

**The Alabama Department
of Public Health and
The March of Dimes
Prematurity Summit**



march of dimes

Embassy Suites
Montgomery, Alabama
Friday, November 14, 2014

**Preterm Birth in Alabama
We Can...and We Have to...Do Better**

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**Scope of the Problem:
National**

- 30% Increase in preterm birth from 1980's – 2006
- ~450,000 – 500,000 infants / year
- Peaked in 2006
 - PTB < 37 wk 12.8 %
 - PTB < 34 wk 3.7 %
 - PTB 34 - 36 wk 9.2 %

Hamilton et al, NVSR, NCHS 2014

**Why The Increase In PTB
Until 2006?**

- Increase utilization of ultrasound dating
 - Diminishes potential error of LMP dating
- Fertility treatment
 - Increase in multiples
- Scheduled preterm birth
 - Byproduct of improved neonatal care

Why The Decrease Since 2006?

- Changes in fertility treatment
 - Fewer higher order multiples
- Progesterone availability
 - Probably only a small contributor
- Efforts to reduce elective early delivery

Why Does Preterm Birth Matter?

- Major cause of neonatal death and long term morbidity
- Major societal burden
 - Increased utilization of healthcare and social service resources
 - Costs increase for each lower week of GA at birth
 - Decreases school performance and productivity

Economic Costs of Preterm Birth

- \$26.2 billion / year
- Term infant
 - \$3,330 for first year
 - LOS 1.3 d
- Preterm infant
 - \$32,000 for first year
 - LOS 13 d

IOM, Preterm Birth: Causes, Consequences and Prevention, 2006

WHO: Global Action Report on PTB

15 countries account for two-thirds of the world's preterm births

- | | | | |
|-------------|-----------------------------|---------------------------------|------------|
| 1. India | 5. Indonesia | 9. Dem. Rep. of Congo | 13. Uganda |
| 2. China | 6. United States of America | 10. Brazil | 14. Sudan |
| 3. Nigeria | 7. Bangladesh | 11. Ethiopia | 15. Kenya |
| 4. Pakistan | 8. Philippines | 12. United Republic of Tanzania | |



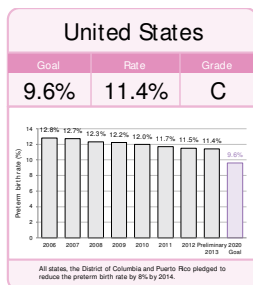
Why Does The Problem Persist?

- Multiple pathways converge to cause PTB
 - Various contributors
 - Extent of contribution
 - Triggering events
- Lack of understanding interferes with:
 - Risk identification
 - Targeted intervention

March of Dimes 2014 Premature Birth Report Card

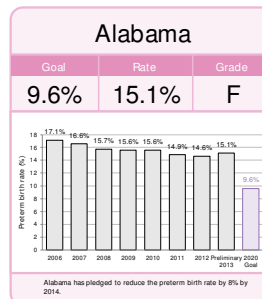


Premature Birth Report Card for 2013

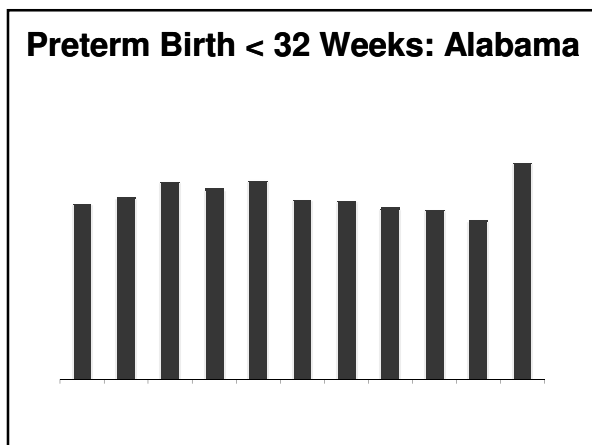
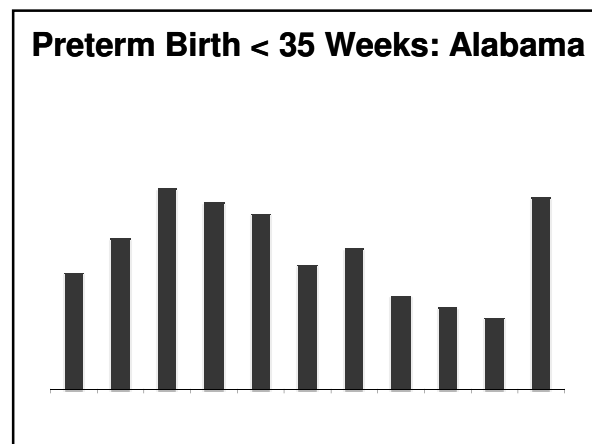
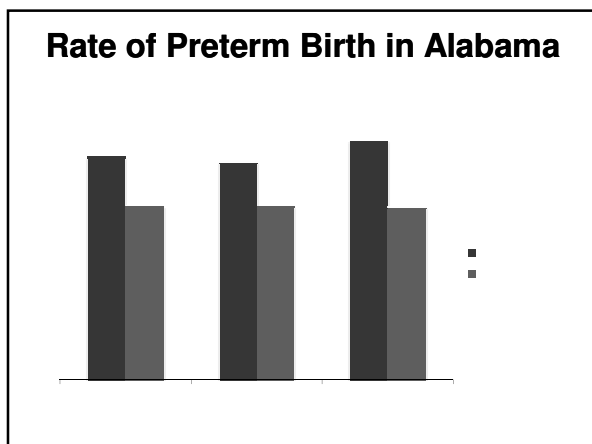


- PTB < 37 wk 11.4 %
- PTB < 34 wk 3.4 %
- PTB 34-36 wk 8%

Premature Birth Report Card for 2013



- PTB < 37 wk 15.1 %
- PTB 34 - 36 wk
 - 2012 10.0 %
 - 2013 9.7 %



What Does This Translate To?

- In Alabama, on average each week:
 - 164 babies are born prior to 37 weeks
 - 28 are born prior to 32 weeks
 - 113 weigh less than 2500 gm at birth
 - 21 weigh less than 1500 gm at birth

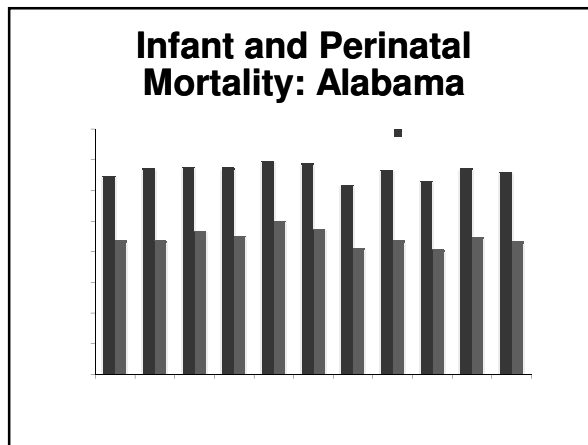
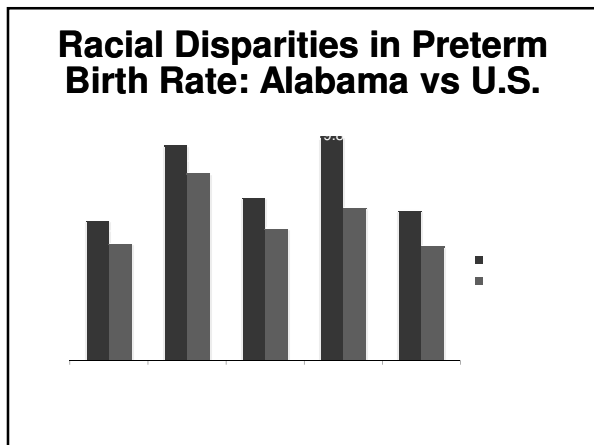
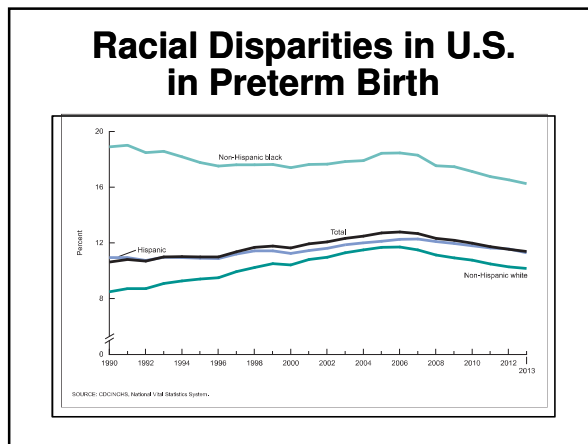
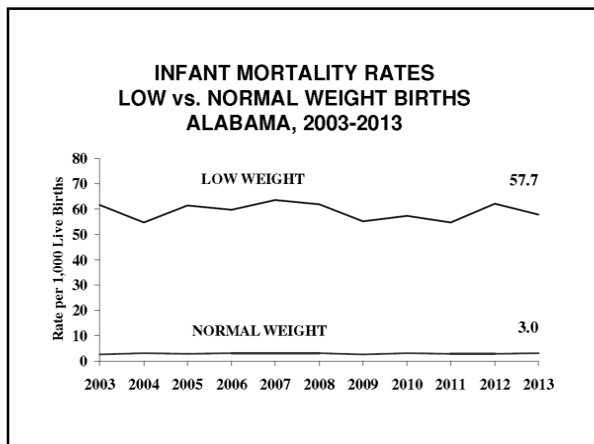
www.marchofdimes.com/peristats

PTB and Infant Mortality in Alabama: 2013

- 500 infant deaths
 - 331 < 37 wk - 66% of deaths
 - 294 < 35 wk - 59% of deaths
 - 255 < 32 wk - 51% of deaths
 - 218 < 28 wk - 44% of deaths

PTB Related To Perinatal and Infant Mortality

- LBW (< 2500 gm)
 - US: 7.9% of births → 66% of deaths
 - Alabama 2012: 10% of births
- VLBW (< 1500 gm)
 - 1.5% of births → 50% of deaths
 - Alabama 2012: 1.9%

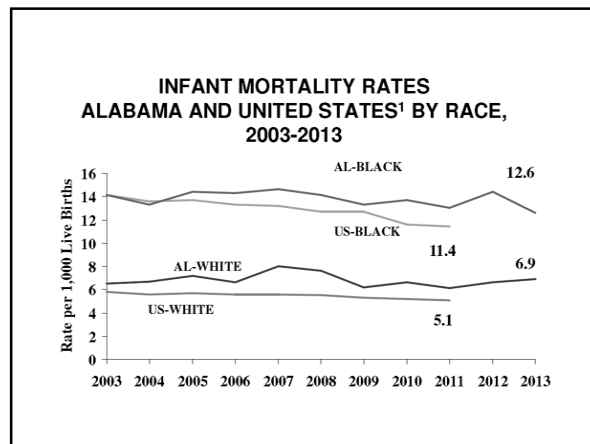
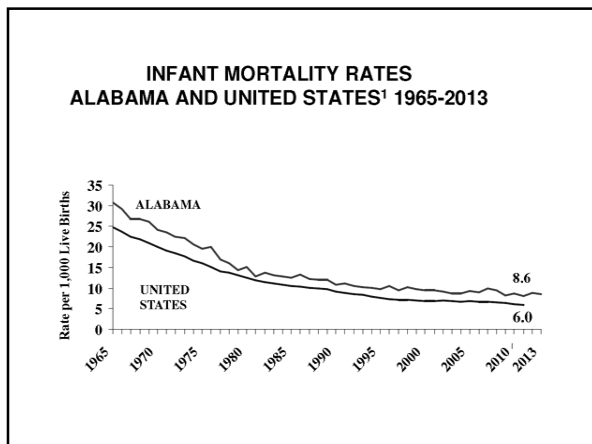


Significance of Disparity in PTB Rates

- Leading cause of infant death
 - Caucasian and Hispanic - Congenital Anomalies
 - African American - Preterm Birth

Racial Disparity: Infant Mortality in Alabama 2012

- White 7.0 per 1,000
- African American 13.1 per 1,000
- Hispanic 7.4 per 1,000



Preterm Birth: Causes and Contributors

- ### Epidemiologic and Sociodemographic Risk Factors for PTB
- Maternal Stress
 - Maternal Age
 - Smoking
 - Poverty
 - Education
 - Health Status
 - Nutrition
 - Prenatal Care
 - Interpregnancy Interval

- ### Causes and Contributors to PTB
- PROM
 - Cervical Insufficiency
 - Decidual Hemorrhage
 - Placental Insufficiency
 - Infection / Inflammation
 - Maternal co – morbidities
 - Uterine Distension
 - Prior PTB / Genetics
- NICHD GPN for PTB Research, unpublished data

- ### Strongest Contributors to PTB
- Infection / Inflammation
 - Especially with early Spontaneous PTB
 - Decidual Hemorrhage
 - Cervical Insufficiency

Racial Disparity in Contributors

- African American
 - Maternal Stress
 - Cervical Insufficiency
- Caucasian
 - Decidual hemorrhage
 - Placental dysfunction
 - Uterine distension

Preterm Birth MOD Targeted Factors: Alabama 2013

- Uninsured Women
- Late Preterm Birth
- Smoking

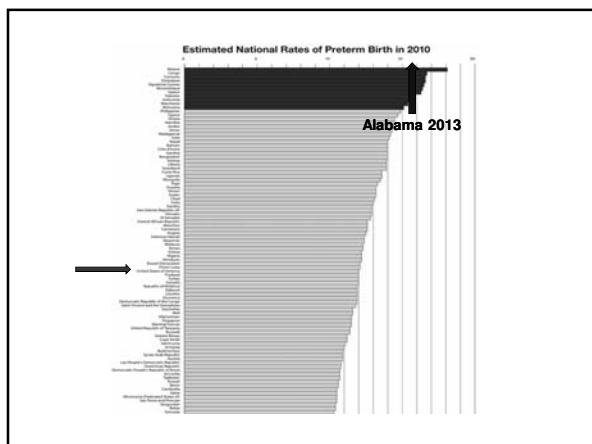
Prevention strategies			
Factor	Previous rate	Latest rate	Status
Uninsured women	21.1%	21.2%	✗
Late preterm birth	10.0%	9.7%	★
Women who smoke	27.3%	21.7%	★

Disparity in Preterm Birth: Not Just Racially Defined

- State and Regional Geographic Diversity
 - Poverty
 - Education
 - Employment
 - Health Status

Disparity in Preterm Birth: Not Just Racially Defined

- Neighborhood Level
 - Housing
 - Crime
 - Access to Healthy Food
 - Social Support
 - Physical Environment
 - Exercise Capability

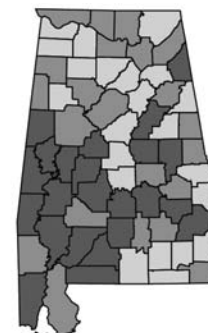


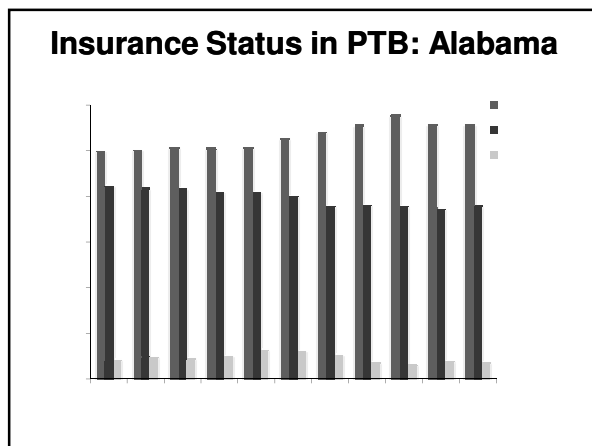
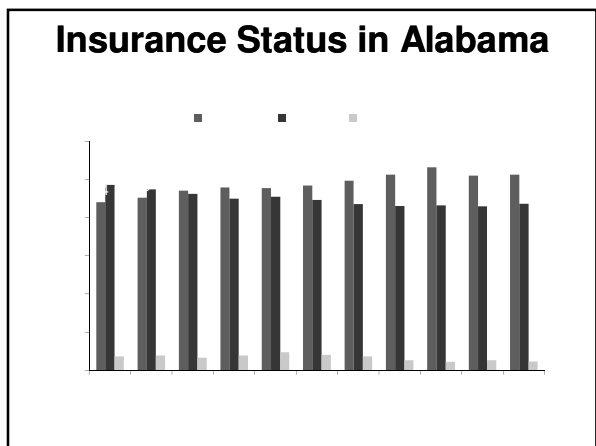
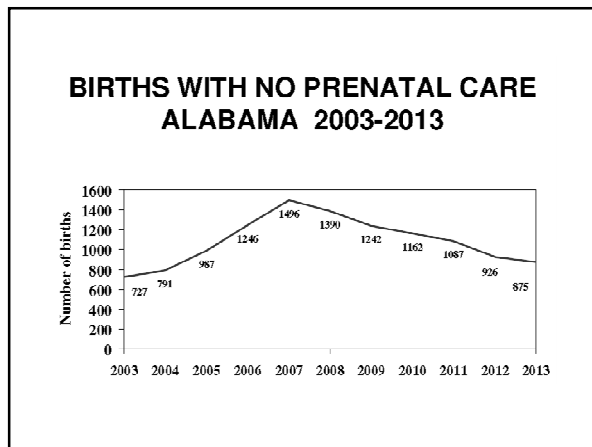
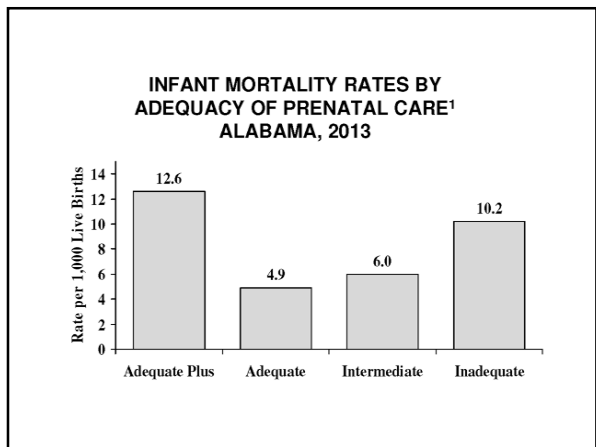
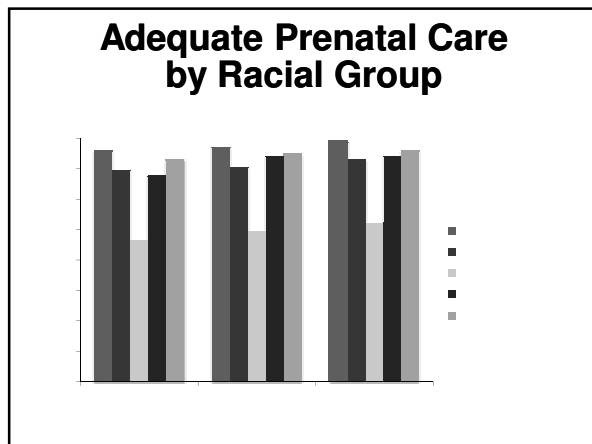
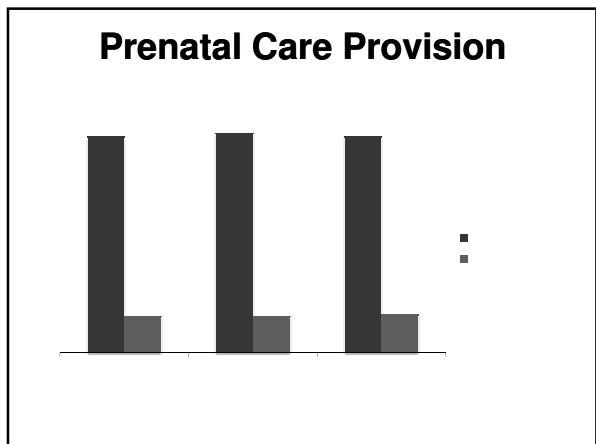
Geographic Diversity in Alabama

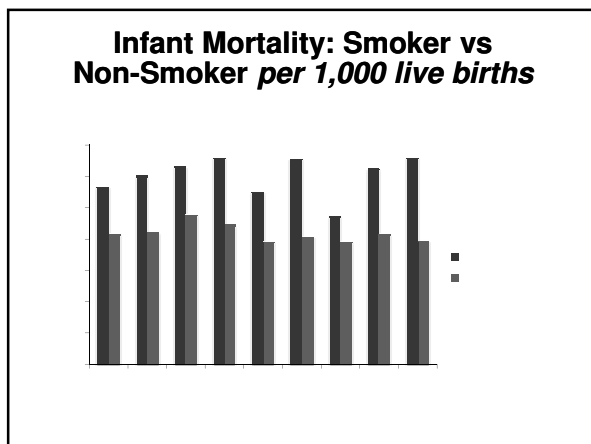
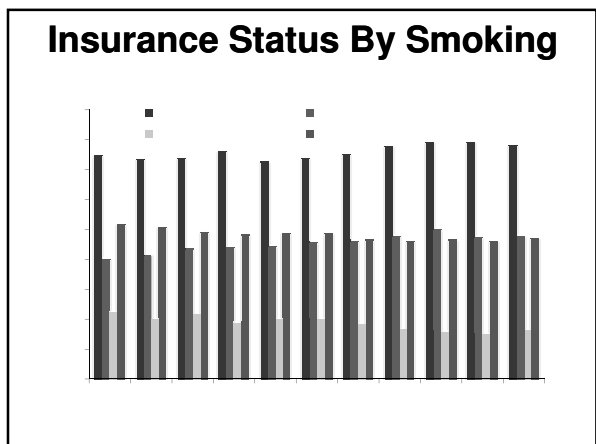
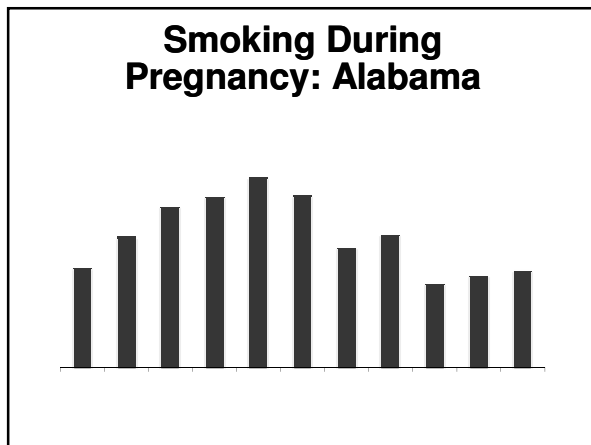
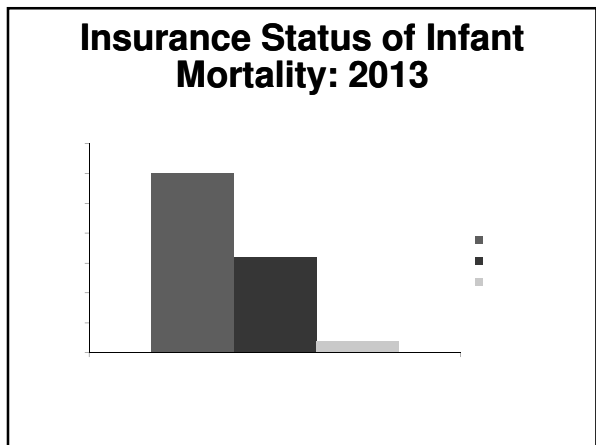
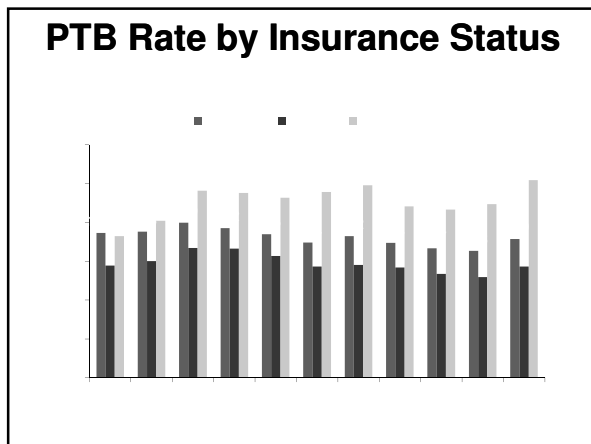
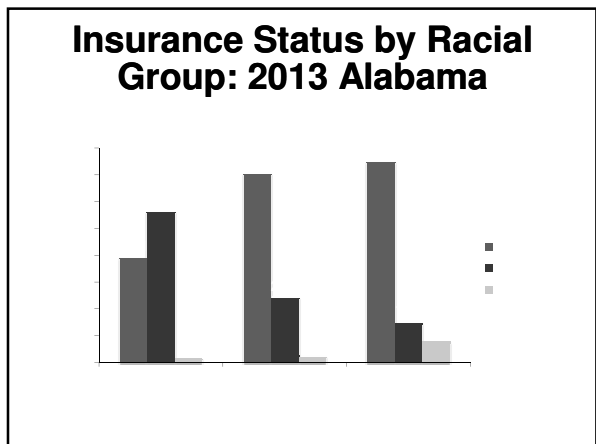
Preterm Birth Rates
2009-2012 Average
Percent of live births (67 Counties)

- Over 16.0 (23)
- 13.8-16.0 (22)
- Under 13.8 (22)

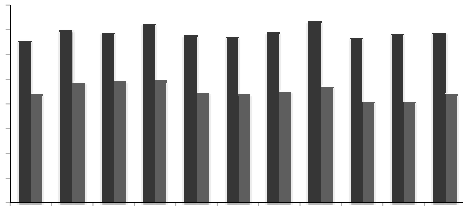
Value ranges are based on an approximately equal number of counties in each range.



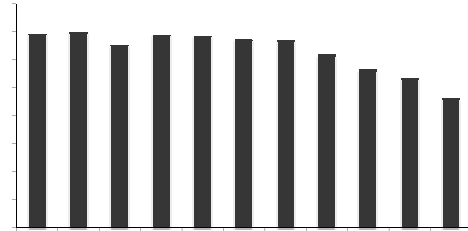




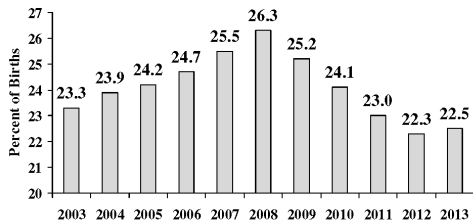
Multiple Rate (per 1,000 births) and PTB Rate in Multiples: Alabama



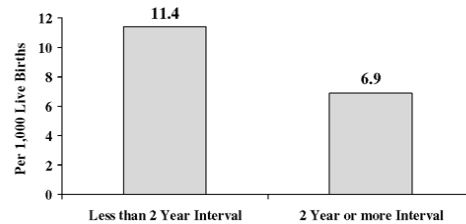
**Teen Births: Alabama
Percent of Births**



PERCENT OF BIRTHS WITH A BIRTH INTERVAL LESS THAN 2 YEARS, ALABAMA, 2013

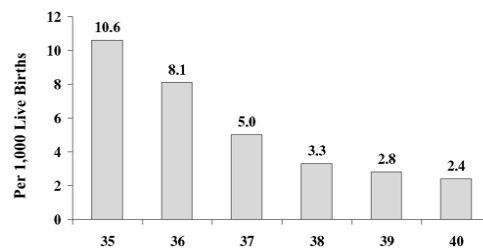


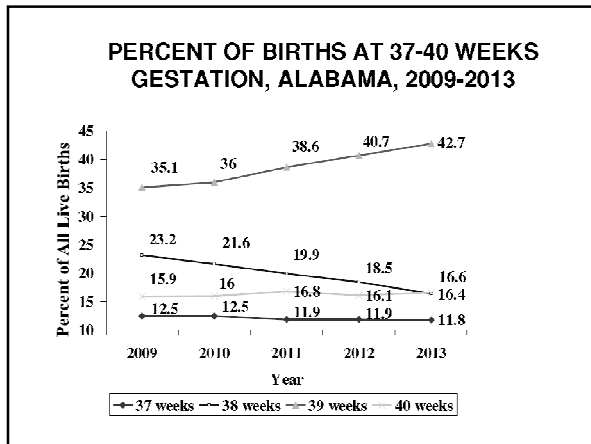
INFANT MORTALITY RATES BY BIRTH INTERVAL ALABAMA, 2013



Late Preterm and Early Term Birth: Significance and Changes

INFANT MORTALITY RATE, GESTATIONS 35-40 WEEKS, ALABAMA, 2013





- ### Summary
- Alabama continues to have one of the highest rates of PTB in the United States
 - The high rate of PTB is a major contributor to the high perinatal mortality rate
 - There are significant racial and geographic disparities
 - We have made progress in reducing early elective deliveries
 - We have tremendous opportunities for improvement