2016

MINISTRY OF HEALTH
SINGAPORE

Enabling Innovation Grant

National Innovation Challenge (NIC) on Active and Confident Ageing

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Organised by:

Ministry of Health Singapore (MOH)

Supported by:

National Research Foundation (NRF)

Ministry of Social and Family Development (MSF)

Agency for Integrated Care (AIC)

CONTENTS

IMPORTANT NOTICES

1.1   For the avoidance of doubt, this Public Document for the Enabling Innovation Grant shall be read with and shall be subject to the important notices as set out in Annex A.

INTRODUCTION

2.1   Our population will age rapidly over the next two decades. The number of seniors aged 65 and above who are semi-ambulant or non-ambulant will increase. Hence, more seniors will require assistive devices (e.g. mobility aids) to help them live autonomously and achieve ageing in place by overcoming disabilities and improving their ability to perform daily functions. Without effective assistive devices, these seniors may require more care and be institutionalised earlier. Through research, we seek to improve seniors' access to appropriate assistive devices, so that they can remain independent and age in place successfully.

OBJECTIVES

3.1   The Enabling Innovation Grant under the NIC is organised by the Ministry of Health (MOH) and supported by the **National Research Foundation (NRF), Ministry of Social and Family Development (MSF) and the Agency for Integrated Care (AIC)**.

3.2   The Enabling Innovation Grant aims to develop innovative, game-changing solutions that are (i) affordable, (ii) of high usability, (iii) safe and (iv) effective for seniors, to improve seniors' function and enable seniors to remain active, independent and age in place despite disability. We are looking for innovative ideas or translational prototypes that can potentially demonstrate a step improvement in outcomes as compared to products in the market today. Research that focuses on re-branding, working with a combination of current products are not likely to be selected.

CHALLENGE STATEMENT

4.1   Applicants forming Project Teams can submit more than one Application and the Application should be in response to the challenge statement. However, a Project Team will only be awarded Funding for one Research project.

4.2   The challenge statement to Project Teams is to:

Develop innovative solutions that can **achieve step improvements of at least 50% compared to baseline measurements of effectiveness and / or cost,** to enable seniors to age autonomously despite their disability. All assistive devices or new models of assessment should address the needs of seniors **while being easy to use, safe and effective**.

4.3   Potential Research may include, but shall not be not limited to, (a) improvements, redesign or use of new materials to enhance the capabilities of assistive devices, customisability and/or reduce overall costs of current assistive devices without compromises to quality and safety, (b) development of new assistive devices, (c) adaptations of technology from adjacent industries or emerging economies that can be translated into or prototyped as assistive devices or (d) new models of cost-effective assessment of seniors' functional status and need for assistive devices.

4.4   For avoidance of doubt, the words and expressions in the challenge statement shall have the meanings assigned to them as follows:

"Step improvements"	Means improvements of 50% or more from baseline measurements of physical ability, function, waiting time for prescription/diagnosis etc. This improvement must support the key performance indicator (KPI) that the Project Team has decided to track.
"Effectiveness"	Means either (i) the ability of the proposed device in improving function or (ii) the accuracy of the model of assessment in the diagnosis of need, and prescription of, an assistive device.
""Cost"	Means holistic view of the overall cost of an assistive device, including but not limited to the assessment (i.e. diagnosis / prescription of assistive devices) costs, retail price, costs of production, supply, maintenance, repairs, training and/or customisation.

GUIDELINES AND CONSIDERATIONS

5.1   Project Teams must be willing to collaborate with the Grantor or Grantor's Affiliates to ensure that proposed solutions are flexible, extensible and based on open data standards used by organisations in Singapore. This is to facilitate future enhancements, information exchange and backend integration of services and functionality, to both existing and future systems.

ELIGIBILITY

General Eligibility

6.1   The Enabling Innovation Grant is open to all public, private or non-profit institutions, including healthcare providers, research institutes and institutes of higher learning (IHLs)**.** There are no restrictions on nationality for individuals, but the entity they represent must be registered in Singapore either through the setting up of a local equivalent of the entity in Singapore or through a consortium with Singapore-registered entities in order for the entity represented to be eligible.

Project Team Composition

6.2   Applicants for the Enabling Innovation Grant are required to form a Project Team comprising:

a) Members from multi-disciplinary (e.g. pairing medical and technology, engineering) backgrounds; and

b) An Implementation Partner (e.g. a manufacturer, distributor or end-users for the proposed device or a provider for the proposed model of assessment) to test-bed the proposed solutions.

6.3   There is no restriction on the number of Institutions, Investigators and Collaborators in each Project Team.

6.4   Applicants are expected to form their own Project Teams to participate in the Enabling Innovation Grant. The Grantor reserves the right to disqualify or reject any Project Team at any time in the event of the withdrawal of any Institution, Investigator or Collaborator from the Project Team.

Lead Principal Investigator or Project Team Lead

6.5   Each Project Team must appoint a Lead to oversee and coordinate the implementation of the Research during the funding period of the Research.

6.6   The Lead will serve as the primary point of contact with the Grantor for the purpose of the NIC. The Lead shall make all reasonable efforts to ensure that all Institutions, Investigators and Collaborators in the same Project Team are informed of all matters relating to the Grant.

6.7   The Lead must reside in Singapore for at least six (6) months in each calendar year over the duration of the funding period of the Research.

Host Institution

6.8   Project Teams shall identify a Host Institution. If awarded the Grant, the Host Institution shall receive the Funding on behalf of the Project Team. The Host Institution shall in turn make funding arrangements with the other Partner Institutions.

SUPPORT AND FUNDING

Project Funding

7.1   Institutions may qualify for funding of **up to 80% of total approved qualifying costs** to develop and implement their Research for a period of up to three (3) years, with the possibility of extension for another one (1) year with no additional funding from the Grantor. Collaborators are not entitled to receive (directly or indirectly) any or any part of the Funds, whether in cash or in the form of Assets acquired using the Funding or otherwise. Approved qualifying costs include:

a)   **Developmental costs**: These may include costs related to new equipment, IT software, manpower and training that are assessed prior to the implementation of the Research, and necessary to operationalise and evaluate the Research. Other developmental costs will be assessed on a case-by-case basis.

b)   **Operating costs**: These include incremental manpower cost, engagement of services, travelling and transport and minor assets including medical equipment that are assessed to be necessary to operationalise and evaluate the Research.

7.2   Project Teams may refer to the Funding Guide for the National Innovation Challenge on Active and Confident Ageing available for download from the National Medical Research Council (NMRC) webpage at (http://www.nmrc.gov.sg/content/nmrc_internet/home/grant-navigation/competitive-research-grants/national-innovation-challenge-on-active-and-confident-ageing.html) for more information on Funding. The actual funding quantum for selected Research will be determined upon assessment of the impact and scope of the Research.

7.3   Support for indirect costs, on top of supportable qualifying direct costs, is capped at 20% of the supportable qualifying direct costs. Only Singapore-registered Institutions that are IHLs or not-for-profit entities, including public healthcare providers, may qualify for support for indirect costs.

7.4   Funding will be provided in phases, subject to the successful attainment of Milestones and KPIs tied to each phase, as described in the table below:

	Design Phase	**Development Phase**	**Implementation Phase**
	Proof-of-Concept	**Proof-of-Value**	**Test-bedding**
Description	To articulate the concept of the programme / service / prototype and the process by which to achieve stated outcomes To provide studies and analysis that support the concept's viability for further development.	To develop and validate the programme / service / prototype so that it takes on a clearer form to achieve the intended outcomes.	To test and validate the programme / service / prototype in the field (a relevant environment) May include initial production and roll-out.
Requirements	N.A.	Successful attainment of KPIs and Milestones under the Design Phase. Proof-of-concept shows promising results and clear validation plan for proposed programme/service/ prototype through a pilot.	Successful attainment of KPIs and Milestones under both the Design and Development phases. Validated pilot programme/service/ prototype before field test-bedding.
Time Period	Three years, with the possibility of an extension for another one (1) year. Project Teams will have the flexibility to decide the time allocated to each phase. **The Implementation Phase should last for at least one year.**		

7.5   Project Teams are required to track <u>two mandatory KPIs pre and post implementation</u> of its solutions in the Implementation Partner as described in clause 8.8(d) below.

7.6   Project Teams are to demonstrate clear outcomes for the Proof of Concept and Proof of Value stages before proceeding to the Test-bedding stage. Project Teams who fail to do so will not receive funding support for the Implementation Phase (or Test-bedding stage) of the Research.

7.7   All Research must be conducted in Singapore and Funding shall not flow out of Singapore to support overseas entities, including Collaborators.

7.8   The relevant Project Teams will be notified by the Grantor if they are shortlisted for the award of the Grant. Funding shall be granted subject to the mutual agreement

between the relevant Project Teams and the Grantor on the terms and conditions of the Grant as set out in a Letter of Award.

7.9   Funding will be administered and reimbursed through the NIC(PO).

APPLICATION SUBMISSION

Overview of Application Submission

8.1   Applications will be submitted through a **two-stage process**, as follows:

    a)   Project Abstract.   Project Teams shall first submit an abstract of their Research, using the "Project Abstract Submission Template" that can be downloaded from the NMRC webpage at (http://www.nmrc.gov.sg/content/nmrc_internet/home/grant-navigation/competitive-research-grants/EnablingInno.html). Project Teams shall furnish all necessary information and documents as required in the template. Two hard copies of the Project Abstract and any supporting documents should reach the Grantor **no later than 22 January 2017 at 5:00pm**. All Project Abstracts received will be preliminarily assessed for compliance with the eligibility criteria and scope. Shortlisted eligible Project Teams will be asked to flesh out their Research in greater detail for the second stage.

    b)   Project Proposal.   The Grantor will invite the respective Leads of shortlisted Project Teams via email to submit their detailed Project Proposals using the "Project Proposal Submission Template" that will be emailed to them. Project Teams shall furnish all necessary information and documents as required in the template. Two hardcopies of the Project Proposal and any supporting documents should reach the Grantor no later than the deadline stated by Grantor in the invitation email. Project Teams shall furnish any other additional information and documents which may be requested by the Grantor, within the deadline set by the Grantor.

8.2   All submissions to the Grantor must be clearly marked as "Enabling Innovation Grant - National Innovation Challenge (NIC) on Active and Confident Ageing", and delivered or mailed to:

National Innovation Challenge (NIC) on Active and Confident Ageing
Programme Office
Ministry of Health
College of Medicine Building
16 College Road Singapore 169854

8.3   In addition to submitting hard copies as provided above, Project Teams shall email soft copies of their Project Abstract and Project Proposal to NIC_Ageing@moh.gov.sg by the respective deadlines.

8.4   The Grantor reserves the right to reject Applications, or parts thereof, which have been submitted late.

Project Abstract

8.5   Project Abstracts should include, but shall not be limited to, the following:

- Objective(s) of the Research;
- Literature review and the evidence/basis for the Research;
- Key components and innovations of the Research;
- How the Research could address the challenge statement;
- Summary of the implementation plan, timelines and Milestones of the Research; and
- Summary of the evaluation framework and KPIs to track for the Research.

8.6   The length of the Project Abstract should not be longer than 5 pages (excluding supporting documents).

Project Proposal

8.7   Project Proposals should include, but shall not be limited to, the following:

- Objective(s) of the Research;
- Summary of supporting evidence from the literature review for the intended objective(s) and/or solution(s) of the Research;
- Description on the key components and innovations of the Research and how the Research could address the challenge statement, including computations on KPIs;
- Detailed Research phases, including a detailed implementation plan, timelines and milestones for the Research;
- Detailed evaluation framework and KPIs to track for the Research;
- Safety considerations[1] of the proposed solution;
- Effectiveness, cost and usability of the proposed solution;
- Estimated costs to or fees/charges payable by client, if any;
- Required funding for the Research;
- Challenges in Research design;
- Discussion on key assumptions of the Research; and

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[1] Project Teams should note that Projects deemed to be unsafe would be disqualified.

- IP declaration.

8.8   Additional guidance on completing Applications are as follows:

a) <u>Roles and Responsibilities</u>.   The roles and responsibilities of every Institution, Investigator and Collaborator must be clearly specified. Specifically, Project Teams are to articulate which Institution, Investigator or Collaborator will be in charge of tracking outcome measures, ensuring safety and well-being of persons involved in any activity conducted in relation to the Research and administering of the Funding if awarded.

b) <u>Proposed solution</u>.   Project Teams are expected to articulate in detail their proposed solution and will be expected to test-bed the proposed solution at the implementation phase if awarded the Grant. They will also be expected to ensure the safety and well-being of persons involved in any activity conducted in relation to the Research is not compromised in any manner whatsoever. The Project Teams must ensure that all potential human subjects are assessed by a qualified assessor if necessary, e.g. allied health professional, registered nurse or doctor, to determine the need for and suitability of the prototype (if applicable) before the subjects would use the prototype. Project Teams should also take into consideration all applicable laws, including the Human Biomedical Research Act, the Health Products Act, Health Products (Medical Devices) Regulations [2], Allied Health Professionals Act and the Medical Registration Act to ensure that their proposed designs are in line with regulatory requirements. The Project Teams shall remain accountable for the safety and quality of care of human subjects during the course of the Research and be responsible for the submission of any applications required for ethics approval, if necessary.

c) <u>Implementation Plan</u>.   Project Teams are required to describe all implementation activities, stages, Milestones and targets.

d) <u>Computation of KPIs</u>. Project Teams are required to state the baseline and target KPIs by phases as elaborated in clause 7.4 above based on the following indicators.

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[2] Project Teams may refer to the following website for more information relating to medical devices regulations by HSA: http://www.hsa.gov.sg/content/hsa/en/Health_Products_Regulation/Medical_Devices/Overview.html

Project Teams are to respond to KPI 1 <u>or</u> KPI 2. KPI 3 is mandatory.	
KPI 1	**Function or Effectiveness**
Project Teams to address the applicable KPI	Device: a. <u>Effectiveness in overcoming disability</u>. **Physical health or function of seniors is improved**, such that functional capability of the senior is improved e.g. through improved stability or lower burden on the body resulting in better gait or posture or being able to hear the end ranges of audible frequencies better; **OR** Model of Assessment: b. <u>Better assessment</u>. The new model of assessment deployed for the prescription of assistive devices would provide (i) **shorter waiting time** and (ii) **improved accuracy in diagnosis and/or prescription** as compared to existing models.
KPI 2	**Costs**
	c. <u>Affordability and market viability.</u> Project Teams must demonstrate a reduction in costs, including detailed estimations to show (i) anticipated retail price, (ii) reduction in the need for specialised manpower for prescription, (iii) costs for replacement parts etc. Project Teams should also provide an analysis of the market viability of the device (if applicable).
KPI 3	**Usability**
Mandatory	d. <u>Satisfaction / likelihood of adoption.</u> Project Teams must demonstrate that seniors are **more satisfied with and/or more likely to use** the proposed solution. Project Teams could also consider relevant indicators such as quality of life or improvement in attitudes of seniors towards use of assistive devices to measure this KPI.

e) <u>Budget</u>. Project Teams are required to articulate the **total required resources and budget** to implement their Research. Qualifying costs include developmental costs as described in clause 7.1(a) and operating costs as described in clause 7.1(b). Project Teams must ensure accuracy and prudence in budgeting. The Grantor shall not be obliged to consider any requests for additional funding in the event that the Project Teams failed to exercise due diligence in budgeting.

f) <u>Declaration of IP</u>. Project Teams are required to disclose and describe any Background IP (whether owned by an Institution, Investigator, Collaborator or a third party) mentioned in the Application. The information to be disclosed shall include the type of IP (e.g. patent, copyright, confidential

information), the IP owner, whether the IP has been registered or is pending registration, and whether the IP is commercially available off-the-shelf or whether the IP must be customised for use for the Research.

Other Things to Note

8.9   All information submitted pursuant to the Enabling Innovation Grant including supporting technical data and applicable documentation must be in the English language.

8.10   The following Applications will be rejected:

   a) Incomplete Applications, e.g. missing literature review, missing documents, missing signatures, sections left blank and missing CVs, etc.; and
   b) Inappropriate submission template used.

8.11   Project Teams should ensure that all information contained in the Applications and any other information submitted to the Grantor relating to the Enabling Innovation Grant is complete, accurate and not misleading. The Grantor reserves the right to reject any requests for additional funding or any changes in the Research or requested funding after the Project Proposal has been submitted to the Grantor.

EVALUATION AND AWARD

Evaluation

9.1   Applications will be evaluated by an evaluation panel comprising evaluators from multidisciplinary backgrounds, including representatives from MOH, Ministry of Social and Family Development (MSF) and the Agency for Integrated Care Pte Ltd (AIC).

9.2   Shortlisted Project Teams may be required to present their Research (at their own cost and expense) and answer questions from the evaluation panel. Details on the requirements, date and time of the presentation (if any) will be released to the shortlisted Project Teams at a later date.

9.3   The criteria listed below shall be used for the evaluation of the Applications. **Applications will not be scored further if the Research is deemed to be unsafe**:

Component	Evaluation Criteria
Grant Requirements	• Proposal submission • Locally-based Research & Lead • Project Team composition • Address challenge statement
General	• Background of Lead • Track record • Safety
Impact and Outcomes	• Effectiveness of the proposed solution; OR • Cost-effectiveness, market viability of proposed solution and proposed cost to clients; AND • Usability of the proposed solution
Innovativeness	• Innovativeness of proposed solution
Implementation	• Project feasibility and adoption in the local context • Clear implementation plans in implementation phase stage • Reasonableness of funding request

9.4   The evaluation panel reserves the right to reject any or all Applications submitted for the Enabling Innovation Grant, without being obliged to give any reason thereof.

Moderation

9.5   Where an Application is selected by the evaluation panel for consideration for award, the Project Team, through the Lead and Host Institution, will be notified. The terms of the Research, Milestones, KPIs and Funding quantum may be adjusted by the Grantor in agreement with the Project Team.

Award

9.6   The final decision to award the Grant will be made by the Grantor on the evaluation panel's recommendation. The Grantor and the evaluation panel shall not be obliged to enter into any correspondence with any Institution, Investigator or Collaborator regarding reasons for non-acceptance of an Application.

Progress and Final Reports

9.7   Awarded Project Teams will be required to submit to the Grantor annual progress reports as stated in the Letter of Award in relation to all Research-specific KPIs, the progress of the Research implementation and any challenges that may impede progress.

9.8   Awarded Project Teams will also be required to submit a final report at the end of the funding period of the Research detailing the learnings made and whether the Research has met the desired outcome of the challenge statement.

IMPORTANT DATES TO NOTE

10.1   The timeline for key activities under the Enabling Innovation Grant is set out below.

Activity	Date
Call for Applications	21 November 2016 (Mon)
Public Briefing	1 December 2016 (Thurs)
Deadline for Project Abstract Submission	23 January 2017 (Mon)
Deadline for Submission of Project Proposal	3 April 2017 (Mon), or as otherwise specified by the Grantor in the invitation email
Evaluation and Moderation Process	April 2017 – July 2017
Announcement of Results	2nd half of 2017

CONTACT DETAILS

11.1   Any enquiries regarding the NIC and/or the Enabling Innovation Grant should be emailed to NIC_Ageing@MOH.gov.sg.