# Opportunities to Improve Outcomes by Measuring the Quality of Precision Oncology (QPRO)

Yvonne Bombard[1] and Tim Hanna[2] on behalf of MOHCCN QPRO study team

[1]Genomics Health Services & Policy Research, St. Michael's Hospital, Toronto, ON, Canada

[2]Queen's University, Cancer Centre of Southeastern Ontario, Ontario Institute for Cancer Research, Kingston, ON, Canada

## Scientific abstract

**Background and rationale:** Precision oncology (PO) is becoming central to cancer care with comprehensive genomic profiling (CGP), enabling treatments tailored to patient's tumor genetics. While achieving the best outcomes requires highest quality of care embedded in health care structure and processes, current quality indicators in PO are limited, focused mostly on single-gene alterations rather than CGP approaches. This risks overlooking broader dimensions of quality including understanding of genomic information and result delivery experience that can shape patient care and outcomes. Hence as CGP use expands, there is a growing need for patient-informed indicators to guide the delivery of accessible, equitable, and high value of care for the benefit of all cancer patients in Canada.

**Objective:** To develop patient-centered consensus-based clinical quality indicators to be used as national standards for precision oncology.

**Methods and Results:** We are conducting semi-structured interviews with adult cancer patients who provided samples for genome profiling as part of precision oncology care in Canada. Findings will inform a consensus-based process to define high-priority metrics of high-quality precision oncology care. Interviews are exploring dimensions relevant to structure, processes and outcomes of care in precision oncology. Data analysis is conducted using an interpretive description approach and results synthesized using a dual-lens framework to capture multidimensional outcomes whose value is contingent on the quality of care.

Preliminary findings (n=15) show patients reflected on multiple quality dimensions embedded in structure and processes including efficiency, effectiveness, timeliness and patient-centeredness while demonstrating variable preferences to access and understanding of genomic information. Patients discussed learning about their genomic results during consultations with their oncologists, typically within 2-10 months, with none reporting use of any patient-facing digital portal. While some patients expressed a desire for full access to results for independent learning, others were content on provider-led interpretations of any significant findings. Some patients, given their involvement in multiple therapies, were uncertain on the extent to which CGP informed their treatment decisions, whereas others wondered if earlier integration of CGP into the treatment pathway might have yielded greater clinical benefits, even if associated with out-of-pocket costs. Despite these uncertainties, patients reported satisfaction when CGP contributed to clinical and decisional outcomes by confirming their existing treatment plans or enabling access to trials and targeted therapies, although disappointments were noted when sequencing results were non-actionable. Overall patients attributed both personal and societal values to CGP, citing improved understanding of their tumor and a sense of empowerment by contributing to broader cancer research efforts.

**Conclusion:** CGP value extends beyond clinical utility and includes understanding patient preferences when it comes to access and comprehension of results. This reinforces the importance of flexible, patient-centered approaches in precision oncology.

**Anticipated Impact:** Identifying what matters to patients is critical in the development of equitable and value-added patient-centered metrics that can be subsequently used for measuring quality in MOHCCN cohort data.

## Plain-language abstract

**Background and rationale:** Precision oncology is a cancer care framework that has gained considerable attention for its ability to guide treatment options based on an individual patient's tumor characteristics. It includes comprehensive genomic profiling (CGP) or genome sequencing approaches, which look into multiple genes of an individual giving a more thorough understanding of one's cancer. To ensure precision oncology truly improves outcomes for cancer patients, we need to understand what works and for that we need a clear, structured way to measure the quality of care. Currently the quality indicators in precision oncology is limited and does not necessarily capture the broader dimension of quality from a patient's perspective including access to genomic technologies and care delivery experience. Hence, there is a need to develop patient-centered clinical quality indicators that are specific to precision oncology and applicable across cancer types and testing to benefit all cancer patients in Canada.

**Objective:** To develop a set of clinical quality indicators to measure if precision oncology patients are receiving care that is safe, efficient, effective, timely, patient-centered and equitable.

**Methods and Results:** We are speaking with adult cancer patients who have undergone genome sequencing as part of their care and have received some results. Our conversations will yield information needed to measure the quality of care for these patients. Through our conversations, we are exploring what patients felt they gained from the testing, their experience with how results were delivered and explained and what aspects of care mattered to them. The interviews are analyzed to understand both the outcomes patients experienced and the quality of care processes that shaped those outcomes.

Early findings show patient expressed value on how genomic testing was delivered and how it fit into their care. Most patients learned about their sequencing results during appointments with their oncologist, usually 2-10 months of providing samples, with none using online patient portals to access results. Patients differed on how much they wanted to learn about their results. Some patients wanted full report to support their own learning while others preferred their doctor to explain only the most important findings. For patients receiving several treatments due to advanced cancer, it was unclear how much genome sequencing influenced their treatment decisions while some wondered if having the sequencing done earlier in the cancer could have offered more benefits. Despite the uncertainties, patients expressed satisfaction when findings provided clear clinical and

decisional outcomes by confirming treatment plans and opening up options for trials and therapies. Overall patients described genome sequencing as valuable as it not only improved understanding on their cancer but also provided them with an opportunity to contribute to cancer research.

**Conclusion:** CGP delivers value to cancer patients in multiple ways that may not be captured using current quality evaluation frameworks. It is important that quality indicators in precision oncology reflects patient value and priorities to ensure full benefit of this cancer care approach.

**Anticipated Impact:** Enabling future research studies and trials to identify and prioritize high quality precision oncology approaches to improve outcomes and experiences for all cancer patients in Canada.