Racial and Ethnic Disparities in Birth Outcomes: *A Life-Course Perspective*

Michael C. Lu, MD, MPH
Associate Professor
Department of Obstetrics & Gynecology
David Geffen School of Medicine at UCLA
Department of Community Health Sciences
UCLA School of Public Health

CIMS 2009 Forum
Speaking with One Voice for Mother-Friendly Care

March 6, 2009

We hold these truths to be self-evident, that all men are created equal ....

Declaration of Independence 1776

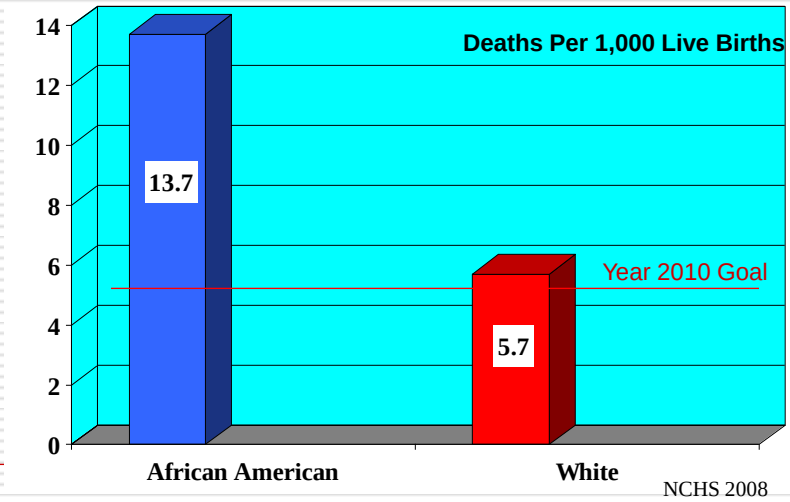
I have a dream that one day … little black boys and black girls will be able to join hands with little white boys and white girls and walk together as sisters and brothers.

Martin Luther King, Jr (1963)

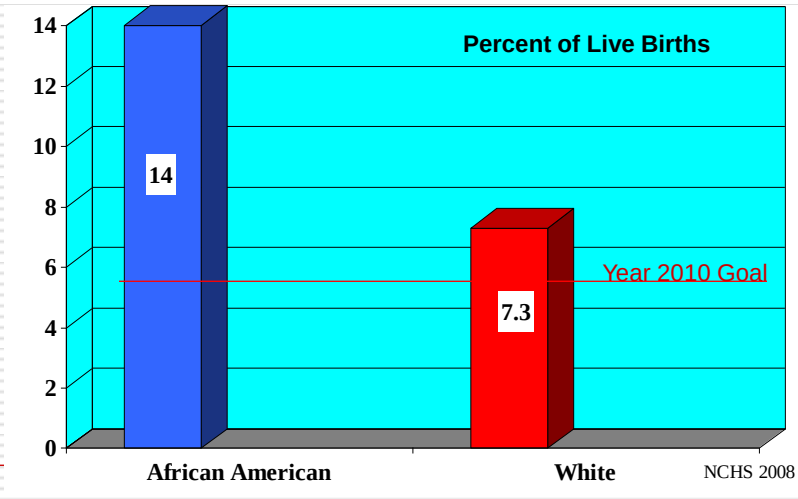
Healthy People 2010 Goals

- Increase quality and years of healthy life
- **Eliminate health disparities**

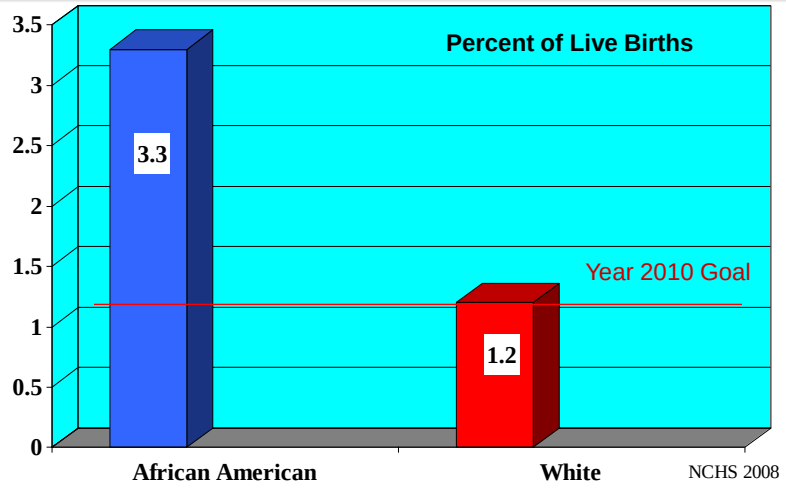
Racial & Ethnic Disparities
Infant Mortality, 2005



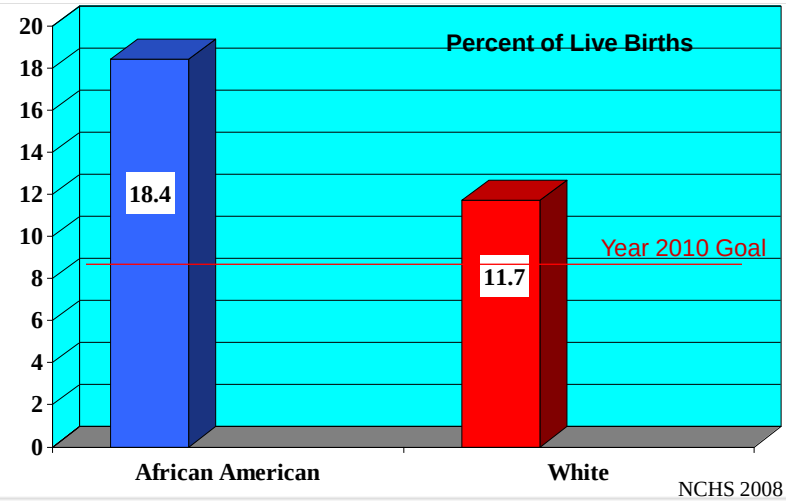
Racial & Ethnic Disparities
Low Birth Weight < 2500g
2005



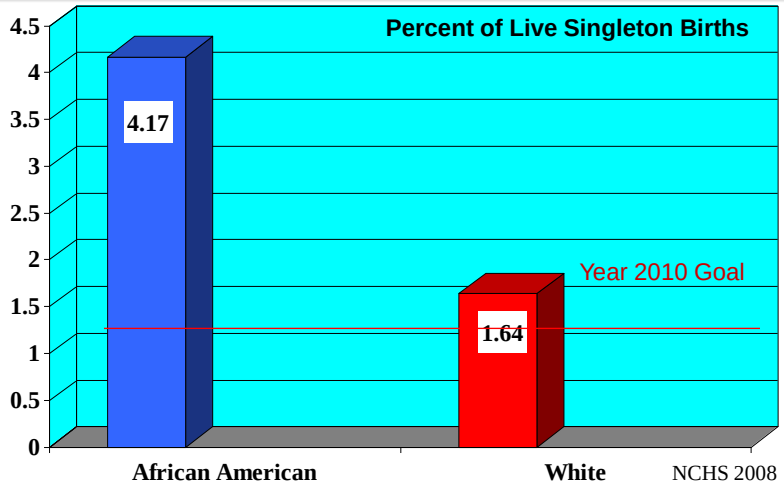
Racial & Ethnic Disparities
Very Low Birth Weight <1500g
2005



Racial & Ethnic Disparities
Preterm Births < 37 weeks, 2005

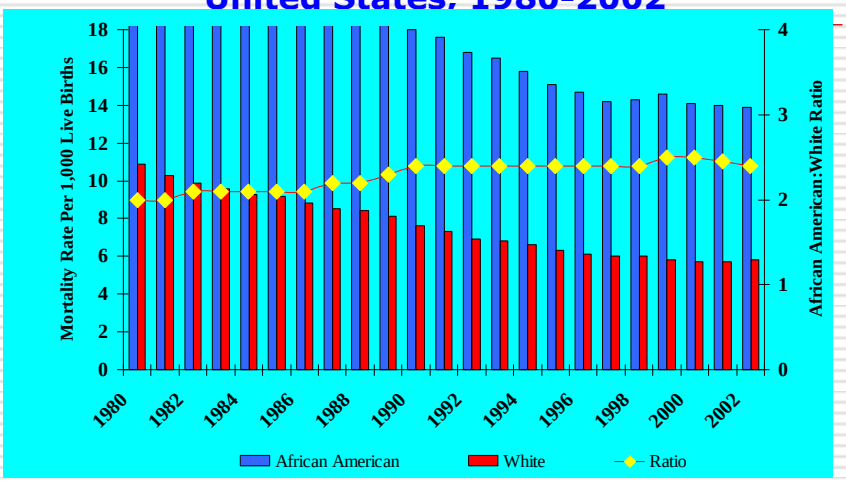


Racial & Ethnic Disparities
Very Preterm Births < 32 Weeks



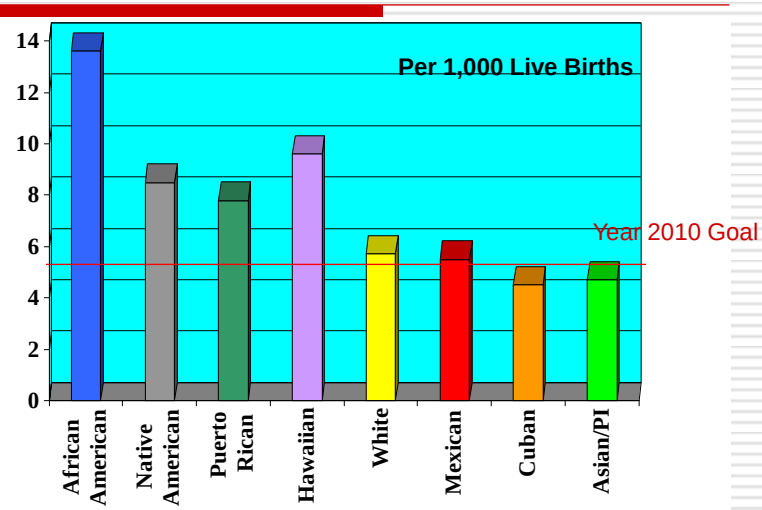
NCHS 2008

Infant Mortality for African Americans and Whites, United States, 1980-2002



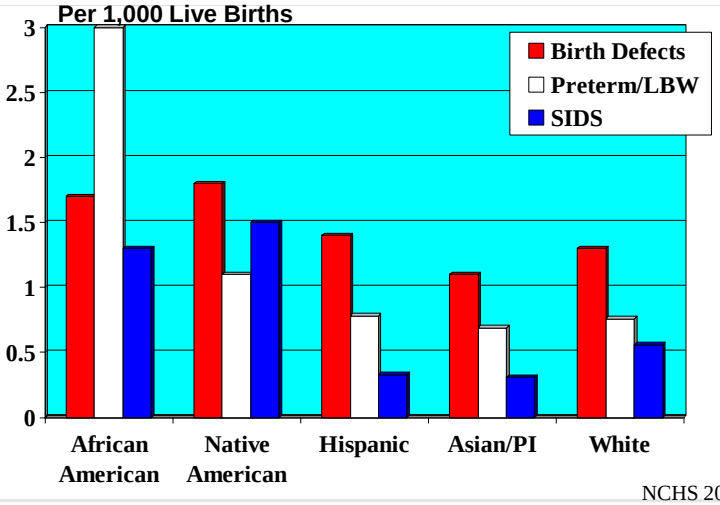
NCHS

Racial & Ethnic Disparities
Infant Mortality



NCHS 2008

Racial & Ethnic Disparities
Causes of Infant Deaths

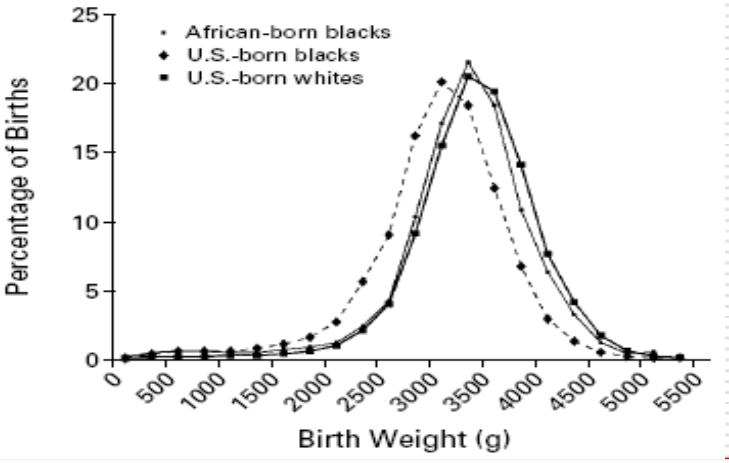


NCHS 2001

Why?

Genetics?

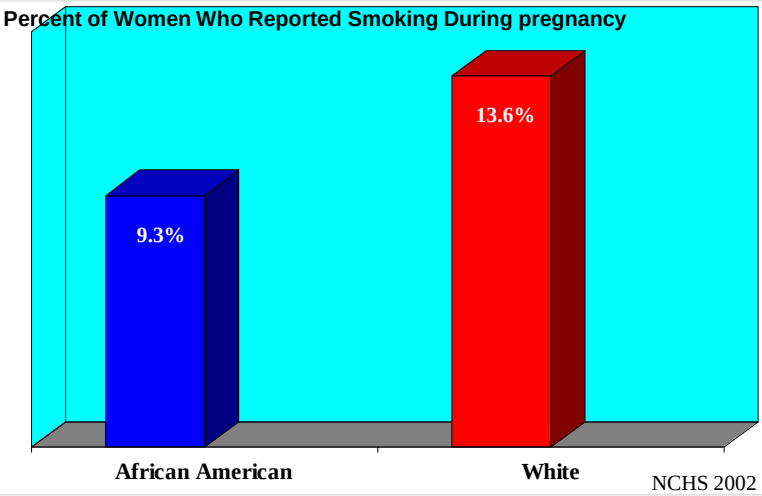
Birth weight distribution of African-born blacks is more closely related to US-born whites than to US-born blacks



David RJ, Collins JW. Differing birth weight among infants of U.S.-born blacks, African-born blacks, and U.S.-born whites. N Engl J Med. 1997 Oct 23;337(17):1209-14.

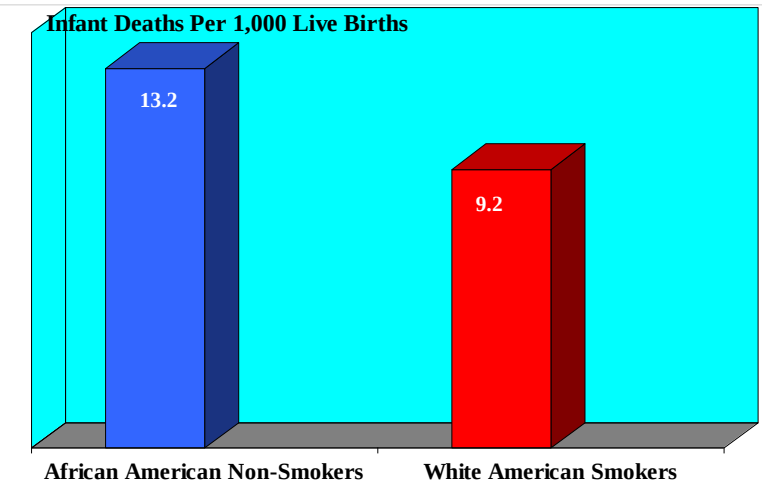
Behavior?

Maternal Smoking?



NCHS 2002

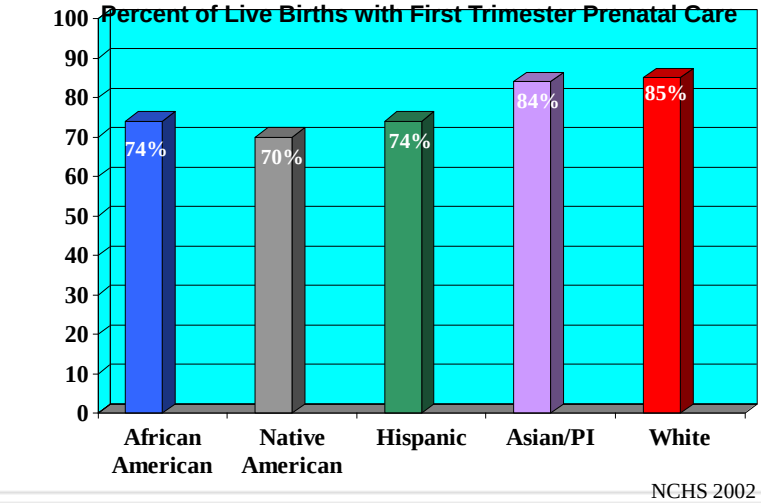
Maternal Smoking?



NCHS 2002

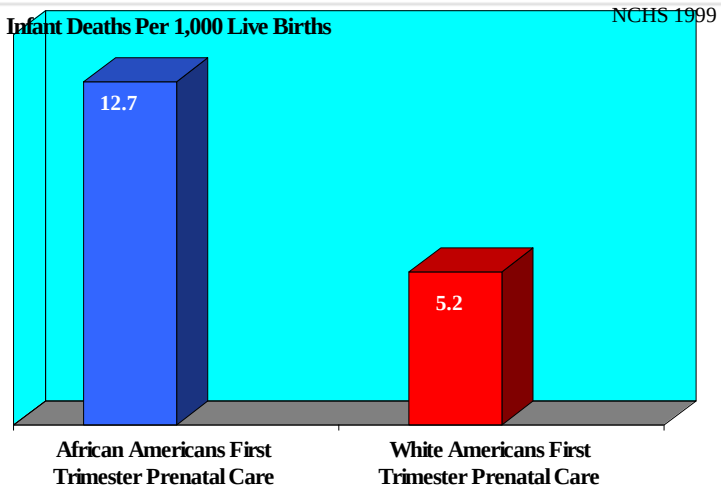
Prenatal Care?

Prenatal Care?

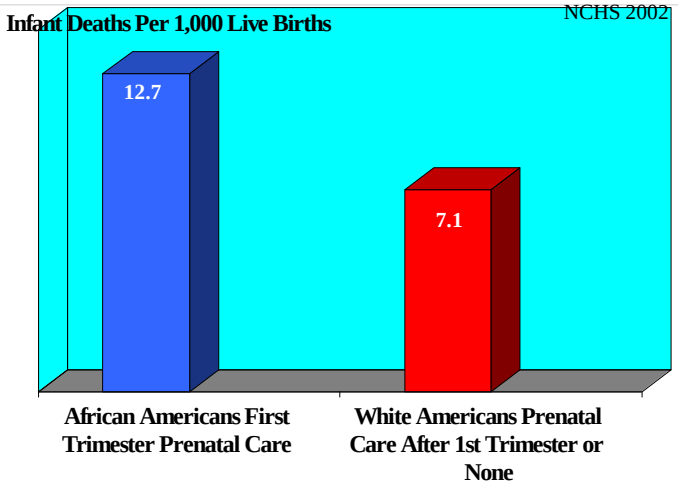


NCHS 2002

Prenatal Care?

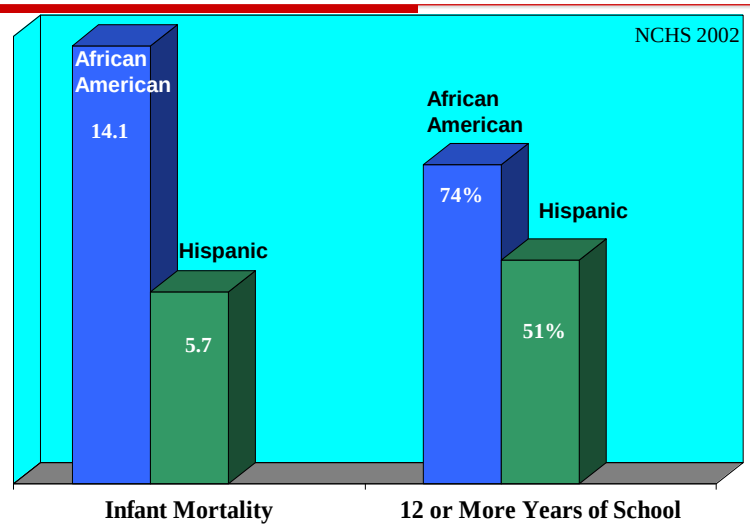


Prenatal Care?

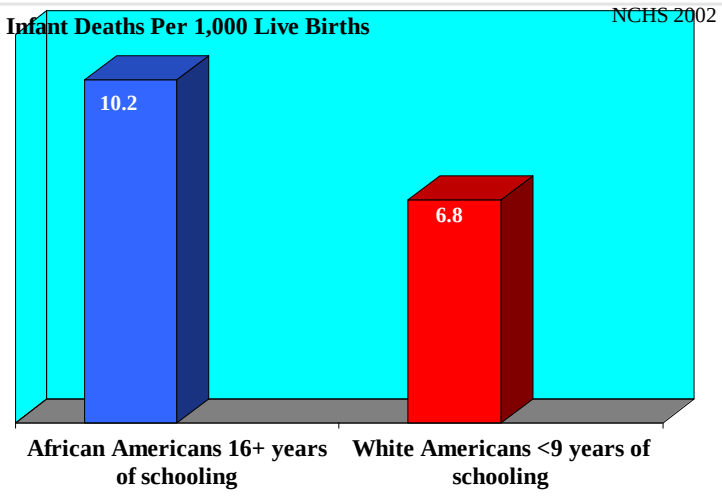


SES?

Racial & Ethnic Disparities
Infant Mortality & Education

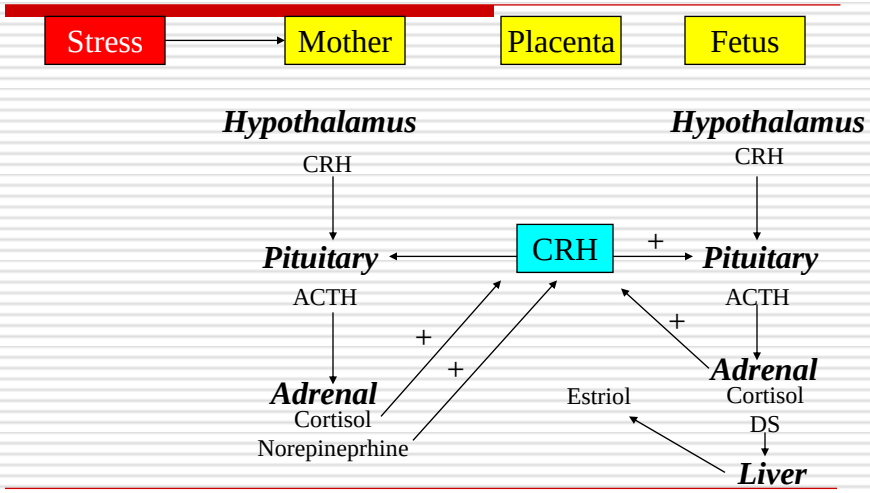


SES?


Infant Deaths Per 1,000 Live Births
NCHS 2002
10.2
6.8
African Americans 16+ years of schooling
White Americans <9 years of schooling

Stress?

Racial and Ethnic Disparities
Stress & Preterm Birth

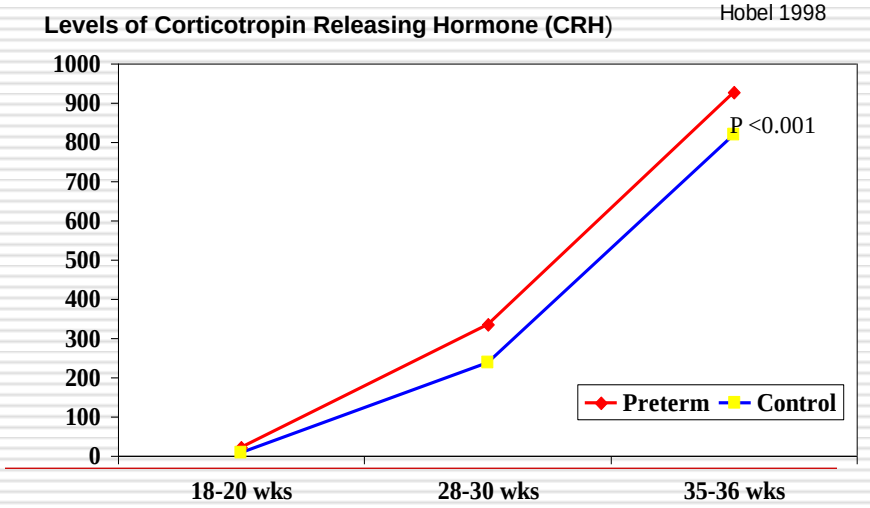


Adapted from Hobel 1998

16 alpha OH DS

Racial & Ethnic Disparities
Stress and CRH in Pregnancy

Hobel 1998



Stressful Life Events & Preterm Birth

American Journal of Obstetrics and Gynecology (2004) 191, 691–9

ELSEVIER

AMERICAN JOURNAL of OBSTETRICS and GYNECOLOGY

www.elsevier.com/locate/ajog

Racial and ethnic disparities in preterm birth: The role of stressful life events

Michael C. Lu, MD, MPH,[a,b,c,*] Belinda Chen, MPH[b]

Department of Obstetrics and Gynecology, David Geffen School of Medicine at UCLA,[a] Department of Community Health Sciences[b] and the Center for Healthier Children, Families and Communities,[c] UCLA School of Public Health, Los Angeles, Calif

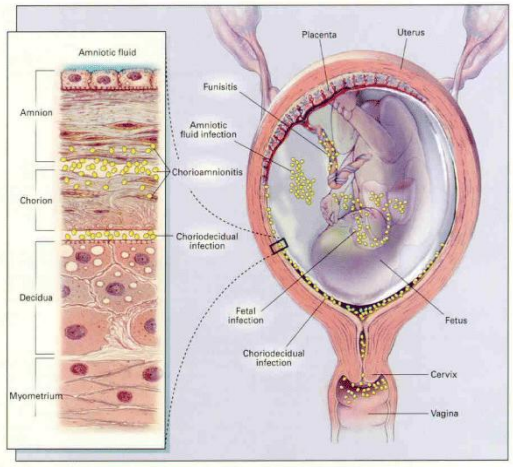
Received for publication January 7, 2004; revised March 10, 2004; accepted April 23, 2004

KEY WORDS
Preterm birth
Racial-ethnic disparity
Stressful life event

Objective: The purpose of this study was to examine racial-ethnic disparities in stressful life events before and during pregnancy and to assess the relationship between stressful life events and racial-ethnic disparities in preterm birth.
Study design: Using data from the Pregnancy Risk Assessment Monitoring System, we conducted a retrospective cohort analysis of a sample of 33,542 women from 19 states who were delivered of a live-born infant in 2000. Principal component analysis was used to group 13 stressful life events into 4 stress constructs: emotional, financial, partner-related, and traumatic. Racial-ethnic disparities in stressful life events were assessed with the use of bivariate and multivariate regression analyses. The contribution of stressful life events to racial-ethnic disparities in preterm birth was evaluated with the use of stepwise regression model and interaction terms.
Results: Black women and American Indian/Alaska Native women reported the highest number of stressful life events in the 12 months before delivery. Compared with non-Hispanic white women, black women were 24% more likely to report emotional stressors, 35% more likely to report financial stressors, 163% more likely to report partner-related stressors, and 83% more likely to report traumatic stressors. The addition of stress constructs to the stepwise regression model minimally affected the association between race-ethnicity and preterm birth, and none of the stress constructs were significantly associated with preterm birth. There were no significant interaction effects between race-ethnicity and stress on preterm birth, except for a modest effect between black race and traumatic stressors.
Conclusion: There are significant racial-ethnic disparities in the experience of stressful life events before and during pregnancy. Stressful life events do not appear to contribute significantly to racial-ethnic disparities in preterm birth.

Infection?

Infections?



(Goldenberg RL et. al. NEJM 342: 1500, 2000)

Multiple Risk Factors?

Racial and Ethnic Disparities

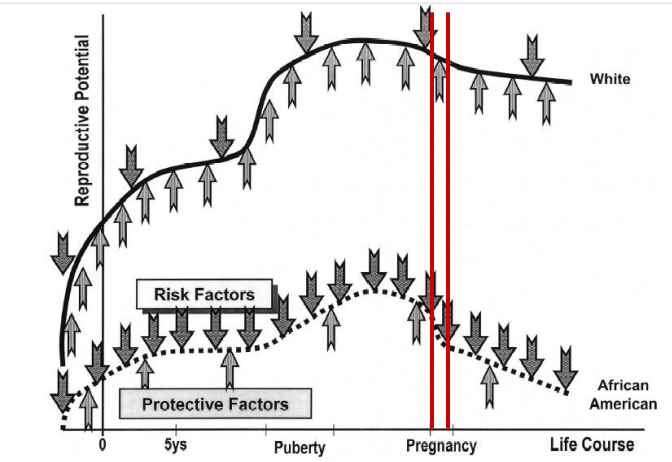
Multiple Determinants of Birth Outcomes

- Shiono et al AJPH 1997
- Controlled for 46 risk factors (demographic characteristics, medical risks, level of living, psychological, social, exposures, "newly defined")
- 236 g mean birthweight difference between African Americans & whites remained
- Maternal age, smoking, BMI, housing & locus of control only significant covariates
- 46 risk factors explained less than 10% of variation in birthweight

Life-Course Perspective

- A way of looking at life not as disconnected stages, but as an integrated continuum

Racial and Ethnic Disparities in Birth Outcomes: A Life Course Perspective

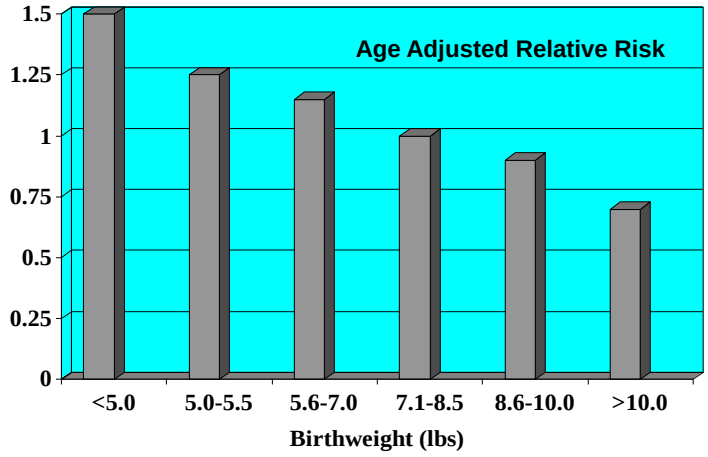


Lu MC, Halfon N. Racial and ethnic disparities in birth outcomes: a life-course perspective. Matern Child Health J. 2003;7:13-30.

Early Programming

Barker Hypothesis

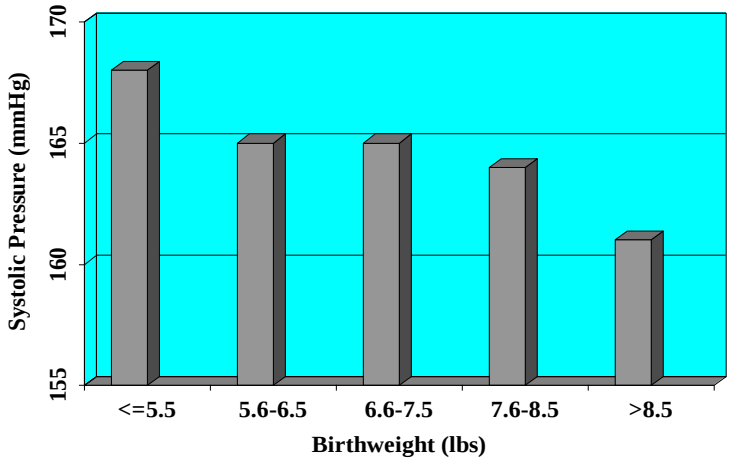
Birth Weight and Coronary Heart Disease



Rich-Edwards JW, Stampfer MJ, Manson JE, Rosner B, Hankinson SE, Colditz GA et al. Birth weight and risk of cardiovascular disease in a cohort of women followed up since 1976. Br Med Jr 1997;315:396-400.

Barker Hypothesis

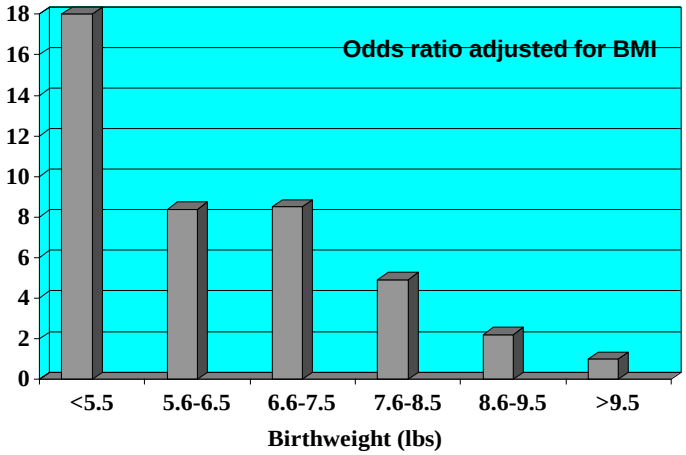
Birth Weight and Hypertension



Law CM, de Swiet M, Osmond C, Fayers PM, Barker DJP, Cruddas AM, et al. Initiation of hypertension in utero and its amplification throughout life. Br Med J 1993;306:24-27.

Barker Hypothesis

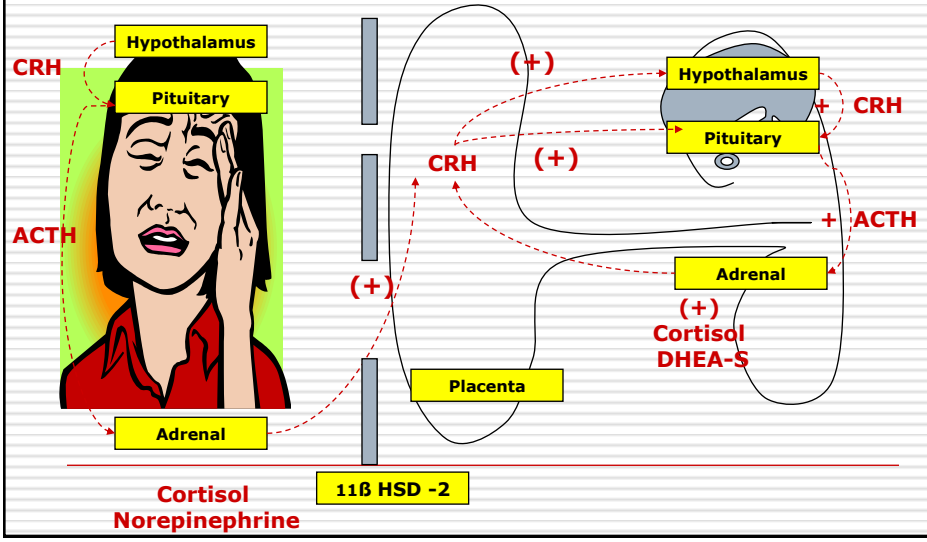
Birth Weight and Insulin Resistance Syndrome



Barker DJP, Hales CN, Fall CHD, Osmond C, Phipps K, Clark PMS. Type 2 (non-insulin-dependent) diabetes mellitus, hypertension and hyperlipidaemia (Syndrome X): Relation to reduced fetal growth. Diabetologia 1993;36:62-67.

Maternal Stress & Fetal Programming

Maternal Stress & Fetal Programming
Does Stress Cross the Placenta?



Prenatal Stress & Programming of the Brain

- **Prenatal stress (animal model)**
  - **Hippocampus**
    - Site of learning & memory formation
    - Stress down-regulates glucocorticoid receptors
    - Loss of negative feedback; overactive HPA axis
  - **Amygdala**
    - Site of anxiety and fear
    - Stress up-regulates glucocorticoid receptors
    - Accentuated positive feedback; overactive HPA axis

Welberg LAM, Seckl JR. Prenatal stress, glucocorticoids and the programming of the brain. J Neuroendocrinol 2001;13:113-28.

Prenatal Programming of the Hypothalamic-Pituitary-Adrenal Axis

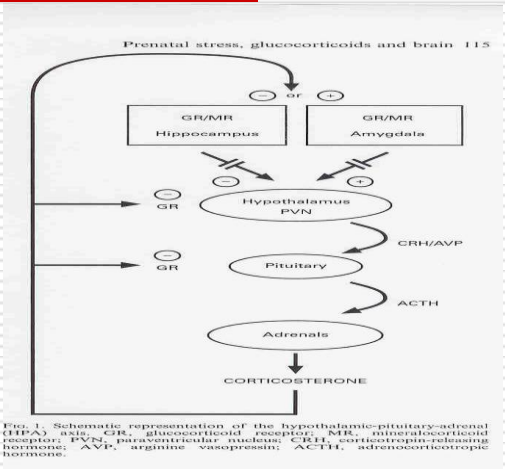
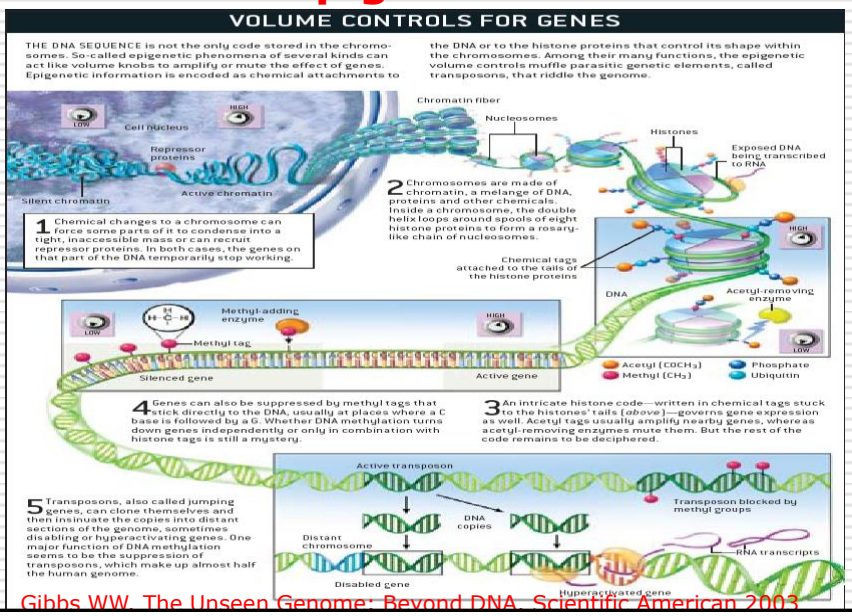


FIG. 1. Schematic representation of the hypothalamic-pituitary-adrenal (HPA) axis. GR, glucocorticoid receptor; MR, mineralocorticoid receptor; PVN, paraventricular nucleus; CRH, corticotropin-releasing hormone; AVP, arginine vasopressin; ACTH, adrenocorticotropic hormone.

Welberg LAM, Seckl JR. Prenatal stress, glucocorticoids and the programming of the brain. J Neuroendocrinol 2001;13:113-28.

Epigenetics



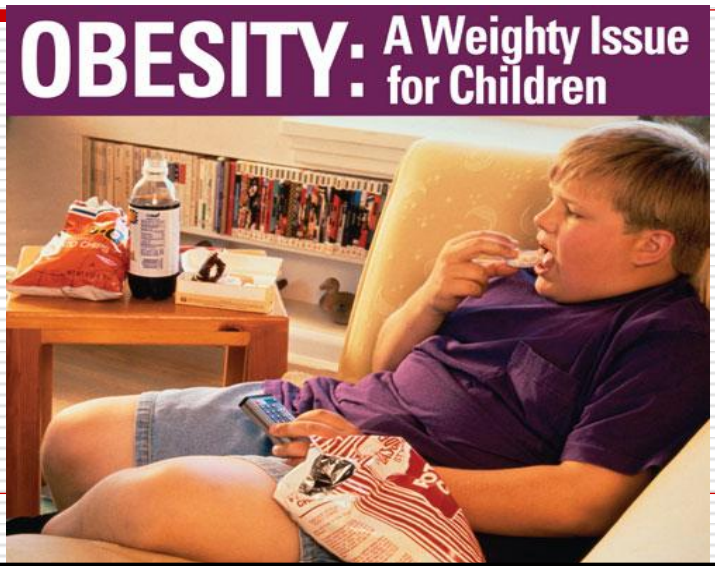
Gibbs WW. The Unseen Genome: Beyond DNA. Scientific American 2003

Epigenetics

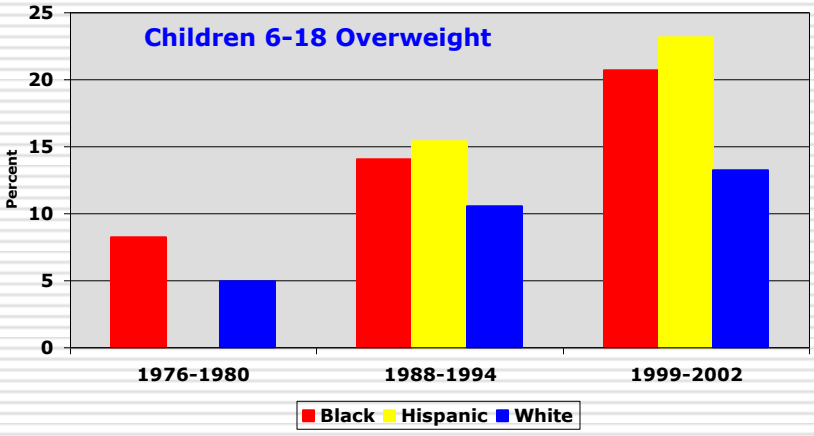
Same Genome, Different Epigenome

R.A. Waterland, R.A. Jirtle, "Transposable elements: targets for early nutritional effects on epigenetic gene regulation," *Mol Cell Biol*, 23:5293-300, 2003. Reprinted in the New Scientist 2004

Prenatal Programming of Childhood Obesity



Epidemic of Childhood Overweight & Obesity



Source: National Center for Health Statistics, National Health and Nutrition Examination Survey

Note: Estimate not available for 1976-1980 for Hispanic; overweight defined as BMI at or above the 95th percentile ofr the CDC BMI-for-age growth charts

Prenatal Programming of Childhood Overweight & Obesity

Matern Child Health J
DOI 10.1007/s10995-006-0141-8

ORIGINAL PAPER

Prenatal Programming of Childhood Overweight and Obesity

Jennifer S. Huang · Tiffany A. Lee · Michael C. Lu

Abstract *Objective:* To review the scientific evidence for prenatal programming of childhood overweight and obesity, and discuss its implications for MCH research, practice, and policy.

Methods: A systematic review of observational studies examining the relationship between prenatal exposures and childhood overweight and obesity was conducted using MOOSE guidelines. The review included literature posted on PubMed and MDConsult and published between January 1975 and December 2005. Prenatal exposures to maternal diabetes, malnutrition, and cigarette smoking were examined, and primary study outcome was childhood overweight or obesity as measured by body mass index (BMI) for children ages 5 to 21.

Results: Four of six included studies of prenatal exposure to maternal diabetes found higher prevalence of childhood overweight or obesity among offspring of diabetic mothers, with the highest quality study reporting an odds ratio of adolescent overweight of 1.4 (95% CI 1.0–1.9). The Dutch famine study found that exposure to maternal malnutrition in early, but not late, gestation was associated with increased odds of childhood obesity (OR 1.9, 95% CI 1.5–2.4). All eight included studies of prenatal exposure to maternal smoking showed significantly increased odds of childhood overweight and obesity, with most odds ratios clustering around 1.5 to 2.0. The biological mechanisms mediating these relationships are unknown but may be partially related to programming of insulin, leptin, and glucocorticoid resistance *in utero*.

Conclusion: Our review supports prenatal programming of childhood overweight and obesity. MCH research, practice, and policy need to consider the prenatal period a window of opportunity for obesity prevention.

Keywords Prenatal programming · Childhood obesity · Overweight · Developmental programming · Fetal programming · Gestational diabetes · Maternal malnutrition · Cigarette smoking

Childhood overweight and obesity is a growing problem in the United States and worldwide. The prevalence of childhood overweight in the U.S. tripled between 1980 and 2000 [1]. Today approximately 1 in 6 (16%) U.S. children are overweight with significant racial-ethnic disparities. For example, nearly 1 in 4 (23%) non-Hispanic black girls ages 6 to 19 are overweight, a prevalence almost twice that of non-Hispanic white girls [1].

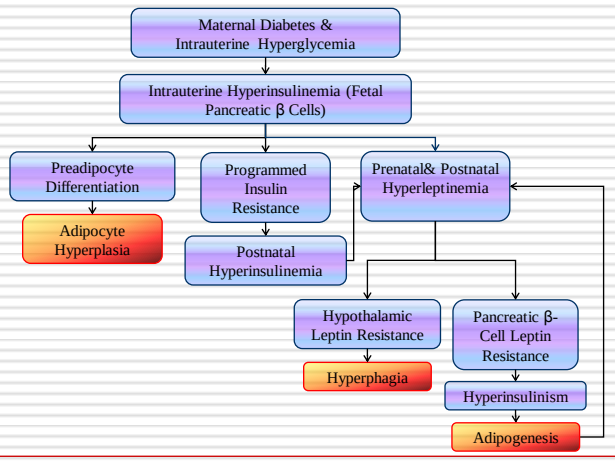
Overweight and obesity has significant lifelong consequences on the health and well-being of children [2, 3]. Childhood obesity is associated with early-onset Type II diabetes mellitus, hypertension, metabolic syndrome, and sleep apnea. It is also associated with cognitive or intellectual impairment and social exclusion and stigmatization as parts of a vicious cycle including school avoidance [3]. Childhood obesity tracks strongly into adulthood [4, 5]; obesity beyond

Disclaimer: The opinions expressed in this paper are the authors' and do not necessarily reflect the views or policies of the institutions with which the authors are affiliated.

J. S. Huang · T. A. Lee · M. C. Lu
Department of Obstetrics and Gynecology,
David Geffen School of Medicine at UCLA,
CA, USA

M. C. Lu (✉)
Department of Community Health Sciences and the Center for Healthier Children, Families and Communities,
UCLA School of Public Health,
Box 951772, Los Angeles, CA 90095–1772, USA
e-mail: mclu@ucla.edu

Prenatal Programming of Childhood Obesity

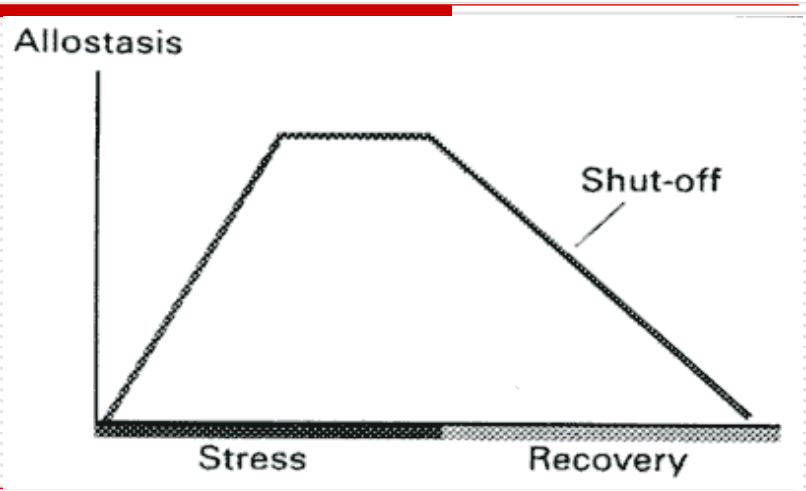


Cumulative Pathways

Stress

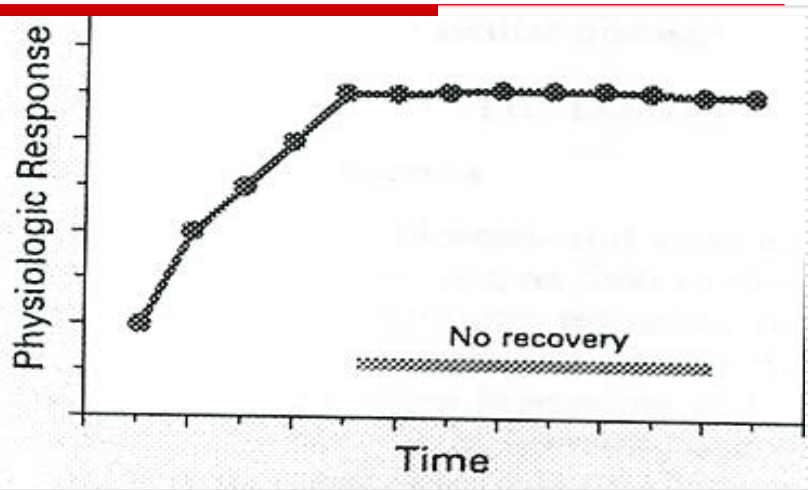
Photo: http://www.lam.mus.ca.us/cats/encyclo/smilodon/

Allostasis:
Maintain Stability through Change



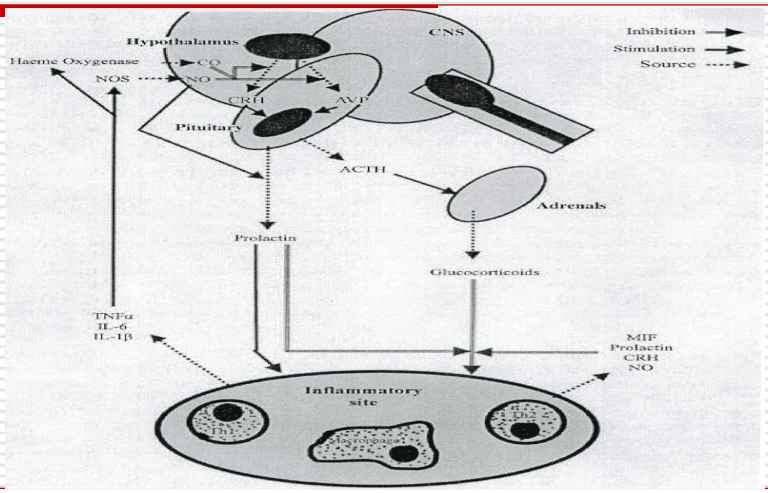
McEwen BS. Protective and damaging effects of stress mediators. N Eng J Med. 1998;338:171-9.

Allostastic Load



McEwen BS. Protective and damaging effects of stress mediators. N Eng J Med. 1998;338:171-9.

Allostasis

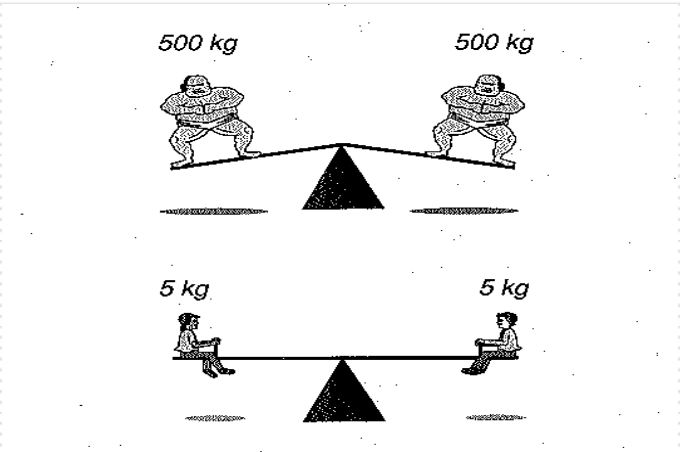


Chikanza IC, Grossman AB. Reciprocal interactions between the neuroendocrine and immune systems during inflammation. Rheum Dis Clin N Am 2000;4:693-711

Stressed vs. Stressed Out

- Stressed
  - Increased cardiac output
  - Increased available glucose
  - Enhanced immune functions
  - Growth of neurons in hippocampus & prefrontal cortex
- Stressed Out
  - Hypertension & cardiovascular diseases
  - Glucose intolerance & insulin resistance
  - Infection & inflammation
  - Atrophy & death of neurons in hippocampus & prefrontal cortex

Allostatic Load

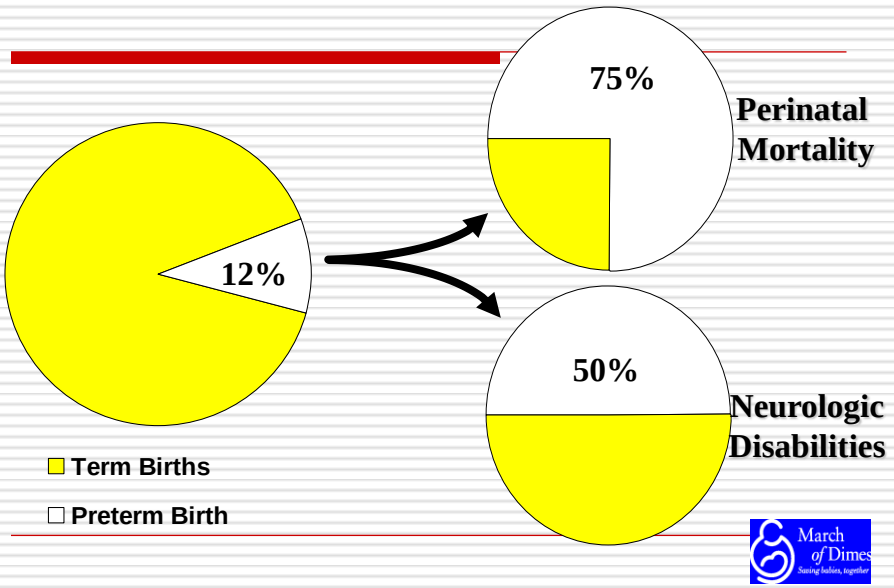


McEwen BS, Lasley EN. The end of stress: As we know it. Washington DC: John Henry Press. 2002

Rethinking Preterm Birth

March of Dimes
Saving babies, together

Sequelae of Preterm Birth

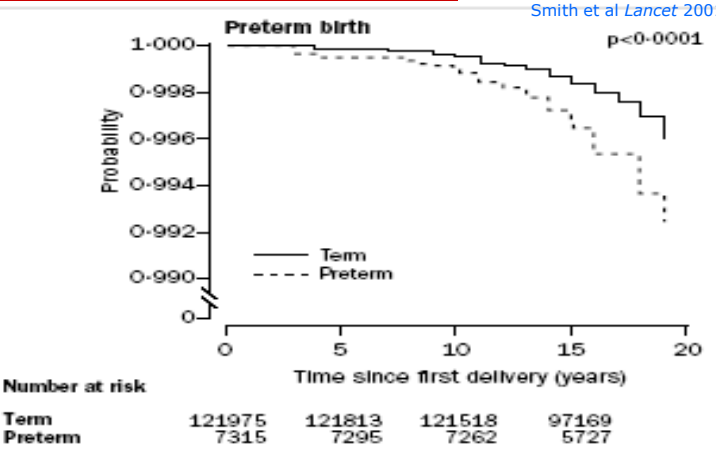


Rethinking Preterm Birth Prevention

Vulnerability to preterm delivery may be traced to not only exposure to stress & infection during pregnancy, but host response to stress & infection (e.g. stress reactivity & inflammatory dysregulation) patterned over the life course (early programming & cumulative allostatic load)

Preterm Birth & Maternal Ischemic Heart Disease

Smith et al *Lancet* 2001;357:2002-06



Kaplan-Meier plots of cumulative probability of survival without admission or death from ischemic heart disease after first pregnancy in relation to preterm birth

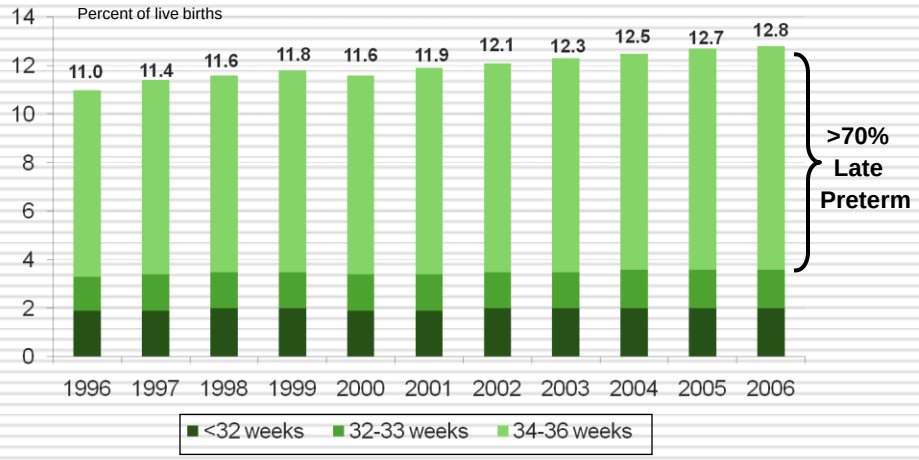
Late Preterm Birth

Late Preterm Birth

- Late PTB rate is rising in the U.S.

Preterm births by gestational age

US, 1996-2006

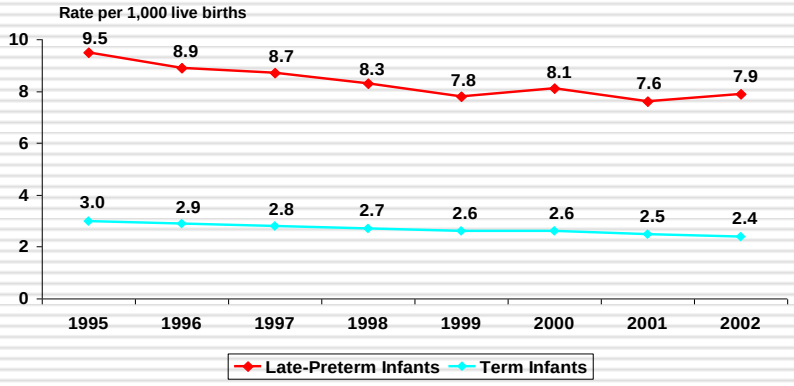


Source: National Center for Health Statistics
Prepared by March of Dimes, Periantal Data Center, 2009

Late Preterm Birth

- **Late PTB is associated with adverse outcomes**

Late PTB Infants Are At Greater Risk for Infant Death



Source: National Center for Health Statistics, period linked birth/infant death data
Prepared by March of Dimes Perinatal Data Center, 2007

Late PTB Infants Are At Greater Risk For Cerebral Palsy & Mental Retardation

	CP		DD/MR	
	Hazard ratio	95% CI	Hazard ratio	95% CI
Crude hazard ratios				
Gestational age (weeks)				
30-33	9.09	6.36-12.99	2.17	1.56-3.03
34-36	3.68	2.79-4.87	1.36	1.11-1.66
37-41 (reference)	1.00		1.00	
≥42	0.91	0.34-2.46	1.02	0.66-1.56
Adjusted hazard ratios*				
Gestational age (weeks)				
30-33	7.87	5.38-11.51	1.90	1.34-2.71
34-36	3.39	2.54-4.52	1.25	1.01-1.54
37-41 (reference)	1.00		1.00	
≥42	0.90	0.34-2.43	1.01	0.66-1.55

*Adjusted for maternal race/ethnicity, infant sex, multiple gestation, SGA, and LGA.

Petrini JR, Dias T, McCormick MC, Massolo ML, Green NS, Escobar GJ. Increased risk of adverse neurological development for late preterm infants. Journal of Pediatrics 2008.

Late PTB Infants Are At Greater Risk For Neurodevelopmental Problems

- Compared to term infants, late preterm infants:
  - Are twice as likely to die of SIDS
  - Have an 80% increased risk of ADHD
  - Have a 20% risk of clinically significant behavior problems at 8 yrs of age
  - Are more likely to be diagnosed with Developmental Delay in the first 3 years
  - Are more likely to be referred for special needs in pre-school
  - Are more likely to have problems with school readiness

Adams- Chapman I. Clin Perinatol 33: 947-964

SMFM PAPERS www.AJOG.org

Adverse neonatal outcomes: examining the risks between preterm, late preterm, and term infants

Jamie A. Bastek, MD; Mary D. Sammel, ScD; Emmanuelle Paré, MD; Sindhu K. Srinivas, MD; Michael A. Posencheg, MD; Michal A. Elovitz, MD

OBJECTIVE: There is a relative paucity of data regarding neonatal outcomes in the late preterm cohort (34 to 36 6/7 weeks). This study sought to assess differences in adverse outcomes between infants delivering 32 to 33 6/7, 34 to 36 6/7 weeks, and 37 weeks or later.

STUDY DESIGN: Data were collected as part of a retrospective cohort study of preterm labor patients (2002-2005). Patients delivering 32 weeks or later were included (n = 264). The incidence of adverse outcomes was assessed. Significant associations between outcomes and gestational age at delivery were determined using χ^2 analyses and Poisson regression modeled cumulative incidence and controlled for confounders.

RESULTS: Late preterm infants have increased risk of adverse outcomes, compared with term infants. Controlling for confounders, there was a 23% decrease in adverse outcomes with each week of advancing gestational age between 32 and 39 completed weeks (relative risk 0.77, $P < .001$, 95% confidence interval, 0.71-0.84).

CONCLUSION: Further investigation regarding obstetrical management and long-term outcomes for this cohort is warranted.

Key words: adverse neonatal outcomes, late preterm infant, preterm birth, preterm labor

Cite this article as: Bastek JA, Sammel MD, Paré E, et al. Adverse neonatal outcomes: examining the risks between preterm, late preterm, and term infants. Am J Obstet Gynecol 2008;199:367.e1-367.e8.

The preterm birth rate has risen 31% since 1981, most notably because of

★EDITORS' CHOICE★

MATERIALS AND METHODS

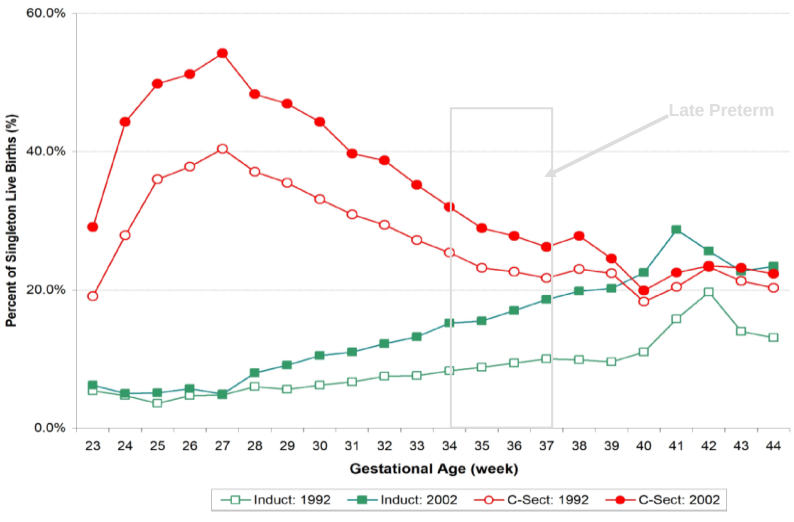
Data collection for this study was per-

AJOG 199 (4), 365, Oct 2008.

Late Preterm Birth

- Some late PTBs are iatrogenic

Between 1992 & 2002
Late PTB by Induction has doubled
Late PTB by Cesarean has increased by 1/3



Standardizing Criteria for Scheduling Elective Labor Inductions

Abstract

Induction of labor has become routine practice in perinatal units across the United States, with rates reaching a high of 21.2% of births in 2003-2004. This article describes the process our institution used to standardize the criteria for scheduling inductions. Specifically, we aimed to increase the consistency in practice for scheduling and performing elective inductions, including mandating gestational age of 39 completed weeks, ensuring cervical ripeness, and disallowing the use of cervical ripening agents. The nurses' participation, from planning to implementation, was critical in the success of this evidence-based practice change.

Key Words: Induction of labor; Perinatal nursing; Standardization.

Laurel Durham, MPH, RN, Larry Veltman, MD, Peggy Davis, BSN, RN, Linda Ferguson, RNC, Margaret Hacker, BSN, RN, Debra Hooker, RN, Kristine Larigon, MBA, RN, Jennifer Pribyl, BSN, RN, Karen Twilleager, BSN, RN, and Gretchen Van Hout, BSN, RN

Durham L, et al. MCN May/June 2008

"It is imperative that nurses are an integral part of the team that determines the best practice for elective inductions within hospitals."

Table 2. Changes to Elective Induction Scheduling Process After 3 Months and Provider Feedback

	Beginning of trial	After feedback from providers
Personnel and Scheduling	Inductions must be scheduled by provider only (no support staff from office allowed to call for scheduling).	Any provider or staff who has all required information for scheduling can schedule inductions.
Bishop score	Bishop score must be >8 for all elective inductions.	Nulliparous patients must have Bishop score >8. Multiparous patients must have Bishop score >6.
Scheduling time in advance of induction date	Elective inductions can be scheduled 7 days in advance.	Elective inductions can be scheduled 10 days in advance.

Suggested Clinical Implications

- Perinatal nurses need to be aware of recommended criteria for elective inductions and the evidence supporting it.
- Adherence to ACOG and IHI recommendations for elective inductions requires gestational age more than 39 completed weeks and measurement of Bishop score.
- Focusing on decreasing variation in practice may allow for increased quality in perinatal care.
- Hospitals may want to consider shifting their focus from rate of induction to the appropriateness of each induction.
- Support of leadership for change is essential.

CLINICAL OPINION www.AJOG.org

OBSTETRICS

Improved outcomes, fewer cesarean deliveries, and reduced litigation: results of a new paradigm in patient safety

Steven L. Clark, MD; Michael A. Belfort, MD, PhD; Spencer L. Byrum, LCDR (ret.) USCG; Janet A. Meyers, RN; Jonathan B. Perlin, MD, PhD

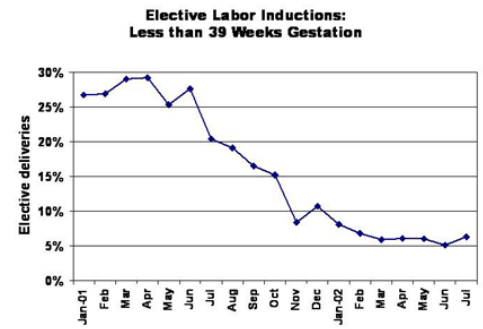
The Hospital Corporation of America (HCA) is the nation's largest private health care delivery system, providing approximately 220,000 deliveries annually in 120 facilities in 21 states. Representing approximately 5% of all births in the United States, we describe here our assessment and approaches to 4 major challenges in contemporary obstetric practice and the initial results of these initiatives. Notably, and as part of a concerted effort to incorporate the features of high-reliability organizations into HCA's obstetrical services, these interventions have been associated with improved perinatal outcomes, a reduced primary cesarean delivery rate, and lower maternal and fetal injury, with re-

In a health care delivery system with an annual delivery rate of approximately 220,000, a comprehensive redesign of patient safety process was undertaken based on the following principles: (1) uniform processes and procedure result in an improved quality; (2) every member of the obstetric team should be required to halt any process that is deemed to be dangerous; (3) cesarean delivery is best viewed as a process alternative, not an outcome or quality endpoint; (4) malpractice loss is best avoided by reduction in adverse outcomes and the development of unambiguous practice guidelines; and (5) effective peer review is essential to quality medical practice yet may be impossible to achieve at a local level in some departments. Since the inception of this program, we have seen improvements in patient outcomes, a dramatic decline in litigation claims, and a reduction in the primary cesarean delivery rate.

Key words: litigation, patient outcomes, patient safety, quality medical practice

Cite this article as: Clark SL, Belfort MA, Byrum SL, et al. Improved outcomes, fewer cesarean deliveries, and reduced litigation: results of a new paradigm in patient safety. Am J Obstet Gynecol 2008;199:105.e1-105.e7.

Clark SL, et al. AJOG, 2008;199:105.e1-105.e7.



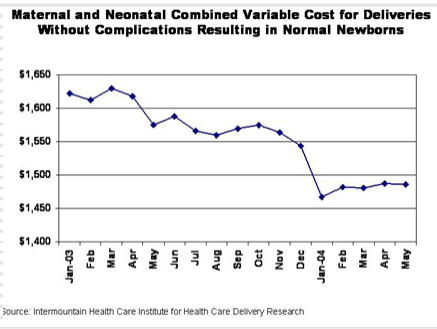
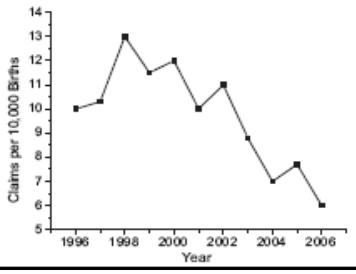


FIGURE 4
Trends in obstetrical malpractice claims



Healthy Babies
ARE WORTH THE WAIT®

Learn About Prematurity/Preterm Birth | Make a Difference in Your Community | About Our Initiative | For Health Care Professionals | For the Press

HEALTH TIP OF THE MONTH

Preterm labor can happen to any pregnant woman. Ask your healthcare provider about the signs and symptoms of going into labor too soon and about what you can do to reduce your risk.

Welcome to the official website of

Healthy Babies Are Worth the Wait

Our goal is to reduce the high rates of premature birth in Kentucky.

Prematurity is the number one cause of newborn infant death. In the U.S., about 1 in 8 babies are born prematurely (before 37 weeks), and in Kentucky 1 out of 7 babies are delivered early. Premature babies are more likely to have serious life-long problems than babies born full term. Even babies born just a few weeks early or *late preterm* (between 34 and 37 weeks) can develop serious problems, as their brains are not fully developed.

WHAT'S NEW?

www.prematurityprevention.org

If your pregnancy is healthy, it's best if your baby is born at 40 weeks.

A baby's brain at 35 weeks weighs only two-thirds of what it will weigh at 40 weeks.

35 weeks 40 weeks

- In the last six weeks of pregnancy, your baby's brain adds connections needed for balance, coordination, learning and social functioning. During this time, the size of your baby's brain almost doubles.
- Babies born early have more learning and behavior problems in childhood than babies born at 40 weeks.
- Babies born early are more likely to have feeding problems because they can't coordinate sucking, swallowing and breathing as well as full-term babies.
- Babies born early are likely to have breathing problems, like apnea. Apnea is when a baby stops breathing.
- Babies born early are more likely to die of sudden infant death syndrome (SIDS). SIDS is when a baby dies suddenly and unexpectedly, often during sleep.

march of dimes
pregnancy & newborn health education center®

marchofdimes.com

To order our catalog or multiple copies of our materials, call 1-800-367-4630.
#37-2229-07 **Late Preterm Brain Development Card** 1/08

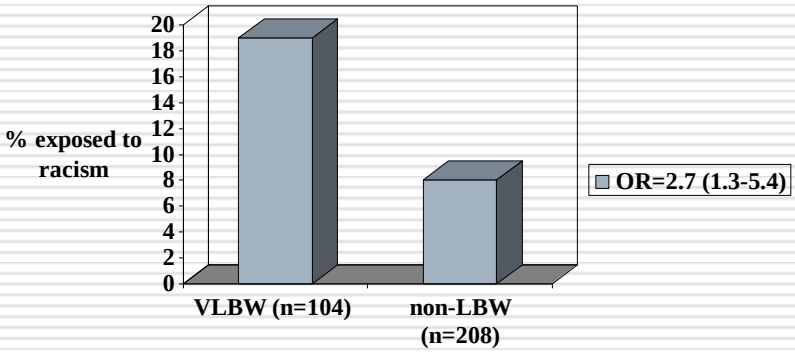
Prevention of Late Preterm Birth:
Too Much Too Early?

- Late PTB rate is rising in the U.S.
- Late PTB is associated with adverse outcomes
- Some late PTBs are iatrogenic

Racism

MATERNAL LIFETIME EXPOSURE TO INTERPERSONAL RACISM IN 3 OR MORE DOMAINS AND INFANT BIRTH WEIGHT

(Collins et al, AJPH, 2004)



A B S T R A C T

The author presents a theoretic framework for understanding racism on 3 levels: institutionalized, personally mediated, and internalized. This framework is useful for raising new hypotheses about the basis of race-associated differences in health outcomes, as well as for designing effective interventions to eliminate those differences.

She then presents an allegory about a gardener with 2 flower boxes, rich and poor soil, and red and pink flowers. This allegory illustrates the relationship between the 3 levels of racism and may guide our thinking about how to intervene to mitigate the impacts of racism on health. It may also serve as a tool for starting a national conversation on racism. (*Am J Public Health.* 2000;90: 1212–1215)

Going Public

Levels of Racism: A Theoretic Framework and a Gardener's Tale

Camara Phyllis Jones, MD, MPH, PhD

Race-associated differences in health outcomes are routinely documented in this country, yet for the most part they remain poorly explained. Indeed, rather than vigorously exploring the basis of the differences, many scientists either adjust for race or restrict their studies to one racial group.[1] Ignoring the etiologic clues embedded in group differences impedes the advance of scientific knowledge, limits efforts at primary prevention, and perpetuates ideas of biologically determined differences between the races.

The variable race is only a rough proxy for socioeconomic status, culture, and genes, but it precisely captures the social classification of people in a race-conscious society such as the United States. The race noted on a health form is the same race noted by a sales clerk, a police officer, or a judge, and this racial classification has a profound impact on daily life experience in this country. That is, the variable "race" is not a biological construct that reflects innate differences,[2–4] but a social construct that precisely captures the impacts of racism.

For this reason, some investigators now hypothesize that race-associated differences in health outcomes are in fact due to the effects of racism.[5,6] In light of the Department of Health and Human Services' Initiative to Eliminate Racial and Ethnic Disparities in Health by the Year 2010,[7,8] it is important to be able to examine the potential effects of racism in causing race-associated differences in health outcomes.

Levels of Racism

I have developed a framework for understanding racism on 3 levels: institutionalized, personally mediated, and internalized. This framework is useful for raising new hypotheses about the basis of race-associated differences in health outcomes, as well as for designing effective interventions to eliminate those differences. In this framework, *institutionalized racism* is defined as differential access to the goods, services, and opportunities of society by race. Institutionalized racism is normative, sometimes legalized, and often manifests as inherited disadvantage. It is structural, having been codified in our institutions of custom, practice, and law, so there need not be an identifiable perpetrator. Indeed, institutionalized racism is often evident as inaction in the face of need.

Institutionalized racism manifests itself both in material conditions and in access to power. With regard to material conditions, examples include differential access to quality education, sound housing, gainful employment, appropriate medical facilities, and a clean environment. With regard to access to power, examples include differential access to information (including one's own history), resources (including wealth and organizational infrastructure), and voice (including voting rights, representation in government, and control of the media). It is important to note that the association between socioeconomic status and race in the United States has its origins in discrete historical events but persists because of contemporary structural factors that perpetuate those historical injustices. In other words, it is because of institutionalized racism that there is an association between socioeconomic status and race in this country.

Personally mediated racism is defined as prejudice and discrimination, where prejudice means differential assumptions about the abilities, motives, and intentions of others accord-

The author is currently with the Department of Health and Social Behavior, Department of Epidemiology, and the Division of Public Health Practice, Harvard School of Public Health, Boston, Mass. She will soon begin working with the Centers for Disease Control and Prevention, Atlanta, Ga.

Requests for reprints should be sent to Camara Phyllis Jones, MD, MPH, PhD, Centers for Disease Control and Prevention, 4770 Buford Hwy, MS K45, Atlanta, GA 30341.

This article was accepted April 12, 2000.

Closing the Black-White Gap in Birth Outcomes:
A 12-Point Plan

1. **Provide interconception care to women with prior adverse pregnancy outcomes**
2. **Increase access to preconception care for African American women**
3. **Improve the quality of prenatal care**
4. **Expand healthcare access over the life course**
5. **Strengthen father involvement in African American families**
6. **Enhance service coordination and systems integration**
7. **Create reproductive social capital in African American communities**
8. **Invest in community building and urban renewal**
9. **Close the education gap**
10. **Reduce poverty among Black families**
11. **Support working mothers and families**
12. **Undo racism**

Lu MC, Kotelchuck M, Hogan V, Jones L, Jones C, Halfon N. Closing the Black-White gap in birth outcomes: A life-course approach. Ethnicity and Disease *Forthcoming in* 2009.

All this will not be finished in the first 100 days. Nor will it be finished in the first 1,000 days, nor in the life of this Administration, nor even perhaps in our lifetime on this planet. But let us begin.

John F Kennedy (1961)

We hold these truths to be self-evident, that all men are created equal ….

Declaration of Independence 1776

I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin, but by the content of their character

Martin Luther King, Jr (1963)

Let America be America again.
Let it be the dream it used to be….
O, let America be America again–
The land that never has been yet–
And yet must be—
the land where *every* man is free.

Langston Hughes