MINISTRY OF HEALTH
SINGAPORE

Enabling Innovation Grant

National Innovation Challenge on Active and Confident Ageing

Public Briefing
1 Dec 2016

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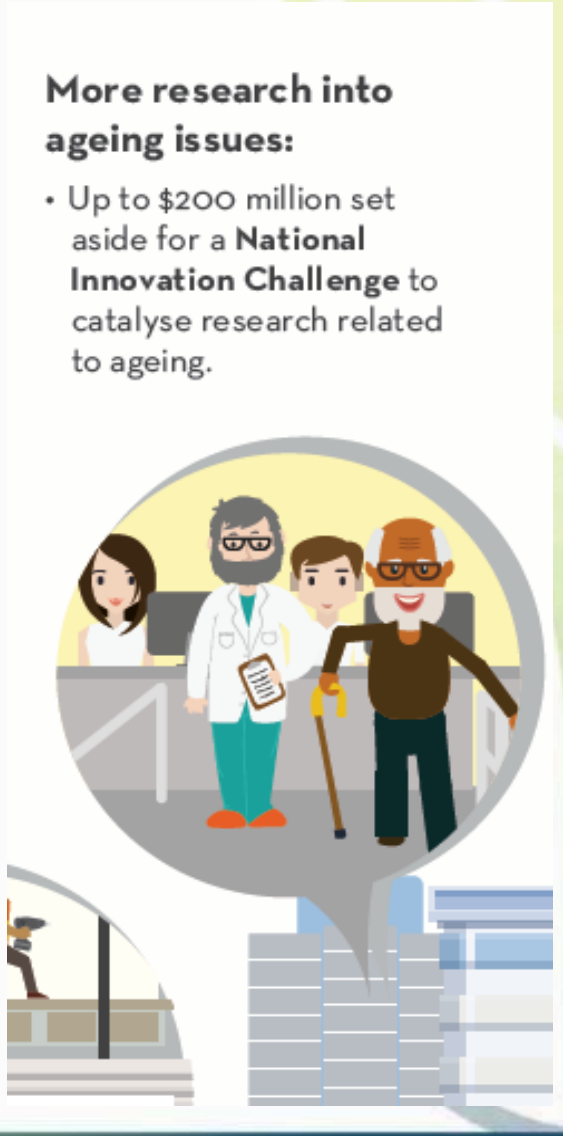
National Innovation Challenge on Active and Confident Ageing

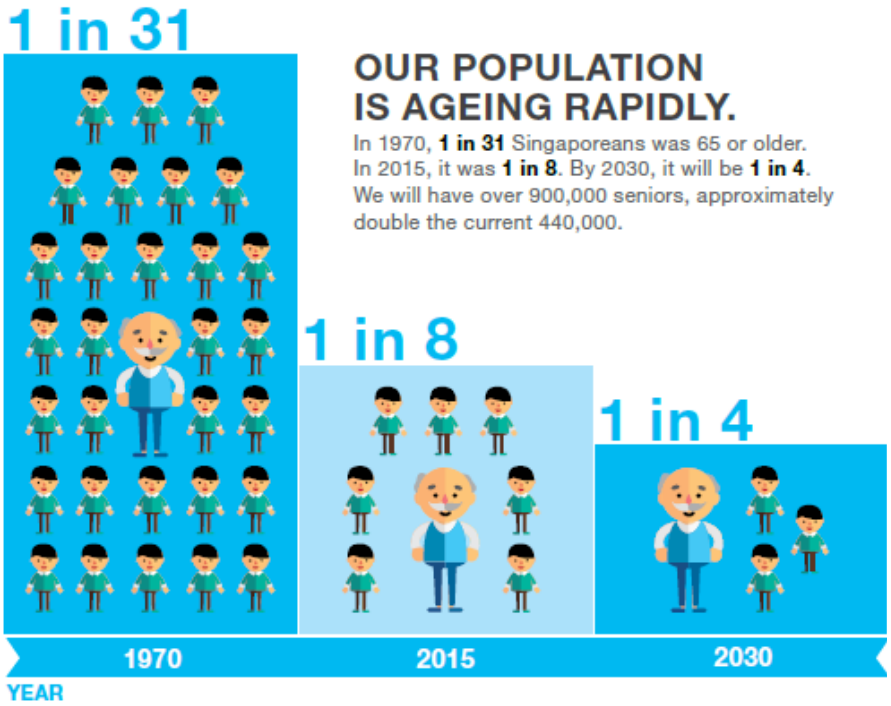
- The National Innovation Challenge (NIC) on Active and Confident Ageing was announced by Minister for Health and Chairman of the Ministerial Committee on Ageing as part of the Action Plan for Successful Ageing on 26 August 2015

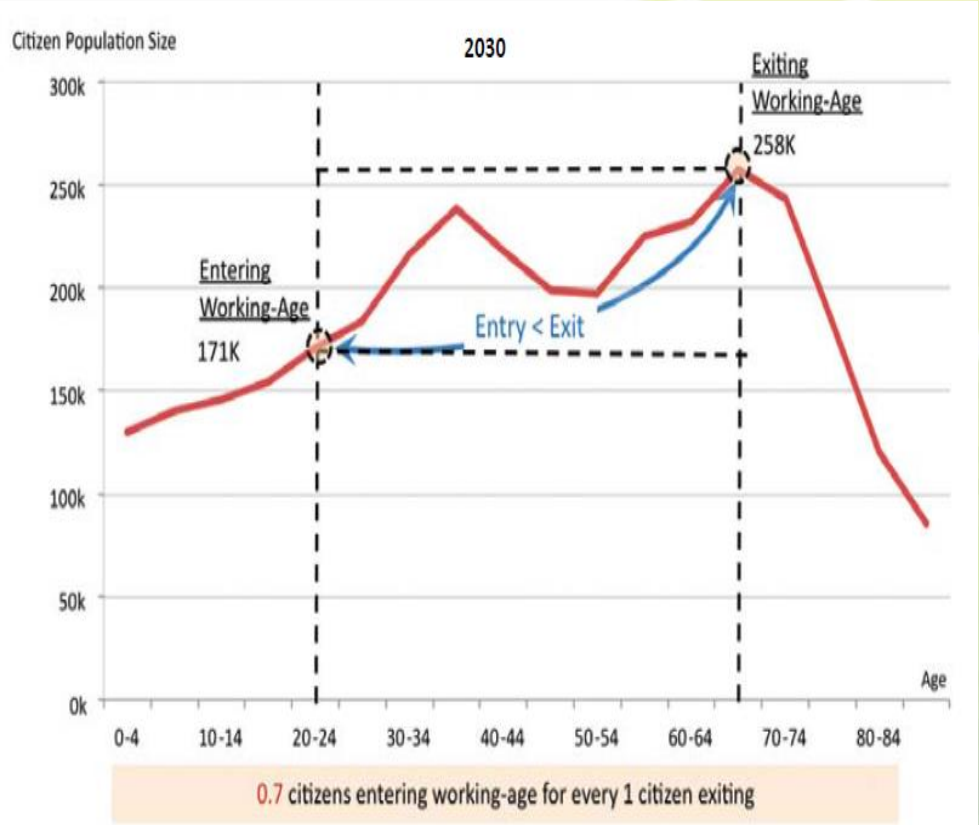
- This NIC seeks to **catalyse innovative ideas and research** in Singapore that can **transform the experience of ageing** in Singapore, tomorrow.



Singapore is ageing rapidly

By 2030, there will be over 900,000 Singaporean seniors





Source: Population White Paper, Jan 2013.

Enabling Innovation Grant

- This is our fourth grant call, under the NIC thrust on “Ageing in Place”

- We seek **innovative, game-changing solutions that can achieve step improvements in effectiveness and / or cost** to enable seniors to age autonomously despite disability.

- Projects that focus on re-branding, working with a combination of current products or a re-design of current products are not likely to be selected.

Challenge Statement

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**.

Examples of Research Projects

Potential Research may include, but are 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.

Examples of Research Projects

Mobility Aids

- Motorised wheelchairs or ramps for use in confined spaces, such as the steps outside of HDB flats leading to the common corridor;
- Wheelchairs that facilitate transfer of seniors with severe disabilities from the wheelchair to other day-to-day home furniture such as beds and sofas without third-party assistance (e.g. use of robotic arms);
- Use of new materials (e.g. lower cost, lighter weight) for wheelchairs without compromises to the durability and safety of the final product;
- Batteries with longer lifespans and lighter weight for motorised wheelchairs to reduce the frequency of replacement, or charge controllers to prevent over-charging of batteries, as seniors may forget to switch off the chargers resulting in battery damage over time due to overcharging;
- Convertible wheelchairs and walking frames to allow flexible use of mobility aid;
- Detachable motors for non-motorised wheelchairs, so persons who already own regular wheelchairs can convert their regular wheelchairs to motorised ones should their needs change.

Examples of Research Projects

Hearing Aids

- Cost-effective alternatives to hearing aids for less-severe hearing losses and establish guidelines for appropriate fitting.
- Location detectors in hearing aids to help seniors find their misplaced devices or which are able to detect abnormal use (e.g. not being worn when the aids have consistently been worn at the same time in the past) and send reminders for hearing aid users to wear their hearing aids;
- New screening tests or portable diagnostic kits for hearing tests that could be administered by trained persons with little/no infrastructure set up;
- Staffing alternatives to current practices to conduct identification and management of individuals with hearing loss that does not require medical intervention;
- Develop or apply technologies that can be used to reduce the cost and staffing requirements to perform hearing testing; and
- Apps or computer-based programmes to enable seniors to access instructions on how to use or troubleshoot their hearing aids or participate in an audiology rehabilitation programme.

Examples of Research Projects

Visual Aids

- Augmented glasses for persons with poor night vision
- Multi-function glasses that could be adjusted to suit different vision so that seniors do not need to change glasses often
- Print words scanner/camera that can translate to audible text to facilitate seniors' reading; and
- TV or computer magnifiers for persons with low vision.

Other Assistive Devices / Technologies

- Exoskeleton that provides support to seniors and / or corrects seniors' gait when walking; and
- Robots that help transfer seniors, e.g. from the bed to the wheelchair.

Eligibility

- Applicants forming Project Teams can submit **more than one Application** in response to the challenge statement but a Project Team will only be awarded Funding for **one Research project**.

- Open to all **public, private or non-profit organisations**, research institutes and institutes of higher learning, registered and/or incorporated in Singapore.

- 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 teams are to identify a 'Host Institution' for the administration of the Research.

Project Team Composition

- Required to partner an implementation partner and form a Project Team comprising:
  - Members from **multi-disciplinary** (e.g. pairing medical and technology, engineering) backgrounds; and
  - 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.
- **No restriction** on the number of Institutions, Investigators and Collaborators in each Project Team
- Applicants are expected to **form their own** partnerships.

Project Funding

- Awardees may qualify for **up to 80%** funding of approved qualifying costs to develop and implement their Research for a **period of up to 3 years**, with the possibility of **extension for another 1 year** (with no additional funding).

- Qualifying costs include both **developmental and operating** costs

- Project Teams are expected to **co-fund the remaining 20% of qualifying costs**

- Support for **indirect costs,** *on top of supportable qualifying 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.

- Funding will be provided in phases and subjected to the successful attainment of milestones and Key Performance Indicators (KPIs) tied to each phase.

Explanation of Costs

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

  - Expenditure on manpower (EOM);
  - Expenditure on new equipment; and
  - Other operating expenses (OOE)

- **Indirect costs** are 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,

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

Project Phases

Project teams will have the **flexibility to decide the time allocated** to the phases as follows,

Design phase (Proof-of-concept). Project teams are to articulate the concept of the programme / service / prototype 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.

Development phase (Proof-of-value). Project teams are to develop and validate the programme / service / prototype so that it takes on a clearer form to achieve the intended outcomes.

Implementation phase (Test-bedding) - At least one year. In this phase, project teams are to test and validate the programme / service / prototype in the field (a relevant environment). This phase may also include initial production or roll out.

Application Process

*Proposals will be evaluated through a **two-stage process***

Project Abstract

- First, submit a short 5-page **Proposal Abstract** of the Research, including a comprehensive literature review that show the reasons for choosing a particular solution
- Project Teams are to use the "Project Abstract Submission Template" that can be downloaded from NMRC webpage
- Two hard copies of the Project Abstract and any supporting documents should reach MOH **no later than 23 January 2017 at 5:00pm.**
- Project Teams shall email soft copies to NIC_Ageing@moh.gov.sg by the deadline

Project Proposal

- Shortlisted proposals will then be invited to submit a **detailed Project Proposal**. This will be evaluated by an evaluation panel.

Project Abstract

- **Objective(s)** of the Project;
- 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.

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 their proposed designs are in line with regulatory requirements.

Mandatory KPIs (1)

KPI 1 Function/Effectiveness OR KPI 2 Costs

- Project Teams should address either KPI 1 or KPI 2

<table>
<tr><th>KPI 1 Function/Effectiveness
[Project Teams to address the applicable KPI]</th><th>KPI 2 Costs</th></tr>
<tr><td>Device
<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;</td><td rowspan="2"><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).</td></tr>
<tr><td>Model of Assessment
<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.</td></tr>
</table>

Mandatory KPIs (2)

KPI 3 Usability

- Satisfaction / likelihood of adoption. 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.

Broad Evaluation Criteria

Component	Evaluation Criteria
Grant Requirements	• Proposal submission • Locally-based Research & Lead • Project Team composition • Address challenge statement
General	• Background of Lead • Track record
	• Safety **[Project Teams should note that Research deemed to be unsafe would be disqualified.]**
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

Timeline

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

Questions?

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