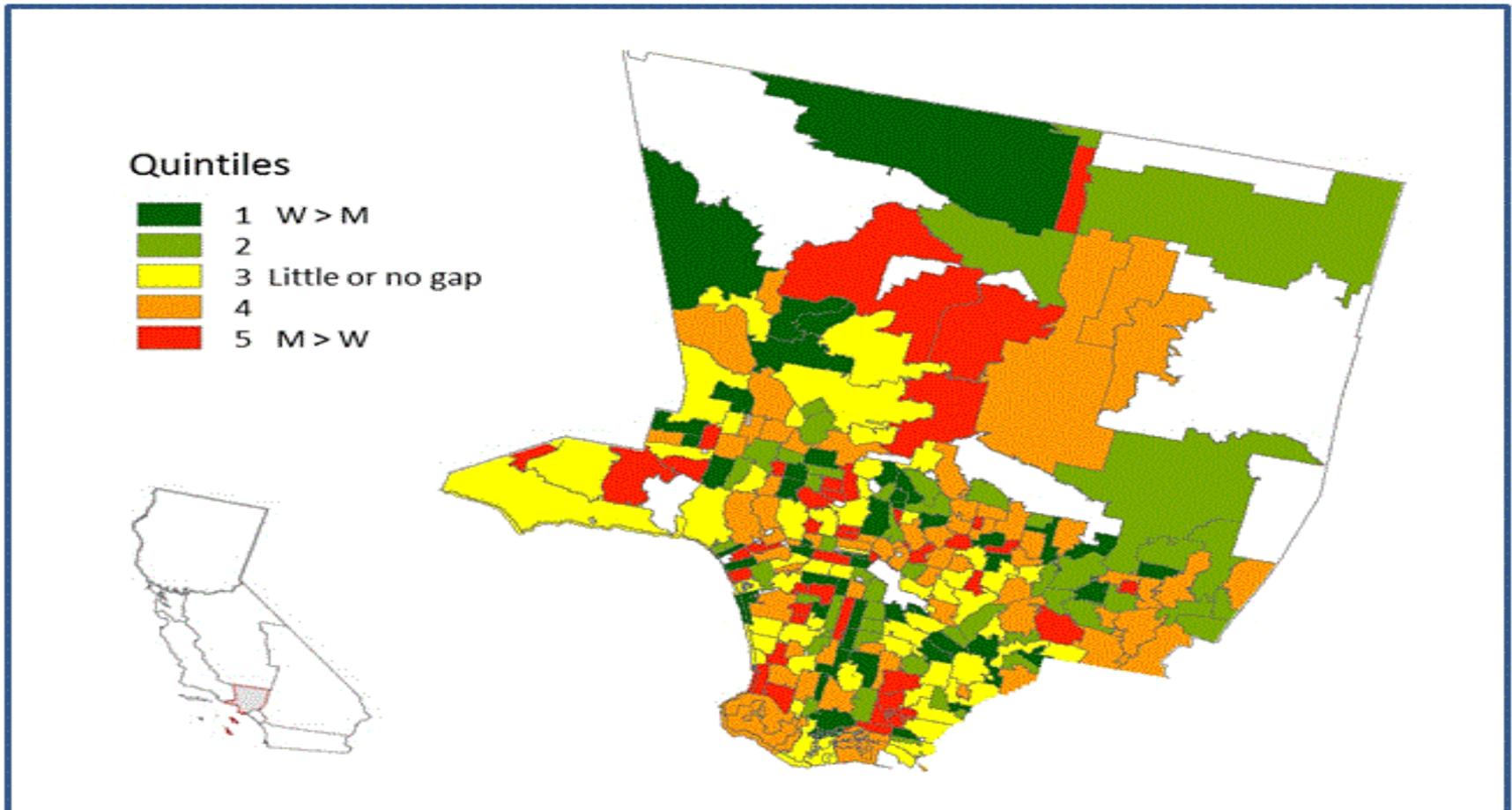


# Assessing Gaps at County Levels or Higher May Mask Important Gaps at More Local Level\*



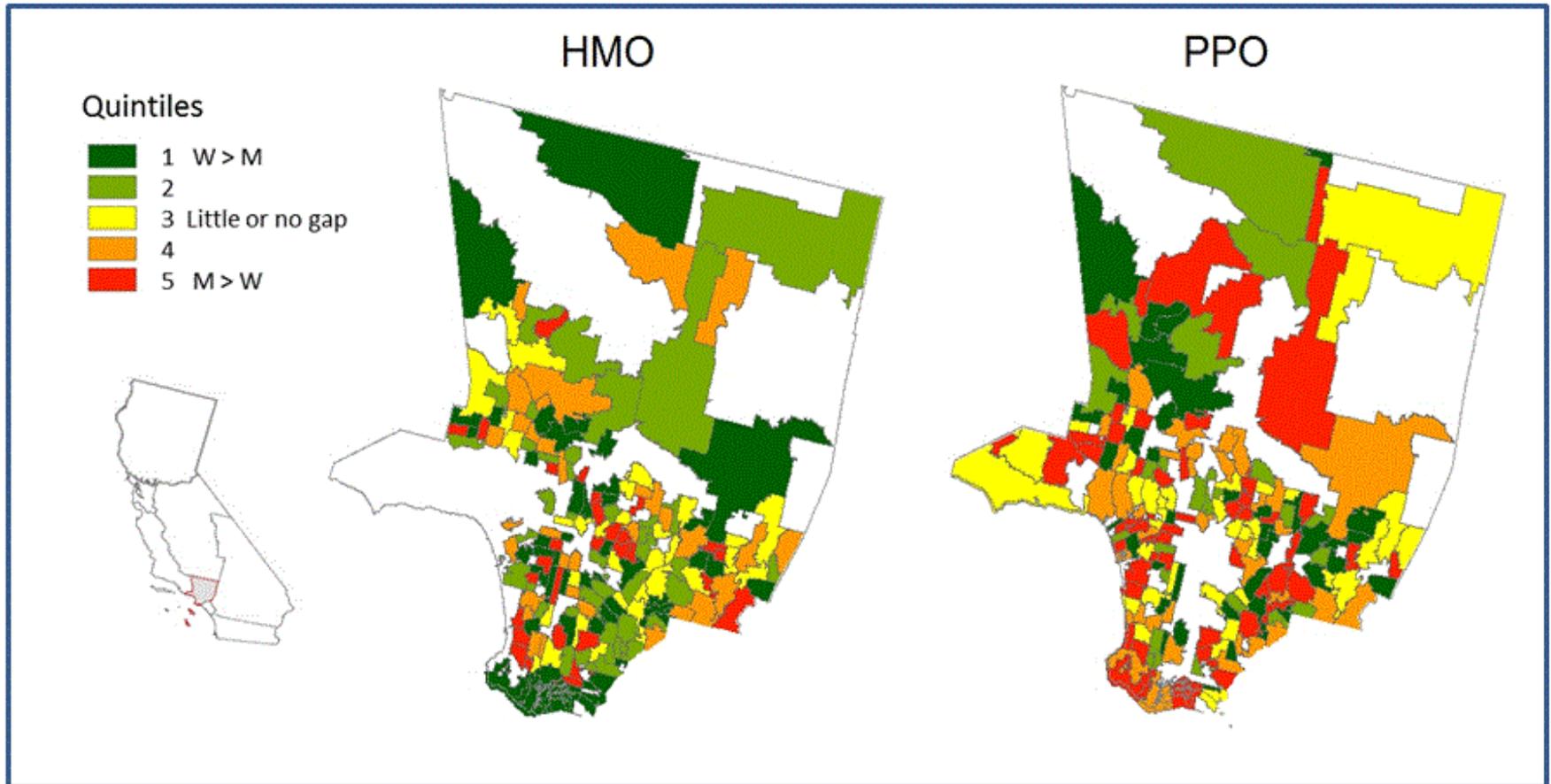
\*Only Counties and Zip Codes with sufficient number of eligible plan members (at least 30 men and 30 women) shown.

# Gender Gaps in DM LDL Screening in LA County by Zip Code\*



\*Only Zip Codes with sufficient number of eligible plan members (at least 30 men and 30 women) shown.

# Gender Gaps in DM LDL Screening in LA County by Zip Code and Insurance Type\*



\*Only Zip Codes with sufficient number of eligible plan members (at least 30 men and 30 women) shown.

# Mapping – Beyond Geography

- To make patterns of predictors and disparities accessible
- To illustrate where and whether specific relationships occur
  - do disparities map on to racial/ethnic or socioeconomic neighborhood characteristics or the availability of specific health services?
- To examine patterns of care
  - are those getting better and worse care treated at the same clinics and by the same providers?

# Take Home Points

- Gender differences in CVD and DM ambulatory care are typically small to moderate
- At the population level, even small average differences can reflect large numbers of women not receiving indicated care
- Managed care can produce higher quality care and reduce gender gaps
- Maps of gender differences in QoC can inform local and regional stakeholders and help to answer questions and precipitate efforts to improve women's QoC



# Questions?

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