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Racial Differences in Pregnancy Outcomes

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Section A

Overview

What Determines Infant Mortality in a Population?

- ◆ Incidence of high risk pregnancies
- ◆ Incidence of high risk births (LBW)
- ◆ Health status of high risk births
- ◆ Cause of death after the first month

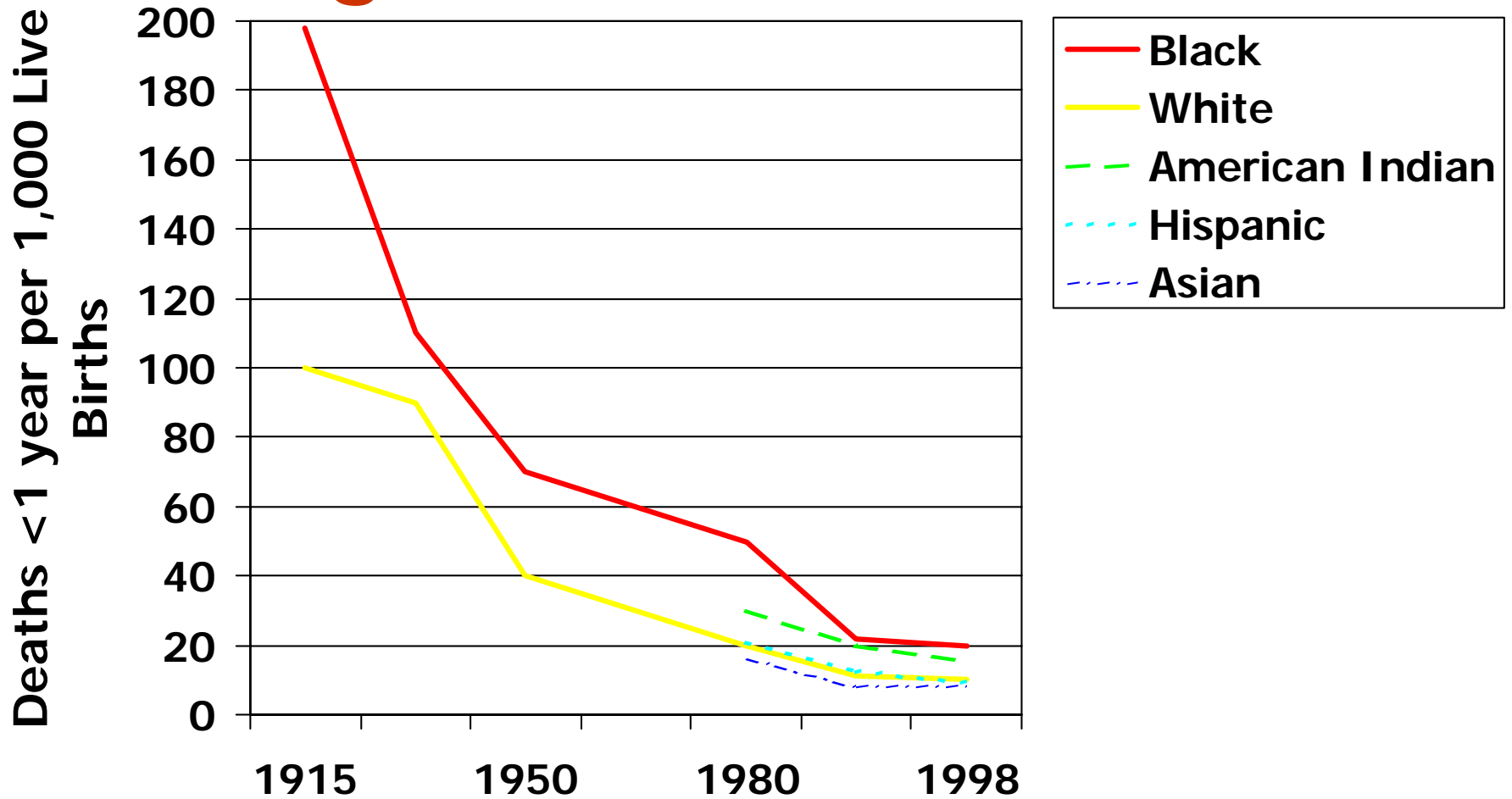
Racial Differences in Infant Mortality and LBW

- ◆ Importance of studying racial differences in pregnancy outcome
 - Persistence of differences
 - Social responsibility

Racial Differences in Infant Mortality and LBW

- ◆ “Wilcox and Russell’s analysis by looking at LBW as an often normal variation between populations, in a sense, lets us out of what for years has not only been a perplexing scientific problem but also an intractable social ill (David, 1990).”

IM Rate by Race and Hispanic Origin: U.S., 1915–1998



Note: Infant deaths are classified by race of descendants. Prior to 1980, live births are classified by race of parents. For 1980–98, they are classified by race of mother.

Persistence of Racial Differences in IMRs

- ◆ Two-fold greater rate of IM for black newborns across the entire 20th century
- ◆ Not the same for other ethnic groups but, data have only been available for two decades

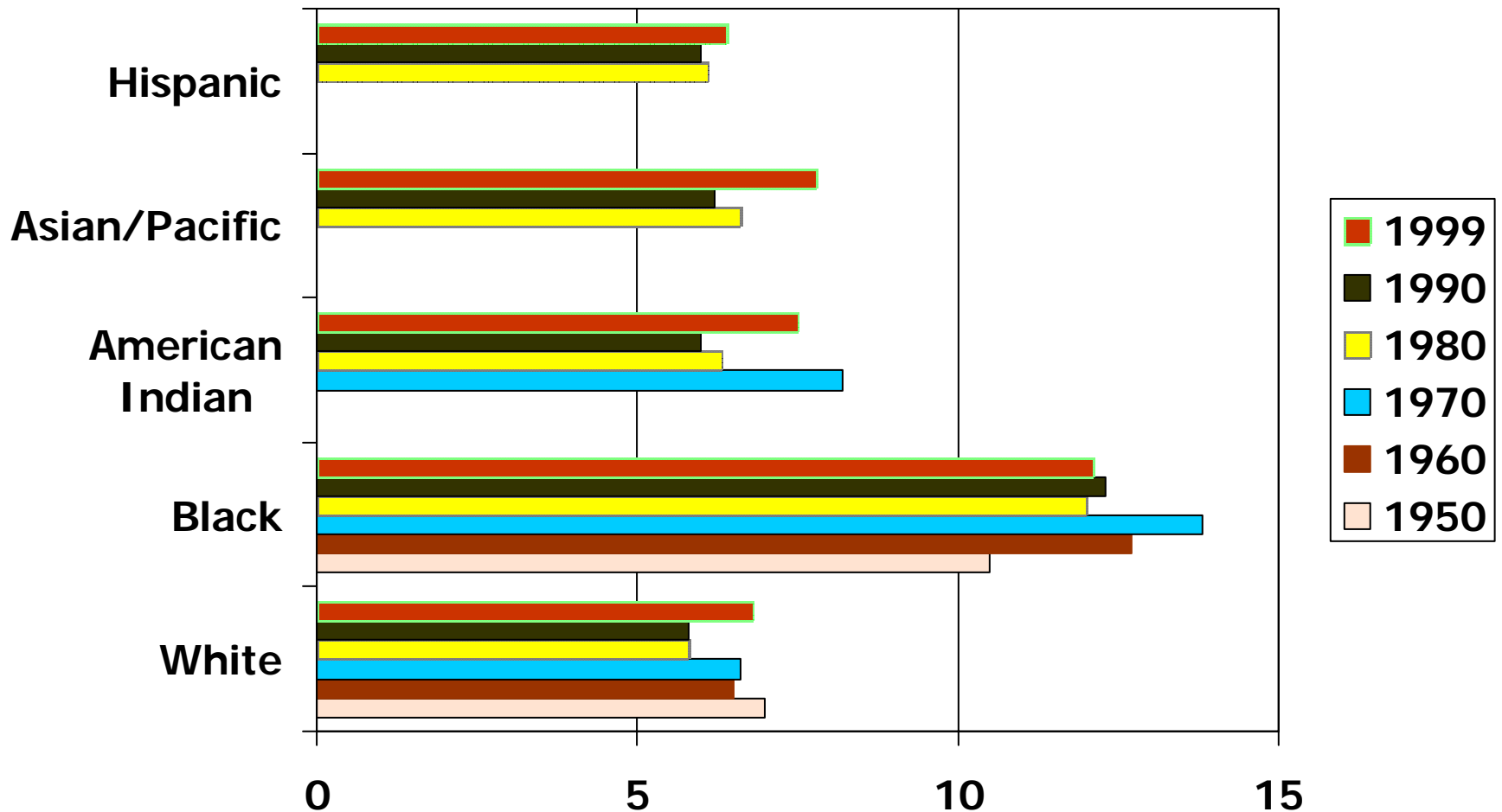
Section B

Racial Differences in Infant Mortality and LBW

Description of Birth Weight Differences

- ◆ Magnitude of the differences:
 - LBW rates are twice as great for black newborns than for white newborns
 - Racial differences for VLBW rates are greater (threefold)
 - Rates of LBW, for most other racial or ethnic groups, are either similar to or slightly higher than white rates but lower than rates for black newborns

Percent LBW by Race and Hispanic Origin, Selected Years: U.S., 1950–1999



Description of Birth Weight Differences

- ◆ Magnitude of the differences:
 - Higher infant mortality rates for black newborns are primarily attributed to racial differences in birth weight, especially for neonatal mortality rates

Racial Differences in LBW Rates* at Johns Hopkins Hospital, 1896–1936

Total Births	White	Black	Ratio
<2500 gms	6.95	11.95	1.96
<2000 gms	2.33	4.39	1.88
<1500 gms	0.81	1.52	1.88

*Excluded infants <1,500 gms or <35 cms in length.

Differences Have Persisted over Time

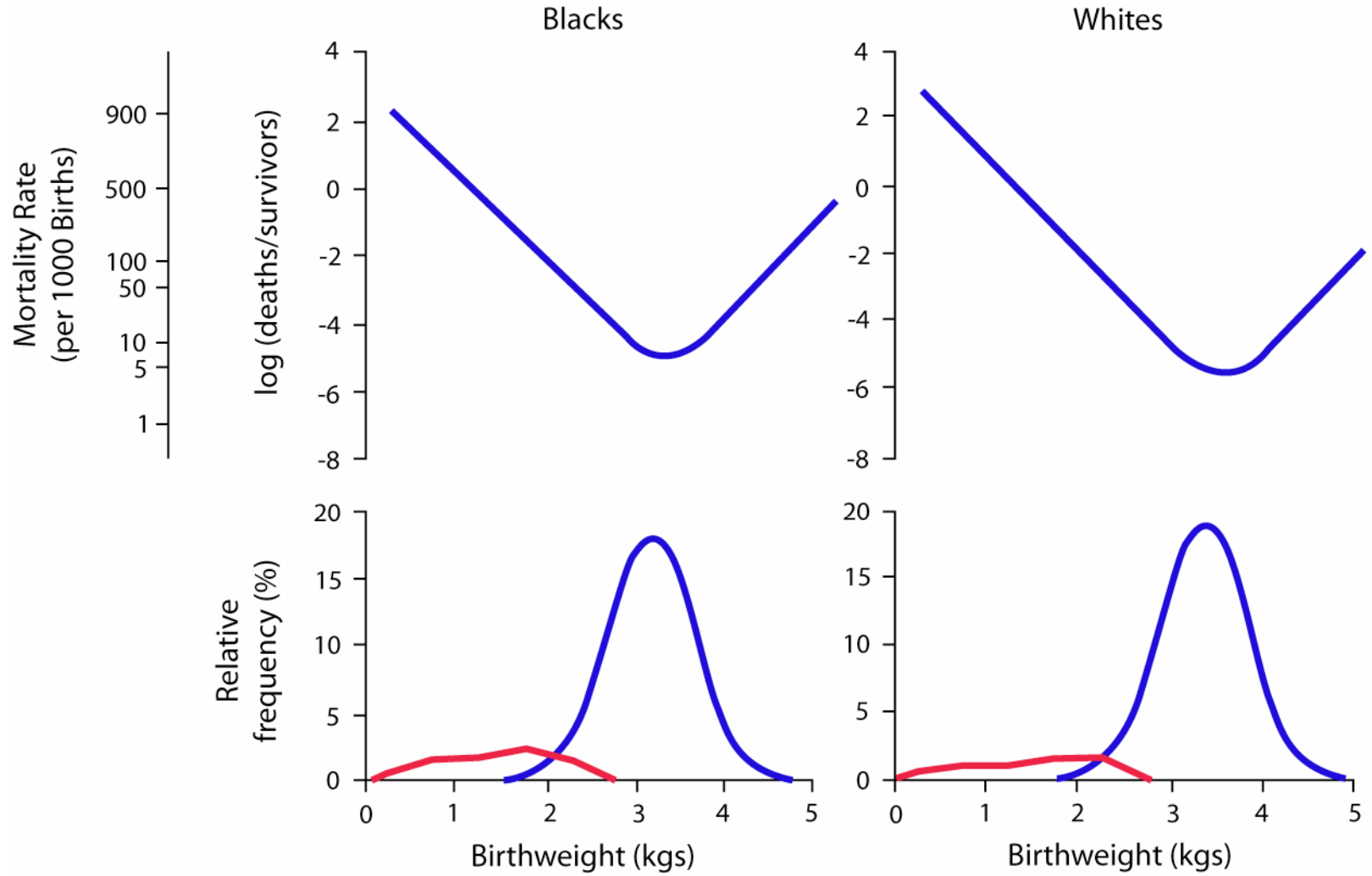
- ◆ Peckham (1938) noted similar differences over 70 years ago
- ◆ Differences persist over markedly different geographic areas
 - Boston
 - St. Louis
 - Mississippi Delta

Racial Gaps in VLBW Rates Persist Across Geographic Areas

Area	VLBW Rates		
	White	Black	Odds Ratio
Boston (1980–85)	0.8	2.4	3.1 (2.6–3.7)
St. Louis (1985–86)	1.4	3.2	2.3 (1.8–2.8)
Mississippi (1984–85)	0.8	2.0	2.5 (1.9–3.3)

Nature of Birth Weight Differences

- ◆ Differences in the mean of the predominant birth weight distribution of about 220 grams
- ◆ Greater percentage of births in the residual distribution for black newborns



Estimated birthweight distributions and mortality curves for blacks and whites.

Source: Wilcox and Russell, *Int. J. Epi.* (1986) 15(2):188-196

Explanations for the Racial Differences in Outcome

- ◆ Dressler (1993) suggests three conventional models of health inequalities:
 - Racial-genetic model
 - Health behavior or life style model
 - Socioeconomic status model

Explanations for the Racial Differences in Outcome

- ◆ Dressler proposes a social structural model to explain racial differences in health
- ◆ He emphasizes social closure, the active mobilization of power to enhance or preserve one's place in the social hierarchy, and declares competitors for status as outsiders

Health Behavior/Socioeconomic Explorations

- ◆ Racial differences in LBW and pre-term birth rates persist when an adjustment is made for traditional risk factors (health behaviors and demographic characteristics)
- ◆ Several recent studies show that differences among low income women may even widen when an adjustment is made for traditional risk factors

Pregnancy Outcomes for Black and White Women in the Military

- ◆ Infant mortality rates are reported by the authors to be similar for the two racial groups
- ◆ Pre-term and LBW rates were still higher for black women, especially for the earliest born and smallest babies

Recent Studies/ Studies in Progress

- ◆ Series of studies funded by CDC to specifically look at stress in relation to pre-term birth
- ◆ Studies generally show small but tangible effects of stress and social supports on pregnancy outcomes
- ◆ The biological basis for an effect of stress on pre-term birth has been increasingly supported in recent studies

Recent Studies/ Studies in Progress

- ◆ Ethnographic studies show multiple sources of stress for black women, which vary by education and social status
 - But they have not directly linked these factors with PTB
- ◆ Alternatively, infant death reviews point to stress as a possible causative factor (but no comparisons are made with infants that did not die)

Role of Racial Discrimination

- ◆ Residential environment
- ◆ Perceived racism as an individual
- ◆ Income incongruity

Women's Health Status

- ◆ Evidence here is largely indirect, based on differences in mortality rates between black and white women for medical causes of death
- ◆ Potentially fruitful area for future study particularly in relation to variations in VLBW rates

Young Black Women More Likely to Die from Medical Causes than Young White Women

	Black/White Ratio	
	15–19 years	25–29 years
All Medical Causes	1.57 (1.5–1.65)	2.69 (2.61–2.77)
Hypertension	1.1 (0.24–5.4)	7.9 (4.5–13.85)
Anemias	7.09 (5.0–10.05)	15.23 (11.26–20.59)
Urinary	2.11 (1.44–3.07)	3.83 (3.09–4.76)
Heart Disease	2.27 (1.96–2.62)	3.54 (3.24–3.85)

Women's Health Status

- ◆ Even if a relationship is established here, it is still necessary to investigate the origins of the maternal health status differences
- ◆ Transgenerational factors: What happens to a woman as a fetus affects her health as an adult

Known Solutions: Suggested by Researchers

- ◆ Reductions in teen births are likely to have only a modest effect on racial differences
- ◆ Changes in health behaviors are likely to have some impact, although, again, probably modest on racial differences
- ◆ A reduction in unwanted pregnancies is likely to have no effect

Known Solutions: Suggested by Researchers

- ◆ Improved access to prenatal care is likely to have only a modest effect on LBW rates
 - In fact, use of prenatal care has increased among black women with no reduction in LBW
- ◆ Improved quality of care may have a larger effect, but its effect is difficult to predict

Known Solutions: Suggested by Researchers

- ◆ Solutions may need to address health status deficits among black children long before the reproductive period (notion of transgenerational effects)