



Advancing NIH Research on the Health of Women: A 2021 Conference

Maternal Morbidity and Mortality: Tip of a Lifecourse Iceberg

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Brigham and Women's Hospital

October 20, 2021



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Maternal Morbidity and Mortality: Tip of a Lifecourse Iceberg

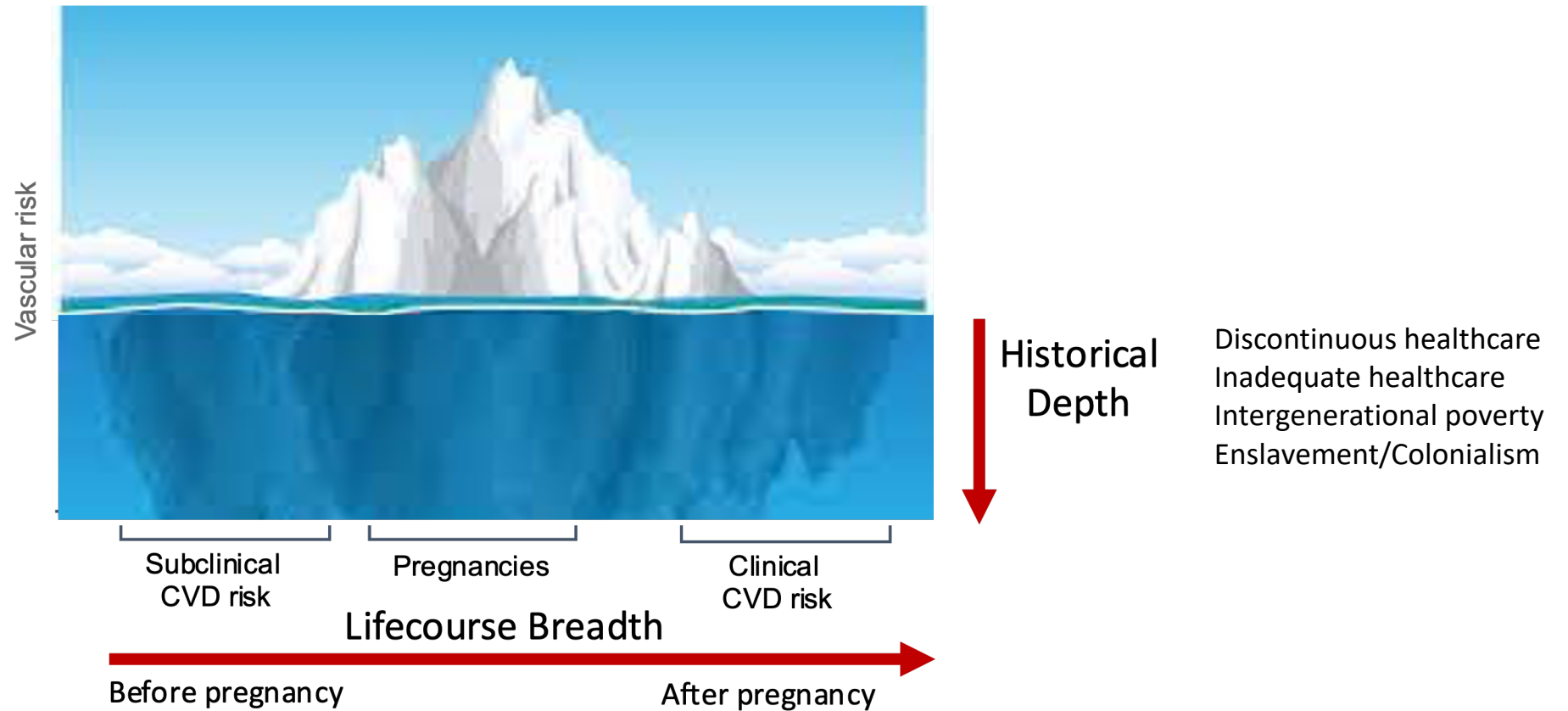
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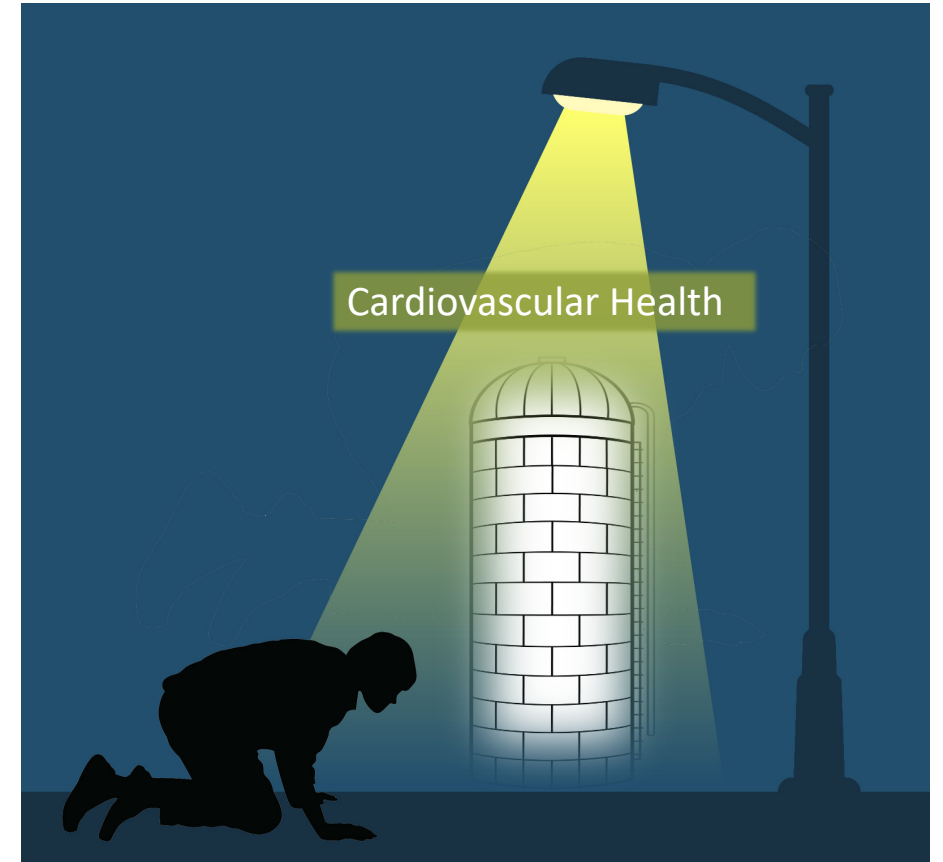
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Maternal Morbidity and Mortality are the Tip of the Iceberg



**Because of our disciplinary silos,
we missed the obvious**





Streetlight Effect

Illustrations from the Objective Standard, 2019 and Ayoud Tabout



Bikini Medicine \neq Women's Health



“The tendency of medicine to concentrate on the breasts and the reproductive organs, while essentially ignoring the rest of the woman”

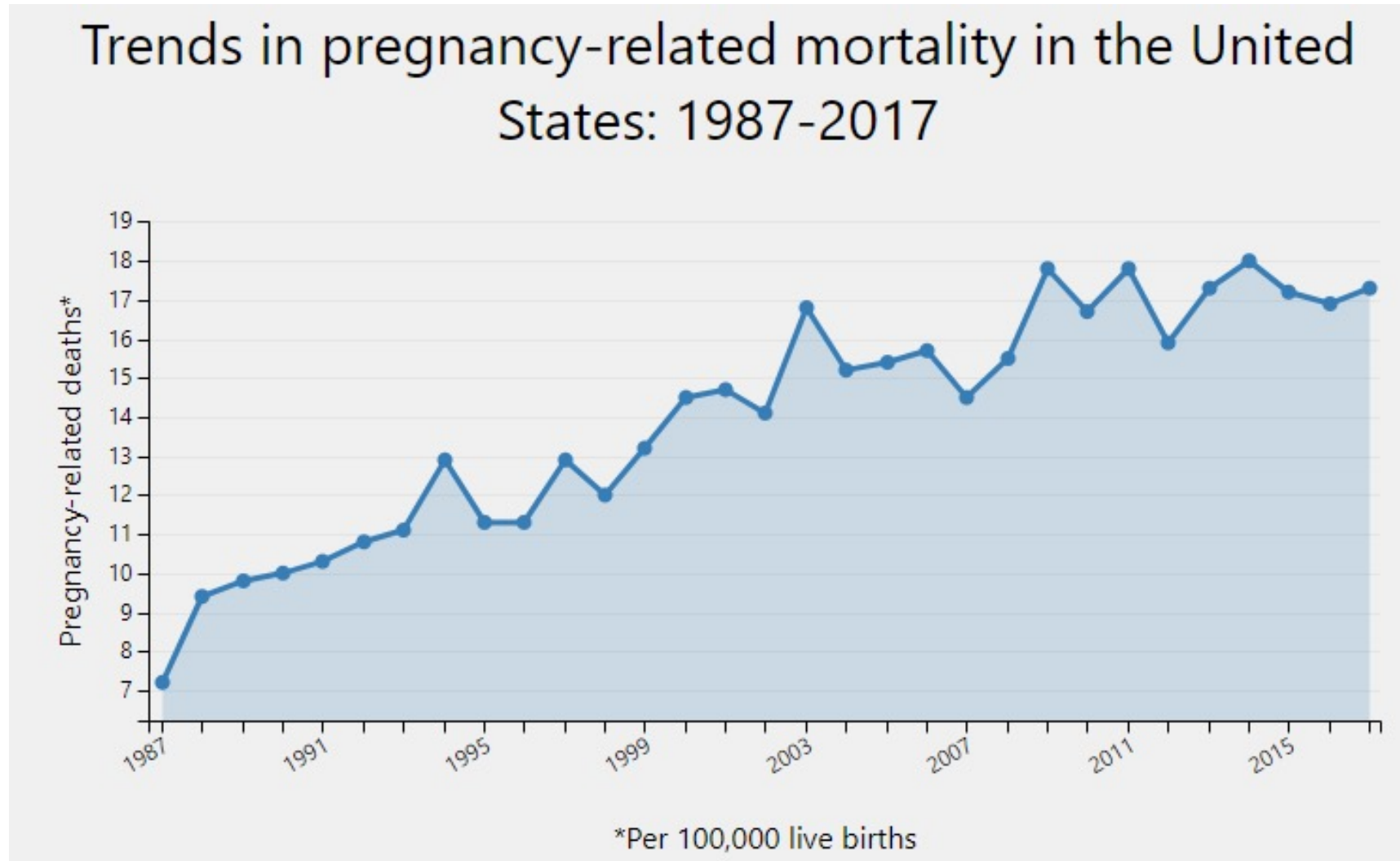
- Nanette Wenger, MD

“The Health of Women encompasses all diseases and conditions that affect a woman from head to toe and recognizes that individual-level biological factors interact with numerous influences across a woman's life course”

ADVANCING SCIENCE FOR THE HEALTH OF WOMEN

The 2019-2023 Trans-NIH Strategic Plan for Women's Health Research

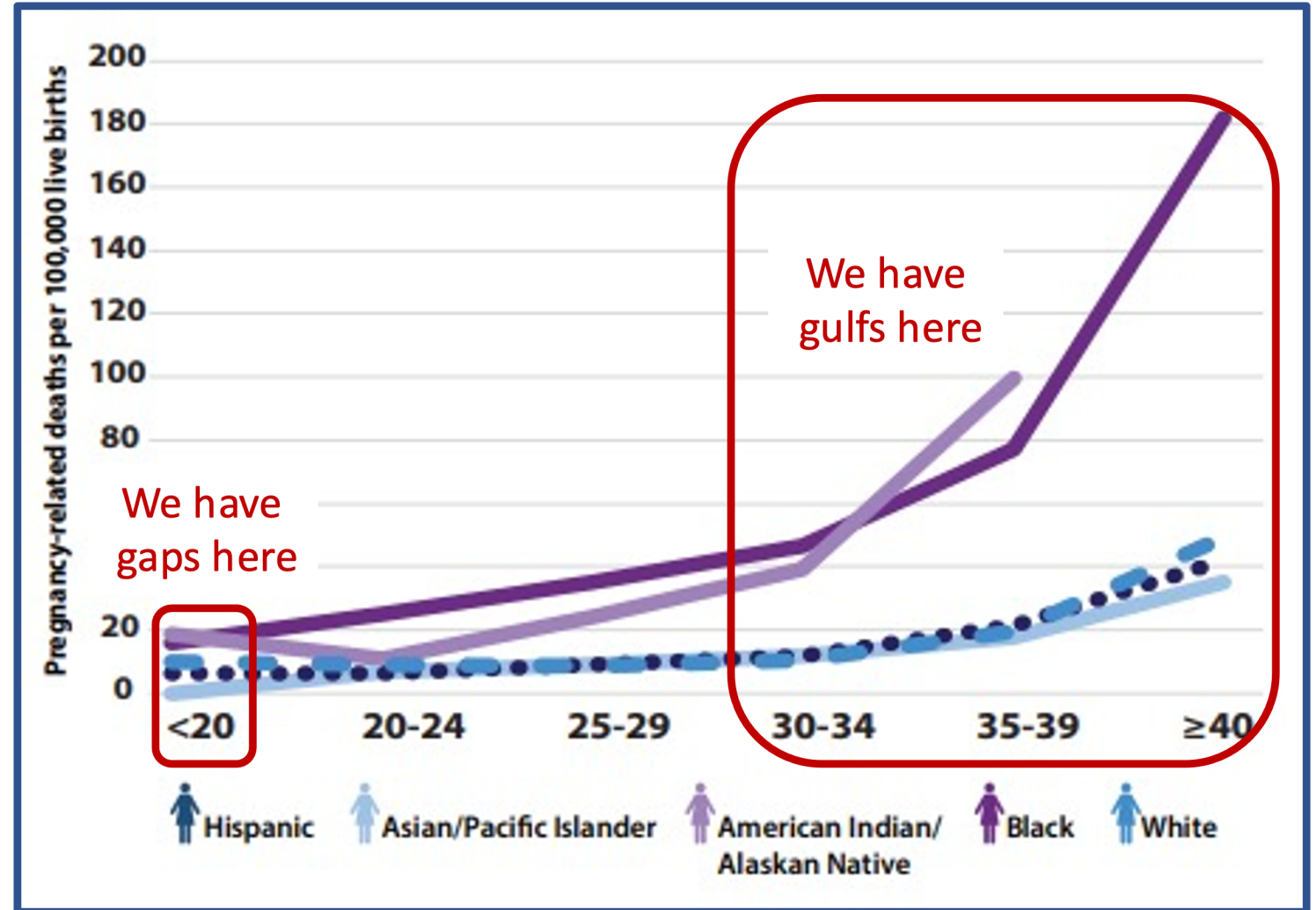
Meanwhile, we've been losing ground



MM Risk accumulates across the lifecycle in Black and AI/AN women

These data suggest:

- A lifecycle approach to MMM
- Socially determined and inequitably distributed: Each of the leading causes of maternal death is 2-5x more common for NH Black mothers compared to NH White mothers

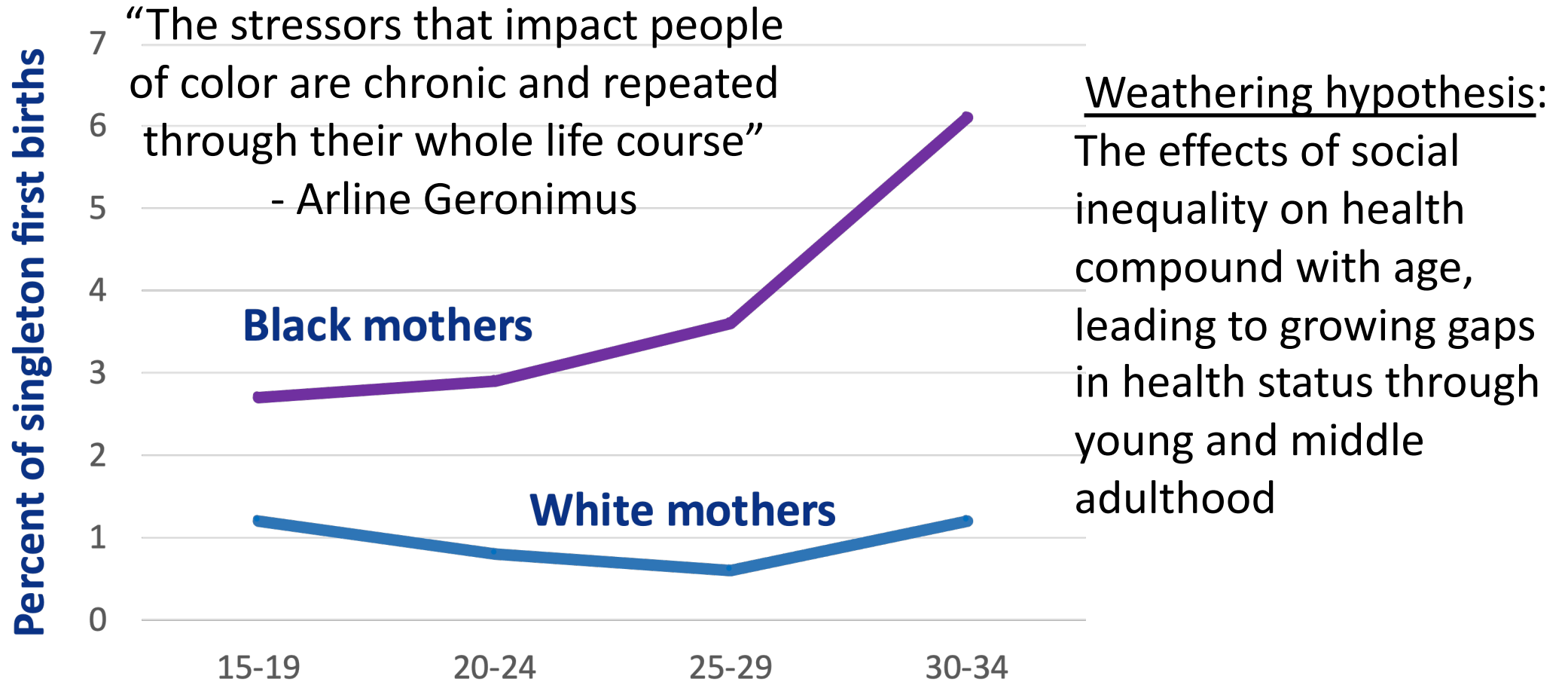


<https://www.cdc.gov/reproductivehealth/maternal-mortality/disparities-pregnancy-related-deaths>

We've known this for some time

Weathering Hypothesis:

Rates of very low birthweight by maternal age and race, Michigan 1989



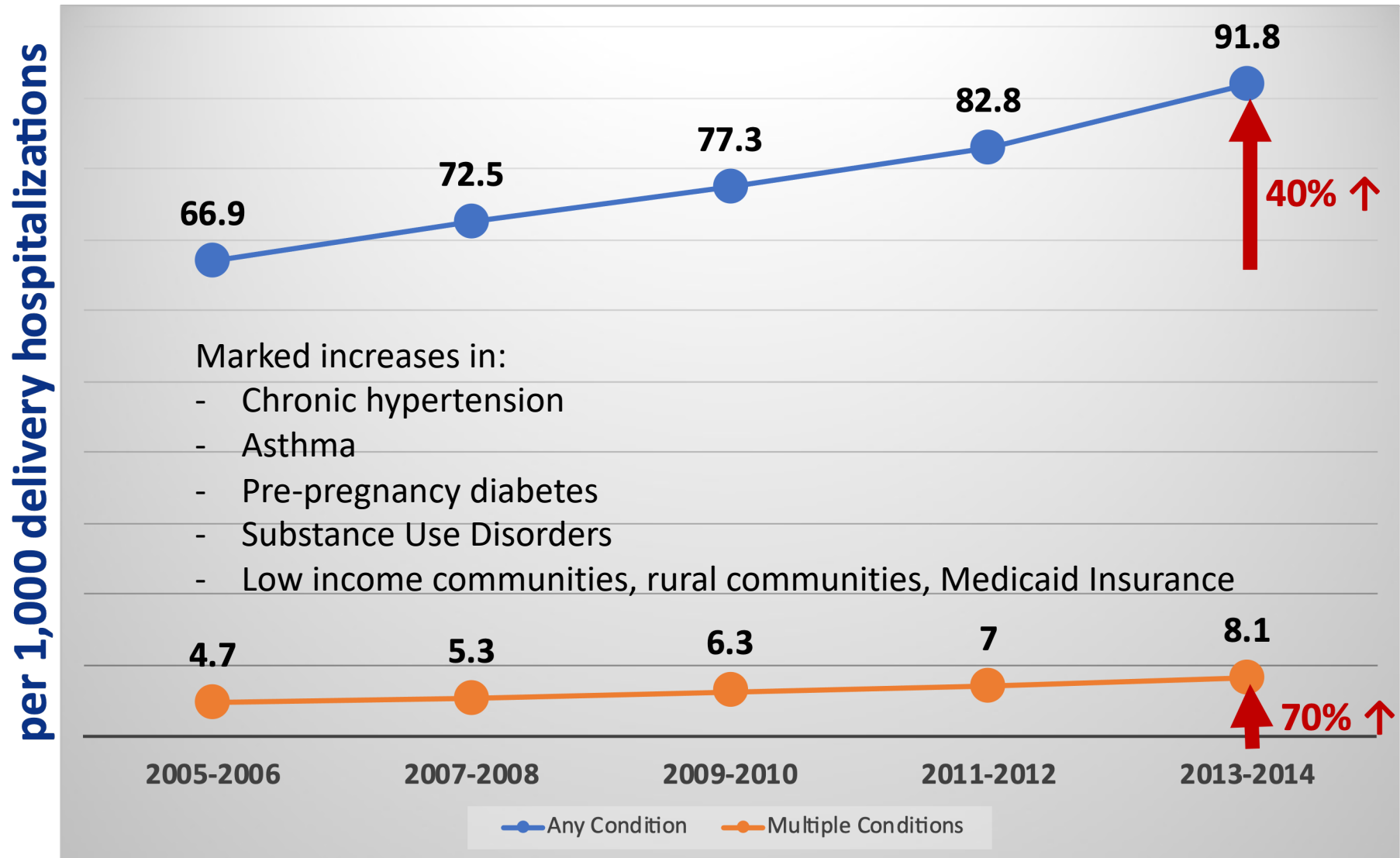
Violence Against Women and MMM

“To have a full picture of MMM, it is crucial to understand all the factors that contribute to the overall health of women.”

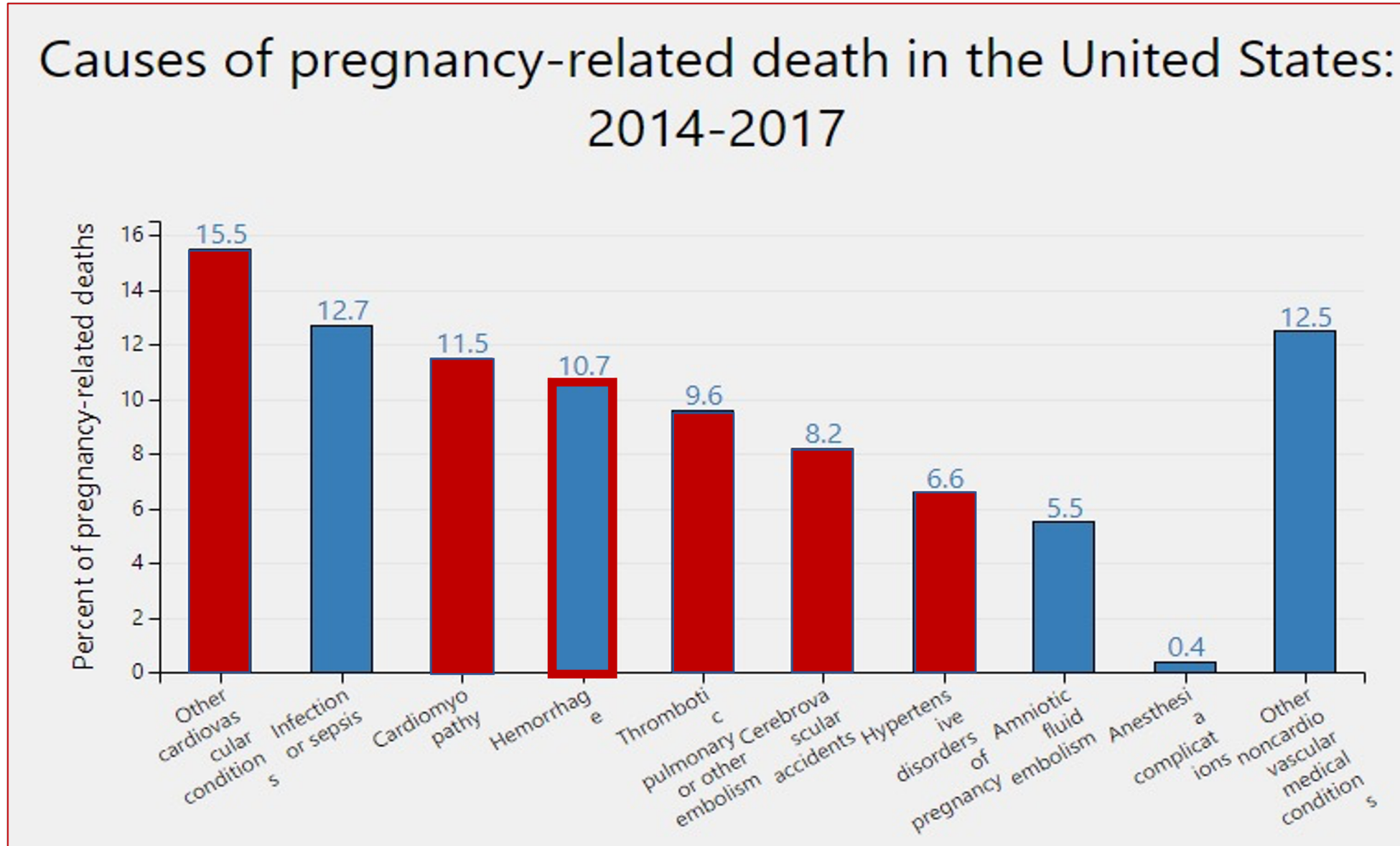
- Noursi, Clayton, Campbell & Sharps, Curr Women's Health Review 2020

- Conspicuously missing: Violence against women
- Lifetime: 18% sexual, 31% physical, 36% psychological violence (NISVS 2015)
- Physical abuse affects 6% in pregnancy or year before pregnancy (PRAMS)
- Dose-response associations with physical, mental & behavioral health – including many underlying contributors to MMM
- Homicide, suicide, drug overdose while pregnant or within 1y of pregnancy:
 - Count as ‘pregnancy-associated deaths’ by CDC
 - Do **not** count as ‘pregnancy-related death’ -> missing from MMM statistics
- Underestimate of impact of violence against women on MMM

Pre-pregnancy Chronic Conditions Increasing: Now 10% of deliveries



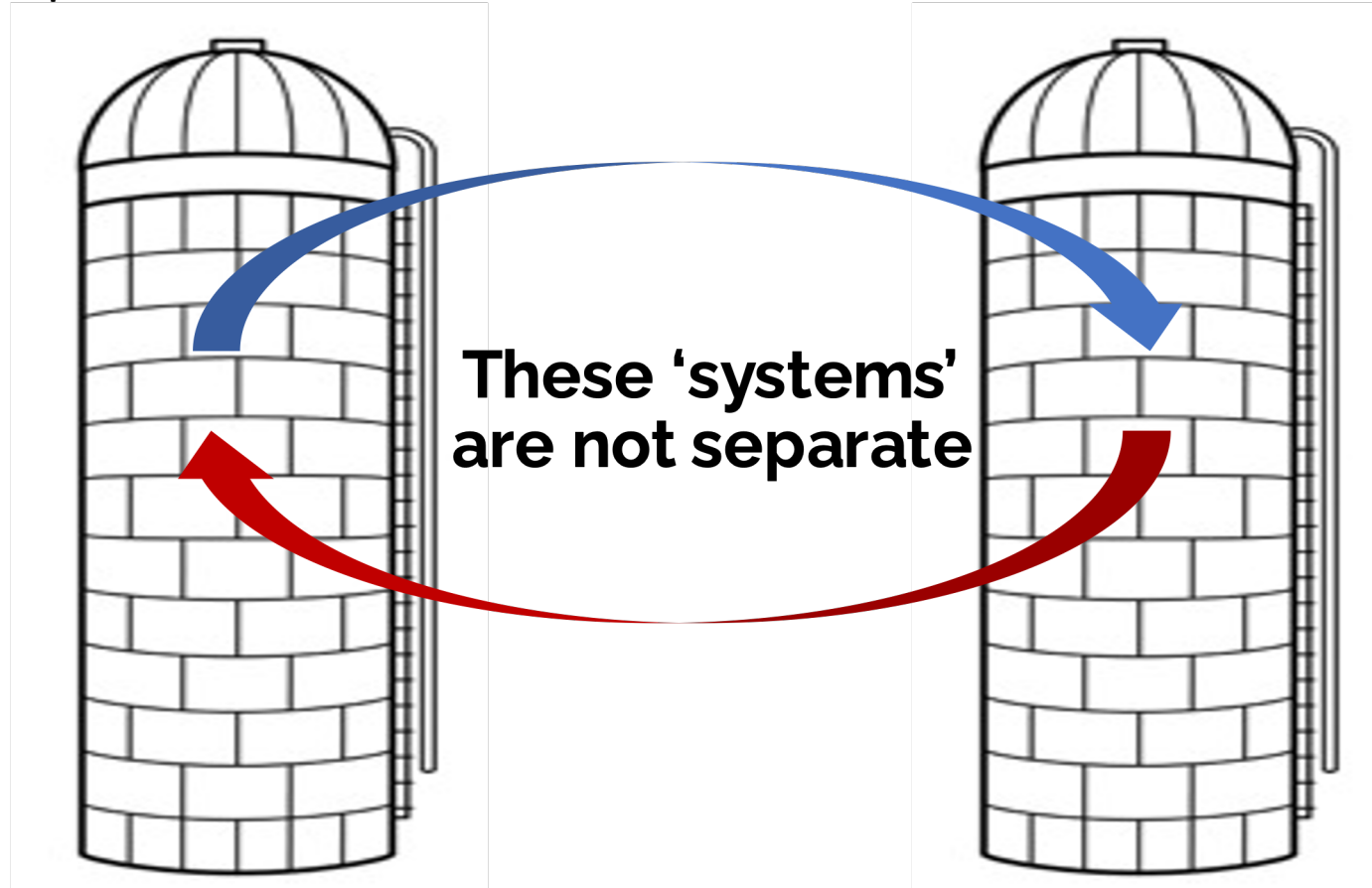
At least half of MM related to cardiometabolic health



New understanding of health

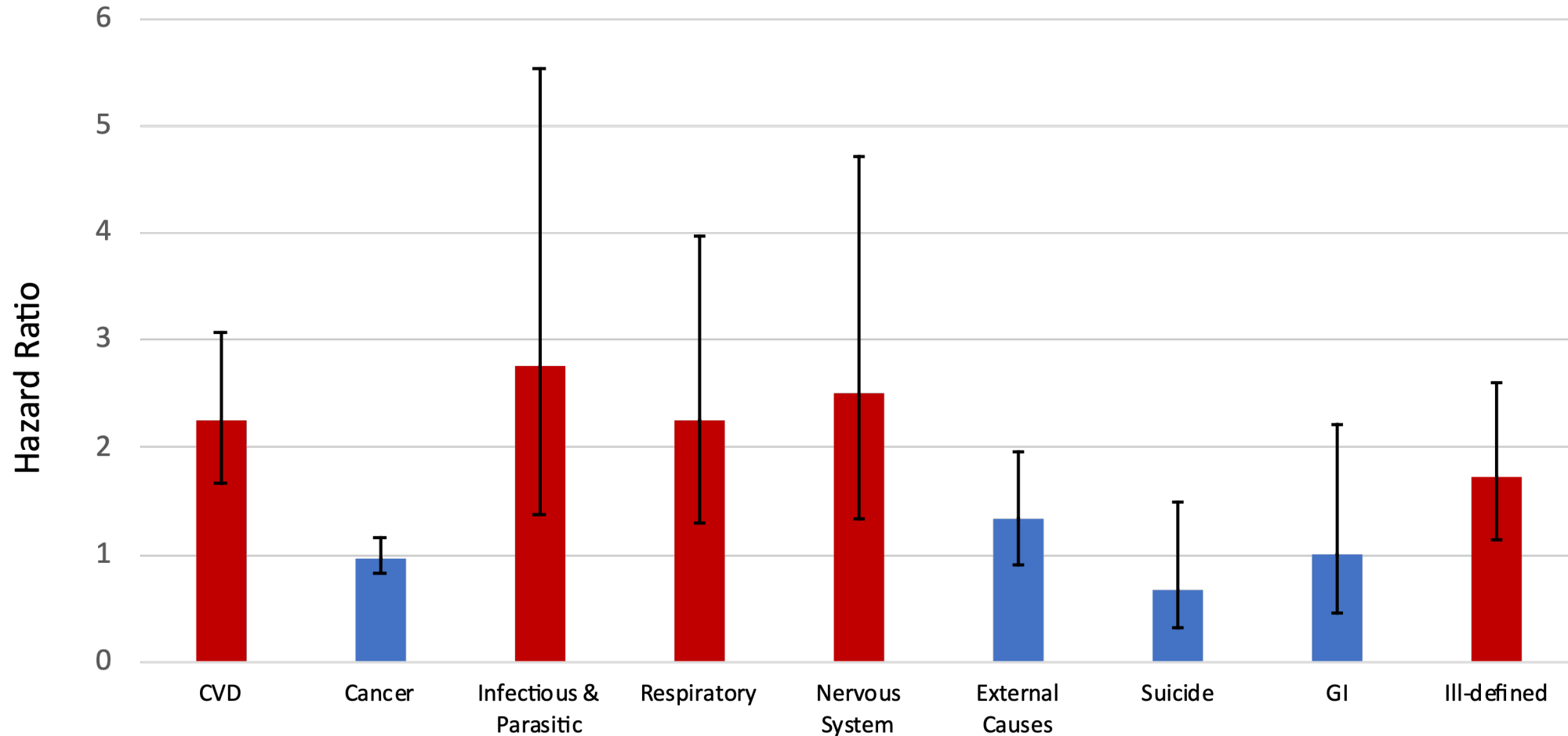
Reproductive Health

Cardiovascular Health

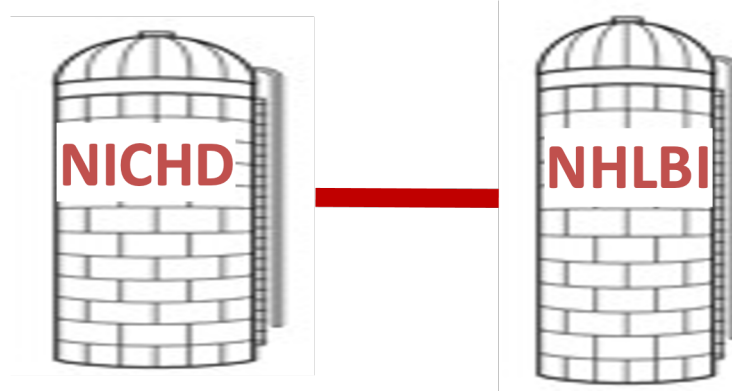


MMM may tell us about more than just CVD

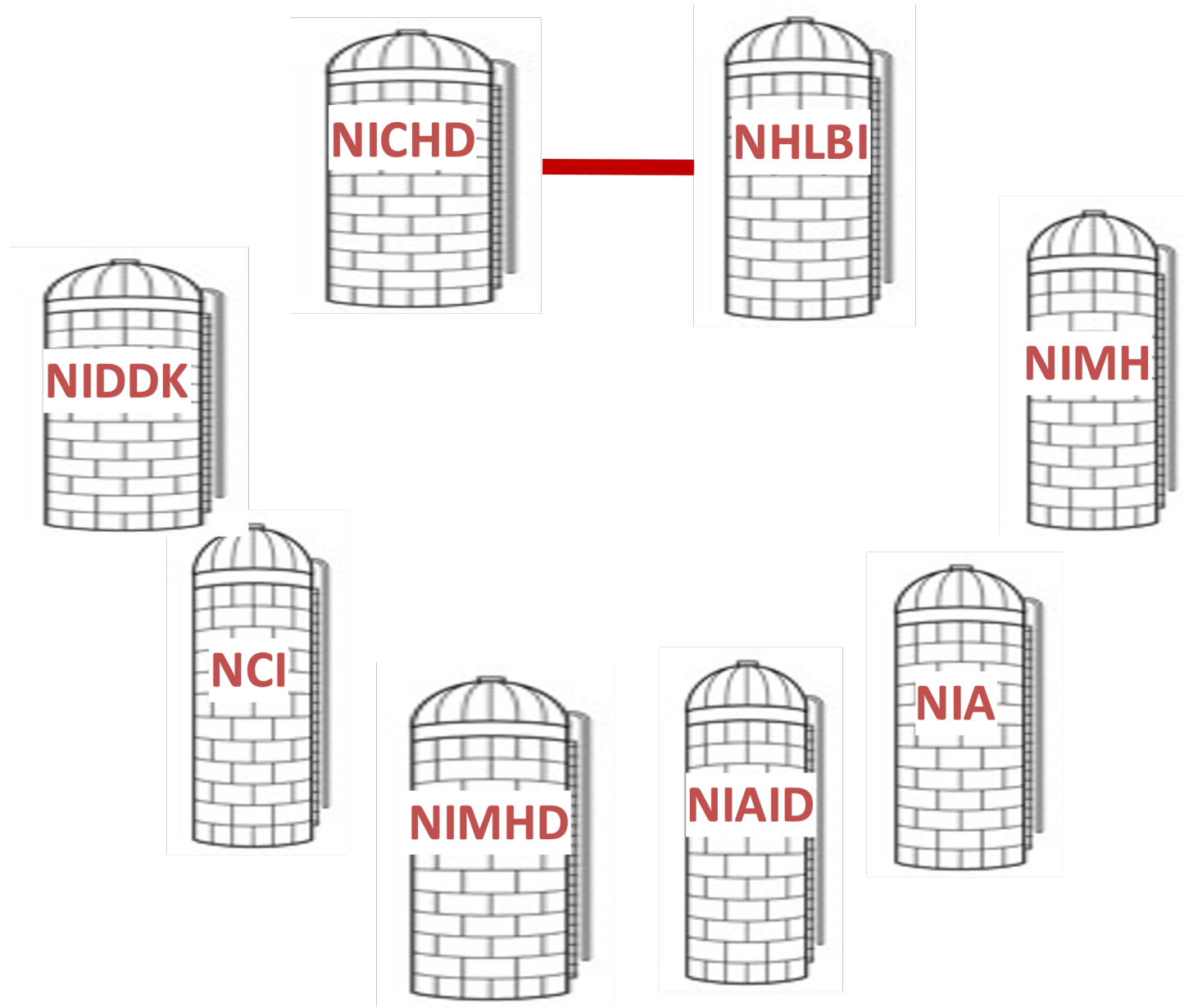
Adjusted hazard ratios (HRs) and 95% confidence intervals (CI) for the risk of cause-specific premature mortality (before age 70 y) according to the occurrence of hypertensive disorder of pregnancy among 88,395 parous women, Nurses' Health Study 2, 1989-2017



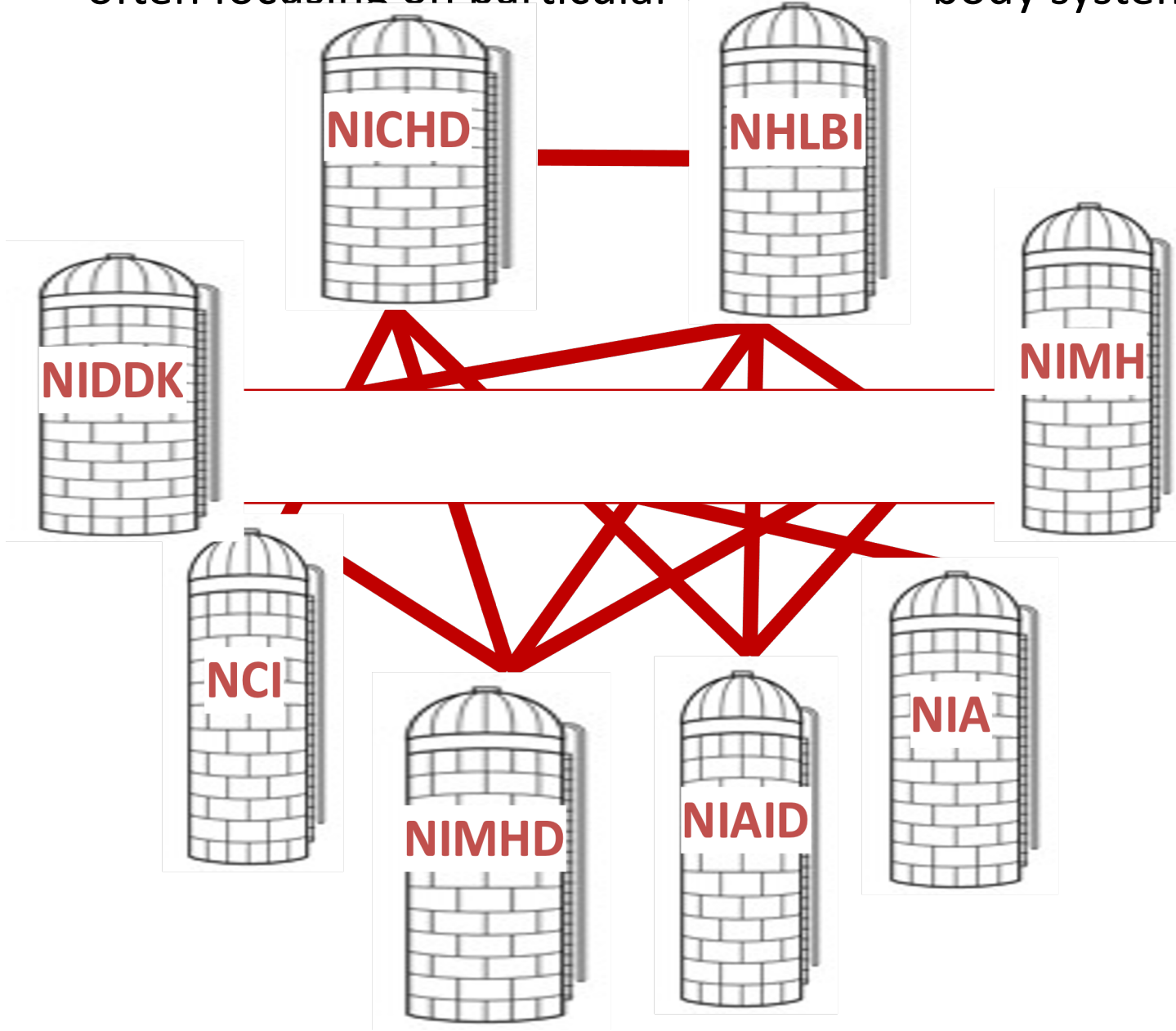
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The diagram illustrates the organizational structure of the National Institutes of Health (NIH). At the top, the **Director** is shown in a box. Below the Director, a horizontal line represents the flow of information to the **NIH Institutes and Centers**. These are represented by silos with the following labels: **NIDDK**, **NICHD**, **NHLBI**, **NIMH**, **NCI**, **NIMHD**, **NIAID**, and **NIA**. Red lines connect the Director to each of these Institutes and Centers. Additionally, red lines connect the Institutes and Centers to each other, indicating a network of communication and collaboration. The diagram is titled "NIH Organizational Structure" and includes the text "NIH Institutes and Centers" and "NIH Director".



What MMM teaches us about NIH strategy:

- Cross-Disciplinary Work
 - Across Institutes
 - Across Agencies
- Lifecourse Approach
 - All RFAs and proposals should consider events before and after the period under study
 - Prioritize research on health of girls *and* women, including reproductive health, across IC's
- Promote Translation
 - All proposals should include not just dissemination, but actual translation, visions
 - Scientists need more training in translation, especially community-based research (a new K?)
- We need to keep moving beyond 'bikini medicine'
 - Women's Health merits more investment in cross-disciplinary finding and coordination
 - Need a coordinating body with large purse and the mandate to ensure a holistic, translated Women's Health research agenda (probably a larger role for ORWH, if not an NIWH)
- Maternal Health is one part of a larger Women's Health agenda. Both will fail if we revert to bikini medicine.

Thank you