PROGRAM GUIDE - Clinical Demonstration Program

INTRODUCTION

The Clinical Demonstration Program ("CDP") aims to assist Alberta-based small to medium sized enterprises ("SMEs") in the health technology sector with the development of new health products. This program is administered by Alberta Innovates – Technology Futures and funded by Western Economic Diversification, as part of Alberta's Bringing Technologies to Market Action Plan. **Please note that this program is a competitive, two-step program.** Refer to Section 2.0 for further details.

1.0. OVERVIEW

1.1. Primary Objective

The Clinical Demonstration Program aims to:

- Support Alberta SMEs to successfully develop their innovative concepts or prototypes into marketable products;
- Provide critical funding for clinical demonstration and testing of health technologies to determine safety and efficacy of the technology.

This program supports clinical demonstration and testing of health technologies (medical devices, assistive technologies, diagnostics, eHealth, mHealth). It does not fund development or testing of therapeutics (drugs, vaccines, cellular products) nor natural health products. Combination products (e.g. for drug delivery) may be eligible if the demonstration project is primarily for the device component.

1.2. Desired Outcomes

- New health technology products generating sales and revenue for Alberta-based companies;
- Increased economic activity to the province of Alberta;
- Greater share of health technology of the GDP and industrial export of the province of Alberta;
- Development of medical device products that address needs identified by front-line users;
- The entry of new, competitive, Alberta-based health technology companies into the global market.

1.3. Monetary Value of a CDP Contract

The CDP may provide up to 50% of the total project cost, to a maximum AITF contribution of $200,000 CAD.

Before AITF advances funding, the Applicant and Clinical Demonstration Service Provider must enter an Agreement governing the project and detailing a cash contribution of a minimum of 50% of the Project Costs to the Project. A copy of the Agreement must be provided to AITF.

1.4. Eligibility

The following criteria must be met for any project to be eligible for funding.

- Company revenues for the preceding fiscal year must not exceed $5,000,000.
- Less than 50 full-time employees.
- Legally established as a provincially, extra-provincially or federally registered corporation or partnership which has legal status to operate in Alberta and which retains a significant physical presence in Alberta.
- Must be a technology-driven business developing innovative new products or services for growing markets in health.
- Does not have an outstanding balance or otherwise owe money to any Alberta Innovates organization, subsidiary, or partner.
- The Clinical Demonstration Service Provider must be an independent third party to the Applicant.

1.5 Project Definition

Clinical Demonstration is a project that has a product or prototype ready for clinical demonstration to determine safety and efficacy or to collect data in a clinical setting for a health economics assessment. A Clinical Demonstration project will be within Technology Readiness Level (TRL) 6 – 9. Clinical Demonstration projects are limited to a maximum term of 18 months. AITF may provide up to 50% of the project cost, to a maximum AITF contribution of $200,000 CAD. Applicant Companies will be required to contribute a minimum of 50% of the total project value.

Please refer to Appendix I for an overview of TRLs.

1.5.1. Project Expenses

Project expenses are defined as expenses *directly* related to the proposed project. The following is a list of project expenses that are eligible for CDP reimbursement:

Eligible expenses may include:

- Itemized and detailed costs of instrument, equipment, materials, and supplies used exclusively for the project.
- Itemized and detailed cost of demonstration and/or clinical testing services, including third party services.
- Itemized and detailed costs of protocol development for clinical testing, clinical trials management and analysis of clinical data from demonstration/testing.

Ineligible expenses include:

- Design and production of advertising material.
- Sales and promotion activities.
- Costs associated with applying for clinical approvals, Health Canada approvals, government grants and/or programs.
- Institutional or agency fees for submission of ethics protocols, study protocols or regulatory submissions and quality system audits.
- Salary support (eg: internships, students, post-doctoral fellows or principal investigators of knowledge institutions).
- Basic professional services such as ongoing routine accounting, tax and legal business requirements and financing fees unless directly related to the project.
- Travel, conference and entertainment costs.
- Costs associated with protection of intellectual property.
- Overhead or administrative costs, rent, utilities.

Any expenses outside of those listed above must be pre-approved by AITF. Payment will not be considered for any activities conducted prior to agreement execution and the project start date. Ownership of all purchased materials resides with the SME.

1.5.2. Project Plan and Budget

Full proposals are expected to have clearly defined project plans, timelines, milestones, deliverables and activities for the term of the project.

The budget must contain detailed costs for project specific activities and equipment required to complete the project as proposed.

1.5. Program Schedule

See website for current program details and updates. Expressions of Interest (“EoI”) to apply for support from the Clinical Demonstration Program will be accepted on an ongoing basis and reviewed in bimonthly competitions. Full proposals will be by invitation only and applicable deadlines for full proposal submissions will be indicated in the invitation letters.

Results from the outcome of the EoI review will be emailed to the applicant at the email address provided on the application form within **2 weeks of the EoI competition closing date.**

EOIs are to be submitted via email to healthproduct@albertainnovates.ca.

2.0. APPLICATION PROCESS

Please note that application to receive a support from the CDP is a two-step process:

1) ***Expression of Interest ("EOI")*** – *Submissions accepted during each competition period up to and including the competition closing date.*
2) ***Health Product Development Program Full Proposal*** – BY *INVITATION ONLY, following the review of submitted EoI.*

2.1. Expression of Interest

Through the EOI process, AITF expects to:

- Increase the success rate of full proposal applications.
- Reduce the amount of time spent writing and reviewing applications that are not eligible to receive funding from this program.
- Provide some advice and direction to Alberta SMEs beyond the limits of this program.
- Identify how the expertise of AITF and its partner institutions might additionally support the projects.

2.1.2. Re-applications

If the Expression of Interest application is unsuccessful, the applicant may reapply once with the appropriate modifications to the original application. A cover letter addressing the changes that have been made to the original application must be attached to the re-application, and the new or modified information within the application must be highlighted.

Click *here* for access to the Expression of Interest form.

2.2. CDP Full Proposal

Please note that Full Proposals to the Clinical Demonstration Program will be accepted by invitation only.

The Full Proposal application form and Program Guidelines are provided to invited applicants following the Expression of Interest review. Applications are due for submission within 4 weeks of receiving the invitation. Once received, the full proposal is reviewed by a minimum of three external Expert Panel members using the evaluation criteria identified in 2.2.1. The Expert Panel will provide recommendations for consideration by AITF. Timeframe between submission of Full Proposal and the final notification to the applicant is 4-6 weeks.

2.2.1. Proposal - Evaluation Criteria

Evaluation of Proposals will be conducted using the criteria provided below:

- Market Potential of the product
- Economic Benefit to Alberta
- Experience and expertise of the applicant's team including the clinical service provider
- Commercialization Strategy for the technology
- Feasibility of the project and fit with the applicant's commercialization strategy

Please refer to Appendix II for additional information.

2.2.2. Re-applications

If a Full Proposal application is unsuccessful, the applicant may reapply once with the appropriate modifications to the original application. A cover letter addressing the changes that have been made to the original application must be attached to the re-application, and the new or modified information within the application must be highlighted.

3.0. PAYMENT DETAILS

Project plan, budget, timelines and implementation are unique with each project. Project milestones and payment details will be developed and agreed to for each project. The critical milestones and payment schedule are based on the proposed Project Plan within the application and will be finalized before an agreement is executed. In addition, prior to execution of the agreement, the Applicant must provide a copy of the Agreement entered into with the Clinical Demonstration Service Provider regarding services to be rendered for the project term.

Initial payment is issued within 45 days of the agreement execution date. All subsequent payments are issued within 45 days following the successful completion of each milestone and AITF approval of the accompanying milestone report. Continued funding is contingent upon successful completion of the defined milestones in the project plan and AITF's approval of the corresponding milestone report.

4.0. ADDITIONAL AWARD DETAILS

4.1. Agreement

The successful CDP contract recipient and AITF will enter into a CDP Agreement (the "Agreement") prior to the commencement of the program. This Agreement will contain all the terms and conditions which govern the relationship of the parties and the operation of the CDP. A mutually agreed upon Statement of Work ("SoW") with a detailed project plan, milestones, itemized budget and payment schedule will become a part of the agreement (Schedule A).

4.2. Term of Award

The CDP contract award will be held to the terms and conditions outlined in the Agreement.

4.3. Start Date

Successful CDP contract recipients are expected to commence their project within 45 days of award acceptance in accordance with the Agreement. Therefore the Agreement must be fully executed within 45 days of the award notification.

4.4. Approved use of Award

CDP awards may only be used for work as outlined in the approved application specifically adhering to the Agreement.

4.5. Reporting

Reporting contained in the Agreement will be governed by terms related to continued disclosure and reporting obligations including but not limited to the following:

- Submission of reports outlining the project progress according to the agreed upon project plan, as well as a final report at project completion. The milestone summary report template will be emailed to the applicant two weeks in advance of your expected milestone completion date and should be emailed to AITF within one week of milestone completion. Project conclusion reports will be emailed to the applicant two weeks in advance of the expected conclusion date and should be emailed to AITF within 30 days of project completion.
- During the term of the project and for a period of seven years thereafter, program recipients must keep accurate and complete records of the activities related to the funded project. Any records required to be maintained pursuant to this Agreement are subject to the *Freedom of Information and Protection of Privacy Act* (FOIPP) as it relates directly to, and is necessary for the program. A copy of the FOIPP Act can be found on the AITF website.
- During the five years following the completion of the award, AITF may collect information on impacts and outcomes resulting from the grant funding, such as new or enhanced products and processes, intellectual property generated, new customers, new or increased sales, market capture, and other significant outcomes.

CDP recipients must agree to participate in program evaluations that may be undertaken by AITF from time to time at the recipients cost, both during and after completion of the project.

4.6. Intellectual Property

Intellectual property developed during expected preparation of the CDP program will follow the Agreement. This should include scenarios such as the generation of new IP as a result of the CDP Award.

4.7. Acknowledging the Funding Agencies

All publications, presentations and public messages arising from the CDP must acknowledge the support of AITF and Western Economic Diversification (WD). Please use the full corporate name, Alberta Innovates – Technology Futures, rather than any acronym.

4.8. Public Information

AITF reserves the right to publish and/or disseminate non-confidential information regarding its awards. Alberta Innovates – Technology Futures (AITF) is regulated by the Freedom of Information and Protection of Privacy Act (FOIPP) of Alberta. The information on this application form will be used only for the purpose of applying for a grant. AITF may provide this information to AITF employees or external reviewers, but such parties are subject to confidentiality and/or non-disclosure obligations.

4.9. Changes and Termination

CDP award recipients will be expected to achieve the milestones of the project as outlined in the Statement of Work. Any substantial changes must be approved by AITF in advance and schedules modified accordingly, and remain consistent with the overall intention of the approved award. AITF must also be notified if the project is terminated. Failure to complete all required documentation may result in grant repayment and the applicant being deemed ineligible to apply for future funding from AITF.

4.11. Extent of Liability

AITF shall not be liable in any way whatsoever to the CDP recipient for any direct or consequential damages, loss or injury suffered by the CDP recipient.

4.12. Indemnity

The CDP award recipient shall indemnify and hold harmless AITF, its employees and agents against and from any and all third party claims, demands, actions, and costs whatsoever (including legal costs on a solicitor-client basis) that may arise directly or indirectly out of any act or omission of the CDP grant recipient or of their employees, contractors or agents in the performance of this Agreement or the negligence or tortious act or willful misconduct of the CDP grant recipient or their employees or agents or anyone for whom they are legally responsible in relation to their obligations under this Agreement.

4.13. General Liability Insurance

The CDP award recipient shall, at their own expense and without limiting their liabilities herein, insure their operations under a contract of General Liability Insurance, in accordance with the Insurance Act (Alberta), in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, personal injury and property damage including loss of use thereof. The CDP award recipient acknowledges that no protection is available from liability for any third party claims pursuant to the CDP.

4.14. Program Audit

As part of an ongoing effort to improve and enhance program outcomes, AITF reserves the right to audit any account pertaining to this Program at anytime.

Appendix I - Technology Readiness Levels -TRL- for Medical Devices.

TRL 1 Definition: Basic principles observed and reported.	
Lowest level of technology readiness. Scientific research begins to be translated into technology's basic properties	Scientific findings are reviewed and assessed as a foundation for new technologies. Generation of scientific and bioengineering knowledge base.
	TRL 1 DECISION CRITERION: Scientific literature reviews and initial Market Surveys are initiated and assessed. Potential scientific application to defined problems is articulated.
TRL 2 Definition: Technology concept and/or application formulated.	
Invention begins. Once basic principles are observed, practical applications can be invented. The application is speculative and there is no proof or detailed analysis to support the assumption.	Intense intellectual focus on the problem with generation of scientific studies that review and generate research ideas, hypothesis, and experimental designs for addressing the related scientific issues.
	TRL 2 DECISION CRITERION: Hypothesis(es) generated. Research plans and/or protocols are developed, peer reviewed, and approved.
TRL 3 Definition: Analytical and experimental critical function and/or characteristic proof-of-concept	
Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. This may include components that are not yet integrated or representative.	Basic research, data collection, and analysis begin in order to test hypothesis, explore alternative concepts, and identify and evaluate component technologies. Initial tests of design concept, and evaluation of candidate(s). Study endpoints defined. Animal models (if any) are proposed. Design verification, critical component specifications, and tests (if a system component, or necessary for device test & evaluation) developed.
	TRL 3 DECISION CRITERION: Initial proof-of-concept for device candidates is demonstrated in a limited number of laboratory models (may include animal studies).
TRL 4 Definition: Component and/or breadboard validation in laboratory environment.	
Basic technological components are integrated to establish that the pieces will work together. This is relatively 'low fidelity' compared to the eventual system. Examples include integration of 'ad hoc' hardware in a laboratory.	Non-GLP laboratory research to refine hypothesis and identify relevant parametric data required for technological assessment in a rigorous (worst case) experimental design. Exploratory study of candidate device(s)/systems (e.g., initial specification of device, system, and subsystems). Candidate devices/systems are evaluated in laboratory and/or animal models to identify and assess potential safety problems, adverse events, and side effects. Procedures and methods to be used during nonclinical and clinical studies in evaluating candidate devices/systems are identified. The design history file, design reviews and, if required, a master device record, are initiated to support either a 510(k) or PMA.
	TRL 4 DECISION CRITERION Proof-of-concept and safety of candidate devices/systems demonstrated in defined laboratory/animal models.

Appendix I - Technology Readiness Levels -TRL- for Medical Devices.

<table>
<tr><td colspan="2">TRL 5 Definition: Component and/or breadboard validation in a relevant environment.</td></tr>
<tr><td rowspan="2">Fidelity of prototype technology increases significantly. The basic technological components are integrated with reasonably realistic supporting elements so that the technology can be tested in a simulated environment. Examples include ‘high fidelity’ laboratory integration of components.</td><td>Further development of selected candidate(s). Devices compared to existing modalities and indications for use and equivalency demonstrated in model systems. Examples include devices tested through simulation, in tissue or organ models, or animal models if required. All component suppliers/vendors are identified and qualified; vendors for critical components audited for quality system compliance. Component tests, component drawings, design history file, design review, and any master device record verified. Product Development Plan drafted. Pre-IDE meeting held with FDA for proposed Class III devices, and the IDE is prepared and submitted to FDA.

For a 510(k), determine substantially equivalent devices and their classification, validate functioning model, ensure initial testing is complete, and validate data and readiness for quality system inspection.</td></tr>
<tr><td>TRL 5 DECISION CRITERION: IDE review by FDA results in determination that the investigation may begin.
For a 510(k), preliminary findings suggest the device will be substantially equivalent to a predicate device.</td></tr>
<tr><td colspan="2">TRL 6 Definition: System/subsystem model or prototype demonstration in a relevant environment.</td></tr>
<tr><td rowspan="2">Representative model or prototype system, which is well beyond the breadboard tested for TRL 5, is tested in a relevant environment. Represents a major step up in a technology’s demonstrated readiness. Examples include testing a prototype in a high fidelity laboratory environment or in clinical environment.</td><td>Clinical trials conducted to demonstrate safety of candidate Class III medical device in a small number of humans under carefully controlled and monitored clinical conditions. Component tests, component drawings, design history file, design review, and any master device record updated and verified. Production technology demonstrated through production-scale plant qualification.

For 510(k), component tests, component drawings, design history file, design review, and any master device record updated and verified. Manufacturing facility ready for quality system inspection.</td></tr>
<tr><td>TRL 6 DECISION CRITERION Data from the initial clinical investigation demonstrate that the Class III device meets safety requirements and supports proceeding to clinical safety and effectiveness trials.

For a 510(k), information and data demonstrate substantial equivalency to predicate device and support production of the final prototype and final testing in a clinical environment.</td></tr>
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TRL 7 Definition: System prototype demonstration in an operational environment.	
Prototype near or at scale of planned operational system. Represents a major step up from TRL 6, requiring the demonstration of an actual system prototype in an operational environment,	Clinical safety and effectiveness trials conducted with a fully integrated Class III medical device prototype in an operational environment. Continuation of closely controlled studies of effectiveness, and determination of short-term adverse events and risks associated with the candidate product. Functional testing of candidate devices completed and confirmed, resulting in final down-selection of prototype device. Clinical safety and effectiveness trials completed. Final product design validated, and final prototype and/or initial commercial scale device are produced. Data collected, presented, and discussed with FDA in support of continued device development. For a 510(k), final prototype and/or initial commercial-scale device are produced and tested in an operational environment
	TRL 7 DECISION CRITERION: Clinical endpoints and test plans agreed to by FDA. For a 510(k), information and data demonstrate substantial equivalency to predicate device and use in a clinical environment, and support preparation of 510(k).
TRL 8 Definition: Actual system completed and qualified through test and demonstration	
Technology has been proven to work in its final form and under expected conditions. In almost all cases, this TRL represents the end of true system development.	Implementation of clinical trials to gather information relative to the safety and effectiveness of the device. Trials are conducted to evaluate the overall risk-benefit of using the device and to provide an adequate basis for product labeling. Confirmation of quality system compliance, the design history file, design review, and any master device record, are completed and validated, and device production followed through lot consistency and/or reproducibility studies. Pre-premarket approval meeting held with FDA. Premarket approval (PMA) prepared and submitted to FDA. Facility pre-approval inspection completed. For 510(k), prepare and submit application
	TRL 8 DECISION CRITERION: Approval of the PMA [or, as applicable, 510(k)] for device by the FDA.
TRL 9 Definition: Actual system proven through successful operations.	
Actual application of the technology in its final form and under mission conditions. In almost all cases, this is the end of the last 'bug fixing' aspects of true system development.	The medical device may be distributed/marketed. Post-marketing studies (nonclinical or clinical) may be required and are designed after agreement with the FDA. Post-marketing surveillance.
	TRL 9 DECISION CRITERION: None – continue surveillance.

Appendix II: Criteria for Full Proposal Evaluation

Criterion	*An ideal project will:*
Market Potential	Demonstrate or test a product for which there is a substantial worldwide market and a realistic strategy for market entry
Economic Benefit for Alberta	Generate substantial long-term economic activity, employment and revenue for an Alberta-based company
Team	Be driven by a team with relevant expertise and experience, and have a strategy to procure and integrate any missing expertise
Commercialization Strategy	Be integrated into a realistic commercialization plan with a clear end goal
Project Plan	Present a clear plan to advance the technology towards a marketable end product, while reducing risk at specific milestones and linked to realistic timelines and (financial) resources