

Marina R. S. Walther-Antonio, PhD
 Department of Surgery
 Division of Surgical Research
 Mayo Clinic
 Department of Obstetrics and Gynecology
 Division of Gynecologic Surgery
 Center for Individualized Medicine
 Microbiome Program
 Mayo Clinic
 200 First Street SW
 Rochester, MN 55905
waltherantonio.marina@mayo.edu

Andrea Mariani
 Department of Obstetrics and Gynecology
 Division of Gynecologic Surgery
 Mayo Clinic
 200 First Street SW
 Rochester, MN 55905
mariani.andrea@mayo.edu

The contents of this work are solely the responsibility of the authors and do not necessarily represent the official views of the National Institutes of Health.

This work was supported by Clinical and Translational Science Awards grant KL2 TR002379 from the National Center for Advancing Translational Science.

The authors report no conflict of interest.

REFERENCES

1. Doll K, Khor S, Odem-Davis K, et al. Role of bleeding recognition and evaluation in black-white disparities in endometrial cancer. *Am J Obstet Gynecol* 2018;219:593.e1–14.
2. Fast stats: an interactive tool for access to SEER cancer statistics. Surveillance Research Program, National Cancer Institute. Available at: <https://seer.cancer.gov/faststats>. Accessed November 22, 2018.
3. Bakkum-Gamez JN, Wentzensen N, Maurer MJ, et al. Detection of endometrial cancer via molecular analysis of DNA collected with vaginal tampons. *Gynecol Oncol* 2015;137:14–22.
4. Walther-Antônio MRS, Chen J, Multinu F, et al. Potential contribution of the uterine microbiome in the development of endometrial cancer. *Genome Med* 2016;8:122.

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REPLY



We thank Walther-Antonio and Mariani for their interest and response to our study on the role of bleeding recognition and evaluation in the black-white disparities in endometrial cancer. They correctly emphasize the impact of our primary findings, which is that differences in health care delivery

before diagnosis may influence the stage at diagnosis and thus mortality rates for women with this disease.

Walther-Antonio and Mariani go on to suggest that early biomarkers may help mitigate the contribution of variation in health care delivery to these racial disparities by bypassing reliance on patient reporting of symptoms and provider response. We agree overall that standardization in the form of a potential biomarker result obtained from screening can reduce racial disparities.

In cervical cancer, the objective nature of the screening Papanicolaou test provided a context-independent method of identifying women at risk. However, disparities persisted for decades after the introduction of screening and only recently have begun to improve and then only for some.¹ The social impact of racialization and subsequent discrimination is not limited to any 1 arena of health care and does not disappear with medical innovation.²

The current approach to early detection in endometrial cancer is failing black women, the population most at risk. Scientific advances that can augment or replace this system to allow for earlier medical detection or prevention altogether are needed but are not sufficient. These advances will not succeed without concurrent research and intervention to remove the patient, provider, and system-level factors that impede the highest quality of care for black women's gynecological health. Early patient engagement,³ development of technology that is resource independent, and real-world testing among high-risk communities will be important methods moving forward. ■

Kemi M. Doll, MD, MS
 Barbara A. Goff, MD
 Department of Obstetrics and Gynecology
 University of Washington Medical Center
 PO Box 356460
 Seattle, WA 98195
kdoll@uw.edu

Scott D. Ramsey, MD, PhD
 Fred Hutchinson Cancer Research Center
 Seattle, WA

The authors report no conflict of interest.

REFERENCES

1. Why is cervical cancer killing so many black women in the South? The Takeaway. WNYC Studios in The Takeaway. New York, NY: WNYC Studios; 2018.
2. Phelan JC, Link BG. Is racism a fundamental cause of inequalities in health? 2015. Available at: <http://doi.org/10.1146/annurev-soc-073014-112305>. Accessed December 10, 2018.
3. Endometrial Cancer Action Network for African-Americans. 2018. Available at: <https://ecanawomen.org/>. Accessed February 1, 2019.

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