Grant Call on Frailty

National Innovation Challenge on Active and Confident Ageing

Public Briefing

25 Apr 2022

House Rules

Please take note of the following house rules:
1. Ensure that your microphones are <u>muted</u> during the session.
2. During the Q&A session, participants should click on the raise hand icon within the Zoom application to raise their questions. The moderator will select and invite the participant to raise his/her question.
3. The moderator will invite the participant to unmute the microphone to pose his/her question. Kindly mute your microphone after speaking please.
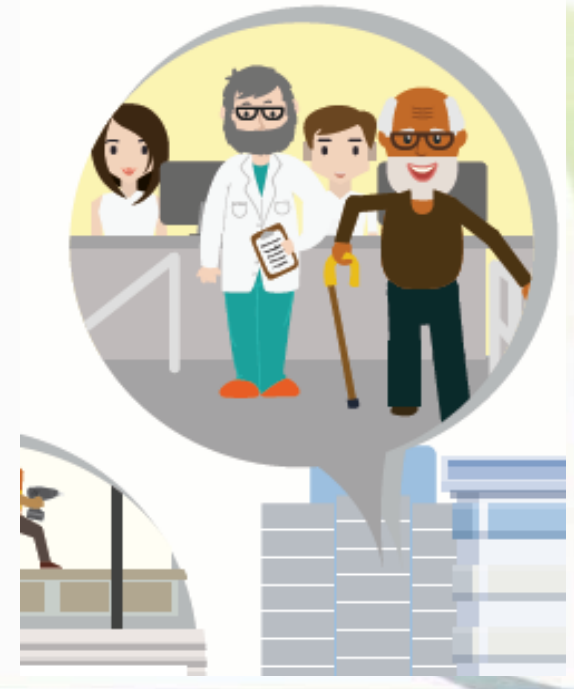
Outline

- **National Innovation Challenge on Active and Confident Ageing**

- **Grant Call on Frailty**
  - Objectives
  - Challenge Statements
  - Eligibility
  - KPIs
  - Broad Evaluation Criteria
  - Funding
  - Application Process
  - Timeline

- **Q&A**

National Innovation Challenge on Active and Confident Ageing

- The National Innovation Challenge (NIC) on Active and Confident Ageing was announced by Minister for Health and Chairman of the Ministerial Committee on Ageing as part of the Action Plan for Successful Ageing on 26 August 2015

- The NIC seeks to **catalyse innovative ideas and research** in Singapore that can **transform the experience of ageing** in Singapore.

- We have launched a total of 8 thematic grant calls across a variety of ageing-related topics:
  - Home care, Cognition, Ageless workplaces, Assistive devices, Healthy ageing, Falls prevention, Chronic disease management, and Caregiving ecosystem

More research into ageing issues:
- Up to $200 million set aside for a **National Innovation Challenge** to catalyse research related to ageing.

Importance of addressing Frailty

*"A clinically recognisable state in which the ability of older people to cope with every day or acute stressors is compromised by an **increased vulnerability brought by age-associated declines in physiological reserve and function across multiple organ systems. "***

Frailty is a pressing concern for the ageing population:

- There is increasing prevalence of frailty among our senior population (at least 35% and 5% of the senior population are pre-frail and frail respectively across the primary domains of physical, mental and social wellness[1]).

- Frailty is associated with an increased likelihood of reporting mortality, disability and poor quality of life compared to well seniors , and consequently higher healthcare utilization.

However, studies have also shown that frailty can be preventable, treatable, and reversible.

- Evidence has shown that early detection of frailty could enable proactive care, and therefore delay or reduce functional decline, enhance quality of life, and reduce healthcare costs.

[1]Merchant, R. A., Chen, M. Z., Tan, L., Lim, M. Y., Ho, H. K., & van Dam, R. M. (2017). Singapore Healthy Older People Everyday (HOPE) Study: Prevalence of Frailty and Associated Factors in Older Adults. Journal of the American Medical Directors Association, 18(8), 734.e9–734.e14. https://doi.org/10.1016/j.jamda.2017.04.020

Objectives of the grant call on Frailty

- The grant call aims to catalyse research that deepens and validates our understanding of the **multi-professional and multi-dimensional aspects of frailty**.
  - E.g. Multi-domain interventions (e.g. mix of physical, social and behavioural components) targeting sub-groups such as malnourished populations, were found to be more effective in preventing and/or delaying frailty and enhancing adherence to interventions*

- We are looking to support research projects in the areas of:
  a) Studying frailty epidemiology (i.e. progression of frailty, transition from different stages of frailty);
  b) Behavioural factors that promote positive mindset shifts (e.g. increased adherence to frailty interventions or lifestyle changes) among seniors.
  c) Develop novel detection tools, as well as interventions targeting pre-frail/frail elderly people to delay frailty and improve health outcomes

- These interventions and solutions should be **effective, scalable, cost-effective and harness the use of technology** as far as possible

*Scoping review on Frailty Interventions by Geriatric Education & Research Institute

Challenge Statements
(Teams will choose at least 1 of the 3 statements highlighted below)

#1

*To **leverage technology (e.g. artificial intelligence or wearables) to enhance the understanding of multi-dimensional frailty.***

*The findings should further support the **projection of trajectories and outcomes of the population across the frailty spectrum, as well as the development of interventions to improve/delay frailty conditions.***

#2

*To **develop integrated detection and intervention strategies to delay or reverse the progression of frailty** in various social and health care settings, including the community and primary care.*

*The solutions should achieve better outcomes as compared with current approaches, **in terms of improving the well-being of seniors, better adherence to interventions <u>and</u> reducing disability, hospitalisations, healthcare utilisation or mortality rates by at least 25%.***"

#3

*To **leverage technology and/or behavioural science to improve awareness of pre-frailty, and provide nudges which promote lifestyle modifications and improve adherence to interventions by at least 50%, in a sustainable and scalable manner.***
The findings should identify ideal assimilation processes for specific archetypes/target groups that inculcate adherence and help seniors recognise the value behind the recommended interventions in helping maintain their capacity and independence.

Eligibility

- Open to **teams representing public and/or private sector institutions across all disciplines. Individuals are not eligible to apply**. While there is no restriction on the nationality of members in the project team, the entity represented must be legally registered in Singapore. Consortiums with Singapore-registered entities are also eligible to apply.

- Project teams are to identify a 'Host Institution' from any local public institution for the administration of the Research including the receipt of funding.

- A PI can submit **only one application**. However, he/she may be part of the Project Team of other proposal applications.

Eligibility - Project Team Composition

- Project teams are required* to:
  - Collaborate with **at least one healthcare cluster** <u>and</u> **at least one community partner** in the development and implementation of their project. The partners will need to be identified and included in your proposals.
  - Include **at least one technical partner** if your cluster and community partner do not have the relevant expertise (e.g. expertise in the technology solution that the team is planning to provide).

- Applicants are expected to **form their own partnerships**.

- Project teams are also recommended to obtain letters of support for implementation of the proposed solution from industry, community partners or public agencies.

- **No restriction** on the number of Institutions, Investigators and Collaborators in each Project Team. However, each healthcare cluster, community partner and technical partner must be represented by a team member i.e. Co-Investigator(s) or Collaborator(s).

At the time of application, PI will need to identify in IGMS whether the implementation partner would be a Co-I or Collaborator.

Eligibility - Project Team Composition

- Applicant applying as **Principal Investigator** is required to fulfil the following criteria at the point of application:

  - Holds a primary appointment in a local publicly funded institution and salaried by the institution.

  - PIs should have PhD or MD/MBBS/BDS qualifications. (Exceptions would be made on a case-by-case basis).

  - Is an independent PI with a demonstrated track record of research, as evidenced by the award of nationally competitive funding (international funding to be considered on a case by case basis), substantial publication record in the past 3 years, or PI status in research institutes.

  - Has a laboratory or research program in Singapore

  - Holds a minimum of 9 months employment (per calendar year) with local Singapore institution(s). Upon award, the PI must agree to fulfil at least 6 months of residency in Singapore for each calendar year over the duration of the grant award.

  - Has no outstanding reports from previous BMRC, NMRC grants, and other national grants.

  - For proposals involving patients, the PI should be SMC registered; or should be able to demonstrate ability to access patients through SMC registered Co-Is or collaborators.

Eligibility - Project Phases

Projects are required to have four phases: **Proof of Concept** (POC), **Proof of Value** (POV), **Test-Bedding** and **Scale-Up.** Beyond a minimum of two years for the Test-Bedding and Scale-Up phases, Project Teams will have the flexibility to decide the time allocated to each phase.

Design phase (Proof-of-concept)

Project Teams are to articulate the concept of the prototype solution and the process by which to achieve stated outcomes. Project teams should also provide studies and analyses that support the concept's viability for further development where appropriate.

Development phase (Proof-of-value)

Project Teams are to develop and validate the prototype solution so that it takes on a clearer form to achieve the intended outcomes.

Implementation phase (Test-bedding)

In this phase, Project Teams are to first test and validate the prototype solution in the field on end-users.

Scale-Up phase (Deployment)

Project Teams are to refine and roll-out the validated solution in multiple sites or settings, to serve a broader population of end-users and assess operational sustainability and cost-effectiveness.

Eligibility - Proposal Submission

- Interested applicants are to submit a **Letter of Intent (LOI)** covering the following areas:

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

- Shortlisted LOIs will then be invited to submit a full proposal.

Eligibility - Proposal Submission

- Proposals should include **detailed implementation and scale-up plans involving the cluster, technical and community implementation partner(s).** Project Teams should specify the target group for the proposed solution, such as pre-frail, frail or specific sub-groups (e.g. malnourished, sarcopenic obese populations).

- The proposal should also **address barriers to technological adoption** of the solution/intervention, and consider the **feasibility, scalability and sustainability** of the solution/intervention.

- The Host Institution is required to obtain the **endorsement of the <u>full proposal</u>* by the Deputy Group CEO/Deputy CE-level and above, that:**

    a) The cluster's leadership will **provide the necessary support** for the project; and

    b) To the best of their knowledge, the **project does not duplicate other efforts** that the cluster is taking on for frailty.

Although Letter of Endorsement is only required during the submission of full proposal, we encourage project teams to check-in with clusters early during the drafting of LOI, to ensure that cluster is supportive of the overall direction of the proposal.

Mandatory KPIs (1)

Key Area	KPI
KPI 1: Impact	Project Teams are to demonstrate that the research study and intervention programmes are effective and/or contribute to the overall well-being of seniors. Possible KPIs could include: • Development of projections or modelling of the trajectory and outcomes across the frailty spectrum in Singapore • Effectiveness of detection and intervention strategies to delay or reverse frailty progression • Improvement in functional ability, intrinsic capacity and quality of life as measured by appropriate tools (e.g. improvement in frailty scores - Fried's Criteria/ Clinical Frailty Scale (CFS)/ FRAIL Scale • Reduction of disability, hospitalisations, healthcare utilisation or mortality rates by at least 25% • Improvement in adherence to interventions by at least 50%

Mandatory KPIs (2)

Key Area	KPI
KPI 2: Cost-Effectiveness	Project Teams are to demonstrate that the proposed intervention or solution is <u>cost-effective as compared to existing solutions and interventions or the standard of care</u>.
KPI 3: Quality	Project Teams are to propose <u>at least three client KPIs</u> to track. Possible client KPIs can include: • Acceptability by target population • Adherence to programme / behavioural change • Reduction in hospitalisation/ institutionalisation • Reduction in disability • Reduction in mortality

Broad Evaluation Criteria

Component	Evaluation Criteria
Grant Requirements	• Proposal Submission • Locally-Based Project & Lead Principal Investigator • Team Composition • Address Challenge Statement
General	• Expertise and Ability of the Lead Principal Investigator and the team to carry out the proposed research project
Scientific Merit	• Address an important problem to yield significant results • Appropriate study design and sound basis for the intervention • Robust methodology and analyses • Advances scientific knowledge, technical capability, and the standard of care
Impact and Outcomes	• Impact • Cost-effectiveness of the proposed solution • Proposed outcomes / KPIs • Scalability and sustainability of proposed solution
Innovativeness	• Innovative features of the proposed solution, and why are they deemed innovative
Implementation	• Project feasibility and adoption in the local context • Reasonableness of funding request

Project Funding

- Awardees may qualify for **full funding support of approved qualifying costs** to develop and implement their Research for a period of **up to five years, with the possibility of extension for up to 6 months** (with no additional funding).

- Private entities that are part of the Project Team will be funded at up **to 70% of supportable direct costs,** in line with NRF's funding guidelines**.**

- Support for indirect costs, on top of supportable qualifying direct costs, is **capped at 20% of direct costs**. **Only Singapore-registered Institutions that are institutes of higher learning (IHLs) or non-profit entities, including public healthcare providers, may qualify for support for indirect costs**.

- Funding will be provided on a reimbursement basis, to be claimed via the Integrated Grant Management System (IGMS).

Explanation of Costs

- In general, qualifying costs are **direct costs** that are required to **execute or implement the project**, and are held **accountable to the performance** of the particular Research. These include,

  - o Expenditure of Manpower (EOM);
  - o Equipment (EQP);
  - o Overseas Travel (OT) and
  - o Other Operating Expenses (OOE)

- **Indirect costs** are those that are **incurred for common or joint objectives** and therefore cannot be identified readily and specifically with a particular Research, but contribute to the ability of the Host Institution to support the Research. Examples include,

  - o General administration and general expenses (eg. provision of research space)
  - o Operation, maintenance, utilities, rental and departmental administration expenses

Applying via Integrated Grant Management System (IGMS)

- The following files will be available for download from the NMRC (www.nmrc.gov.sg) and IGMS (https://researchgrant.gov.sg) websites:
  - IGMS Application Guide
  - Public Document and Application Guide
  - README document
  - (i) Proposal, (ii) CV, (iii) Other Support and Annexes and (iv) Declaration and Additional Info Templates (these must be completed and attached in your IGMS application)
  - Prevailing Terms and Conditions
- To submit an application on IGMS, PIs are required to obtain a CorpPass from your institution and this will be used to access/log in IGMS. For more information on how to register your institution's representative as a CorpPass admin or obtain a CorpPass, please visit www.corppass.gov.sg.
- If this is the first time your institution/organisation is creating an institutional account with IGMS, please email the Grant Manager (Tricia_Teo@moh.gov.sg) **at least two weeks before the submission deadline** with the following details:
  - -   Full Name of Company:
  - -   Local Company / Foreign Company:
  - -   Public Company / Private Company:
  - -   UEN (for Local Company) / Unique Identifier (for Foreign Company):

  The Grant Manager will inform you of the next steps.

Applying via Integrated Grant Management System (IGMS) – cont'd

- For the submitted application to route to NICPO by the deadline of submission, Project Team must identify a Host Institution Office of Research (HI ORE) with the following roles set up on IGMS:
  - Host Institutional Director of Research (HI DOR)
  - Host Institution Office of Research (HI ORE)

- The PI should submit only <u>one</u> application on behalf of the Project team **using the templates available on the IGMS** and upload these documents to the relevant sections in IGMS:
  - Research proposal
  - CV template (PI, Co-I/Collab)
  - Other Attachments Template (Signatories and Other Support)

- It is **mandatory** for all applications to be submitted *online via* IGMS by **30 May 2022, 5pm**. Please ensure that all online submissions are **endorsed by the corresponding host institution's Research Director by the closing date.**

Additional Guidance (1)

Roles and Responsibilities

- The roles and responsibilities of every Institution, Investigator and Collaborator must be clearly specified.

Proposed Solution(s)

- To articulate in detail the proposed solution and how it can achieve the targeted outcomes/KPIs.
- Project Teams will be expected to test-bed the proposed solution at the implementation phase if awarded the Grant.

Implementation Plan

- Project Teams are required to describe all implementation activities, stages, Milestones and targets.

Additional Guidance (2)

Ethics Consideration

- Expected to ensure the safety and well-being of persons involved in any activity conducted in relation to the NIC is not compromised in any manner whatsoever.

- 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.

- Take into consideration all applicable laws, including the Human Biomedical Research Act, the Health Products Act, Health Products (Medical Devices) Regulations , Allied Health Professionals Act and the Medical Registration Act to ensure that proposed designs are in line with regulatory requirements.

Timeline

Activity	Date
Public Briefing	25 Apr 2022
Launch of Grant Call and Submission of LOI	29 Apr – 30 May 2022
Call for Submission of Full Proposals for Shortlisted LOIs	~Jul – Aug 2022
EP Meeting and Interview with Project Teams	Nov/Dec 2022
Announcement of Results	Dec 2022

For enquiries, please email
NIC_Ageing@moh.gov.sg

We look forward to receive your application!