



Comprehensive Genomic Profiling leads to better patient outcomes, new joint study says

Real-world data from Providence, Illumina and Microsoft Research finds cancer patients with early genomic testing received better precision treatment, underlines urgency to become standard practice

RENTON, Wash. Nov. 12, 2024 – New real-world data from Providence, Illumina (NASDAQ: ILMN), and Microsoft Research reveals that Comprehensive Genomic Profiling (CGP), when done early in a cancer patient’s diagnosis, leads to better personalized treatment and patient outcomes. The findings come out of the first two years of a five-year, real-world study, which was published today in the [Journal of Clinical Oncology - Oncology Practice](#) (JCO-OP).

Through a novel approach, the study employed pathologist-driven CGP testing making test results available 12 days prior to the patient’s initial medical oncologist visit. The study found that the availability of test results at the initial visit influenced the early clinical decision-making process and led to over half of the patients receiving biomarker-driven targeted therapy or immunotherapy, which in turn significantly improved overall survival of 25 months for patients treated with targeted therapy compared to patients treated with chemotherapy alone.

By observing test actionability rates, therapy choice and outcomes across 3,216 advanced cancer patients across several cancer types, the study found:

- CGP test can identify actionable mutations based on either guideline-based treatment or clinical-trial matching for **67%** of tumors, compared to only 33% of tumors with small-panel test
- **52%** of CGP-tested patients received a matched targeted therapy or immunotherapy as opposed to 32% of patients who received conventional systemic chemotherapy alone. Patients who received a targeted therapy had significantly better overall survival as opposed to patients who received only chemotherapy (25 months vs. 17 months, $p < 0.001$)

The publication of this paper comes on the heels of [another study from this team of researchers](#), which found a similar clinical impact for advanced non-small-cell lung cancer (NSCLC) patients tested with CGP. This recently published study presented comparative analysis between patients with advanced NSCLC tested with CGP and small panel and found that in comparison to small panel-tested patients, CGP patients had a higher rate of actionable mutations (77% vs. 63%, $p < 0.001$), patients with actionable mutations received matched precision therapies at a

higher rate (64% vs. 50%, $p < 0.001$) and improvement in overall survival (median: 16 months vs. 7 months, $p < 0.0001$).

“Both of these novel studies, as well as the impact of the findings, underscores the importance of CGP being folded into standard of care diagnostic practices,” said Carlo Bifulco, M.D., chief medical officer of Providence Genomics and a co-author of the study. “By getting CGP test results in the hands of pathologists and oncologists at the onset of a cancer diagnosis, we witnessed CGP-tested patients received biomarker-matched therapy at a higher rate, which often led to better outcomes.”

CGP, which assesses hundreds of cancer biomarkers across various tumor types in a single test, can guide patients toward targeted treatments or immunotherapies that may not have been identified through more limited genomic testing approaches. This type of testing is increasingly being adopted due to its broad scope and faster turnaround times compared to sequential single-gene tests or small panels. However, barriers to access remain, including insurance coverage and other logistical challenges.

For payers, these results build evidence that a CGP approach prior to treatment initiation improves survival compared to conventional small-panel testing. “For evidence-driven coverage decisions, improved patient outcomes—particularly survival—are the key determinant, said John Fox, senior director of Market Access at Illumina. “These real-world results across multiple solid tumor types should empower plans to cover CGP as a first-line test.”

“Patients who received a CGP test in this study did so free of charge,” Providence bioinformatics scientist and lead author of the study Alexa Dowdell, MS, said. “By removing the barrier that most often prevents patients from receiving this test, we were able to observe a sizeable cohort and witness the effectiveness of tumor molecular profiling and the precision therapies that often followed.”

Using a natural language processing-based approach developed by Microsoft Research collaborators, Providence clinical researchers were able to quickly and efficiently parse through large sets of publications, clinical trials, and electronic health records. These AI capabilities assisted Providence researchers with genomics interpretation and clinical trial matching in the molecular tumor boards.

“These results further illustrate the paradigm shift in clinical practice in oncology,” said Swaroop Aradhya, head of Medical and Clinical Affairs at Illumina. “Patients are seeing better outcomes from precision treatments based on a tumor’s molecular profile compared to conventional approaches used to treat cancer.”

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About Providence

Providence is a national, not-for-profit Catholic health system comprising a diverse family of organizations and driven by a belief that health is a human right. With 51 hospitals, more than 1,100 physician clinics, senior services, supportive housing, and many other health and educational services, the health system and its partners employ more than 129,000 caregivers serving communities across seven states – Alaska, California, Montana, New Mexico, Oregon, Texas, and Washington, with system offices in Renton, Wash., and Irvine, Calif. Learn about our vision of health for a better world at [Providence.org](https://www.providence.org).

About Illumina

Illumina is improving human health by unlocking the power of the genome. Our focus on innovation has established us as a global leader in DNA sequencing and array-based technologies, serving customers in the research, clinical, and applied markets. Our products are used for applications in the life sciences, oncology, reproductive health, agriculture, and other emerging segments. To learn more, visit [illumina.com](https://www.illumina.com) and connect with us on [X](#), [Facebook](#), [LinkedIn](#), [Instagram](#), [TikTok](#), and [YouTube](#).

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