



**All Mothers
Matter...Right?**

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Georgia Society of Anesthesiologists
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No financial disclosures

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Objectives

- Describe the current state of maternal mortality in the U.S. and Georgia
- Identify potential causes of disparity in maternal mortality
- Evaluate current personal attitude toward minority patients and reflect on implicit bias
- Identify strategies to reduce/eliminate disparities in maternal health outcomes

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Bias

- I am Black.

4

Bias


- I am a Mother.

A photograph showing a woman from the back, wearing a green and white patterned hospital gown, holding a newborn baby. The baby is lying in a hospital bed and has several medical tubes and sensors attached to its chest and face. The woman is looking down at the baby with a focused expression.

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Bias


- I am a Mother.

A photograph of a woman in a green hospital gown smiling warmly at a newborn baby. The baby is wrapped in a white blanket with blue and red stripes and is wearing a white cap. The woman is holding the baby close to her face. The background shows a hospital room with medical equipment.

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Bias

- I am a Mother.

A photograph of a Black woman lying in a hospital bed, smiling at the camera. She is holding a newborn baby wrapped in a white blanket with colorful footprints. She has a medical sensor on her chest. The background shows hospital equipment and a blue blanket.


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Lost Mothers: Maternal Mortality in the U.S.

Black Mothers Keep Dying After Giving Birth. Shalon Irving's Story Explains Why

December 7, 2017

By Nina Martin and Renee Montagne
NPR

A photograph of a Black woman standing in a hospital room. She is wearing a black sleeveless top and has her hand on her pregnant belly. The room has a blue wall with stars and a crib in the background.

<https://www.npr.org/2017/12/07/568948782/black-mothers-keep-dying-after-giving-birth-shalon-irvings-story-explains-why>

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Serena Williams on
Motherhood, Marriage, and
Making Her Comeback

January 10, 2018 (online)
Vogue February 2018 Cover Story

by Rob Haskell

<https://www.vogue.com/article/serena-williams-vogue-cover-interview-february-2018>




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Why America's Black
Mothers and Babies Are in a
Life-or-Death Crisis

The answer to the disparity in death rates
has everything to do with the lived
experience of being a black woman in
America.

April 11, 2018
By LINDA VILLAROSA
New York Times

<https://www.nytimes.com/2018/04/11/magazine/black-mothers-babies-death-maternal-mortality.html>



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U.S. Maternal Mortality

- A pregnancy-related death is defined as the death of a woman while pregnant or within 1 year of the end of a pregnancy –regardless of the outcome, duration or site of the pregnancy—from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.
- The pregnancy-related mortality ratio = an estimate of the number of pregnancy-related deaths for every 100,000 live births

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U.S. Maternal Mortality

- 2016: 18.8 maternal deaths/100,000 births – highest of all developed countries
- Only industrialized nation with rising maternal mortality rate
 - 26% increase between 2000-2014
- Black women are 3-4 x more likely to die from a pregnancy-related complication than non-Hispanic white women
 - 12.4/100,000 for white women
 - 40.8/100,000 for black women

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How Did We Get Here?

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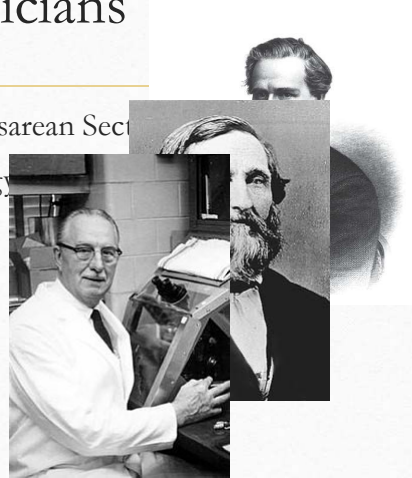
Physician/Slave/Slave Owner Relationship

- Strained patient - physician relationship dates back to 1800s
- Physicians employed by slave owners
- Shared interests
- Physicians purchased slaves to conduct experiments on

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Notorious Physicians

- Dr. Francois Marie Prevost – Father of the Cesarean Section
- Dr. James Marion Sims – Father of Gynecology
- Dr. Crawford Long – Father of Anesthesia
- Dr. George Otto Gey – HeLa Cells



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Vesicovaginal Fistula Experiments

- 1845-1849
- 11 enslaved women with vesicovaginal fistulas obtained
 - 3 enslaved women were named in his journals: Lucy, Betsey, and Anarcha
- Procedure perfected May of 1849 after numerous surgeries, including over 30 on Anarcha
- Dr. Sims went on to found the New York Women's Hospital

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Tuskegee Syphilis Experiment

- “Study of Syphilis in the Untreated Male”
- Public Health Service + Tuskegee Institute
- 1932 –study began – 6 month design
- 600 men enrolled initially – 399 with syphilis/201 without
- No man adequately treated for syphilis during study
 - PCN noted as tx of choice in 1945
- 1972 – Study ends
- 1973 – Class action lawsuit filed – \$10 million settlement
- 2001 – President’s Council on Bioethics formed



By National Archives Atlanta, GA (U.S. government) - [1],
originally from National Archives, Public Domain,
<https://commons.wikimedia.org/w/index.php?curid=9774274>

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Where Are We Now?

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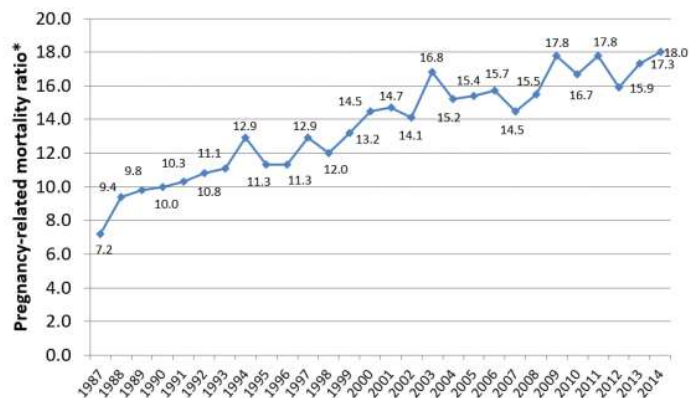
Pregnancy Mortality Surveillance System

- Established by the CDC in 1986
- National surveillance of pregnancy-related deaths collected from 52 reporting areas yearly
 - 50 states + NYC + DC
- Data is protected under 308(d) Assurance of Confidentiality



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Trends in pregnancy-related mortality in the United States: 1987–2014

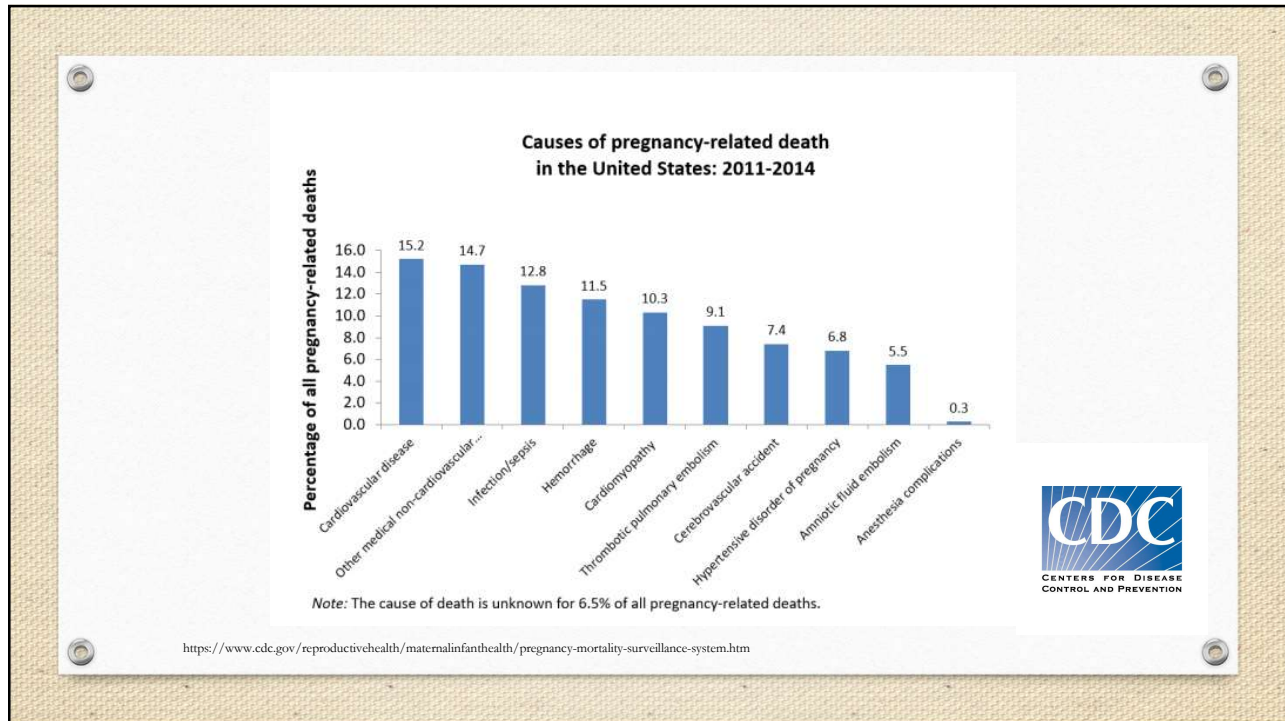


*Note: Number of pregnancy-related deaths per 100,000 live births per year.

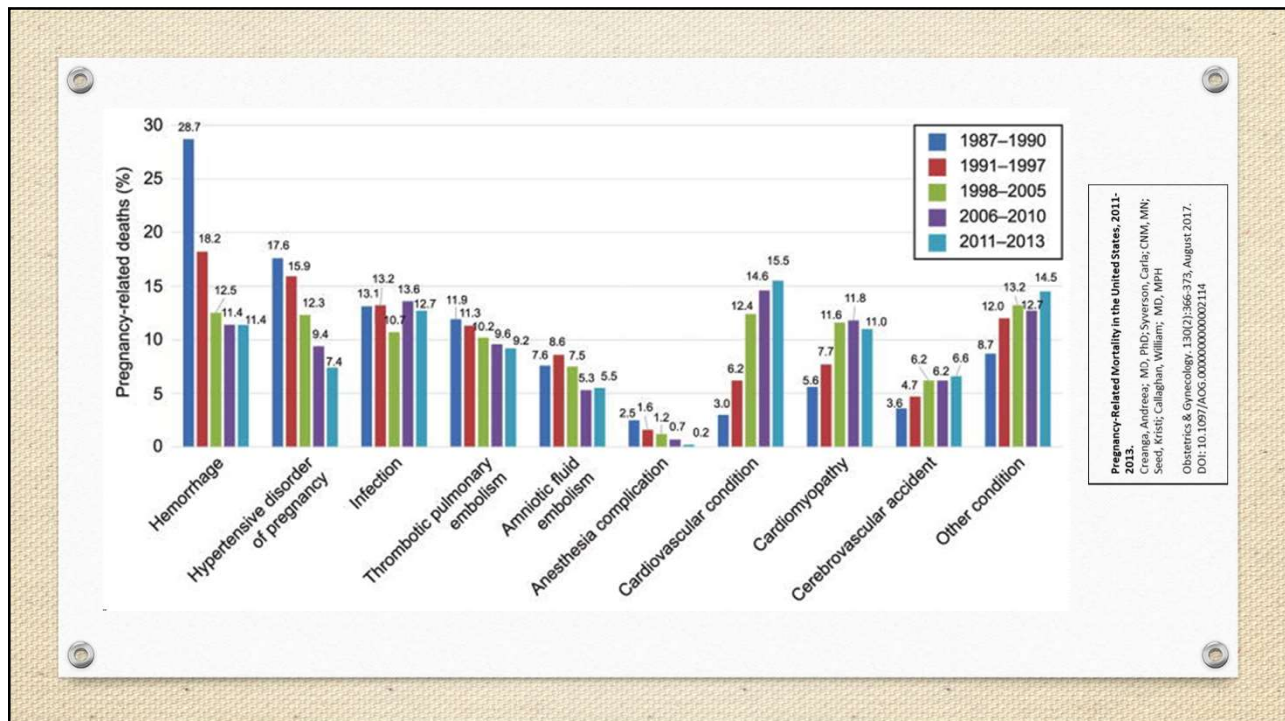
<https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-mortality-surveillance-system.htm>



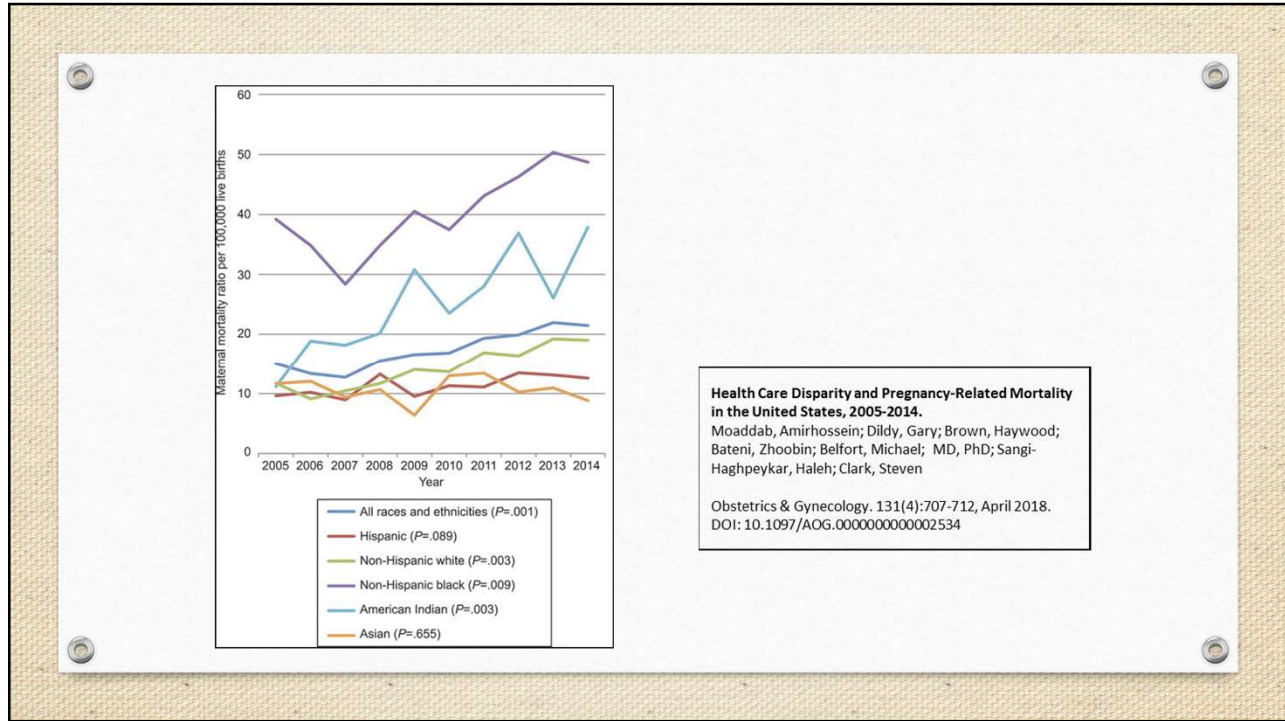
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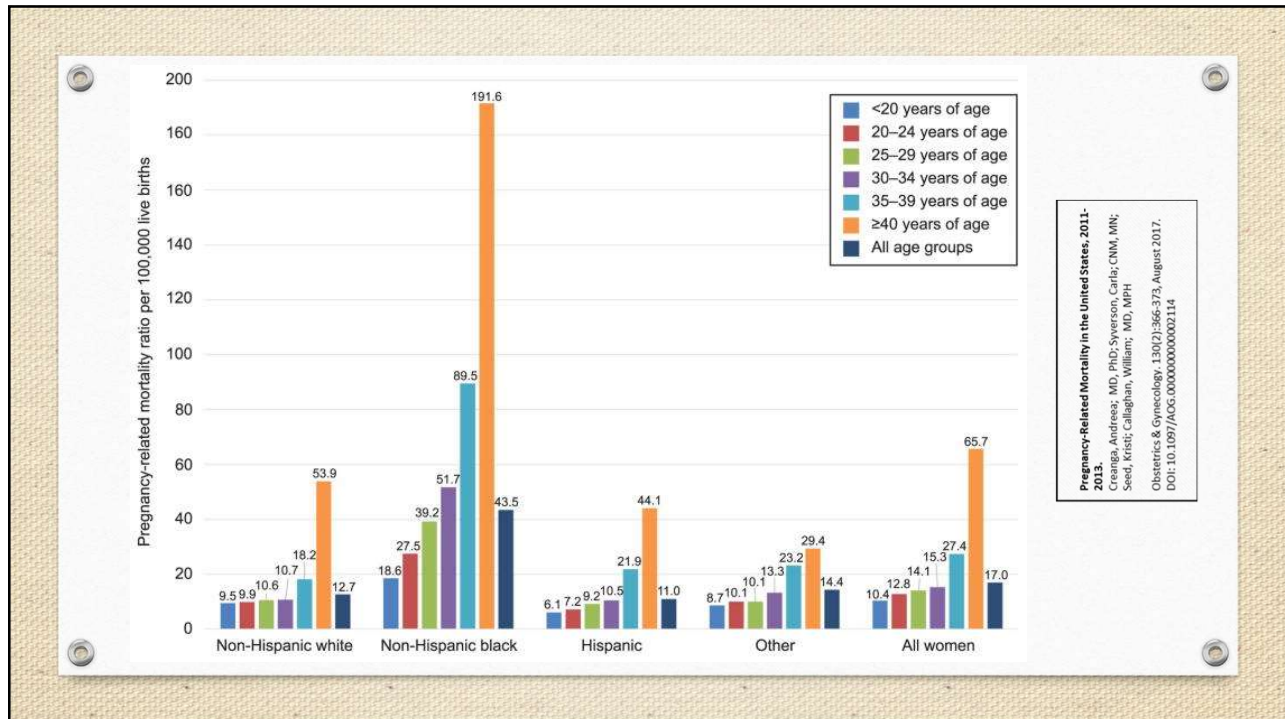
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Risk of Death for Non-Hispanic Blacks

- Lowest for teenagers - 2:1
- Peak in 30s – 4.8:1
- Lower in 40s – 3.6:1
- Overall risk – 3.4:1

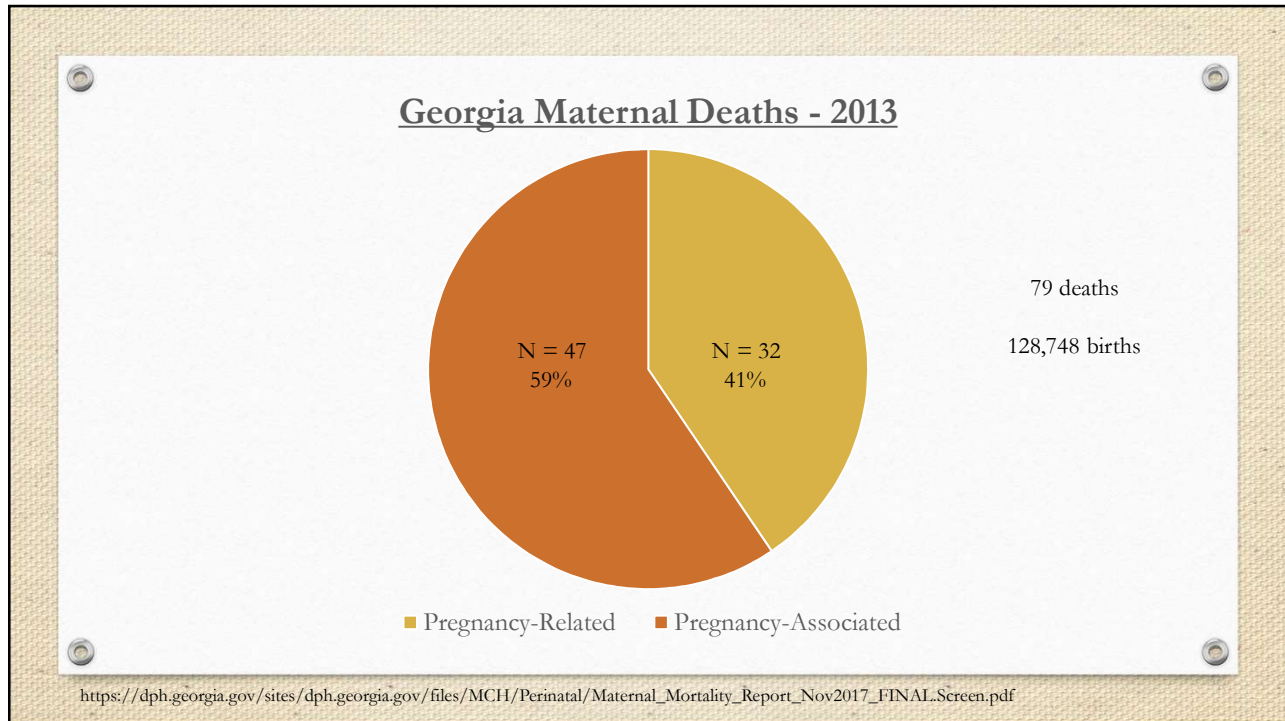
- Fastest rate of increase in maternal death between 2007 and 2014

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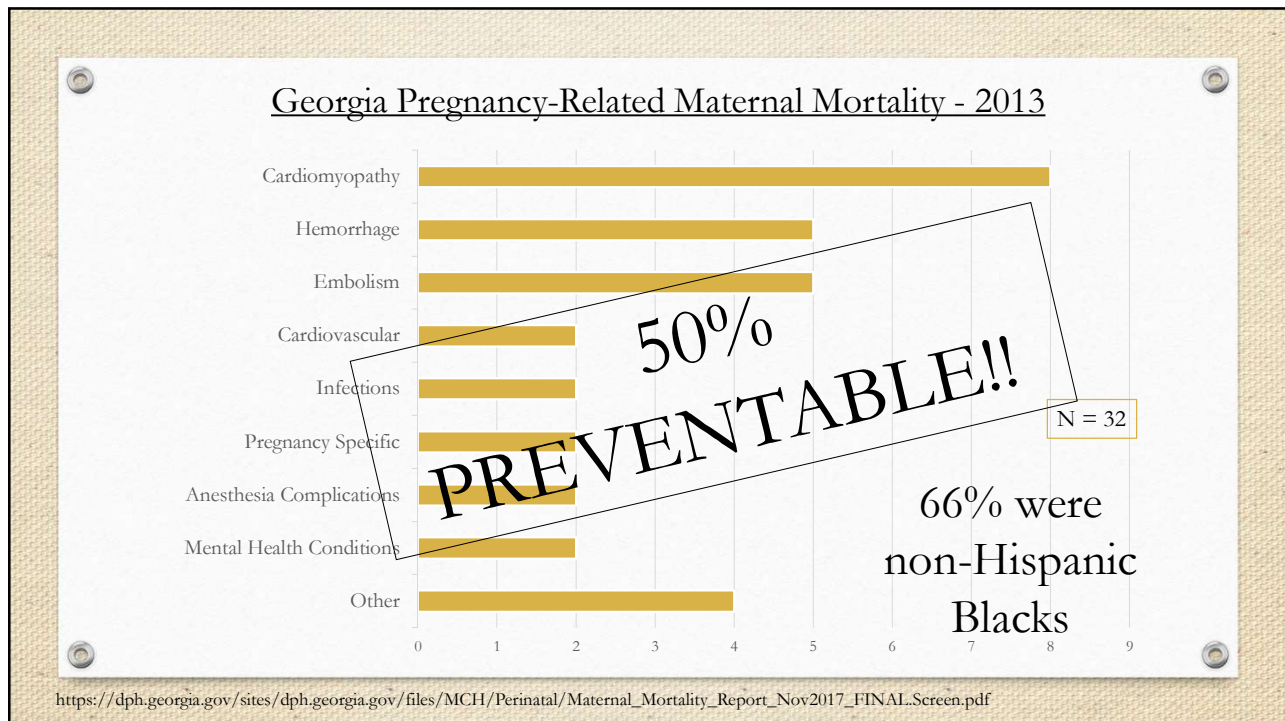
Causes of Death

- Cardiovascular conditions, Cardiomyopathy, and other medical conditions contributed 40.9% and 46.8% of pregnancy-related deaths among non-Hispanic whites and black women
- Conversely 39.5% of pregnancy-related deaths among Hispanic and 48.9% among other race women were attributable to hemorrhage, infection, and hypertensive disorders of pregnancy.

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Georgia Maternal Mortality Rate

- 2010 – Highest maternal mortality rate in the nation
- 2016 – 40.8/100,000 live births
 - 27.1 for White women
 - 62.1 for non-Hispanic Black women

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Georgia Maternal Mortality

- 2016 – Platner, et al – Obstetrics and Gynecology
- “Pregnancy-Associated Deaths in Rural, Nonrural, and Metropolitan Areas of Georgia”
- Objective: “To characterize pregnancy-associated deaths and examine the relationship between area of residence and pregnancy-associated deaths and pregnancy-related mortality ratios in Georgia from 2010 to 2012.”
- 105 pregnancy-related deaths between 2010-2012 in GA

Platner, Marissa; Loucks, Tammy L.; Lindsay, Michael K.; Ellis, Jane E. Obstetrics&Gynecology128(1):113-120, July 2016.

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Georgia Maternal Mortality

- Pregnancy-related mortality ratio was 26.5 per 100,000 live births
- Pregnancy-related mortality ratio did not differ statistically among areas
 - Rural -27.1
 - Nonrural - 24.4
 - Metropolitan Atlanta - 27.7
- Pregnancy-related mortality ratio by race:
 - 49.5 for black women
 - 14.3 for white women

Platner, Marissa; Loucks, Tammy L.; Lindsay, Michael K.; Ellis, Jane E. *Obstetrics&Gynecology*128(1):113-120, July 2016.

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Georgia Maternal Mortality

- Gap in pregnancy-related mortality ratio between black and white women was highest for metropolitan Atlanta
 - Metro Atlanta – Blacks 51.6 vs Whites 12.4, $P < .001$
 - Less in nonrural areas – Blacks 50.3 vs Whites 12.0, $P < .001$
 - Comparable in rural areas – Blacks 39.4 vs Whites 22.4, $P = .281$
- Being a non-hispanic black was associated with a higher risk of mortality in GA regardless of delivery location!

Platner, Marissa; Loucks, Tammy L.; Lindsay, Michael K.; Ellis, Jane E. *Obstetrics&Gynecology*128(1):113-120, July 2016.

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Why?

Multifactorial!

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Patient Factors

- Retrospective, Observational study
- Objective: “To quantitate the contribution of various demographic factors to the US maternal mortality ratio”
- Analyzed data from the CDC National Center for Health Statistics database and the Detailed Mortality Underlying Cause of Death database (CDC WONDER)
- Looked at maternal demographic, lifestyle, health, and medical service utilization characteristics for correlation

Moaddab et al, Health Care Disparity and Pregnancy-Related Mortality in the US, 2005-2014, Obstetrics and Gynecology, 2018

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Patient Factors

Characteristic	Simple Pearson's Correlation Coefficient	P value
% of deliveries to non-Hispanic Black women	0.501	<.001
Unintended pregnancy	0.500	<.001
Unmarried mother	0.423	.002
Four or less prenatal visits	0.322	.020
Gestational diabetes	-0.319	.021
Cesarean delivery	0.288	.047

Moaddab et al, Health Care Disparity and Pregnancy-Related Mortality in the US, 2005-2014, Obstetrics and Gynecology, 2018

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Characteristic	Simple Pearson's Correlation Coefficient	P value
Chronic Hypertension	.069	.627
PIH	-0.123	.384
Eclampsia	0.003	.982
Diabetes	0.196	.162
Tobacco	-0.094	.510
Obesity	0.163	.249
Maternal education less than high school	0.210	.135
Deliveries paid by governmental insurance	0.282	.050
Women with healthcare coverage	-0.282	0.76
Poverty	0.214	.128
% rural population	-0.069	.624
% deliveries to Hispanic women	-0.006	.964
% deliveries to non-Hispanic white women	-0.254	.069
% deliveries to Native American women	-0.016	.912
% deliveries to Asian women	-0.141	.318
% pregnancies with maternal age older than 45	-0.098	.490

Moaddab et al, Health Care Disparity and Pregnancy-Related Mortality in the US, 2005-2014, Obstetrics and Gynecology, 2018

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Patient Factors

- Chronic illnesses tend to develop earlier in black women, are less likely to be adequately managed and, thus, more likely to result in morbidity/mortality
 - Chronic stress thought to be a major contributor in maternal and neonatal morbidity
- Beliefs and pre-conceived notions contribute greatly to initiation of prenatal care
 - Delay in prenatal care establishment linked to experiences of racism
- Adjustment for patient factors only mildly reduces risk

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Healthcare Access/Utilization

- Preconception, Antenatal, Postpartum, and Intra-pregnancy interval
- Preconception planning allows for optimization of chronic conditions, stress reduction, and trust establishment
- 2011-2013 – 24.5% of pregnancy-related deaths established prenatal care in 2nd or 3rd trimester, and 8.5% had no care
 - 79% of White women establish 1st trimester care
 - 78% of Asian women
 - 64% of Black women
- 4 or less prenatal visits is associated with increased mortality
 - Blacks 4x more likely to have 0-5 prenatal visits
- Less likely to be seen by specialists, including MFM

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Healthcare Access/Utilization

- Postpartum
 - Less likely to attend post-partum visits
 - Less likely to receive contraception
 - Less likely to receive long-acting contraception
 - Unwanted pregnancy associated with increased risk of mortality

- Intra-partum Interval
 - Reduced
 - Chronic conditions not managed/poorly controlled



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Hospital Quality

- According to national data, minority women deliver in different and lower quality hospitals than whites
 - 75% of black deliveries occurred in a quarter of hospitals with 18% of white deliveries occurring in those same hospital
- Creanga et al – 7 states with > 80,000 annual live births (AZ, CA, FL, MI, NJ, NY, NC) 2008- 2011
 - 15 Delivery-related indicators: Complicated vaginal delivery, Complicated cesarean delivery, Obstetric trauma, Blood transfusion, Other OB complications (CNS, anesthesia), wound complications post VD, wound complications post CD, Puerperal infection, PP UTI, Hysterectomy in setting of PPH, PP vascular complications, OB thrombosis/embolism, uterine rupture for TOLACs, puerperal CV disorders, In-hospital mortality

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Hospital Quality

- Creanga et al – 7 states with > 80,000 annual live births (AZ, CA, FL, MI, NJ, NY, NC) 2008- 2011
 - Black-serving (>50% of deliveries) hospitals performed worse on 12/15 delivery-related indicators: infection, OB embolism, puerperal CV disorders, blood transfusion, and in-hospital mortality being significantly higher
 - Wide variation in indicators between races at White or Hispanic-serving hospitals with Blacks having 1.19 - 3.27 higher rates and 1.15 - 2.68 higher rates in the most prevalent indicators
 - Few differences in indicators at Black-serving hospitals between ethnic groups

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Provider Factors

- Knowledge/Experience
- Listening to Mothers III Survey- 2013 – 2400 mothers
 - Communication - 40% experienced communication issues
 - Cultural Competence –25% of black mothers perceived discrimination during birth hospitalization



“On the way to lunch, I listened to a hip-hop station on the car radio. I believe that satisfies our cultural diversity requirement for another year.”

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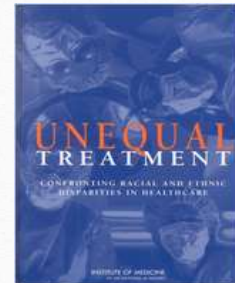
Provider Factors

- **Explicit Bias** - refers to the attitudes and beliefs we have about a person or group on a conscious level. Much of the time, these biases and their expression arise as the direct result of a perceived threat.
- **Implicit Bias** - is an aspect of implicit social cognition: the phenomenon that perceptions, attitudes, and stereotypes operate without conscious intention.

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Provider Factors

- Implicit bias –
 - Institute of Medicine reviewed 150+ cases on racial disparity
 - Black patients were less likely than White patients to:
 - Receive kidney transplants/be waitlisted
 - Receive lower LE revascularization and undergo amputation instead
 - Have surgery for lung CA
 - Undergo cerebral angiography/CAE
 - Receive cardiac cath, CABG, and thrombolytic therapy
 - Receive HRT/counselling involving HRT



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Provider Factors

- Implicit Bias-
 - Implicit Bias Affects Thrombolytic Decisions
 - EM and IM residents at 4 sites (including Emory) were given Implicit Association Tests
 - Pictures and word associations to determine implicit bias → faster reaction time is equal to higher association
 - Questionnaire to address explicit bias
 - Clinical vignette + a picture of a Black or White Man
 - Residents scoring higher on implicit racial bias were also less likely to treat the Black Man with thrombolytics

Green, Alexander R et al. "Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients" *Journal of general internal medicine* vol. 22,9 (2007): 1231-8.

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Provider Factors

- Implicit Bias –
 - Pain for Blacks: more likely to be underestimated and undertreated
 - 2016 - Study performed at UVA demonstrated 50% of medical students/residents held beliefs that Blacks and Whites experienced pain differently
 - 15 item questionnaire
 - Provided with 2 scenarios – one with White patient and one with Black patient
 - Learners with higher false beliefs were more likely to exhibit racial bias in assessment and less appropriately treat pain
 - Study on pediatric population with appendicitis showed black children were less likely to receive any type of pain medication vs other ethnic groups



Goyal MK, et al. Racial Disparities in Pain Management of Children With Appendicitis in Emergency Departments. *JAMA Pediatr.* 2015;169(11):996-1002.

Kelly M. Hoffman, Sophie Trawalter, Jordan R. Axt, M. Norman Oliver. Proceedings of the National Academy of Sciences Apr 2016, 113 (16) 4296-4301; DOI: 10.1073/pnas.1516047113

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Where Do We Go From Here and How Do We Get There ?

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Improving Access/Utilization

- State/Federal policies that promote affordable, comprehensive, and accessible maternal health care
- Expanding Medicaid to allow for comprehensive care prepregnancy and more than 60 days post-pregnancy
- Medicaid acceptance at hospitals serving predominately white populations
- Funding for maternal health



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Improving Hospital Quality

- Quality initiatives aimed at standardizing delivery care
- Implementation of safety bundles, protocols, and checklists
 - Maternal early warning criteria
 - Simulation training
 - Coordinated care and crew resource management
 - Team training
 - Promotion of safety culture
 - Provider dashboards



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Improving Hospital Quality

- Reduction of Peripartum Racial and Ethnic Disparities Patient Safety Bundle
 - National Partnership for Maternal Safety → Council on Patient Safety in Women's Healthcare
 - <http://safehealthcareforeverywoman.org/patient-safety-bundles/reduction-of-peripartum-raciaethnic-disparities/>
 - Evidence based, Actionable, Standardized
 - 4 Components:
 - Readiness – Provide education on peripartum disparities and root causes
 - Recognition – Provide staff wide education on implicit bias
 - Response - Timely/tailored responses to reports of inequity
 - Reporting and Systems Learning - Develop a disparities dashboard , QI projects



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Confronting Implicit Bias

- Implicit Bias:
 - Everyone has them!
 - We tend to hold biases that favor our own ingroup
 - Have real-world effects on behavior
 - Are MALLEABLE!

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Confronting Implicit Bias

- Participation in cognitive and behavioral interventions has been shown to be effective in reducing bias.
 - State of the Science Implicit Bias Review – Kirwan Institute
 - 1) Intergroup Contact – contact and interethnic friendships can improve interethnic attitudes
 - 2) Perspective tracking – vignettes or storytelling
 - 3) Mindfulness – recognition of and commitment to proceed with training to reduce bias
 - 4) Individualization – intentionally focusing on individual pt information apart from their social group

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Increasing Physician Diversity

- Minority physicians more likely to practice in areas with higher minority populations/underserved areas
- Higher patient satisfaction scores when the patient-physician race is concordant
 - Increased communication
 - Participatory decision making
- Diversity in healthcare environments is associated with increased delivery of quality care for minority groups

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State Health Policies

- 2011 - Pregnancy Medical Home (PMH) – NC
 - On-going collaboration with pregnancy case manager
 - CMS incentivizes participating providers for risk screening and postpartum visit completion
 - Data and analytical feedback from Community Care of NC (CCNC)
 - Clinical guidance materials/resources
 - Significant reduction in disparity:
 - 2004 – Blacks 5.1 x more likely to die
 - 2013 – Pregnancy-related mortality ratio 24.3 for blacks and 24.2 for whites



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Federal Health Policies

- 2018 - Maternal Care Access and Reducing Emergencies (CARE) Act
 - Introduced by Senator Kamala Harris, CA
 - \$5,000,000 grant for implicit bias training for healthcare training programs - priority to obstetrics/gynecology
 - \$25,000,000 grant for 10 states to establish Pregnancy Medical Home Programs
 - Priority to states with highest rates of disparity
 - Dissemination of best practices
 - National Academy of Medicine to study and make recommendations for incorporating bias recognition in clinical skills testing for accredited osteopathic and allopathic medical schools

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What is Georgia Doing?

- 2013 – SB 273 Developed a Maternal Mortality Review Committee
 - DPH + GA OBGyn Society + CDC
 - 45 members/3 year period
 - Released 2 reports: 2015/2017
 - 2012: 26/86 maternal deaths pregnancy-related (68% Black)
 - 2013: 32/79 maternal deaths pregnancy-related (66% Black)
 - Data interpretation but little change implementation



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Conclusion

- Maternal mortality is an issue nationwide
- There continues to be a disparity between Black maternal mortality when compared to other races/ethnicities
- This disparity is likely multifactorial with discrimination/implicit bias playing a major role
- Strategies to reduce this disparity includes action at the provider, hospital, state, and federal levels

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Questions?

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