

Smart Technologies for Dentistry Request for proposals

For NCOHR researchers and industry, addressing Virtual Appointments
in Dentistry

Guide dated 2022 February 1st

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Introduction and objectives

The advent of COVID-19 pandemic has pushed the world on-line. This has accelerated the urgency for implementing more smart technology tools that can aid the health ecosystem to function remotely and efficiently. Telehealth, or virtual visits, is helping make access to health care more convenient. People can see and talk to a clinical expert through their smartphone, tablet or computer, meaning they don't have to go to the clinician's office or sit in a waiting room. Instead, they can visit with a clinician from the convenience of their own home.

This request for proposals aims to identify projects that would have commercial and clinical viability in the near future, within the area of virtual appointment tools, provided as a service to the dental public health and public/private clinical practice of dentistry.

The proposed projects will study the use of innovative smart technologies used in the virtual appointment space or propose the development and testing of new ones. **They will focus on evaluating existing solutions in dental sessions or using new combinations on the technologies in dental sessions.**

This call for projects is open to researchers of the NCOHR network and to companies that wish to collaborate with researchers of this network to propose an innovative solution in the targeted theme.

The application will proceed with two phases. In phase 1, the applicants will submit an LOI document (see the LOI form) which will be used to select invited full submissions. LOIs will move forward based on their potential to meet the criteria and objectives of the call.

Successful applicants after Phase 1 will be guided to Phase 2 (full applications) by the call promoters to apply for funding from different sources depending on their eligibility. NCOHR will commit \$80k in funding to the successful project(s), and this amount will be leveraged with co-funding from industry partners and funding agencies, including MEDTEQ+, Ontario Centre of Innovation, Alberta Innovates, MITACS, NSERC Alliance, foundations and other partners.

Note on Confidentiality

At the Letter of Intent stage (first step of the application process), project proposals will be non-confidential by default, as no confidentiality agreement will have been signed between the applicants and the promoters. LOIs will only be seen by the promoters of the call and will not be available on our websites. However, companies that prefer to sign a confidentiality agreement at this stage are welcome to let us know.



Promoters of the call



The Network for Canadian Oral Health Research (NCOHR) is the primary resource for initiating, supporting and sustaining innovative and collaborative oral health research designed to benefit the health of all Canadians: Healthy mouths - healthy bodies. NCOHR offers resources to encourage oral health researchers across Canada to collaborate and communicate with one another, and with our clinical colleagues. We envision that innovative and collaborative oral health research partnerships will make a difference in the health of Canadians. NCOHR is funded by the Institute of Musculoskeletal Health and Arthritis (IMHA) of the Canadian Institutes of Health Research (CIHR) and several partners.

For more information, visit our website: www.ncohr-rcrsb.ca.



MEDTEQ+ is the Industrial Consortium for Research and Innovation in Medical Technologies in Canada. We accelerate the collaborative development of innovative technologies for clinicians and patients as well as their validation and integration into Canadian and international healthcare networks. Launched in Quebec in 2013, MEDTEQ+ has 200 industrial, academic, and institutional members. Since its creation, MEDTEQ+ has supported more than 100 research projects, valued at over \$60 million. We also support the integration of health technologies across Canada by providing direct funding to innovative start-ups and SMEs in the commercialization phase and by deploying the Beachhead™ program, an accelerated adoption program for industrial medical technology innovations by and in collaboration with clinical sites in Quebec, Canada and abroad. Since 2018, MEDTEQ+ has invested over \$8M in 19 commercialization-stage startups in rounds of over \$80M and is currently deploying the Beachhead™ program at 13 sites in Canada and internationally.

For more information, visit our [website](#).

Call Schedule

Information webinar Recording of the webinar available here .	January 26th, 2022 1:00 PM EST
Opening of the call - Submit the Letter of Intent form . Visit MEDTEQ+ website to find documents and information.	February 1st, 2022
Due date for the Letters of Intent	March 1st, 2022 5:00 PM EST
LOI results & full submission invitation Applicants selected by NCOHR based on their Letter of Intent will be invited to submit a full proposal	March 8th, 2022
Full submission due (1st review of the complete proposal by NCOHR and MEDTEQ+)	April 15th, 2022 5:00 PM EST

Eligible applicants and projects

This call for projects is open to researchers of the NCOHR network and technology companies that wish to collaborate with these researchers to propose an innovative solution that will significantly impact the Canadian population by providing better access to oral health care. These innovative solutions must demonstrate their ability to be rapidly deployed in Canada, in the public or private oral health ecosystem.

Ideally, the applicants from the NCOHR network will submit their application in partnership with identified companies willing to be involved in the submitted project.

In the same way, applicant companies will have identified at least one, but preferably more researchers from the NCOHR network with which to build and submit their application. It will nevertheless be possible for researchers without industrial partners to file an application, and for companies to file the application without an academic partner; however, these projects will be given lower priority than projects submitted by a team consisting of an NCOHR researcher(s) and one or more industrial partners.

During the LOI stage (Phase I), promoters will propose to link partners from different applications which have similar approaches and objectives, in order to lead to enhanced applications. For example, this could be valuable in expanding a clinical validation pool, or accelerate a product development step.

Academic applicants should be cognizant that eligible partnerships with industry may leverage the funding and enhance the commercial viability of the project. While leverage resources is not a requirement it will be considered as an attribute contributing to feasibility.

To be eligible to apply, NCOHR researchers must be members in good standing of their organization. Status of members will be checked with the NCOHR office at the LOI stage (phase 1).

Eligible companies must meet the following characteristics:

- Be a company eligible for collaborative project funding in the targeted jurisdictions. Generally, this means that the company must have R&D or manufacturing operations in those jurisdictions.
- Commit to co-funding the project once it is in the development stage. The exact amount that the company will be required to disburse will depend on the other sources of funding that the industrial partner and the project team are able to secure collaboratively, as well as the individual project budget.
- Be or become a member in good standing of MEDTEQ+ at the time of submission of the complete funding application (phase 2).
- Usually, large companies are eligible co-applicants if they collaborate with at least one SME in the jurisdiction of interest.

Please note that a project may be carried out by several companies and several researchers. But at least one must satisfy all the above criteria.

A project will be eligible if it meets the following conditions:

- Solutions that have achieved at least a Technology Readiness Level 5 (TRL 5, see Appendix below) will be preferred, i.e., solutions close to a stage of validation of the functions and impact in real care settings (impact on patient trajectory, impact on implementation, change management, cost of care and reimbursement, etc.). Lower TRL solutions will be considered if TRL 6 is projected to be reached quickly during the project, leaving sufficient time for validation of the solution in real care settings.
- Collaborative project start date targeted for September 2022. Ideal maximum duration of the collaborative project: 12-18 months. Timeline of the project to deliver the outcome from TRL 5 is 1 year.
- The proposed projects will study the use of any of the top technologies used in the virtual appointment space or propose the development and testing of new ones. **They will focus on evaluating existing solutions in dental sessions or using new combinations of the technologies.**
- Applicants must demonstrate mentoring from an accessible incubator (the incubator could be either located on campus or in the community; examples of incubators are [Health Innovation Hub](#); [Centech](#); [Innovacorp](#); [District3](#), [MaRS](#), [TEC Edmonton](#), etc) and/or commercialization mentor

(it is the expectation that the research group is either involved in being actively mentored by an early-stage (pre-investment) commercialization incubator, or has an experienced commercialization mentor on board as a collaborator to guide on the strategic elements of productization). A letter of support or collaboration will be a requirement of the full proposal from the incubator. At the LOI stage applicants only need to identify the incubator(s) and/or mentor support.

- Research groups must identify “next-steps” plan to enabling the “go-to-market” strategy and engage the partners for that plan during the course of the project, so that there is a very high certainty of the project moving beyond the grant.
- Research groups should include at least an expert in clinical dentistry, but preferably more than one; industry partner or equivalent translational expertise (e.g. expertise associated with start-up incubators and/or commercialization mentors- see above; information technology (IT) expert; patient partner (patient advocacy group, patient, or other patient knowledge expert); public health expert. Projects that include different expertise and different institutional partners which add value to the proposal will be an asset.
- All partners selected and funded in this call must be or become MEDTEQ+ members in good standing prior to submission of the full application.

Funding

NCOHR has committed \$80k in funding to the successful project(s), and this amount will be leveraged with co-funding from industry partners and funding agencies, including but not limited to: MEDTEQ+, OCI, Alberta Innovates, MITACS, NSERC Alliance, foundations and other partners. Applicants understand that if they are selected in the process of this call for proposals, they and the project team will submit appropriate applications for funding and that the awarding of such funding is not guaranteed.

Eligible expenses may vary depending on the funding request. Please note that MEDTEQ+ management fees are eligible expenses.

MEDTEQ+ will be able to assist in the structuring of multi-site and/or multi-province projects in return for fees paid to MEDTEQ+ by the companies, depending on the complexity of the set-ups and the required involvement of MEDTEQ+, discussed on a case-by-case basis.

Sending documents

MEDTEQ+ is managing this call on behalf of all promoters. The documents described below must be submitted and sent to the following address: projet@medteq.ca, as well as any questions related to the call.

Any document missing or not conforming to the rules of the program and the forms (format, font and number of pages) may result in the ineligibility of the application.

Required documents

At the Letter of Intent stage

The Letter of Intent form is available on [MEDTEQ+ website](#). The Letter of Intent objectives are:

- Know the candidates and establish their eligibility
- Have a first understanding of the proposed innovation and its potential
- Verify the stage of maturity of the technological solutions
- Briefly present the plan for the collaborative project

Only those applicants whose forms are selected will be invited by email from MEDTEQ+ to the next steps.

MEDTEQ+ will email confirmation of acceptance or rejection of each applicant's Letter of Intent form after review by the NCOHR Smart Technologies for Dentistry review committee.

The documents must be attached one after the other in **one (1) PDF document**. The information provided must be in ARIAL 11 font, single-spaced.

At the full application stage

Full application, in the form of a collaborative project statement and according to the funding agency's terms of application, will be written by the applicants.

Appendix – Technology Readiness Level (TRL) scale

TECHNOLOGY READINESS LEVEL (TRL)

The Technology Readiness Level is a scale or rating used to assess the level of maturity of an innovation. The definition of the TRLs provides the conditions to be met at each level, enabling accurate TRL assessment.

For each technological component (TC) answer the following questions:

Technology Readiness Level (TRL) of the technological component

- Does the fundamental research exist?
 YES
- Are the concept or the applications formulated?
 YES
- Do analytical studies support the proof-of-concept of your technology?
 YES
- Did you attest on a small scale, in lab environment, the expected performance of the integration of the TC in the general operating context?
 YES
- Did you validate in a relevant environment the expected functional performance of the integration of the TC in the general operating context?
 YES
- Did you attest the expected functions of the TC in a relevant environment simulating the operating environment?
 YES
- Did you demonstrated the prototype in a operational environment?
 YES
- Did you prove that the technology works in its final form and in the environnement intended?

- NO
 YES
- NO
 YES
- NO
 YES
- NO
 YES
- NO
 YES
- NO
 YES
- NO
 YES
- NO
 YES
- NO
 YES
- NO
 YES

- 1** **Base principles**
 observed and reported
- 2** **Technology concept**
 and/or application formulated
- 3** Analytical and experimental
 critical function and/or
 characteristic **proof-of-concept**
- 4** **Component and/or breadboard**
 functional verification in laboratory
 environment
- 5** Component and/or breadboard
 critical function verification
in a relevant environment
- 6** **Model demonstrating the critical**
functions of the element
in a relevant environment
- 7** Model demonstrating the
 element performance for the
operational environment
- 8** **Actual system completed** and
 accepted *for the application*
- 9** **Actual system *in action*** through
 successful mission operations

Sources:
 - Ministry of Economy, Science and Innovation (MESI)
 - Ministry of Innovation, Science and Economic Development Canada (ISED)
 - ISO 16290-2013