



Triple-Negative Breast Cancer and Disparities in Endometrial Cancer

Shahana Banerjee (CAS'24)¹, Anne-Marie McCarthy¹, Sarah Ehsan¹, Nitya Kumar²

¹University of Pennsylvania, Philadelphia, PA; ²Royal College of Surgeons in Ireland, Bahrain



Introduction

- Project 1. Breast cancer subtypes are typically categorized based on immunohistochemistry according to ER, PR, and HER2. Treatments targeting these receptor pathways have improved breast cancer outcomes, but survival differences still exist by subtype; e.g. 5-year survival > 75% for **triple negative breast cancer** vs. ~95% for ER/PR+HER2- tumors

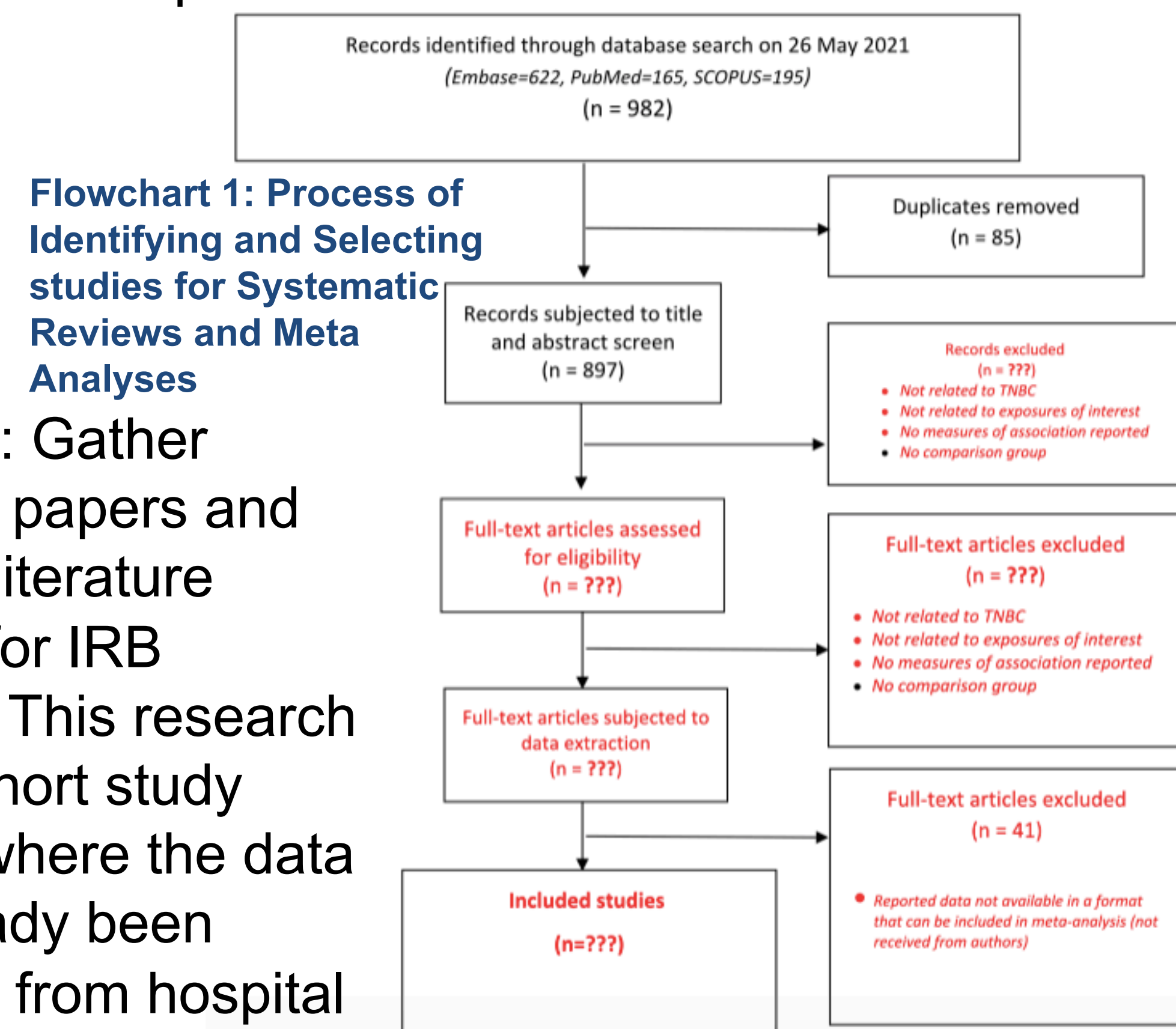
Aim: The **meta-analysis** seeks to evaluate risk factors for triple negative breast cancer by asking if the known breast cancer risk factors are also associated with TNBC in adult females.

- Project 2. **Endometrial cancer** is one of the most common cancers in U.S. women. Substantial racial **disparities** have been found in diagnosis and outcome between Black and White women.

Aim: To expand our understanding of risk factors, epidemiology, and reasons for disparities in EC.

Methods and Materials

- Project 1: (see flowchart 1) Conducting screenings for texts on Rayyan based on inclusion and exclusion criteria; find appropriate tool for risk of bias assessment [Newcastle-Ottawa] and extract data from articles using pre-defined template.

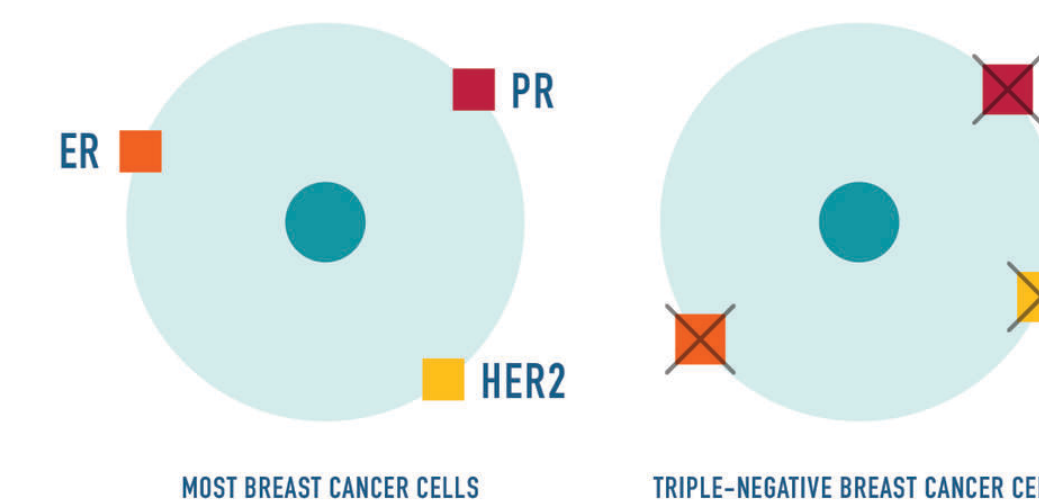
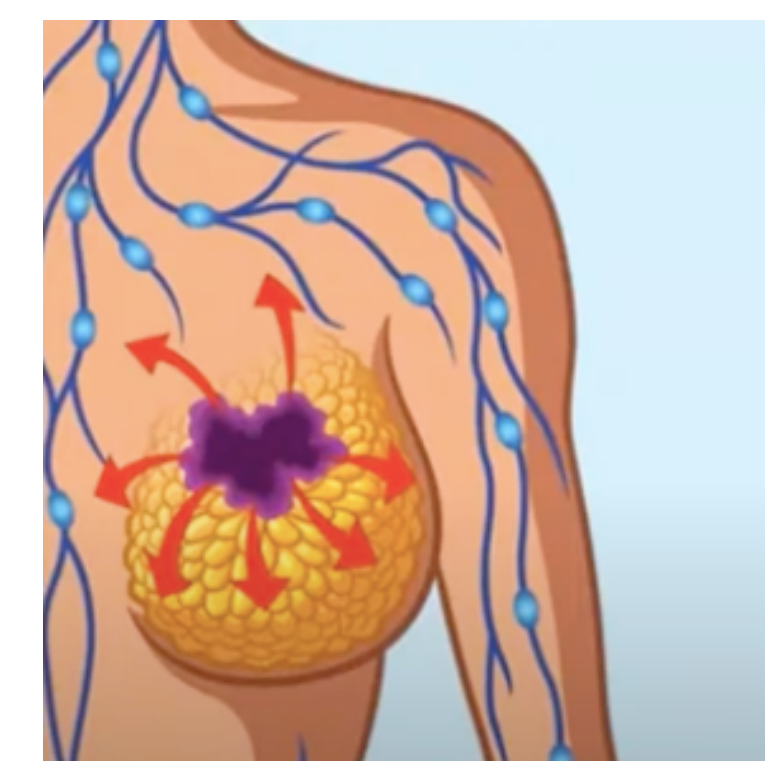


- Project 2: Gather research papers and conduct literature reviews for IRB protocol. This research has a cohort study design, where the data has already been collected from hospital EC patients.

Results

Project 1: Among the several exposures included in our study, as compared to all breast cancers:

- Age: TNBC occurs in younger women more often
- Race: Black women are at greater risk
- Adiposity: Inconsistent findings on the relationship between adiposity and TNBC, particularly with respect to menopause status.
- Younger age at live birth are associated with higher risk of TNBC



Project 2: Substantial racial disparities in endometrial cancer exist: in 2018, an estimated 5-year relative survival was recorded of 84% in White women and 62% in Black women. Increased incidence of tumors in advanced stages, less use of surgery, and high-grade result in these disparities against Black women.

Figure 1: incidence rates, 2013-2017, by race and ethnicity, for uterine corpus

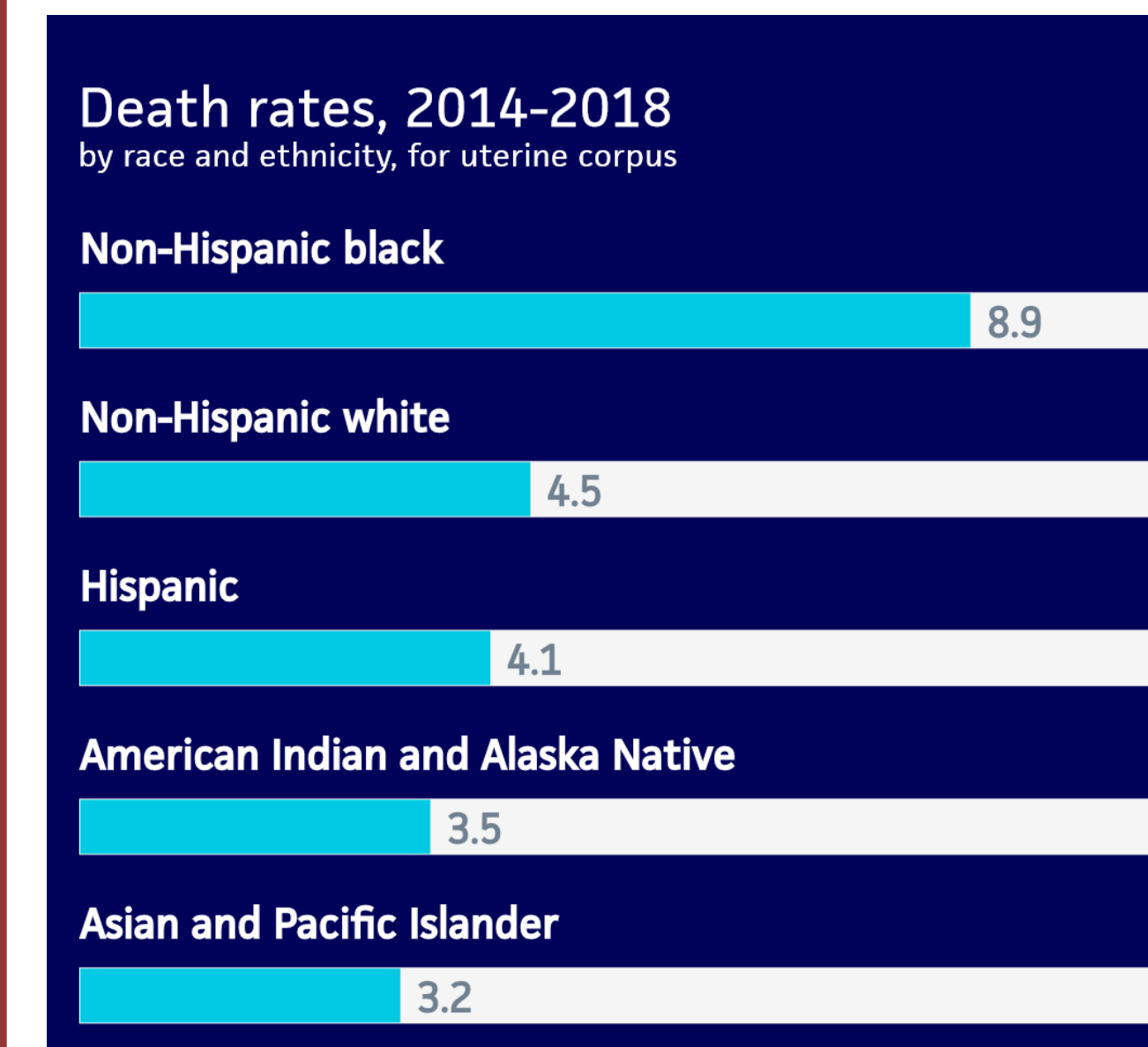
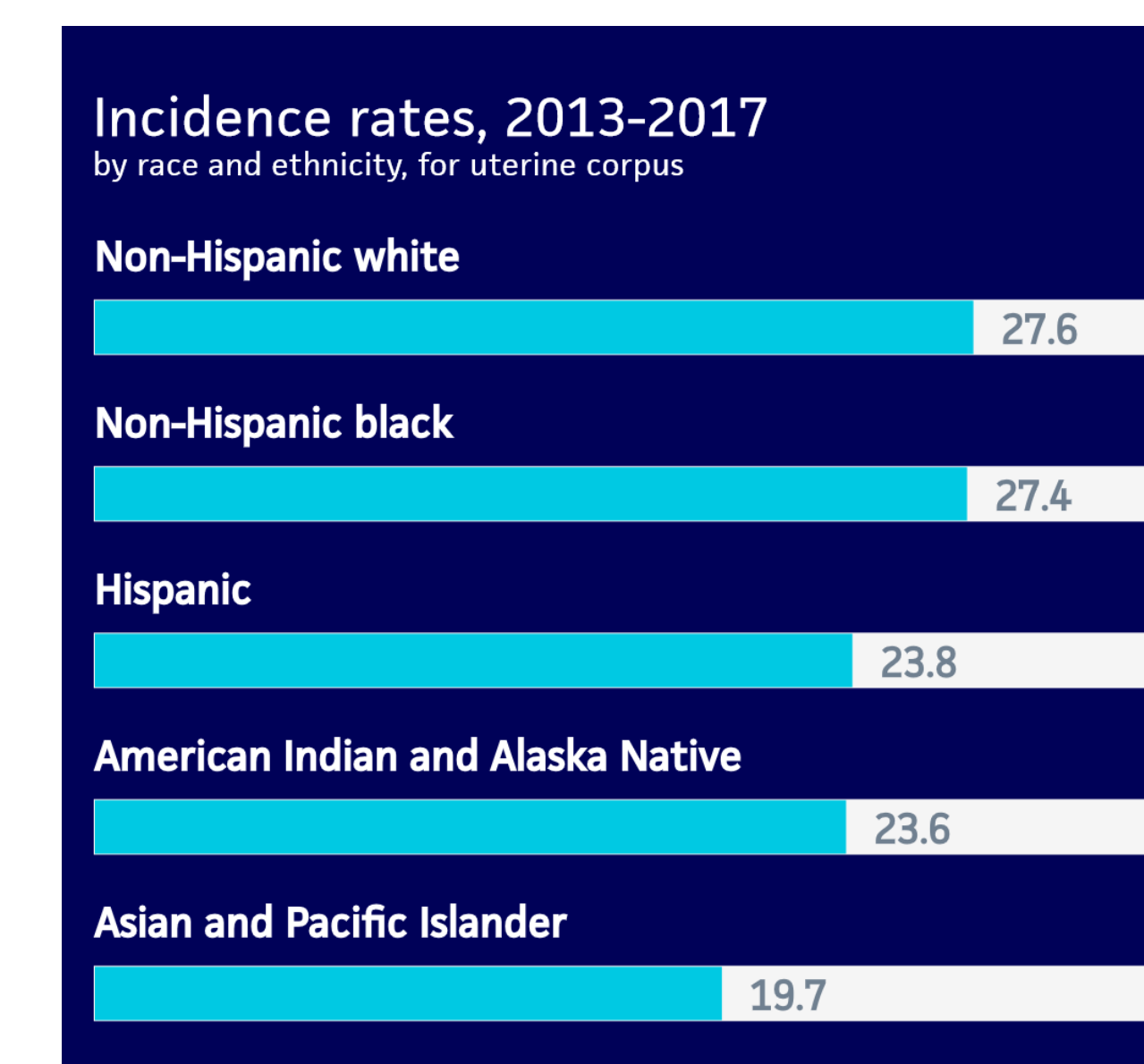


Figure 2: Death rates, 2014-2018, by race and ethnicity, for uterine corpus

Conclusions

- Project 1: This ongoing study will add to the existing evidence on reproductive and lifestyle factors as they relate to TNBC, as well as review the evidence for breast density as it relates to TNBC.
- Project 2: Studies have shown that Black women are less likely to go through operative management even though intensified surgical and radiation treatment are linked to improved survival. Our work will expand into a) understanding how certain influences interact and create barriers that cause such racial inequities in healthcare, and b) creating tools by which women can learn more about prevention.

What's Next?

- I will continue to participate in the projects beyond this summer.
- As per the timelines, both projects are expected to be proceeding to their next steps in Fall 2021. Project 1 will be moving to the data analysis stage and Project 2 will be receiving its study cohort data.

Acknowledgements

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- Thank you to Dr. Anne-Marie McCarthy, Ms. Sarah Ehsan, and Dr. Nitya Kumar for the opportunity to work in these projects and independently explore the discipline.

References

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American Cancer Society: Cancer Facts & Statistics. cancerstatisticscenter.cancer.org/#/cancer-site/Uterine%20corpus.