



CENTER on
SOCIAL
DISPARITIES
in HEALTH



University of California
San Francisco

The unsolved mystery of racial disparities in infant health: Do we know enough to act?

April 4, 2007

Woodrow Wilson Center

Paula Braveman, MD, MPH

Professor of Family & Community Medicine

Director, Center on Social Disparities in Health

University of California, San Francisco

www.ucsf.edu/csdl

Racial disparities in infant health at birth

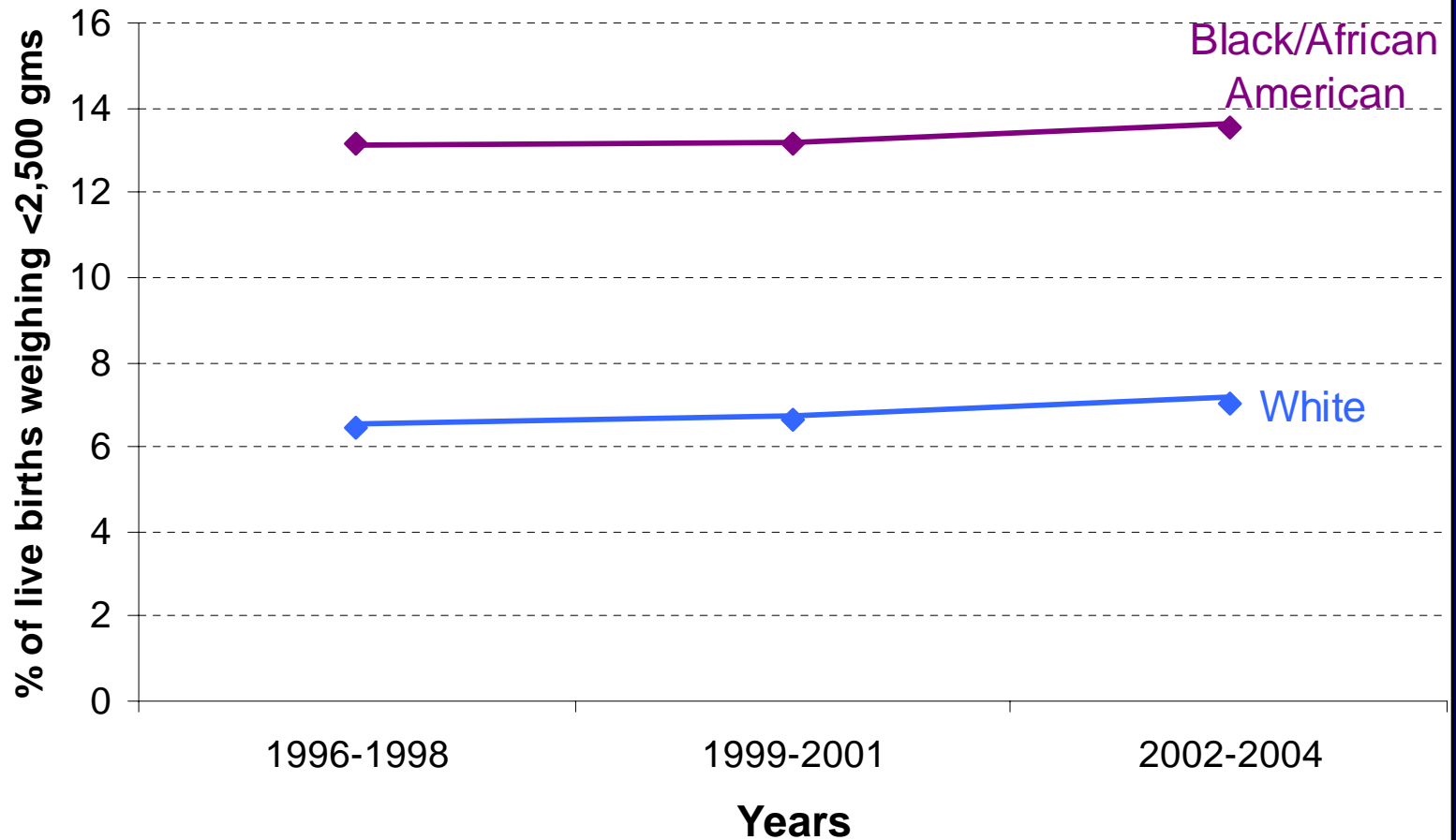
- “Birth outcomes”: Born too small (low birth weight) or too early (premature/preterm birth)
 - Focusing on African Americans (Blacks) and European Americans (Whites)
 - Current knowledge of likely causes
 - Why the differences are likely to involve social factors
 - Why psychological stress could be important, particularly cumulative lifetime effects
 - Policy implications
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Disparities in infant health

- Compared with babies born to European American (“White”) mothers, babies born to African American (“Black”) mothers are around twice as likely to:
 - Have low birth weight (born too small)
 - Be premature (born too early)
 - Die in infancy
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Persistent disparities: low birth weight



Born too early, too small

- Infant mortality
- Serious disability
 - Cognitive
 - Emotional-behavioral
 - Physical
- Family burden
- Economic costs
 - Medical care
 - Special ed.
 - Social services
 - Productivity lost



Causes of being born too early and/or too small

Known:

- Tobacco
- Excessive alcohol
- Drugs
- Nutrition
- Short maternal stature
- Chronic disease

Suspected:

- Infections
 - Environmental toxins
 - Physically demanding work
 - Genes/Gene-environment interactions
 - Stress (psychological)
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Causes of disparities?

Not explained by:

- Tobacco
- Excessive alcohol
- Drugs
- Nutrition
- Maternal height
- Chronic disease

?????

- Infections
 - Environmental toxins
 - Physically demanding work
 - Genes/Gene-environment interactions
 - Stress (psychological)
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Causes of disparities in being born too early or too small

- More questions than answers
 - What can we learn from the patterns?
 - By income
 - By birthplace in U.S. (vs immigrant)
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Ratio of low birth weight rates among Blacks vs Whites at different income levels

Family income in relation to the federal poverty level *	Black to White ratio
Poor: at or below the poverty line	1.3 times
Near-poor : 1-2 times the poverty line	1.6 times
Not low-income: more than 2 times the poverty line	Around 2.5 times

California Maternal & Infant Health Assessment (MIHA), '99-'05

* During '99-'05, federal poverty level for a family of 4 was around \$17,000-\$20,000.

Disparities by birthplace

- US-born African-Americans have adverse birth outcomes
 - Black African/Afro-Caribbean immigrants have relatively good birth outcomes by comparison
 - If genes were the basis, wouldn't immigrants do worse?
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US-born vs immigrant patterns hard to explain by genes alone

- Healthier behaviors?
 - Healthy immigrant selection?
 - Stress?
 - But immigration is stressful, so difficult to explain by stress in general
 - What about type of stress (challenge vs threat)?
 - What about duration &/or timing at critical periods, e.g., childhood?
 - Resources that buffer effects of stress?
 - Optimism
 - Social support
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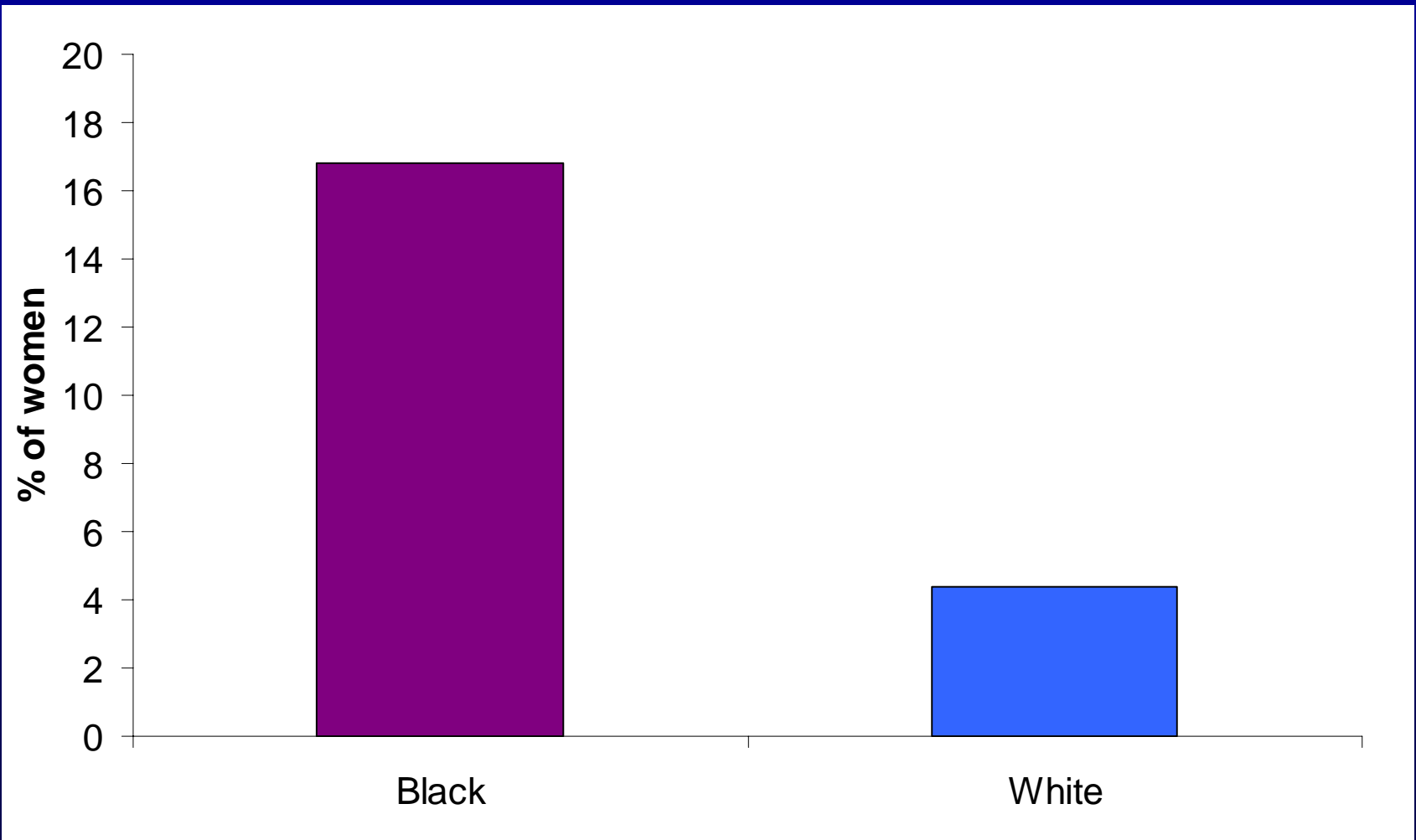
How could stress influence birth weight and/or prematurity?

- Biologically plausible
 - Physiological pathways have been documented in animals & humans, beginning with psychological stress and leading to effects on:
 - **Sympathetic nervous system:** Brain → epinephrine & norepinephrine
 - **Neuro-endocrine pathways:** Brain → adrenal glands → cortisol
 - **Stress hormones** could trigger diverse effects including effects on **immune system** leading to premature labor and/or poor fetal growth
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Who has more stress?

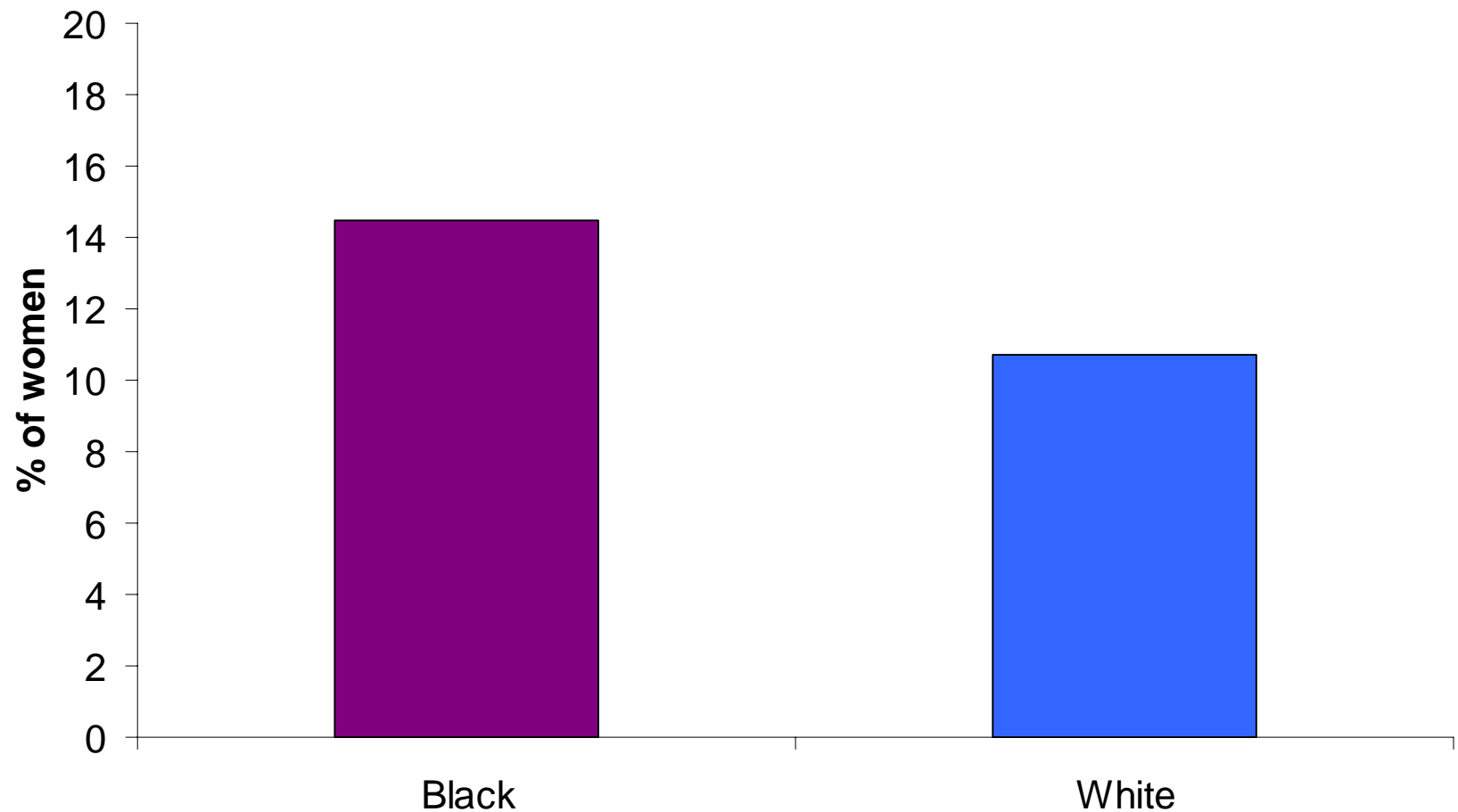
- We studied several major psychosocial stressors experienced during pregnancy
 - Divorce/separation, job loss of partner/self, financial difficulties, food insecurity, homelessness, domestic violence, incarceration of partner/self
 - And lack of social support
 - Postpartum women in California and 17 other states
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Separated or divorced during pregnancy: disparities by race



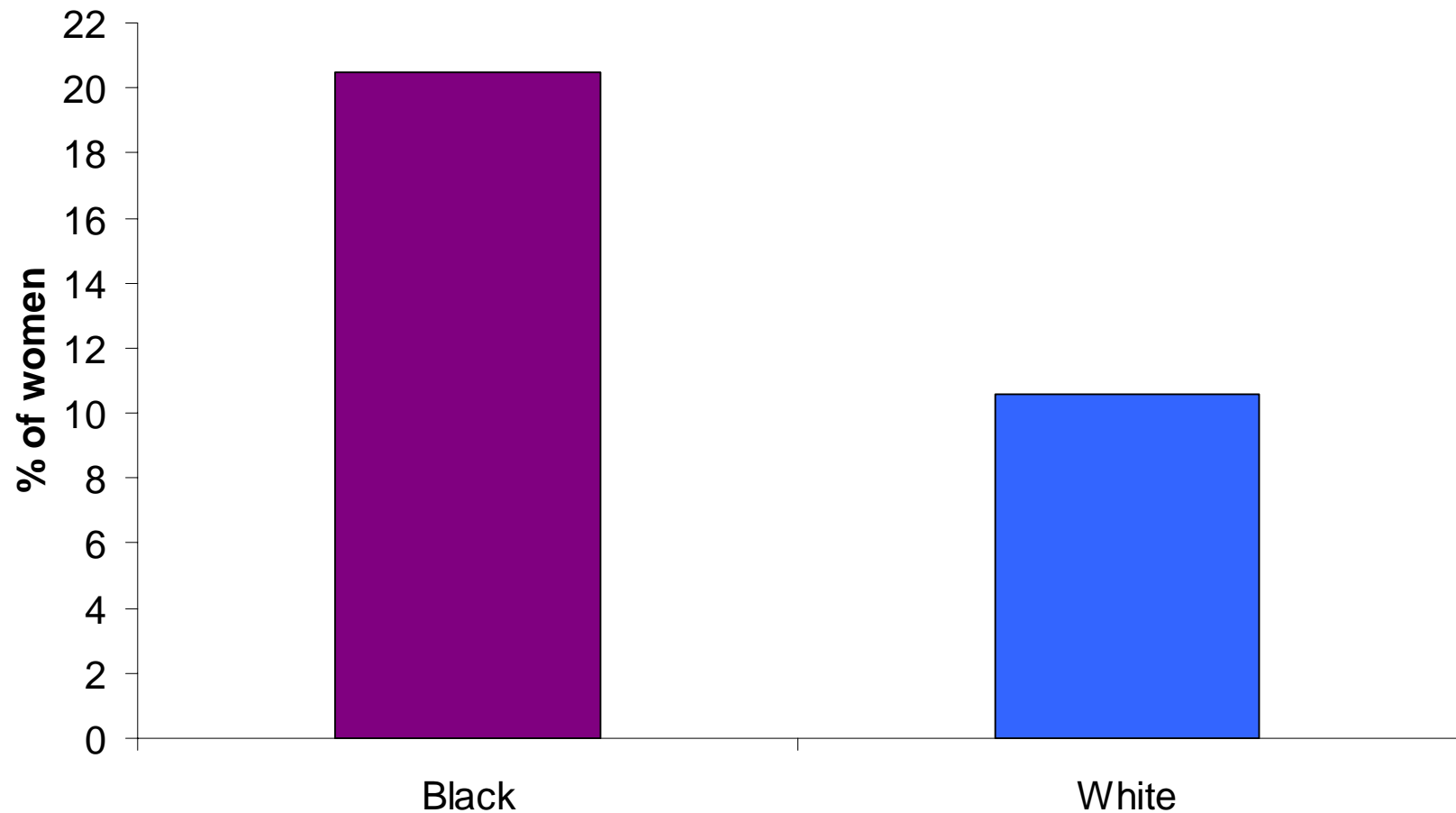
California MIHA 2002-2004 ($n = 10,750$)

Partner lost his job during her pregnancy: disparities by race



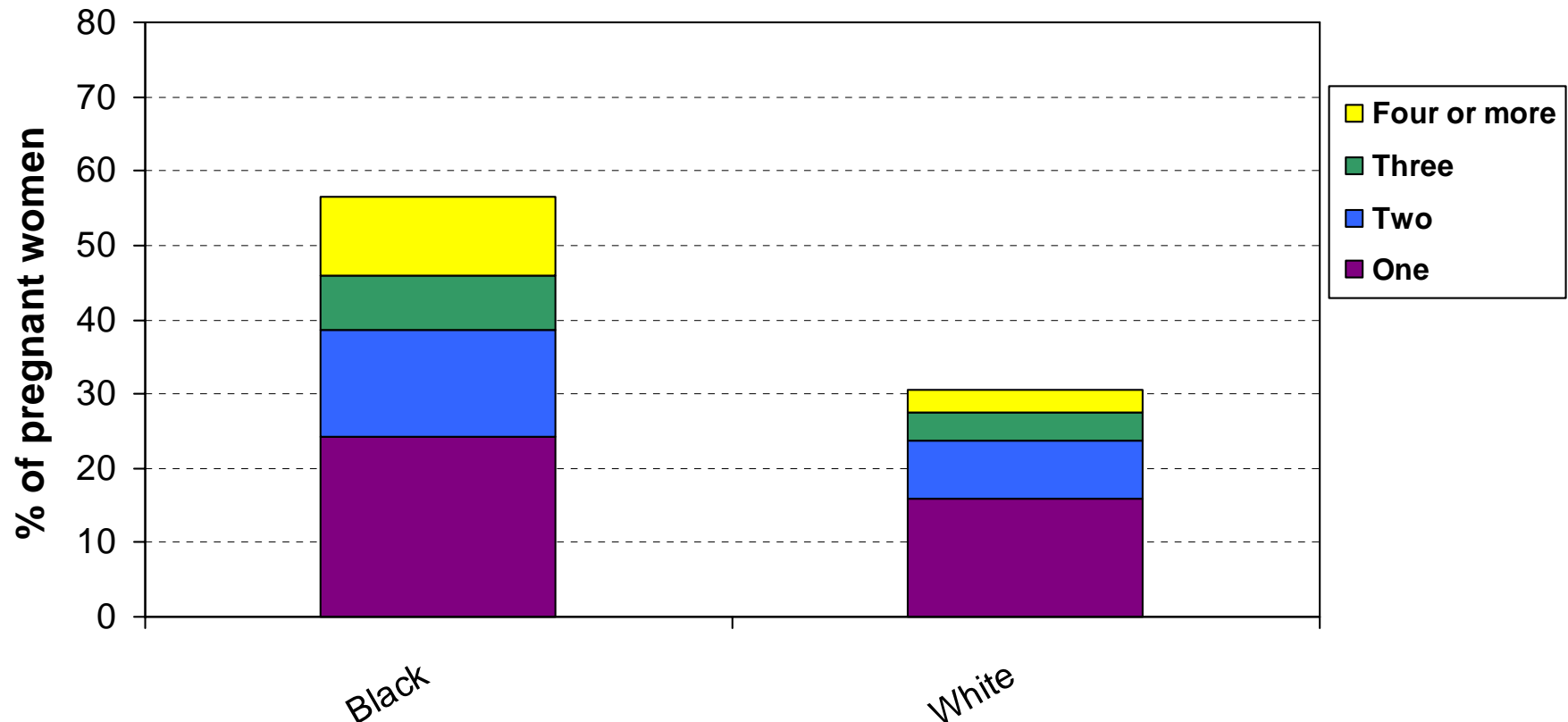
California MIHA 2002-2004 ($n = 10,750$)

Food insecurity during pregnancy: disparities by race



California MIHA 2002-2004 ($n = 10,750$)

Number of hardships during pregnancy:* disparities by race



Separated/divorced during pregnancy, homeless, job loss of spouse/partner, involuntary job loss of respondent, food insecurity, incarceration of respondent or her spouse/partner, domestic violence, hard to live on her family income, unpaid bills, no practical support, no emotional support,

Chronic stress in childhood? Cumulative effects of stress?

- Poverty/low income is often stressful
 - Higher-income/education Black women less likely than Whites to have grown up in well-off households
 - Cumulative stress over lifetime
 - Childhood stress or chronic stress could lead to adverse birth outcomes even if pregnancy itself is relatively stress-free
 - via neuro-endocrine dysregulation
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How could your neighborhood affect your health?



- Physical danger
- Safe places to exercise
- Lead, air pollution, mold
- Access to healthy food
- Role models, peer pressure
 - Substance abuse
- Social networks & support
- Stress, fear, anxiety, despair
- Blacks & Whites of similar income levels live in different kinds of neighborhoods

Racial discrimination as a source of chronic stress across life course

- Could experiences associated with racism explain the patterns?
 - Some studies have linked racism with adverse birth outcomes; some have not; are the measures –generally reflecting incidents--adequate?
 - Current work to develop measures for birth outcomes research
 - Our findings: considerable stress not tied to specific incidents; generalized anxiety/fear about others' reactions toward oneself or loved ones; constant vigilance; lasting impact of childhood & vicarious experiences
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More questions than answers

- Many hypotheses
- Inadequately studied
- Widespread assumption that the basis for the racial differences must be bad behaviors and genes
 - Taking us somewhat off-the-hook in policy arena
- Many studies have concluded a racial difference must be genetic because the difference was still seen even after the researcher “controlled for socioeconomic status (SES)”?

A word of caution

- Beware of studies claiming to have controlled for SES (socioeconomic status)
 - Studies rarely measure more than education or current income
 - At a given income/education level, there are large Black : White differences in:
 - Wealth
 - Quality & rewards of education
 - Neighborhood socioeconomic conditions
 - Childhood socioeconomic conditions
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- To claim that a given racial disparity is independent of SES, one would have to measure all relevant socioeconomic factors
 - Income
 - Educational quality and quantity
 - Wealth
 - Occupation
 - Neighborhood characteristics
 - One's perception of one's status/position
 - All of above throughout one's life
 - That isn't possible
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No study can “control for” SES

- Unmeasured wealth, educational quality, occupational factors, childhood and generational experiences, neighborhood context
 - Be skeptical of studies concluding that an observed racial disparity must be genetic because the disparity was still present after they “controlled for” SES
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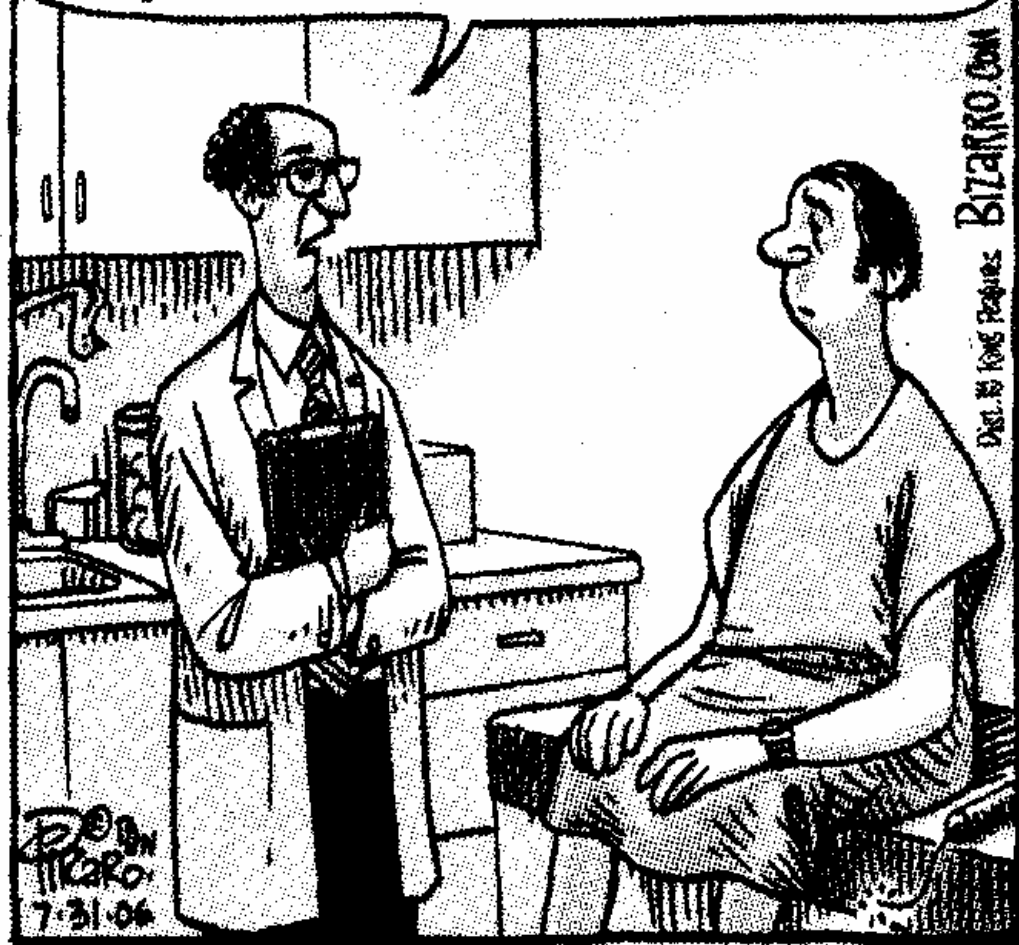
Summing up: Where do the clues lead us?

- More biomedical research needed on environmental toxins, infections, and gene-environment interactions
 - Patterns of Black:White disparities in infant health across socioeconomic groups and by birthplace suggest that social factors –potentially experiences across the life course--play powerful roles
 - Important role for stress is plausible albeit not conclusive
 - Policy implications?
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Do we know enough to justify action? What actions?

- More intensive action to reduce the known adverse risk factors before and during pregnancy
 - E.g., tobacco, alcohol, illicit drugs, chronic disease
 - Poverty and low education are the strongest risks
 - Increase protective factors in households and in neighborhoods
 - Bold experiments testing effects of biologically plausible, promising interventions, including ones that reduce stress and increase social support (which buffers health effects of stress)
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Find a way to keep your stress level down. What works for me is making a ton of money & having practically free health care.





Policy implications: Bold experiments to reduce stress & increase social support

- Need for bold experiments with social factors
 - Will require bold policies
 - Multi-factorial interventions
 - Can't be conducted in test tubes or small-scale
 - But scientific rigor is essential
 - Limited documentation of health effects of socio-economic adversity during pregnancy in affluent countries
 - But body of evidence on early childhood economic adversity warrants improving social and economic factors among pregnant women and infants
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Unequal chances at birth

- When do we know enough to recommend policy change?
- Acting on the best available knowledge
- Costs of status quo
- Known effects of early childhood economic adversity
- Compelling economic & ethical reasons to act

