

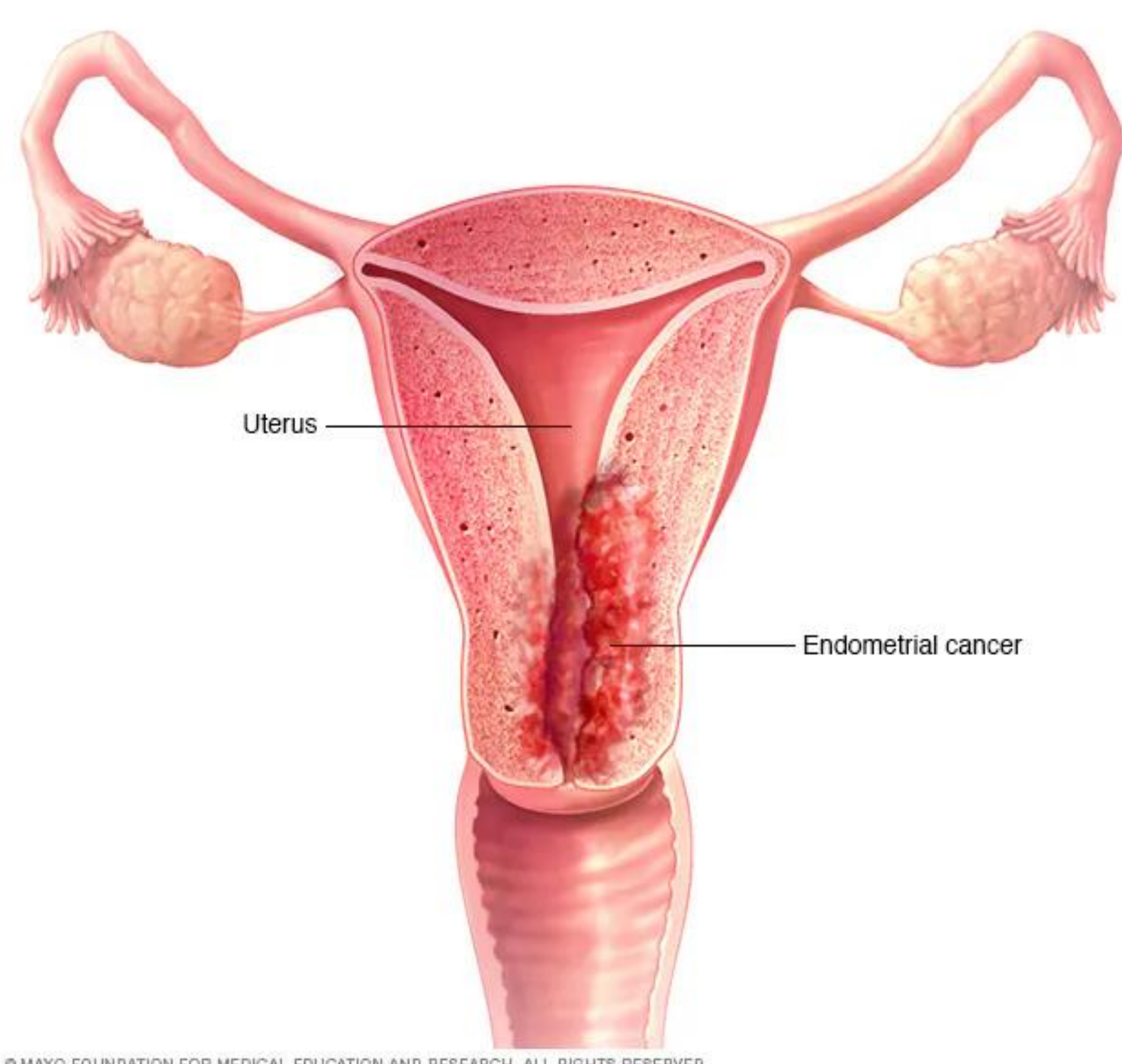
# “The Impact of Next Generation Sequencing Testing (NGS) on Overall Survival Rate of Advance Stage Endometrial Cancer Patients Diagnosed Between 2018-2023 in Louisiana.”

Genesis Grinston<sup>3</sup>, Adairre Castille BS,<sup>1</sup> Madison Keller BS<sup>1</sup>, Dr. Navya Nair MD, MPH<sup>1,2</sup>  
Dr. Amelia Jernigan MD<sup>1,2</sup>, Dr. Tara Castellano MD,MPH<sup>1,2</sup>

1 Louisiana State University HSC, School of Medicine 2 Louisiana State University HSC, Department of OB/Gyn, Division of Gynecologic Oncology 3 Xavier University of Louisiana

## Introduction

- Endometrial Cancer (EC) is the most common gynecological cancer. EC occurs when cancerous cells begin to grow in the endometrium layer of the uterus.



- In 2023, the National Cancer Institute estimates that 66,200 people will be diagnosed with EC, and 13,030 people will die from EC.
- The 2023 national average death rate from disease is predicted to be 19.6%.
- This rising rate has prompted public health efforts for early-stage diagnosis testing to help improve survival outcomes.
- Next Generation Sequencing (NGS) offers prognostic value by identifying genomic alterations within a DNA sequence.
- Physicians can prescribe targeted therapies that improve outcomes and limit toxicity for those tumors that test positive for certain mutations.

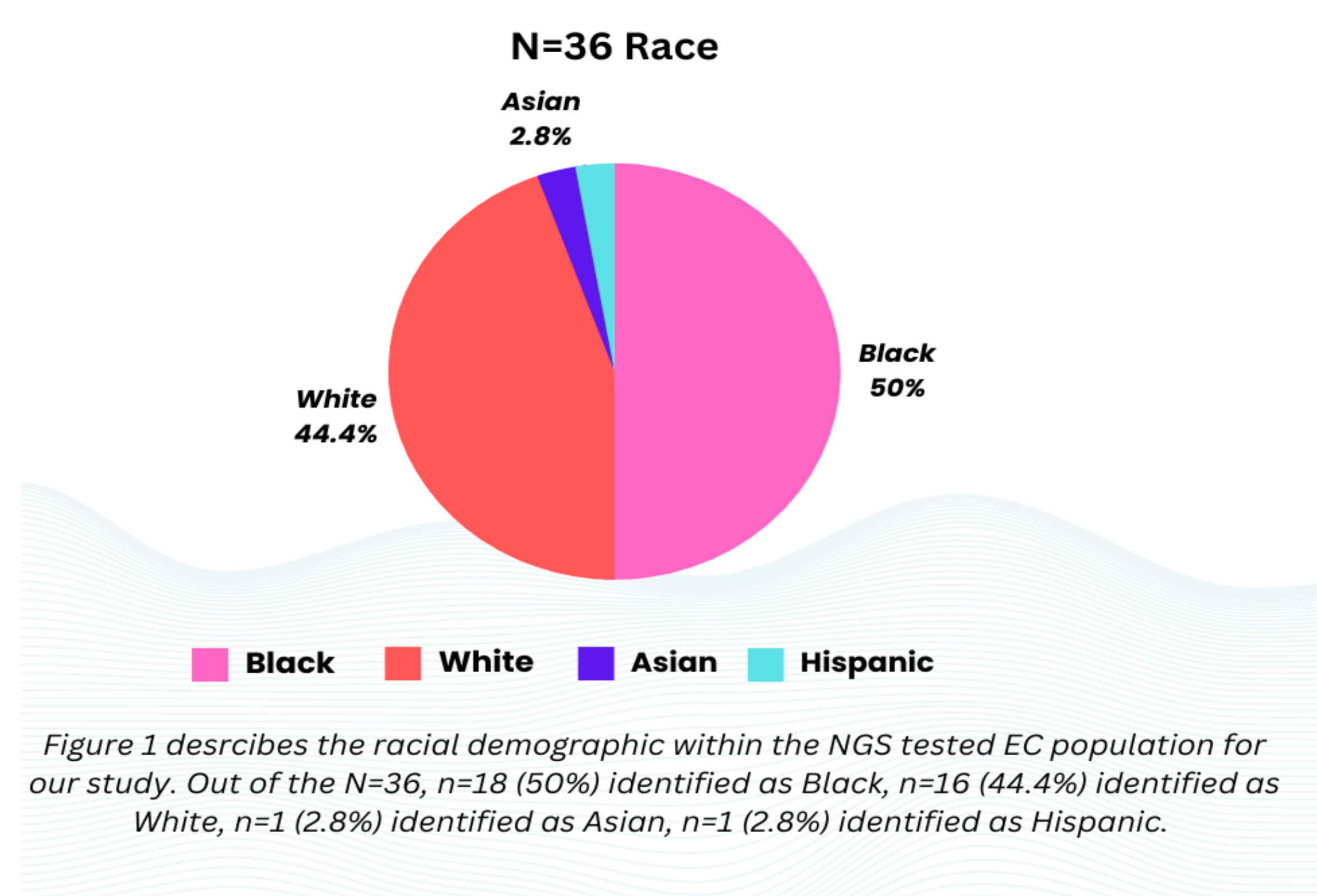
## Objectives

- We aim to describe NGS utilization according to cancer histology and stage, and the impact of overall survival of endometrial cancer.

## Methods

- A retrospective cohort study was conducted of n=127 patients with endometrial cancer, n=36 of which received NGS testing between 2018-2023.
- Chart review was conducted for n=36 patients to analyze demographic, clinicopathologic, molecular, and survival data.
- Participants for this study were recruited based upon their advance cancer stage: n=13 (36.1%) stage 1, n=3 (8.3%) stage 2, n=9 (25%) stage 3, n=9 (25%) stage 4, and n=2 (5.6%) had no initial stage documented.

## Figure 1



## Figure 2

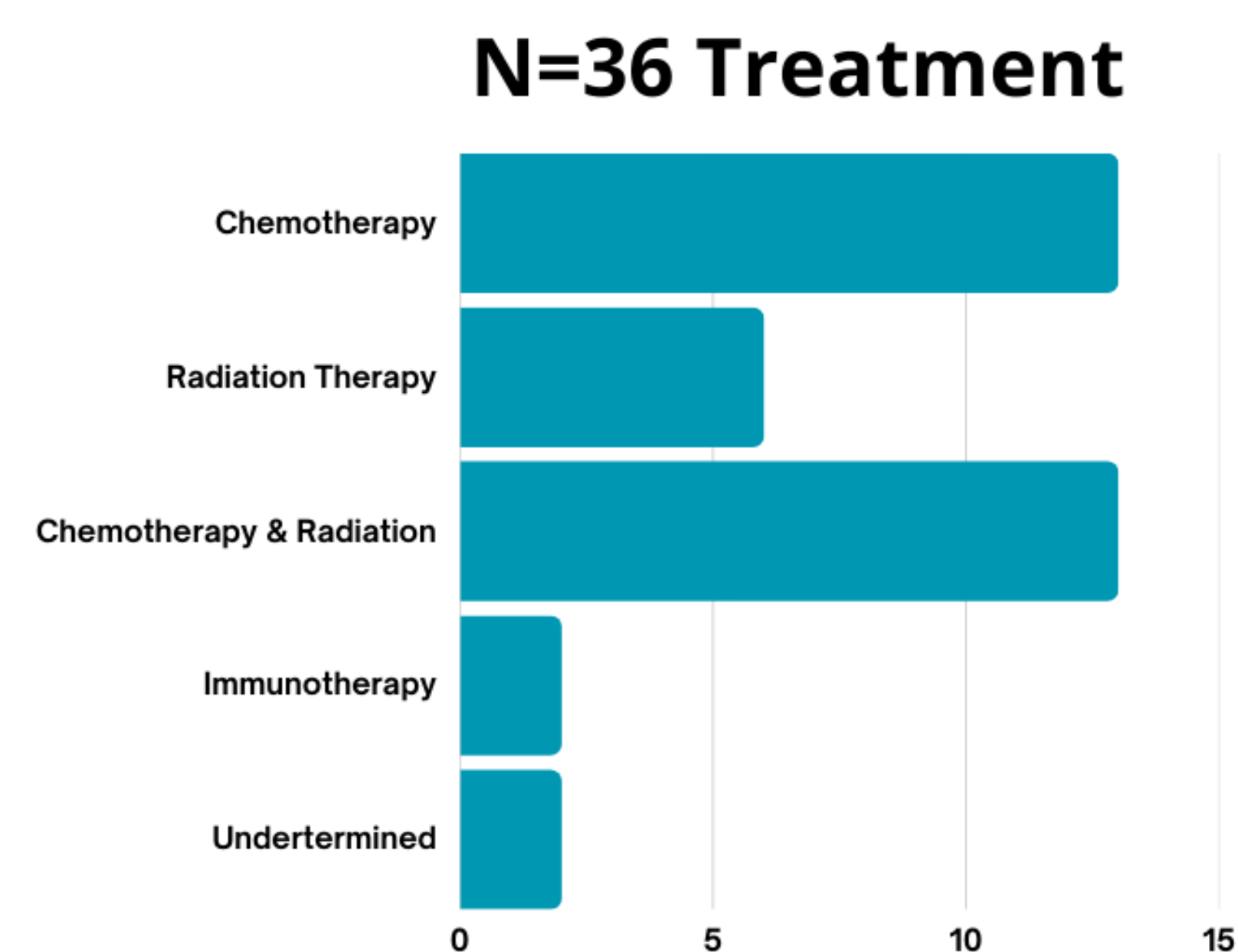


Figure 3 showcases specific treatment given to n=36 after received NGS testing results. N= 13(36.1%) received only chemotherapy, n= 13 (36.1%) received chemotherapy coupled with radiation, n=6 (16.7%) received only radiation therapy, n=2 (5.6%) received Immunotherapy, and n=2 (5.6%) had no treatment recorded on file.

## Figure 3

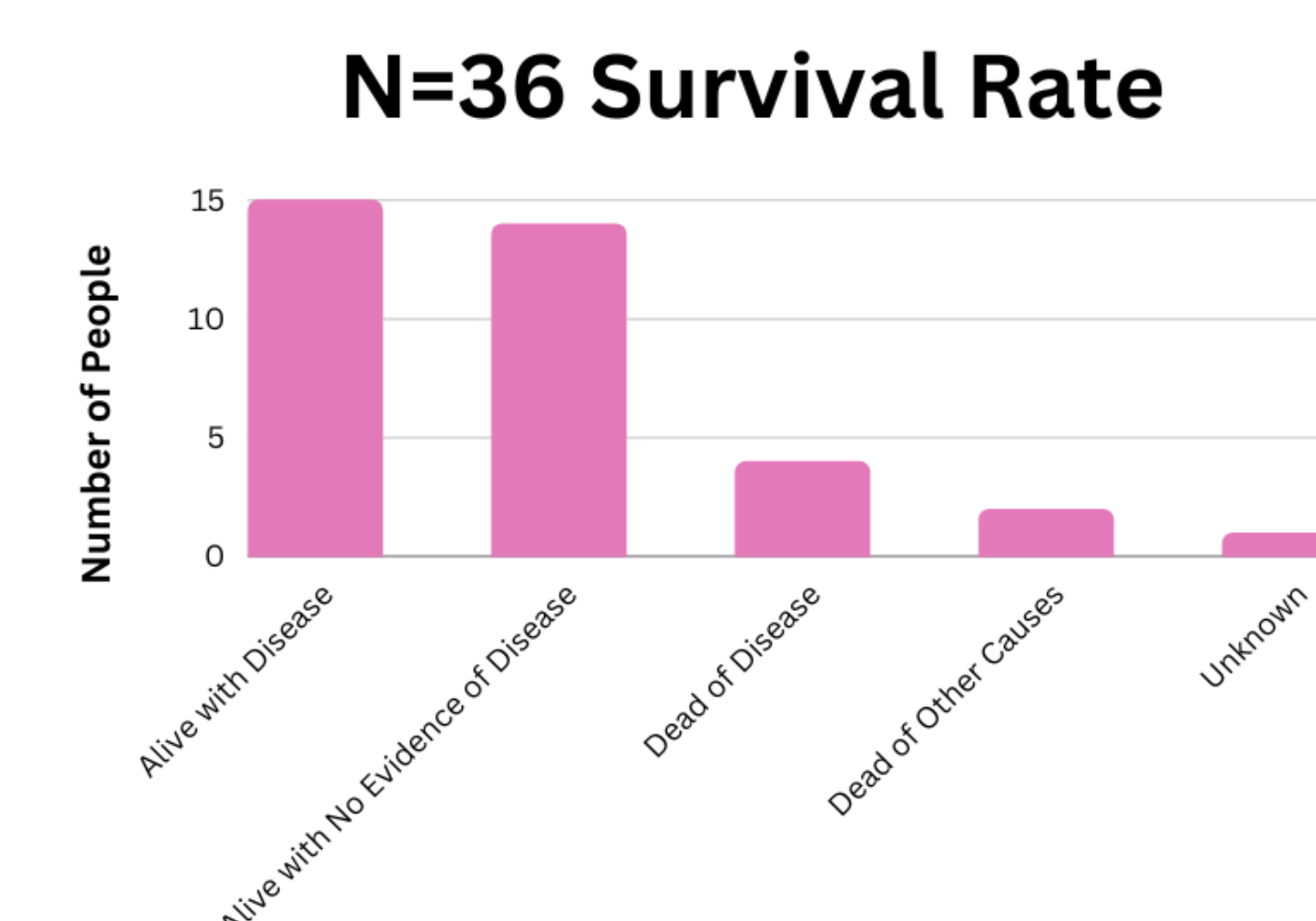


Figure 2 closely examines the overall survival rate for n=36 patients diagnosed with advance stage of EC who received NGS testing. N= 15 (41.6%) were alive with disease, n=14 (38.9%) were alive with no evidence of disease, n=4 (11.1%) dead of disease, and n=2 (5.6%) were dead of other causes, and n=1 (2.8%) were unknown.

## Results

- Preliminary data of NGS testing found n=2 MMRd (14.3%), n=3 MLH1 deficient (21.4%), n=1 MSH6 deficient (7.1%), n=2 PMS2 deficient (14.3%), n=4 HER2/3 2+ or 3+ (28.6%), n=1 HER2 1+ ( 7.1%), n=8 ER+ (57.1%), n=6 PR+ (42.9%), n=6 PTEN (42.9%), and n=1 PIK3CA ( 7.1%).
- Providers frequently used adjuvant chemotherapy, radiation, and immunotherapy (See Figure 2) to help sustain overall survival rate (See Figure 3).
- Preliminary data shows n=4(11.1%) patients who received NGS testing died of disease.

## Conclusion

- We describe a molecularly, racially, and ethnically heterogeneous population.
- Our death from disease rate was 8% lower than the national average predicted for 2023.
- This diversity emphasizes the need for a robust approach to the treatment of high-risk or advanced EC, for which NGS can play a central role.
- Higher prevalence of Black individuals to die of EC even with NGS testing. Further surveillance is needed.

## References

Cancer of the Endometrium - Cancer Stat Facts. SEER. Published 2018.  
<https://seer.cancer.gov/statfacts/html/corp.html>