Racial Disparities in Pregnancy: Is There a Problem?

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Objectives

- To explore the role race plays in health care
- To review the current data on infant and maternal mortality as it relates to race and ethnic groups
- To discuss ways we can improve these disparities

2

Race and ethnicity represent social rather than biological constructs that can provide useful information about how environmental, cultural, behavioral, and medical factors can affect patient health.

ACOG Committee Opinion
Number 649 December 2015

3

Major contributing factors to health disparities are likely to be the conditions in which people are born, grow, live, work and age

-World Health Organization (WHO) Commission on Social Determinants of Health

4

Figure 5

Social and Economic Factors Drive Health Outcomes

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Racism and Discrimination					
Employment Income Expenses Debt Medical bills Support	Housing Transportation Safety Parks Playgrounds Walkability Zip code / geography	Literacy Language Early childhood education Vocational training Higher education	Food security Access to healthy options	Social integration Support systems Community engagement Stress Exposure to violence/trauma	Health coverage Provider availability Provider linguistic and cultural competency Quality of care

Health Outcomes: Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

KFF

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History

- 1848: Samual Cartwright
  - Discovered "Black" diseases
    - Drapetomania: lack of enthusiasm for slavery and leading to attempts of escape
    - Hebetude: singular laziness or shiftlessness that causes slaves to mishandle and abuse their owners' properties
  - Diseases did not manifest themselves in the same way in blacks
    - Syphilis: underdeveloped nervous system of blacks did not cause the same damage as white people; it affected the muscles
    - **Tuskegee Study of Syphilis in the Untreated Negro Male:** 1932 and 1972,
      - United States Public Health Service
      - 600 black men, their wives, and their children were deceived into participating in a research study that denied them treatment to observe the natural progression of the disease

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History

- James Marion Sims
  - "**Father of America Gynecology**"
  - Developed the techniques for vesciovaginal fistula repair
  - Caused them to multiple enslaved women all and repaired them without anesthesia
- Francis Marie Prevost
  - 1822-1831 perfected the cesarean section on enslaved women
  - First successful in 1830
- Ephraim McDowell
  - First to perform a successful oophorectomy on enslaved women

7

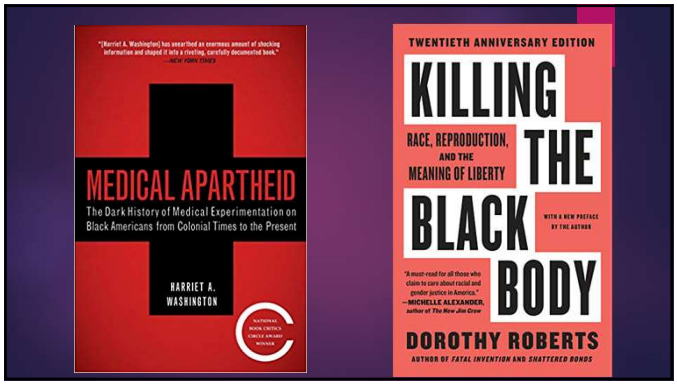

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Table 1. Select Examples of Disparities in Obstetric and Gynecologic Health and Health Care [a]

Disparities in Health Outcomes	AI/AN	Asian	Black	Hispanic	White
Infertility in last 12 months (% of women)[b]	N/A	10	12	9	7
Unintended pregnancy (% of pregnancies)[c]	N/A	N/A	69	56	42
Preterm birth (% of live births)[d]	13	10	17	12	10
Fetal death (/1,000 live births + fetal deaths)[e]	N/A	N/A	11	5	5
Maternal death (/100,000 live births)[e,f]	N/A	8	26	5	7
Gonorrhea (/100,000 population)[g]	96	18	570	N/A	24
Cervical cancer (/100,000 population)[h]	7	7	10	11	7
Breast cancer deaths (/100,000 population)[i]	15	11	31	15	22
Diabetes-related deaths (/100,000 population)	22	11	33	13	24
Disparities in Health Care Access and Services					
Birth control provided in past year (% of women aged 15–44 years)[b]	N/A	N/A	29	29	37
Pap testing within 3 years (% of women aged 21–65 years)[j]	79	75	85	79	83
Mammography within 2 years (% of women aged 50–74 years)[j]	69	64	73	70	73
Ever received infertility treatment (% of women)[k]	N/A	N/A	11	12	16
Prenatal care in first trimester (% of births)[d]	69	84	75	76	89
Cesarean delivery (% of births)[l]	29	34	36	32	32

Abbreviations: AI/AN, American Indian or Alaska Native; N/A, data not available.

[a] Stiller M, Schmidt L. Health disparities and infertility: impacts of state-level insurance mandates. Fertil Steril 2008;85:858–65.

[b] Finer LB, Zolna MR. Shifts in intended and unintended pregnancies in the United States, 2001-2008. Am J Public Health 2014;104(suppl 1):S43–8.

[c] March of Dimes. PeriStats. Available at: http://www.marchofdimes.org/peristats/Peristats.aspx. Retrieved September 1, 2015.

[d] MacDorman MF, Gregory EC. Fetal and perinatal mortality: United States, 2013. Natl Vital Stat Rep 2015;64:(8):1–24.

[e] California Maternal Quality Care Collaborative. Racial disparities. Available at: https://www.cmqcc.org/focus-areas/maternal-mortality/racial-disparities. Retrieved September 2, 2015.

[f] Data is limited to the state of California but represents the most recently available data. National data have not been updated since 2010.

[g] Racial disparities in nationally notifiable diseases--United States, 2002. Centers for Disease Control and Prevention (CDC). MMWR Morb Mortal Wkly Rep 2005;54:9–11.

[h] Human papillomavirus-associated cancers - United States, 2004-2008. Centers for Disease Control and Prevention (CDC). MMWR Morb Mortal Wkly Rep 2012;61:258–61.

Kohler BA, Sherman RL, Howlader N, Jemal A, Ryerson AB, Henry KA, et al. Annual report to the nation on the status of cancer, 1975-2011, featuring incidence of breast cancer subtypes by race/ethnicity, poverty, and state [published errata appear in J Natl Cancer Inst 2015;107(7). pii: djv177; J Natl Cancer Inst 2015;107(5). pii: djv121]. J Natl Cancer Inst 2015;107:djv048.

[j] Kochanek KD, Murphy SL, Xu J. Deaths: final data for 2011. Natl Vital Stat Rep 2015;63(3):1–120.

[k] Martinez G, Chandra A, Febo-Vasquez I, Mosher W. Use of family planning and related medical services among women aged 15-44 in the United States: National Survey of Family Growth, 2006-2010. Natl Health Stat Report 2013;6:1–16, 20.

[l] Cancer screening - United States, 2010. Centers for Disease Control and Prevention (CDC). MMWR Morb Mortal Wkly Rep 2012;61:41–5.

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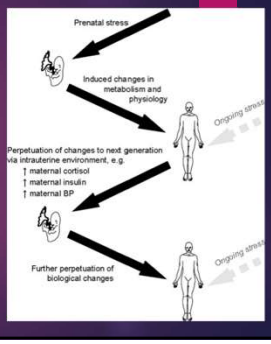
- It's not your genes.
- Bad stuff happens→ changes your DNA expression→ disease happens



Epigenetics and the embodiment of race: Developmental origins of US racial disparities in cardiovascular health Christopher W. Kuzawa
Elizabeth Sweet
First published: 16 October 2008
https://doi.org/10.1002/ajhb.20822

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The Immigrant Paradox

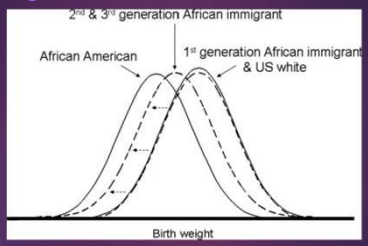

Fig. 3. Schematic illustrating the intergenerational change in birth weight among recent African immigrants to the US. The first generation (mean 1) is born to foreign-born mothers, has a mature birth weight and birth weight distribution comparable to that of US whites. Second generation females (mean 2) are born with lower birth weights, moving closer to the African American mean. Their offspring show greater (Adapted from Kuzawa and Sweet, 2009)

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Elizabeth Sweet
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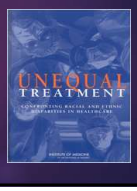
Evidence Based Facts

- IOM Group on Racial and Ethnic Disparities focused on the culture of medicine and found that black and other minorities receive poorer quality of care than white patient for ALL kinds of medical treatment secondary to implicit bias or "unconscious discrimination".



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Evidence Based Facts

- Race is a social category that has staggering biological consequences because of the impact on social inequality on people's health
- Overt discrimination or the threat of discrimination has a negative impact on health
- Patients of color (namely black and Latinx) women are twice as likely to receive no pain medication for the same basic procedures because of stereotypes that women of color feel less pain, exaggerate their pain and are predisposed to drug addiction.

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The reasons for the black-white divide in both infant and maternal morality have been debated by researchers and doctors for more than two decades. But recently there has been growing acceptance of what has largely been, for the medical establishment, a shocking idea: **For black women in America, an inescapable atmosphere of societal and systemic racism can create a kind of toxic physiological stress, resulting in conditions – including hypertension and pre-eclampsia – that lead directly to higher rates of infant and maternal death.** And that societal racism is further expressed in a pervasive, longstanding racial bias in health care – including the dismissal of legitimate concerns and symptoms – that can help explain poor birth outcomes even in the case of black women with the most advantages.

April 11,2018

– Linda Villarosa, New York Times Magazine

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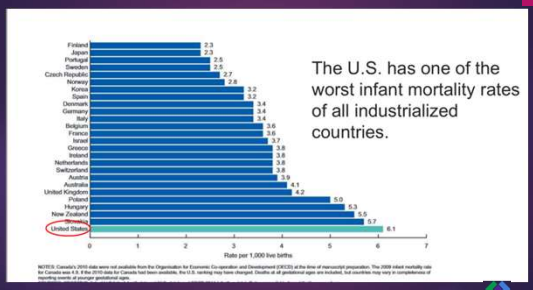
U.S. Infant Mortality



The U.S. has one of the worst infant mortality rates of all industrialized countries.

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Disturbing Numbers

For every 1,000 babies born in the U.S. in 2018, 5.67 died before their first birthday.

That's 21,498 babies!

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It Gets Worse…

Babies born to black mothers in the U.S. die at more than twice the rates of babies born to white mothers.

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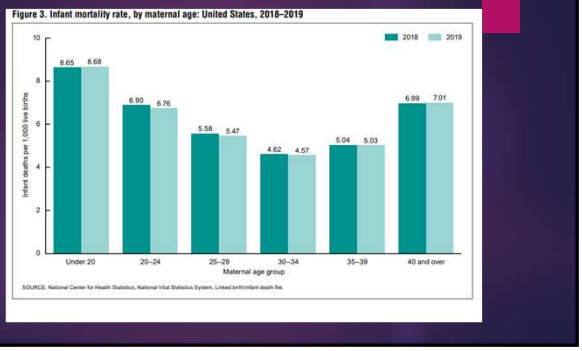
Figure 3. Infant mortality rate, by maternal age: United States, 2018–2019
2018
2019
Infant deaths per 1,000 live births
8.65
8.68
6.90
6.76
5.58
5.47
4.62
4.57
5.04
5.03
6.99
7.01
Under 20
20–24
25–29
30–34
35–39
40 and over
Maternal age group
SOURCE: National Center for Health Statistics, National Vital Statistics System, Linked birth/infant death file.

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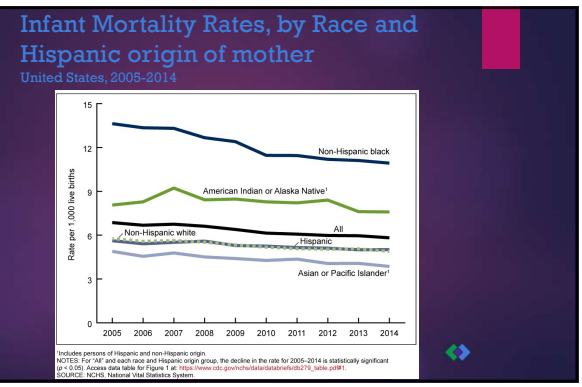
Infant Mortality Rates, by Race and Hispanic origin of mother
United States, 2005-2014
Rate per 1,000 live births
Non-Hispanic black
American Indian or Alaska Native¹
All
Non-Hispanic white
Hispanic
Asian or Pacific Islander¹
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
¹Includes persons of Hispanic and non-Hispanic origin.
NOTES: For "All" and each race and Hispanic origin group, the decline in the rate for 2005–2014 is statistically significant (p < 0.05). Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db279_table.pdf#1.
SOURCE: NCHS, National Vital Statistics System.

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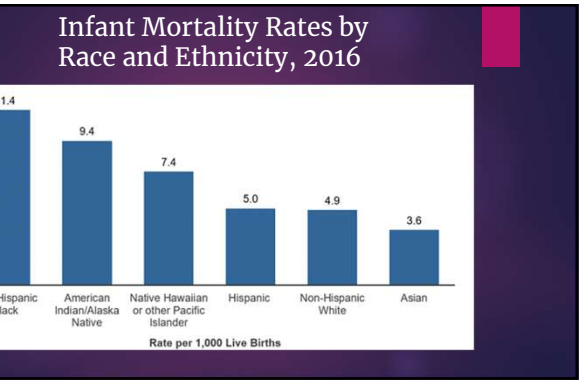
Infant Mortality Rates by Race and Ethnicity, 2016
11.4
9.4
7.4
5.0
4.9
3.6
Non-Hispanic Black
American Indian/Alaska Native
Native Hawaiian or other Pacific Islander
Hispanic
Non-Hispanic White
Asian
Rate per 1,000 Live Births

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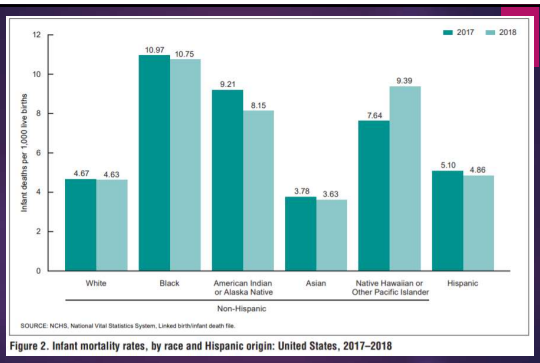

Figure 2. Infant mortality rates, by race and Hispanic origin: United States, 2017–2018

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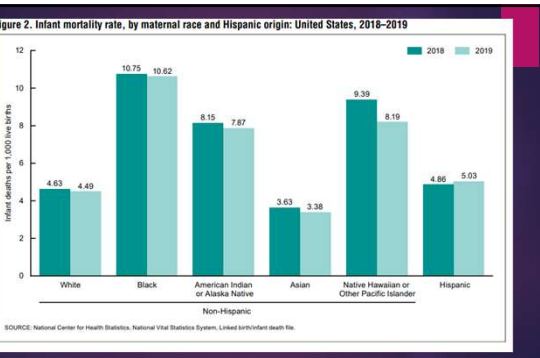

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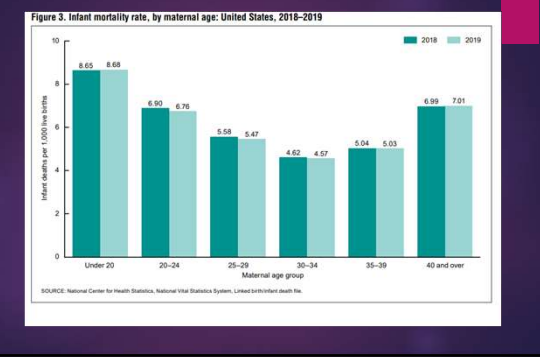

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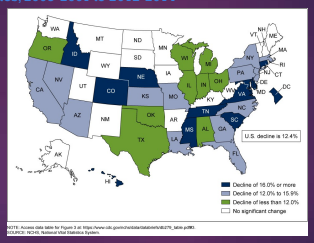
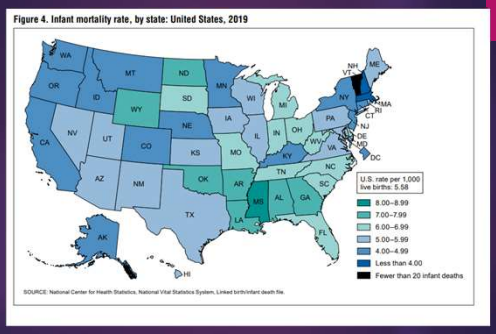
Percent Change in Infant Mortality Rate, by state

United States, 2005-2007 to 2012-2014



No significant change does **NOT** = we are doing well

25



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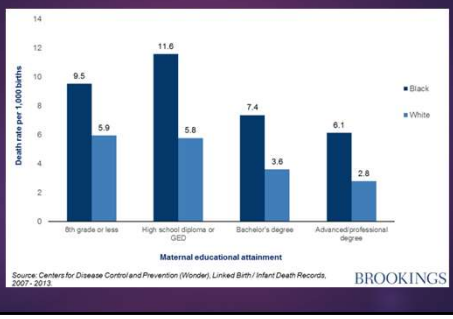
Infant Mortality Higher for Middle-class Blacks than Lower-class Whites: 2007-2013



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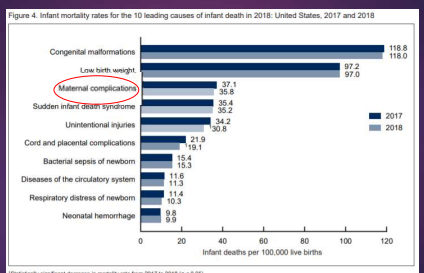
Infant Mortality Rates for the Five Leading Causes of Infant Death United States, 2017, 2018



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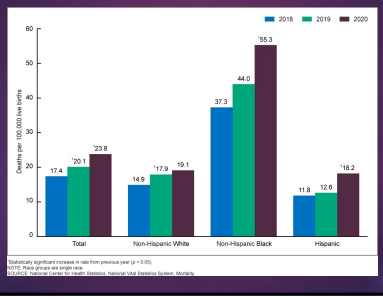
Maternal mortality rates, by race and Hispanic origin: United States, 2018–2020



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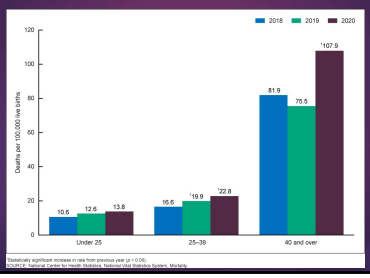
Maternal mortality rates, by age group 2018-2020



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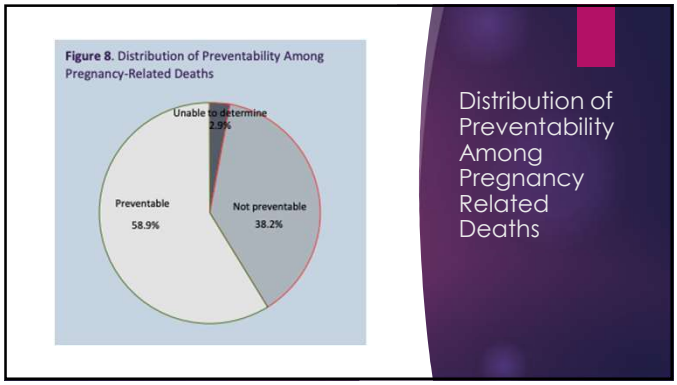
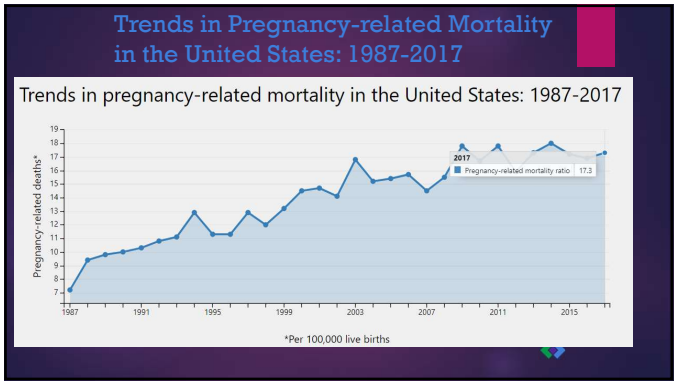


Figure 8. Distribution of Preventability Among Pregnancy-Related Deaths
Unable to determine 2.5%
Preventable 58.9%
Not preventable 38.2%
Distribution of Preventability Among Pregnancy Related Deaths

31


Trends in Pregnancy-related Mortality in the United States: 1987-2017
Trends in pregnancy-related mortality in the United States: 1987-2017
Pregnancy-related deaths*
2017
Pregnancy-related mortality ratio 17.3
*Per 100,000 live births

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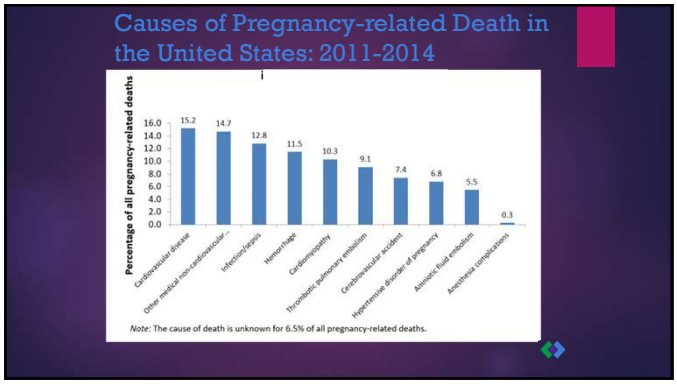
Causes of Pregnancy-related Death in the United States: 2011-2014
Percentage of all pregnancy-related deaths
15.2
14.7
12.8
11.5
10.3
9.1
7.4
6.8
5.5
0.3
Cardiovascular disease
Other medical non-cardiovascular...
Infection/sepsis
Hemorrhage
Cardiomyopathy
Thrombotic pulmonary embolism
Cerebrovascular accident
Hypertensive disorder of pregnancy
Amniotic fluid embolism
Anesthesia complications
Note: The cause of death is unknown for 6.5% of all pregnancy-related deaths.

33

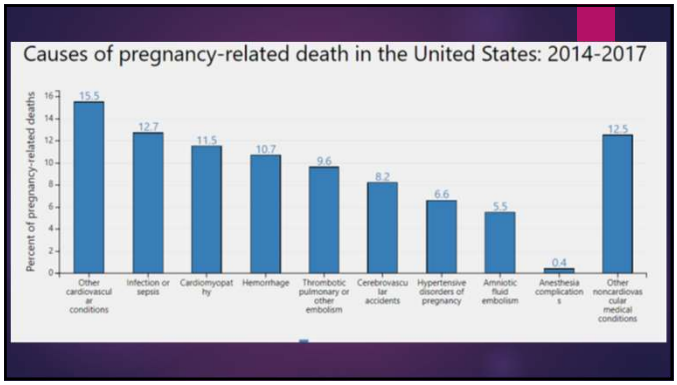
Causes of pregnancy-related death in the United States: 2014-2017
Percent of pregnancy-related deaths
15.5
12.7
11.5
10.7
9.6
8.2
6.6
5.5
0.4
12.5
Other cardiovascular conditions
Infection or sepsis
Cardiomyopathy
Hemorrhage
Thrombotic pulmonary or other embolism
Cerebrovascular accidents
Hypertensive disorders of pregnancy
Amniotic fluid embolism
Anesthesia complications
Other noncardiovascular medical conditions

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Figure 5. Leading Underlying Causes of Pregnancy-Related Deaths by Race-Ethnicity
Proportion of Pregnancy-Related Deaths
Cardiomyopathy
Cardiovascular & Coronary Conditions
Embolism
Hemorrhage
Infection
Mental Health Conditions
Preeclampsia & Eclampsia
non-Hispanic white
non-Hispanic black
Leading Underlying Causes of Pregnancy Related Deaths by Race-Ethnicity

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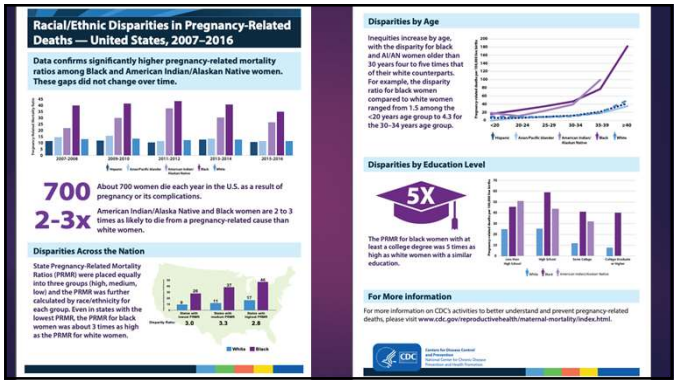
Racial/Ethnic Disparities in Pregnancy-Related Deaths — United States, 2007–2016
Data confirms significantly higher pregnancy-related mortality ratios among Black and American Indian/Alaskan Native women. These gaps did not change over time.
700 About 700 women die each year in the U.S. as a result of pregnancy or its complications.
2-3x American Indian/Alaska Native and Black women are 2 to 3 times as likely to die from a pregnancy-related cause than white women.
Disparities Across the Nation
State Pregnancy-Related Mortality Ratios (PRMR) were placed equally into three groups (high, medium, low) and the PRMR was further calculated by race/ethnicity for each group. Even in states with the lowest PRMR, the PRMR for black women was about 3 times as high as the PRMR for white women.
Disparities by Age
Inequities increase by age, with the disparity for black and AI/AN women older than 30 years four to five times that of their white counterparts. For example, the disparity ratio for black women compared to white women ranged from 1.5 among the <20 years age group to 4.3 for the 30–34 years age group.
Disparities by Education Level
5X
The PRMR for black women with at least a college degree was 5 times as high as white women with a similar education.
For More information
For more information on CDC's activities to better understand and prevent pregnancy-related deaths, please visit www.cdc.gov/reproductivehealth/maternal-mortality/index.html.

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Minnesota Birth Data, 2019

Minnesota Birth Data 2019	State	Rank*	U.S.**
Infant Mortality Rate***	5.1	---	5.9
Percent of Births to Unmarried Mothers	32.2	45th	**39.9**
Cesarean Delivery Rate	**27.6**	39th	**31.7**
Preterm Birth Rate	9.2	41nd	10.23
Teen Birth Rate	**10.1**	43th	**16.7**
Low Birthweight Rate	6.6	43th	8.31

* Rankings are from highest to lowest.
** Rates for the U.S. include the District of Columbia and (for births) U.S. territories.
*** Deaths per 1,000 live births

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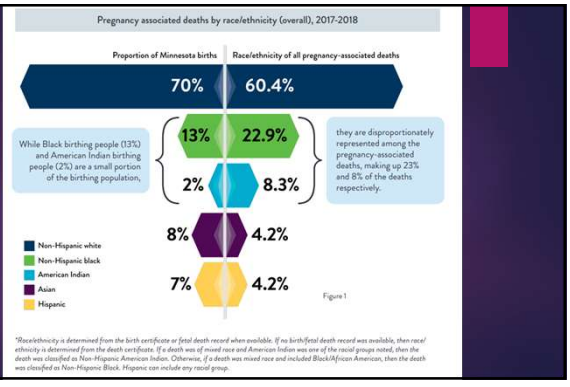
Minnesota Maternal Mortality Report 2017-2018 (state.mn.us)

38



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Pregnancy status

From 2017-2018, 62.5% pregnancy-associated deaths occurred six weeks – one year postpartum or 6 weeks to one year after birth event Twenty percent of the deaths occurred while the person was pregnant, and 16.7% occurred 0-42 days postpartum. (Figure 3)

Timing of death (overall)

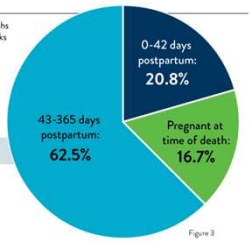

Figure 3

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Pregnancy-Associated deaths (All deaths within one year of pregnancy)

- While Black birthing people (13%) and American Indian birthing people (2%) are a small portion of the birthing population, they are disproportionately represented among the pregnancy-associated deaths, making up 23% and 8% of the deaths respectively.
- 52% of pregnancy-associated deaths occurred among residents of the seven-county metro area and 48% occurred among residents outside of the metro region.
- Most pregnancy-associated deaths (62.5%) occurred between six weeks after the pregnancy and one year postpartum, 20.8% occurred during pregnancy, and 16.7% occurred 0-42 days postpartum.
- Injuries are the leading cause of death for pregnancy-associated deaths (45.8%), including deaths related to motor vehicle accidents, poisoning/overdose, and homicide or suicide, including firearm-related deaths. Substance use was identified as a cause or contributing factor in 31.3% of the pregnancy-associated deaths.

Pregnancy-related deaths (deaths within one year of pregnancy where pregnancy was the aggravating factor)

- Of the pregnancy-related deaths, 100% of the deaths were determined to be preventable.
- Because of the relatively small number of pregnancy-related deaths, we were unable to identify trends in cause of death or report data showing race/ethnicity and location of residence due to the small number of pregnancy-related deaths
- Half (50%) of the pregnancy-related deaths occurred 0-42 days postpartum.

Pregnancy-associated but NOT related (deaths within one year of pregnancy where pregnancy was NOT the aggravating factor)

- Injuries from motor vehicle accidents (16.7%) is the leading cause of pregnancy-associated but NOT related deaths was followed by deaths from poisoning/ overdose (12.5%).
- Three quarters (75%) of the pregnancy-associated but NOT related deaths occurred six weeks to one year postpartum.

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Table 1: Leading cause of death for pregnancy-associated deaths

Cause of death	Frequency	Percent
Injury - motor vehicle accident	8	16.7%
Injury - poisoning/overdose	6	12.5%
Injury - Hanging/strangulation/suffocation	4	8.3%
Cancer	4	8.3%
Firearm, infection, neurological/neurovascular	3 (for each diagnosis)	6.25%

Table 2: Leading Cause of Death for Pregnancy- Associated but NOT related Deaths

Cause of death	Frequency	Percent
Motor Vehicle	8	40%
Poisoning or Overdose	5	25%
Hanging or Strangulation	3	15%
Firearm	2	10%
Other or sharp instrument	3	15%

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Maternal Mortality in Minnesota

- Historically in Minnesota, maternal deaths have been caused by reasons such as hemorrhage, infections and complications from delivery.
- However, in recent years, we have seen more deaths attributed to motor vehicle accidents and chronic health conditions such as hypertension and diabetes.
- Similar to the broader U.S. population, we have also seen an increase in maternal deaths involving substance use, depression and suicides, and gun violence.

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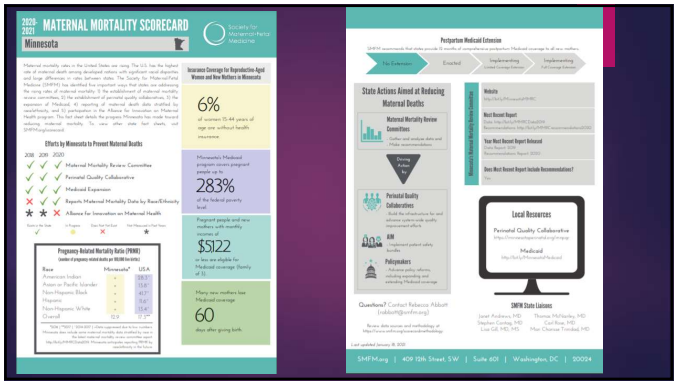

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Regions Hospital Data

CS rates:

- 2018: 26.4%
- 2019: 30.5%
- 2020: 36.4%
- 2021: 33.4%

Operative vaginal deliveries:

- 2018: 2.8%
- 2019: 2.9%
- 2020: 4.3%
- 2021: 3.8%

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Regions Hospital Data

HTN rates (note no changes to diagnostic criteria were made during this time period as well):

- 2018: 18.5%
- 2019: 20.0%
- 2020: 25.2%
- 2021: 30.0%

- DM rates:
  - 2018: 4.4%
  - 2019: 4.9%
  - 2020: 3.9%
  - 2021: 6.7%
- Births between 28-33 weeks (number not percentage):
  - 2019: 165
  - 2020: 168
  - 2021: 88

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So…. let's talk about it.

What are we going to do about this?

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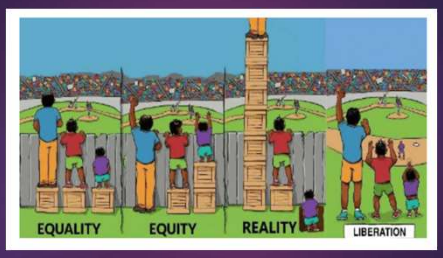
Addressing the Health Equity Challenge



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HEAR HER Campaign | CDC

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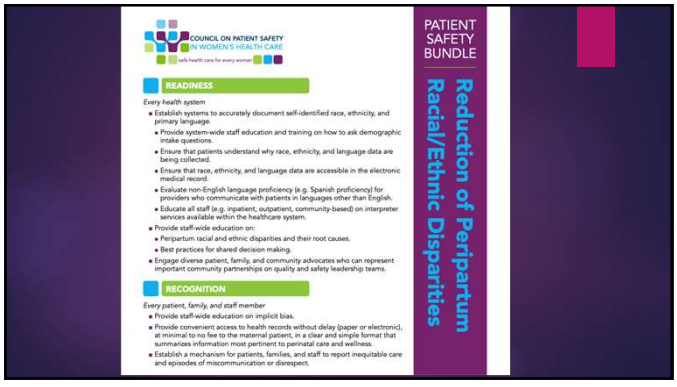

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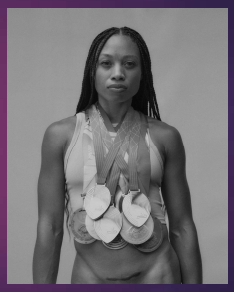
VBAC Calculator

- VBAC: Vaginal birth after cesarean section
  - 2007: Maternal fetal medicine unit
    - Data calculator to assess the success of a vaginal birth after a c-section



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Personal data		Personal data		Personal data	
Age	25 years	Age	25 years	Age	25 years
Ethnicity	White	Ethnicity	African American	Ethnicity	Hispanic
Do you know your BMI?	Yes	Do you know your BMI?	Yes	Do you know your BMI?	Yes
Your BMI	25	Your BMI	25	Your BMI	25
Obstetrics history		**Obstetrics history**		**Obstetrics history**	
Any prior vaginal delivery?	No	Any prior vaginal delivery?	No	Any prior vaginal delivery?	No
Recurring reason for cesarean delivery?	No	Recurring reason for cesarean delivery?	No	Recurring reason for cesarean delivery?	No
Results		**Results**		**Results**	
Probability of successful vaginal birth: 78.43%		**Probability of successful vaginal birth: 65.02%**		**Probability of successful vaginal birth: 64.82%**	
VBAC Score: 60		VBAC Score: 53		VBAC Score: 53	

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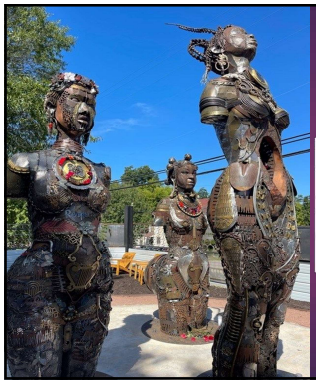

Monument to 'Mothers of Gynecology' unveiled in Montgomery

Updated: Sep. 27, 2021, 12:46 p.m. | Published: Sep. 27, 2021, 10:19 a.m.

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What is an anti-racist organization?

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CHI 2025 Goals

- Reduce maternal mortality and morbidity
- Reduce infant mortality and morbidity
- Continue promotion of breastfeeding
- Improve Adolescent Health
- Enhance developmental support for children
- Improve immunization rates
- Address pediatric, adolescent, and maternal mental health

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What are we doing….

- Postpartum Hemorrhage Bundle
- Hypertension Bundle
- Category fetal heart tone training and education
- Aligning Ob Virtual visits
- Maternal health disparity and diversity and inclusion training
- Journey Mapping

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What Can I Do?

Implicit Bias survey

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What Can I Do?

- See me
- Hear me
- Listen to me
- Treat me like I am you
- Check your bias
- Understand that working in a "diverse" clinic/hospital/community is not a pass for cultural competence

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Enough is enough. Race is a social construct and the overwhelming statistics we present are attributable to a broken racist system, not a broken group of women.

Black Lives Matter: Claiming a Space for Evidence-based Outrage in Obstetrics and Gynecology

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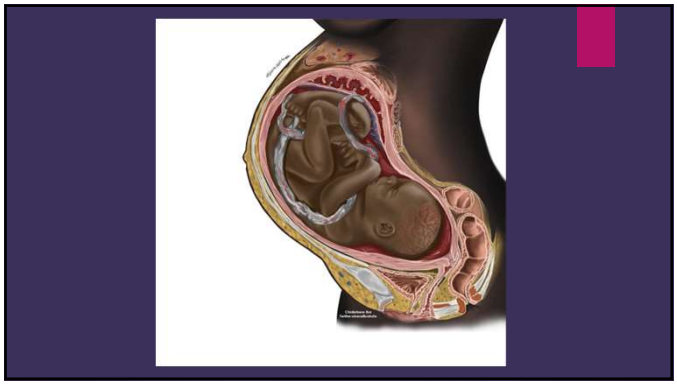

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Thank You

…FOR YOUR OPEN MIND AND HEART.

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