MARATHON OF HOPE CANCER CENTRES NETWORK

RÉSEAU DES CENTRES D'ONCOLOGIE DU MARATHON DE L'ESPOIR

Request for Applications

Phase 2 - Consortium Launch Proposals

General Principles

Phase 1 of the Marathon of Hope Cancer Centres Network (MOHCCN or 'Network') established a pan-Canadian research network focused on precision oncology for the benefit of Canadian cancer patients. This work was grounded in the successful development of five regional consortia spanning all ten provinces, which provide the core structural foundation for Phase 2 of the initiative.

This Request for Applications (RFA) solicits launch proposals aimed at supporting the five MOHCCN Consortia for the initiation of Phase 2. Additional RFAs focused on clinical trials, data-driven discovery (including Phase 1 data), and more targeted pilot projects will be issued subsequently, as appropriate. Funding is subject to approval of Phase 2 by the Treasury Board of the Government of Canada and execution of the Phase 2 Contribution Agreement with the Government of Canada.

Proposals must be submitted by the consortium lead(s) on behalf of the full consortium; only one proposal per consortium will be accepted. All consortium members are expected to be consulted and to contribute to the proposal. **The inclusion of new consortium members—particularly those in rural and remote locations or other underserved settings, including those serving Indigenous populations—is strongly encouraged and will be assessed during evaluation of the proposals.** Advice regarding strategies for inclusion of underserved communities can be obtained through consultation with TFRI's Canadian Spectrum Relations Manager, Amber Teed. Moreover, **it is expected that all proposals will involve consultation with patients**, such as members of the MOHCCN Patient Working Group and/or other patient partners. A list of the names and affiliations of the consortium members and patients who were consulted must be provided as an Appendix to the proposal.

Proposals must clearly articulate how the proposed work advances the overarching objectives of the Phase 2 of MOHCCN. Having established the broad feasibility of whole-genome and transcriptome sequencing (WGTS) profiling at scale, federated data sharing, and prospective case accrual in Phase 1, the primary goal of Phase 2 is to build on this achievement to provide clear evidence of the value of precision oncology for Canadian cancer patients, using **properly designed prospective cancer patient cohorts**. Retrospective cohorts initiated but not completed in Phase 1 are not eligible.

All proposals should be accompanied by ongoing regional health economic assessments and appropriate implementation studies regarding the benefits, limitations, costs, and feasibility of precision oncology approaches in the region.

Cohorts

Phase 2 activities should focus on the accrual and deep characterization of **prospective cases through the integration of WGTS, coupled with the return of results to treating clinicians and patients**, to guide clinical decision-making and improve patient outcomes (such as the ***GenerationAll*** program). To maximize evidence of the usefulness of precision oncology, **priority should be given to well-identified cohorts with greater likelihood of showing benefits of precision oncology for Canadian cancer patients**. These may include cohorts of patients having solid or hematological malignancies with unmet needs, rare or difficult-to-diagnose cancers, early-onset cancers (under 40 years of age), malignancies associated with a high risk of recurrence or treatment resistance, cancers of unknown primary, and others. **Another priority is the inclusion of patients from underserved populations and those historically underrepresented in cancer research, including but not limited to rural, remote, and Indigenous communities, as defined in the MOHCCN Underserved and Underrepresented Populations Guideline**. This should be done through careful consultations and in a way that respects and benefits those communities and groups that are included in the research.

In addition to WGTS data and the standardized MOHCCN clinical data fields, the **inclusion of digitized pathology** data is strongly encouraged. The integration of high-quality digital pathology is expected to strengthen molecular–clinical correlation, support advanced analytical approaches (including artificial intelligence-enabled analyses), and enhance interoperability across consortia. There is an expectation that digital pathology will become a mandatory component in the future; a plan to this effect should be provided.

Further scientific and clinical value of cohorts may be achieved through the additional integration of WGTS with: 1) **complementary multiomics** approaches—such as epigenomics, proteomics, immune profiling, metabolomics, and/or circulating tumor or cell-free DNA—to enable more comprehensive biological characterization, enhance biomarker discovery, and refine risk stratification and treatment selection; 2) **return of germline results** to clinicians, patients, and their families (***KnowMyGenes*** **program**). Evidence should be provided that these complementary studies can be realistically initiated in Year 1. In some cases, only exploratory work may be possible in Year 1, with larger scale projects more suitable for subsequent years.

All studies should aim to **produce robust, reproducible, and publishable genomic, molecular, clinical, and outcomes data**, adhering to Network-standardized protocols and quality control frameworks that ensure interoperability and clinical relevance across consortia.

Although it is acknowledged that research priorities may differ between consortia, collaborations involving two or more consortia for shared priorities, such as specific prospective (e.g. *GenerationAll*) cohorts or *KnowMyGenes* sub-studies, are strongly encouraged to reduce duplication, enhance national coordination, and increase statistical power for cohort studies. Such collaborative efforts should be clearly described and cross-referenced in each participating consortium's proposal.

Illustrative examples of relevant cohort studies are provided in Appendix 1.

Importance of integrated approaches

To maximize efficiency, optimize use of resources, and avoid duplication of effort, the prospective cohorts are also expected to be the main source of data to support reduction to practice and the *KnowMyGenes* studies. This integrated approach will require close coordination, shared planning, and ongoing communication among project teams to align study design, biospecimen use, data generation, and return of results.

Reduction to Practice

Proposals should be accompanied by regionally specific health economic assessment and implementation projects addressing the benefits, limitations, costs, and feasibility of various precision oncology strategies over the next 4 years. Key steps required for real-world implementation will likely include:

- **Cost reduction through streamlining or use of alternative technologies**
- **Workflow optimization from sample acquisition to data reporting:** Streamlining the end-to-end workflow—from specimen collection and accessioning through processing, analysis, and reporting—can reduce labour requirements, minimize errors, and shorten turnaround time. Standardization across centres, coupled with automation and digital tracking, can enhance consistency and throughput while lowering per-sample costs.
- **Comparison of WGTS with other genomic data (e.g. panels, exomes),** with emphasis on advantages and disadvantages and data processing overhead.
- **Use of AI-enabled tools to accelerate data analysis and reporting:** AI-driven algorithms can automate labour-intensive tasks such as data ingestion and analysis, biomarker quantification, variant calling, and clinical report

generation. These tools, when properly designed and tested, can reduce repeat analyses, increase efficiency, and allow expert personnel to focus on complex interpretation, thereby decreasing the marginal cost of diagnostic analysis.

- **Development of shared, centralized analysis pipelines across institutions and provinces:** Interoperable, cloud-based pipelines reduce duplication of effort, can enable harmonized quality control, and lower costs associated with infrastructure maintenance. Centralization (e.g. shared compute, storage, and licensing) can support economies of scale while ensuring consistent analytic performance, particularly benefiting smaller or geographically dispersed centres.

Application and Review Process

Questions about the aims and intents of the RFA as well as other enquiries about the nature of the material to support responses to the RFA may be submitted to TFRI MOHCCN office (moh@tfri.ca) up to one week prior to the application deadline. Selected, anonymized queries and replies from these submissions may be posted on the MOHCCN website.

Following eligibility screening, proposals will undergo evaluation by the MOHCCN External Scientific Advisory Committee (ESAC) for scientific merit and by TFRI Leadership for administrative considerations, in accordance with the criteria outlined in Appendix 2. Additional *ad hoc* external reviews may be obtained as needed. Written feedback will be provided to the consortia, after which revised proposals will be resubmitted for final feedback. Funding recommendations will be forwarded to Network Council for additional comments. Funding approval will be provided by the TFRI Board.

Key Dates

April 2, 2026: Request for Applications (RFA) Launch
April 9, 2026: Informational Webinar
May 8, 2026: Submission of Applications
June 2026: Decisions announced
July 1, 2026: Funding starts*

*****Funding is subject to approval by the Government of Canada Treasury Board of the Phase 2 submission and to subsequent execution of the Phase 2 Contribution Agreement with the Government of Canada.

Budget

The maximum budget available **from Health Canada** for the entire Network in Year 1 is **$20M**, with an expected match of **$10M (i.e. $0.50 match for every Health Canada dollar) from the consortia. An additional $10M is available as match from the Terry Fox Foundation (TFF), and its policy for utilization will be communicated later on as the program progresses**. For Year 1, we estimate that the maximum budget per consortium from Health Canada will be $3.2 million, with a minimum commitment of $1.6 million institutional match (1:0.5 ratio), taking into consideration that Year 1 is not a full year (anticipating a July 1, 2026 start, and ending on March 31, 2027). It is expected that funding will be distributed widely across all consortia. **Should additional RFAs be needed to support projects insufficiently covered by the proposals, the maximum award available per consortium may be reduced to enable funding of these other RFAs.**

During Year 1, funding will support up to 2,000 cases Network-wide, within an overall Phase 2 plan of 11,000 cases, at an estimated total cost of up to $5,000 per typical WGTS case. Additional funds may be required to support activities involving underserved populations, longitudinal studies, multiomics studies, and *KnowMyGenes* studies. Zero-based estimates of the incremental costs associated with these components, along with the proposed source(s) of funding—particularly the availability of regional matching funds—must be documented. When proposing case numbers, it is generally recommended to scale case numbers per consortium according to the consortium case delivery in Phase 1. For example, if a consortium delivered 20% of all cases in Phase 1, it is suggested to develop a proposal for ~400 cases in Year 1. Justifications, including late joining of the Network by some consortia, should be provided if the proposed number differs significantly.

Although projects proposed can be linked to current or future clinical trials, this RFA will **not** fund clinical trial support outside of generation of deep profiling data such as WGTS and other modalities linked to case characterization and monitoring. A separate RFA dedicated to clinical trial support—using funds obtained in part from TFF—will be issued at a later date.

Appendix 1

Example of Cohorts

Inclusion of underserved populations and those historically underrepresented in cancer research, as defined in the MOHCCN Underserved and Underrepresented Populations Guideline, is strongly encouraged. Research teams and consortia should carefully consider how to do this in a way that respects the groups and communities involved and addresses genuine needs and concerns.

1. **Precision oncology-based diagnosis, treatment, and monitoring of cancers with significant unmet clinical need**, including newly diagnosed, high-risk, rare, and difficult-to-treat malignancies (such as early-onset cancers, cancers of unknown primary, virus-associated cancers, pediatric and adolescent/young adult (AYA) cancers, and refractory or relapsed disease). These initiatives may involve longitudinal data collection and adaptive trial designs to support early detection, monitoring of disease interruption, recurrence or progression, and molecularly informed therapeutic interventions, with the overarching goal of improving diagnosis, treatment, and prognosis for Canadian cancer patients.
2. **Longitudinal cohort studies** incorporating serial tissue and liquid biopsies to assess clonal evolution, minimal residual disease, and early indicators of relapse, with or without therapeutic interventions.
3. **Multiomics integration projects**: Cohorts involving the comprehensive integration of multiple molecular and clinical data modalities beyond WGTS to enable a multidimensional understanding of tumor biology and therapeutic response and ascertain the relative contribution and need of each omic approach. Examples include:
    a) Integrated analyses of clinical, WGTS, proteomics, epigenomics, immune profiling, metabolomics, and/or circulating tumor/cell-free DNA (ct/cfDNA) to identify predictive and prognostic biomarkers.
    b) Longitudinal multiomics profiling to study tumor evolution, mechanisms of therapeutic resistance, and treatment-induced immune modulation.
    c) Integration of molecular data with digital pathology, imaging, radiomics, and clinical outcomes to develop composite biomarkers and clinical decision support tools.
4. ***KnowMyGenes:*** At this time, the *KnowMyGenes* program, which aims to study the identification, characterization and clinical management of actionable and hereditary cancer-related germline genomic findings for up to 2,000 cases over 4 years, has not been fully piloted. In this light, projects should take advantage of Gold Cohort cases for time- and scope-limited pilots aimed at establishing the approach and providing compelling evidence of feasibility for *KnowMyGenes* while integrating this activity within and between consortia to avoid duplication of efforts. This initiative should involve timely return of results to clinicians, patients, and their families with the help of genetic counselling and contribute to improved cancer risk assessment and management. If

implemented beyond these pilots, a strategy about reduction to practice should be developed with health economists to address clinical utility, feasibility, cost-effectiveness, and scalability. The reduction to practice strategy will need coordination with the reduction to practice strategy of precision oncology profiling (i.e. somatic WGTS) to be effective (see below), and will likely differ between provinces, requiring focused, regional assessment.

5. **Neoadjuvant targeted therapy trials** integrating paired diagnostic biopsies and postsurgical specimens to improve patient selection, refine treatment stratification, and accelerate translational discovery.
6. **Single-agent window trials** incorporating paired pre- and post-treatment biopsies, followed by biomarker-guided combination therapy studies to evaluate mechanisms of response and resistance.
7. **Window-of-opportunity trials** integrating paired biopsies and deep molecular profiling to characterize tumour adaptation, signalling pathway rewiring, and therapeutic vulnerabilities under treatment pressure.

Appendix 2

Evaluation Criteria

Following eligibility screening, proposals will undergo evaluation by the MOHCCN External Scientific Advisory Committee (ESAC) for scientific merit and by TFRI Leadership for administrative considerations, in accordance with the criteria outlined below. Assessments will prioritize scientific excellence, coherence with Phase 2 objectives, the capacity to advance precision oncology and reduction to practice across the Network, and feasibility.

1. Alignment with MOHCCN Phase 2 Objectives
    - Degree to which the proposal advances the primary goals of Phase 2, including clinically meaningful cohort analysis, return of results, and reduction to practice.
    - Clear articulation of how the proposed program builds on Phase 1 achievements while avoiding redundancy.
    - Contribution of cases to the Gold Cohort and adherence to established characterization criteria.

2. Scientific Merit and Innovation
    - Strength and clarity of the research questions and hypotheses.
    - Use of state-of-the-art molecular profiling technologies and integration of multimodal data where appropriate.
    - Potential to generate high-quality, publishable, and clinically relevant outcomes.

3. Clinical Relevance and Impact
    - Likelihood that the proposed work will inform patient care, clinical decision-making, and/or health system practices.
    - Anticipated impact on Canadian cancer patients, particularly in areas of unmet clinical need.

4. Collaboration and National Coordination
    - Strength and feasibility of inter-consortium and/or cross-institutional collaborations.
    - Contribution to national coordination, avoidance of duplication, and increased statistical power.

- Clear plans for knowledge sharing, coordination, and communication across the Network.

5. Equity, Diversity, Inclusion, and Access
   - Explicit consideration of equitable access and inclusion of underserved populations and those underrepresented in cancer genomics research, including but not limited to rural, remote, and Indigenous communities, as defined by the MOHCCN Underserved and Underrepresented Populations Guideline.
   - Appropriateness of engagement strategies, including culturally informed and community-partnered approaches where relevant.
   - Potential to reduce disparities in access to precision oncology.

6. Feasibility, Deliverables, and Management
   - Realism and clarity of Year 1 deliverables and milestones, including 3- and 9-month outputs.
   - Strength of the monitoring and risk-mitigation plan.
   - Appropriateness of timelines and integration across projects.

7. Team Strength and Governance
   - Expertise, track record, and complementarity of the proposed team.
   - Effectiveness of consortium governance, leadership, and decision-making structures.
   - Integration within the broader MOHCCN and plans for strategic growth of partnerships.

8. Budget Justification and Value for Money
   - Alignment of the budget with proposed activities and deliverables.
   - Appropriateness of personnel effort and resource allocation.
   - Evidence of efficient use of funds and a zero-based budgeting approach.