

LIBERTY UNIVERSITY

A Review of the Socio-ecological Determinants of Maternal Mortality among African American Women

Lili Morgan, Michala Geraty, Michelle Salinas, Katherine Riley, Nicole Abrahamsen, Baraka Muvuka, M.P.H, Ph.D

Background

- ❑ The US reports approximately 700 maternal deaths annually, over 60% of which are preventable.^{1,2}
- ❑ The US Maternal Mortality Ratio increased from 12.7 to 17.4 per 100 000 live births between 2007 and 2018.¹
- ❑ Non-Hispanic (NH) Black women are 2.5 times and 3 times more likely to die than NH White women and Hispanic women, respectively.¹
- ❑ Research focused on individual-level factors has failed to fully explain the inequities in maternal mortality.³
- ❑ Understanding the socio-ecological contributing factors is fundamental in developing multi-level and sustainable population health interventions to improve maternal health among African American women.

Research Question

- ❑ This review synthesizes the multi-level determinants of maternal mortality among non-Hispanic Black/African American women using the Socio-ecological Model.
- ❑ **Review question:** What factors contribute to maternal mortality among non-Hispanic Black/African American women?

Methods

- ❑ Systematic search in PubMed, CINAHL, and PsycInfo
- ❑ **Search Statement:** (((("maternal mortality" OR "pregnancy-related death" OR "maternal death" OR "pregnancy-related mortality" OR "pregnancy complications") AND ("determinants" OR "social determinants" OR "predictors" OR "risk factors" OR "ecological" OR "contributing factors") AND ("African American" OR "Black" OR "non-Hispanic Black" OR "disparities" OR "race" OR "racial differences") AND ("United States"))))

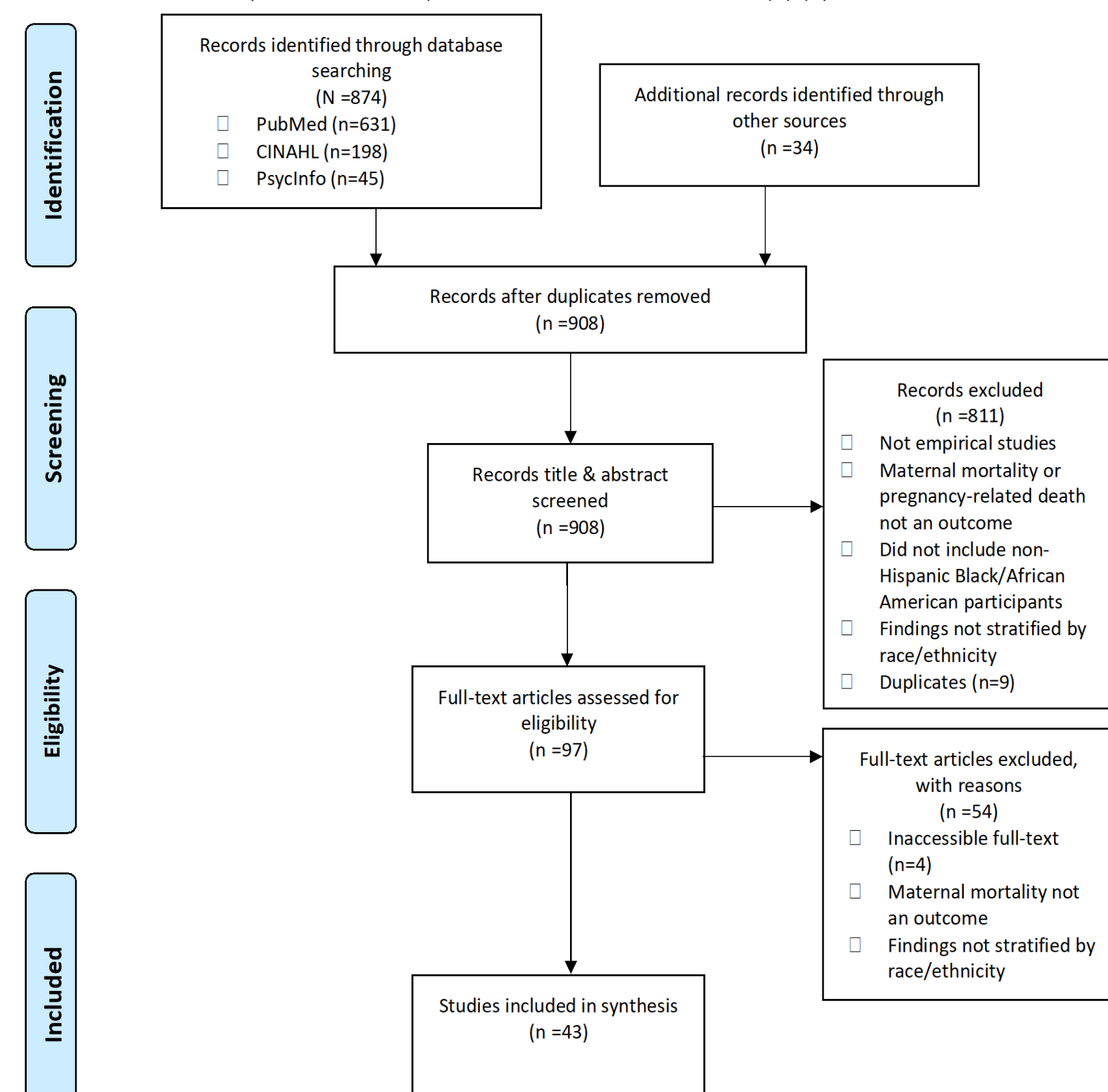


Figure 1. PRISMA Flowchart of the Search Process

Results

Tables 1-3. Characteristics of Studies Included in the Integrative Review

Author, Year	Study Design	Author, Year	Study Design	Author, Year	Study Design
Agbemenu et al., 2019	Case series	Goffman et al., 2007	Case control	Meeks et al., 2020	Cohort crossover
Al-Ostad et al., 2015	Population-based cohort	Hameed et al., 2015	Case series	Mehta et al., 2020	Retrospective observational
Anderson et al., 2004	Case series	Harper et al., 2004	Case-control	Miller et al., 2020	Cross sectional
Berg et al., 2010	Case series	Howell et al., 2013	Retrospective case series	Moadabb et al., 2018	Retrospective observational
Berg et al., 2003	Case series	James et al., 2005	Case series	Nelson et al., 2018	Retrospective analysis
Booker et al., 2018	Retrospective cohort	Kaplowitz et al., 2017	Prospective cohort	Oyana et al., 2015	Retrospective analysis
Brown et al., 2011	Retrospective case series	Kendle et al., 2019	Case series	Petersen et al., 2019	Retrospective analysis
Campbell et al., 2013	Retrospective case series	Koonin et al., 1997	Case series	Rosenberg et al., 2006	Case-control
Chang et al., 2005	Case series	Koonin et al., 1988	Case series	Saftlas et al., 2000	Nested case control
Creanga et al., 2014	Retrospective case series	Lawson et al., 1994	Retrospective case series	Singh, 2021	Retrospective analysis
Dannenberg et al., 1995	Retrospective case series	Leonard et al., 2019	Retrospective cohort	Singh et al., 2021	Retrospective analysis
Ender et al., 1988	Retrospective case series	Limaye et al., 2019	Retrospective cohort	Stultberg et al., 2016	Retrospective case series
Fang et al., 2000	Retrospective case series	Maddorman et al., 2017	Observational	Tucker et al., 2007	Retrospective analysis
Franks et al., 1990	Retrospective case series	Mackay et al., 2001	Retrospective case series	Tripathi et al., 2019	Retrospective cohort
				Vilda et al., 2019	Ecological

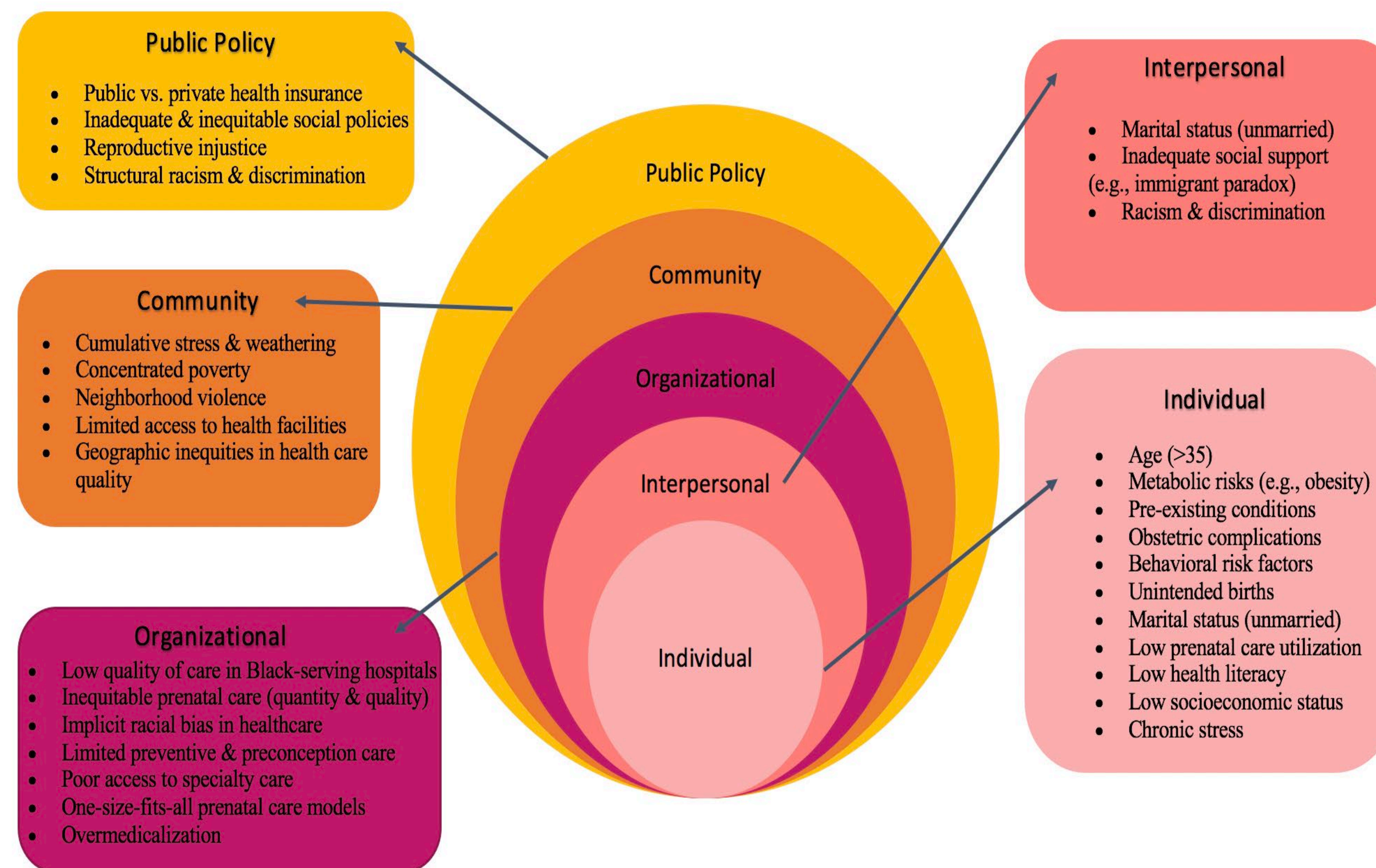


Figure 2. Synthesis of the Socio-ecological Determinants of Maternal Mortality among African American Women

Conclusion

- ❑ The Socio-Ecological Model enabled a comprehensive synthesis of the individual, interpersonal, organizational, community, and policy-level determinants of maternal mortality among African American women.
- ❑ At the individual level, African American women experience higher rates of chronic conditions, pregnancy complications, and socio-economic disadvantage (measured by income and education) than white women.
- ❑ The individual-level factors are influenced by stronger, higher-level determinants such as poor quality of care in Black-serving hospitals, structural racism and discrimination, poor neighborhood conditions, health insurance, and the lack of supportive policies.
- ❑ In conclusion, the disproportionate burden of maternal mortality among African Americans is rooted in inequitable policies, structures, and practices that perpetuate greater levels of social disadvantage, health issues, cumulative stress, limited access to health resources, and low-quality care among African American women over their life course and throughout pregnancy.

Future Work

- Practice**
 - ❑ Develop culturally-appropriate, accessible, and quality comprehensive maternal health services
- Policy**
 - ❑ Establish equitable social, economic, and health policies
- Research**
 - ❑ Increase research on distal determinants of maternal mortality among African Americans, their interactions, and their influence on proximal determinants.

References

- Hoyert DL, Miniño AM. Maternal Mortality in the United States: Changes in Coding, Publication, and Data Release, 2018. *Natl Vital Stat Rep.* 2020;69(2):1-18.
- Building U.S. Capacity to Review and Prevent Maternal Deaths. Report from nine maternal mortality review committees; 2018. https://reviewtoaction.org/Report_from_Nine_MMRCs. Accessed March 14, 2021
- Crear-Perry J, Correa-de-Araujo R, Lewis Johnson T, McLemore MR, Neilson E, Wallace M. Social and Structural Determinants of Health Inequities in Maternal Health. *J Womens Health (Larchmt).* 2021;30(2):230-235. doi:10.1089/jwh.2020.8882