RESEARCH BRIEF

Precision Medicine in Ovarian Cancer: The Promise of Genetic Testing and the Reality of Persistent Disparities

For women diagnosed with ovarian cancer, genetic and biomarker testing can direct treatment and improve outcomes — but utilization remains limited.

KEY FINDINGS:

- Overall, 52% of women diagnosed with ovarian cancer between 2016 and 2023 received genetic testing.
- Women with commercial insurance were 37% more likely to undergo genetic testing than those with public insurance. On average, 62% of patients with commercial insurance received genetic testing compared to 42% and 49% on Medicare and Medicaid respectively.
- Testing varied by race and ethnicity, with Hispanic/Latina patients being 13% more likely than Black patients to receive testing.
- Younger patients were more likely to receive genetic testing compared to older patients, with pediatric patients tested over twice as often as patients over age 65.

Executive Summary:

Ovarian cancer is the **deadliest** gynecologic cancer. Lack of early detection methods, and frequent late-stage diagnoses contribute to its high mortality rate. Each year, **approximately 20,000** women in the U.S. receive an ovarian cancer diagnosis, and the **majority** of those women are diagnosed after their cancer has spread, leaving them with a 5-year survival rate of less than 50%.

Genetic testing has emerged as a crucial tool in improving outcomes, particularly since the **discovery** of the BRCA1 and BRCA2 genes in the 1990s. Over the past three decades, advances in testing technology — along with expanded clinical guidelines and cost reductions — have significantly increased access. Once reserved for patients with a strong family history, genetic testing is now considered the **standard of care** for all women diagnosed with ovarian cancer by leading health organizations such as the American College of Obstetricians and Gynecologists (ACOG) and Society of Gynecologic Oncology (SGO). Testing can reveal hereditary predispositions and identify patients who may benefit from targeted therapies like poly-ADP ribose polymerase (PARP) inhibitors, which have revolutionized treatment for those with BRCA mutations. Additionally, genomic testing can open doors to clinical trials, offering patients cutting-edge treatment options based on the specific genetic makeup of their tumors.

Despite these advances, significant disparities in access remain. Black women, for example, experience the lowest ovarian cancer survival rates, driven by factors including later-stage diagnoses, differences in tumor biology, and inequities in healthcare access. Socioeconomic barriers further compound these disparities, limiting the availability of genetic counseling, testing, and precision medicine treatments for some of the most vulnerable patients.

This analysis aims to further examine trends in utilization and disparities in genetic testing in patients with ovarian cancer.

Methodology:

This analysis leveraged Komodo's Healthcare Map®, the industry's most comprehensive and complete source of real-world longitudinal patient journeys. Patients with a diagnosis of ovarian cancer were identified using ICD-10 and procedure codes, focusing on patients diagnosed between 2016 and 2023. Approximately 421,000 women who had at least two visits within 90 days for ovarian cancer were identified. Patients were then identified who had received genetic/biomarker testing (including at least one of BRCA1, BRCA2, MLH1, MSH2, MSH6, PALB2, PMS2, TP53, NTRK(1-3), MSI, or PTEN genetic tests panels OR Alpha-fetoprotein (AFP), Carcinoembryonic antigen (CEA), Lactate dehydrogenase (LDH), Inhibin A, hCG, or CA-125 biomarker tests) within 60 days of their diagnosis using relevant procedure codes. For the genetic tests examined in this analysis, the somatic and germline variant of the mutations were both inspected. Testing rates were further broken down by patients' race and ethnicity, age, and insurance type.

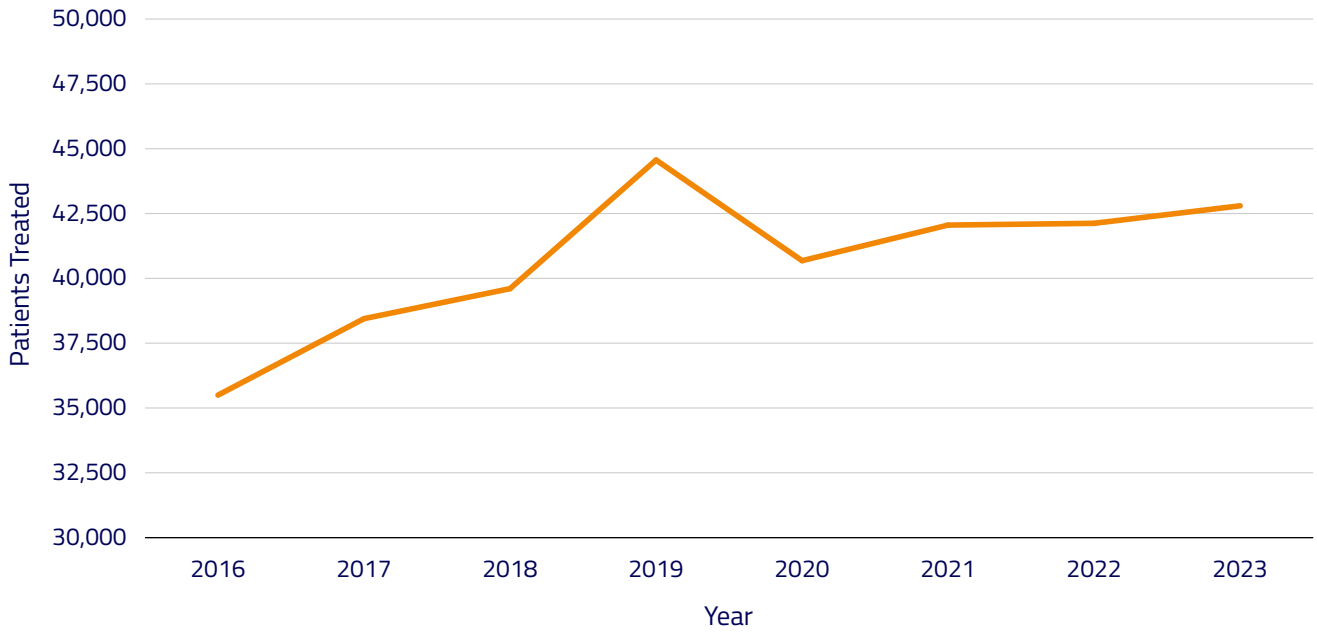
Komodo's MapView™ Cohort Report Template was used in addition to the Payer Mapping Template and custom analytics built on the **MapLab®** healthcare analytics platform to analyze patterns based on age, race, and payer segments.

Results:

Between 2016 and 2023, 52% of ovarian cancer patients received genetic testing within 60 days of a confirmed diagnosis.

Overall, more than 217,000 (52%) ovarian cancer patients had received genetic testing between 2016 to 2023. Rates of testing peaked in 2019, before dropping again in 2020, likely due to the impact of COVID-19 protocols. Rates had yet to rebound fully by the end 2023.

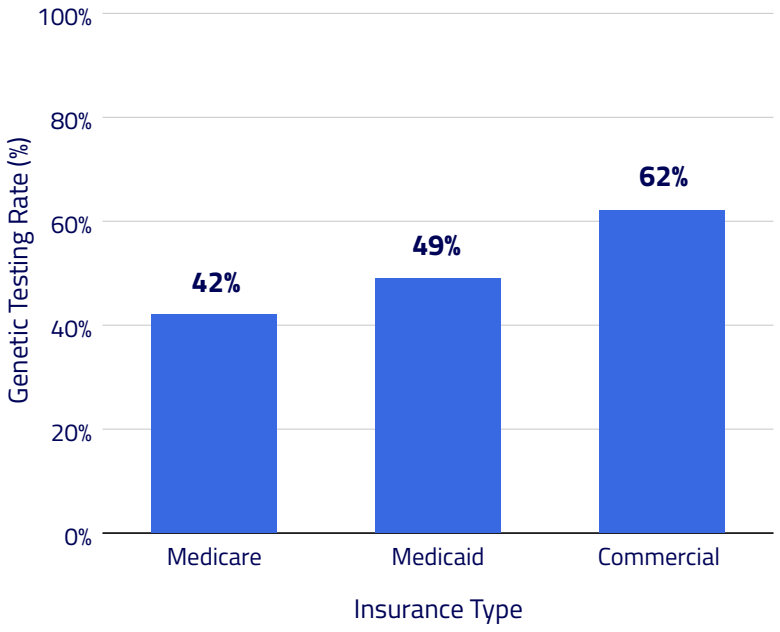
NUMBER OF PATIENTS WITH OVARIAN CANCER WHO HAD A CLAIM FOR GENETIC TESTING



Women with commercial insurance were 37% more likely to undergo genetic testing than those with public insurance.

In the same timeframe, the genetic testing rate was 62% among patients with commercial insurance, while those with public insurance (Medicare and Medicaid) had an average testing rate of 45% (42% and 49%, respectively). Among public insurance plans, Medicare FFS patients had the lowest testing rate at 38%, and state Medicaid patients had a similarly low rate of 40%.

GENETIC TESTING AMONG OVARIAN CANCER PATIENTS BY INSURANCE TYPE



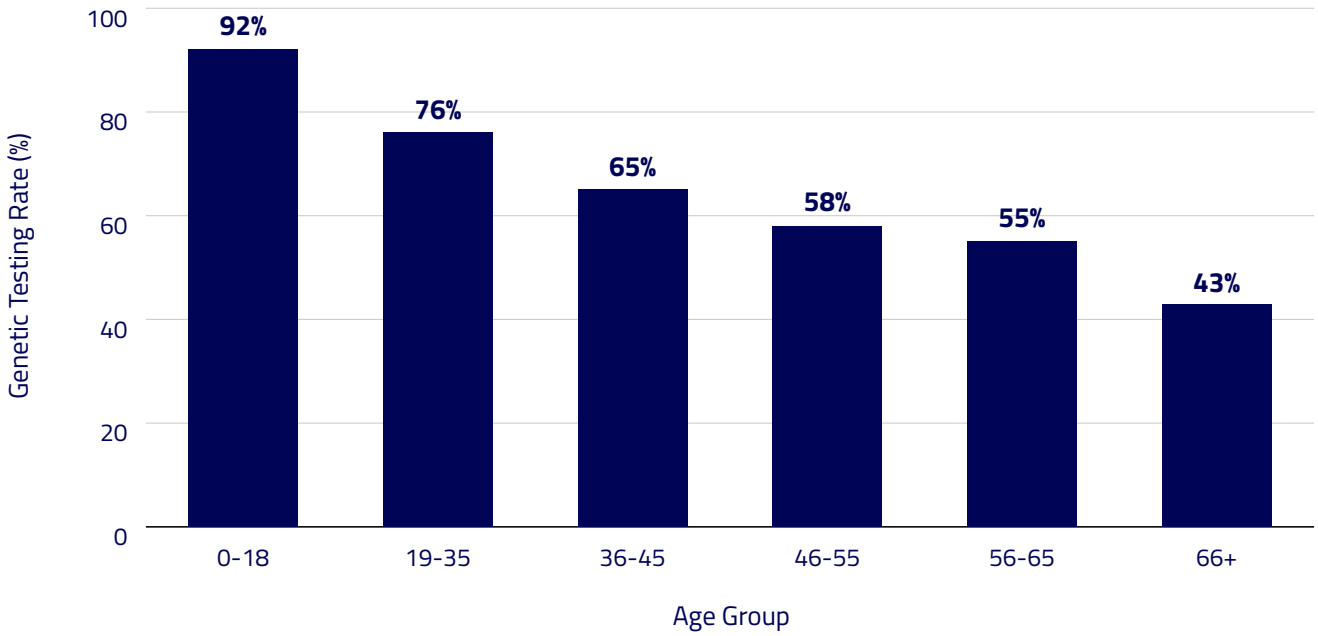
Testing varied by race and ethnicity, with Hispanic/Latina patients being 13% more likely than Black patients to receive testing.

Hispanic/Latina patients were about 25% more likely to receive genetic testing than White patients, while AAPI patients were about 23% more likely than White patients. AAPI patients were also 11% more likely to receive genetic testing than Black patients. Genetic testing rates were highest among Hispanic/Latina (62%) and AAPI (60%) patients, while lower rates were observed among Black (54%) and White (49%) patients.

Younger patients were more likely to receive genetic testing compared to older patients, with pediatric patients tested over twice as often as patients ages 65+.

Genetic testing rates were highest among younger ovarian cancer patients, with pediatric patients (ages 0–18) receiving testing at a rate of 92%, more than twice the 43% testing rate among patients aged 66 and older. Testing rates were 76% for ages 19–35 and 65% for ages 36–45.

GENETIC TESTING AMONG OVARIAN CANCER PATIENTS BY AGE



DISCUSSION:

While genetic testing rates improved from 2016 to 2023, uptake remains insufficient, with an annual average of only 52% of ovarian cancer patients tested despite this being considered the standard of care. Testing rates plateaued after 2019, highlighting a likely impact of the COVID-19 pandemic, as has been seen in screening for many conditions, with a full rebound yet to occur.

Insurance disparities play a major role in access. Patients with commercial insurance were nearly 37% more likely to be tested than those with public insurance, with Medicare FFS and state Medicaid patients facing the lowest rates of genetic testing. These findings suggest that out-of-

pocket costs, coverage limitations, and provider availability contribute to inequities, particularly affecting older and lower-income populations.

Racial disparities persist despite efforts to improve outreach. Hispanic/Latino and Asian/Pacific Islander patients had higher testing rates than White and Black patients, indicating potential differences in provider engagement, targeted education, or access to genetic counseling. Notably, Black patients, who have the highest ovarian cancer mortality, had the second lowest testing rates along with White patients, raising concerns about structural healthcare inequities and implicit biases affecting referral patterns. Our analysis found higher testing rates among AAPI individuals, contrasting with prior research that reported lower rates. This discrepancy likely stems from differences in study design — previous research excluded Hispanic patients, had a small sample size for AAPI individuals (under 800), and reported a wide confidence interval (2-83%). Additionally, certain populations may be more likely to seek testing outside of the traditional healthcare system, which could impact demographic analysis. OCRA, for instance, offers a free genetic testing program for high-risk individuals and reports high utilization among White women.

Efforts to increase adoption must focus on reducing logistical and systemic barriers. Healthcare models that have implemented mainstreaming models — where genetic testing is routinely ordered by oncologists at diagnosis — have demonstrated near-universal testing rates, eliminating racial and socioeconomic disparities in some cases. Studies indicate that integrating genetic testing into routine oncology workflows increases uptake, but implementation remains inconsistent across healthcare settings.

Komodo Health's real-world patient data and AI-powered analytics play a critical role in identifying disparities and improving healthcare access. By leveraging vast datasets that track patient journeys, Komodo's Healthcare Map® enables researchers and policymakers to uncover true disparities in genetic testing, assess gaps in healthcare delivery, and inform targeted interventions. AI-driven insights help detect at-risk populations, optimize screening programs, and refine clinical decision-making, ultimately driving more equitable health outcomes. These advanced tools provide a more comprehensive and accurate picture of patient experiences, allowing healthcare systems to implement data-backed strategies to close the genetic testing gap.

Authors:

Ginika Nwaba, Past Ann Kolker Advocacy Fellow, OCRA

Chad Ramsey, Vice President, Policy, OCRA

Evan Woodward, MD, Senior Clinical Product Manager, Komodo Health

Kevin Chen, Senior Healthcare Consultant, Komodo Health

Rachel Linkter, Senior Healthcare Consultant, Komodo Health

Anna Druet, Senior Science Writer, Komodo Health

About OCRA

Ovarian Cancer Research Alliance is the largest global organization dedicated to combating ovarian and all gynecologic cancer while supporting patients and families. Since its founding in 1994, OCRA has invested $128 million in scientific breakthroughs, helped to secure $3.8 billion in federal research funding, and supports 95,000 individuals annually through its programs. For more information, visit **ocrahope.org**.

About Komodo Health

Komodo is a healthcare technology company that delivers the evidentiary standard for real-world data and analytics. By pairing the industry's most complete, unbiased view of patient encounters with AI-enabled and fit-for-purpose software, Komodo connects the dots between patient journeys and large-scale health outcomes. Across Life Sciences, payers, providers, and developers, Komodo delivers a velocity advantage by helping its customers accurately and efficiently access patient-centric insights at scale to drive faster decision-making, optimize workflows, close gaps in care, and help reduce the burden of disease. For more information, visit **komodohealth.com**.