

2015



MINISTRY OF HEALTH  
SINGAPORE

# Care-at-Home Innovation Grant

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Organised by:

**Ministry of Health Singapore (MOH)**

Supported by:

**Agency for Integrated Care (AIC)**

**Infocomm Development Authority of Singapore (IDA)**

**MOH Holdings Pte Ltd (MOHH)**

**National Research Foundation (NRF)**

**Standards, Productivity and Innovation Board (SPRING Singapore)**

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## 1. IMPORTANT NOTICES

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

## 2. INTRODUCTION

- 2.1. Many seniors wish to age in place gracefully in their own homes among their loved ones for as long as possible. To support our seniors' aspirations, the Ministry of Health (MOH) has been building up the capacity, quality and affordability of home care services. In recent years, we have also seen a surge in demand for home care services.
- 2.2. In the delivery of home care, care staff has to travel from home to home, thus incurring time. Amidst our tight labour market, we need to find "game changer" solutions to enhance the productivity of our home care services to meet the growing need for home care services in the community.

## 3. OBJECTIVES

- 3.1 The Care-at-Home Innovation Grant is organised by MOH to foster partnerships between (i) existing or interested new providers in the local home care sector; and (ii) solution providers with the technological, analytical and/or operations research expertise to innovate new care models and co-create solutions to provide good home care to patients in a more productive manner.
- 3.2 The Care-at-Home Innovation Grant is not meant to simply support the purchase of off-the-shelf products, but rather catalyse new technology-enabled home care models. This can include process redesign, change management strategies, data analytics, operations research, using IT technology as a multiplier for home care providers and staff etc. Through the Care-at-Home Innovation Grant, MOH hopes to test the concept and viability of such technology-enabled models for subsequent scaling up and longer-term adoption by other home care providers.

## 4. CHALLENGE STATEMENT

### Challenge Statement

- 4.1. The Challenge Statement to Participants is to **"invent a new model of care that can enhance the productivity of home care staff by at least 50%, while ensuring good quality, client-centric and responsive service"**.
- 4.2. For avoidance of doubt, the words and expressions in the Challenge Statement shall have the meanings assigned to them:

"invent" Means to create, customise or co-develop.

"model of care" Means the philosophy, framework, systems and processes

to plan and deliver home care services to clients

“home care staff” Refers to registered nurses, enrolled nurses, nursing aides, health care assistants, allied health professionals and any other person involved in delivering home-based care services to clients.

“productivity of home care staff” Shall be measured in terms of the average number of client-hours per home care staff per day. This is computed by taking the total number of direct care hours received by all home care clients served in the day, divided by the total number of care staff needed for the day to serve these clients. Time spent on traveling, administration and other non-client-facing activities should be excluded.

“good quality, client-centric and responsive care” Means the development of a home care model that aims to (i) achieve MOH’s [Guidelines for Home Care](#); and/or (ii) provide value-added services to clients and greater peace of mind for their caregivers.

4.3. Awardees will receive funding support to pilot their Project for a period of up to three years. As part of the trial, Awardees will be required to monitor, track and evaluate the effectiveness of their Project; and establish evidence for subsequent scaling up and longer-term adoption by the rest of the home care sector if successful.

4.4. By way of example, a comprehensive Project that achieves the Challenge Statement in clause 4.1 above may include, but are not limited to, any combination of solutions as follows:

- a) Adoption of routing and scheduling solutions that will optimize routes between clients, enable flexible visit scheduling and closer matching of care staff with home care clients’ unique needs or circumstances to reduce paperwork and unproductive time traveling;
- b) Use of data analytics and/or operations research to risk-stratify clients, enhance care planning and optimise visit duration, frequencies and deployment of care staff across different home care clients;
- c) Remote monitoring of care staff’s locations to improve flexibility in visit scheduling;
- d) Redesign of business processes and service delivery models to reduce time spent on paperwork by care staff, increase client-interaction time and cost-efficiency of operations;
- e) Change management strategies and training for care staff to adapt to, use and maximise the effectiveness of the new processes and technologies;

- f) Use of relationship management software for client/care/medication management; and/or
- g) Use of telehealth technologies to replace the need for physical visits by care staff or to enable multiple simultaneous interactions between care staff and client.

For the avoidance of doubt, the above examples are meant only for consideration and are not MOH's specifications for the Care-at-Home Innovation Grant.

## 5. SCOPE OF HOME CARE SERVICES

5.1. Participants' proposed model of care should apply to the provision of home-based medical, nursing, therapy and/or personal care services to frail and home-bound elderly to enable them to remain at home and in the community and to relieve the burden of caregivers in relation to caring for clients at home.

5.2. The scope of home-based services include, but shall not be limited to:

### *Home Medical*

- a) Comprehensive care assessment;
- b) Management of chronic medical conditions;
- c) Management of uncomplicated acute or sub-acute medical conditions;
- d) Referrals to specialists or service providers in other disciplines, where appropriate;
- e) Arranging for safe transfer for hospitalisation, where necessary;
- f) Prescription of appropriate acute and chronic medicines;
- g) Educating the client and caregiver on the client's medical conditions and the management plan;
- h) Performing minor medical procedures such as simple wound debridement, intra-articular injections etc.; and
- i) Ordering and interpreting appropriate investigations.

### *Home Nursing*

- a) Post-surgical management, e.g. administration of injections, care of central venous line, tracheostomy or drainage tubes;
- b) Wound management;
- c) Maintenance/ changing of urinary catheters and drainage tubes, as applicable;
- d) Stoma care, e.g. colostomy and ileostomy care;
- e) Monitoring of pain control;
- f) Insertion of nasogastric tube and tube feeding;
- g) Assistance with bowel elimination, e.g. enema or manual evacuation;
- h) Monitoring of the client's medical condition, e.g. blood pressure and blood sugar checks;
- i) Providing caregiver education and training with regard to various aspects of care, e.g. prevention of falls, pressure sores, proper feeding techniques, etc.;
- j) Advice on activities of daily living, e.g. nutrition counselling and education;

- k) Monitoring of medication compliance and proper taking of medication;  
and
- l) Administering, supervision and packing of medication.

#### *Home Personal Care*

- a) Personal hygiene;
- b) Assistance with activities of daily living and other personal care tasks;
- c) Mind stimulating activities;
- d) Elder-sitting and respite;
- e) Assistance with medication; and
- f) Performing simple maintenance exercises.

## 6. TECHNICAL GUIDELINES AND CONSIDERATIONS

- 6.1. Awardees must be willing to collaborate with MOH or MOH's Affiliates to ensure that any proposed technical solutions are flexible, extensible and based on open data standards used by the various aged care providers and acute hospitals in Singapore. This is to facilitate future enhancements, information exchange and backend integration of services and functionality, to both existing and future systems.
- 6.2. By way of examples, Participants may wish to consider the inclusion of the following technical aspects when designing their solutions:
  - a) Reliability of system, i.e. error detection and correction during transmission of information, verification of client data;
  - b) Interface to client's electronic medical records;
  - c) Interface to billing system;
  - d) Interface to an existing client referral system, e.g. the Integrated Referral Management System (IRMS);
  - e) Performance under varying levels of bandwidth;
  - f) Camera considerations, e.g. colour, size, lighting and resolution;
  - g) Security management considerations; and
  - h) Data access by staff.

## 7. ELIGIBILITY

### **General Eligibility**

- 7.1. The Care-at-Home Innovation Grant is open to all individuals, companies, non-profit organisations, other entities or consortia that are based, 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 setting up a local equivalent of the entity in Singapore or through consortia with Singapore-registered entities.

### **Project Team Composition**

- 7.2. Participants in the Care-at-Home Innovation Grant are required to partner and form a team ("Project team") comprising:

- a) At least one (1) existing or interested new home care provider; and
  - b) At least one (1) solutions provider with technological, analytical and/or operations research expertise.
- 7.3. A home care provider refers to:
- a) An existing home care provider that is already operating in Singapore; or
  - b) An interested new entrant to the local home care scene. The new entrant must either (i) be an existing healthcare and/or social care provider in Singapore; or (ii) an organisation with experience running home care services overseas.
- 7.4. The home care provider(s) in the Project team shall remain accountable for the safety and quality of care of its clients during the course of the Project.
- 7.5. A solutions provider refers to any individual, entity or consortium that has the technological, analytical and/or operations research expertise to contribute to the Project. This includes, but is not limited to, organisations that can offer ICT solutions, consultancy services, data analytics capabilities or has experience in logistics, deployment and scheduling.
- 7.6. There are no restrictions on the number of Participants in each Project team.
- 7.7. Participants are expected to form their own partnerships to participate in the Care-at-Home Innovation Grant.
- 7.8. MOH reserves the right to disqualify or reject any Project team in the event of the withdrawal of any Participant from the Project team.

### **Team Lead**

- 7.9. Each Project team must appoint an individual as the leader (known as the "Team Lead") to oversee and coordinate the implementation of the Project during the funding period of the Project.
- 7.10. The Team Lead will serve as the primary point of contact with MOH for the purpose of the Care-at-Home Innovation Grant. The Team Lead shall make all reasonable efforts to ensure that all Participants in the same Project team are informed of all matters relating to the Care-at-Home Innovation Grant.
- 7.11. The Team Lead must reside in Singapore for at least six (6) months in each calendar year over the duration of the funding period of the Project.

## **8. SUPPORT AND FUNDING**

### **Project Funding**

- 8.1. Awardees can qualify for up to 80% funding of approved qualifying costs to develop and implement their Project for up to a period of thirty six (36) months. Approved qualifying costs can include costs related to new equipment, IT hardware or software, manpower and training that are assessed to be above

and beyond the standard operating costs of delivering home care services prior to the implementation of the Project, and necessary to operationalise and evaluate the Project.

- 8.2. The actual funding quantum for selected Projects will be determined upon assessment of the impact and scope of the Project.
- 8.3. All Projects must be conducted in Singapore and funding shall not flow out of Singapore to support overseas entities.
- 8.4. The relevant Participants will be notified by MOH if they are shortlisted for the award of the Care-at-Home Innovation Grant and will enter into negotiations on the terms and conditions of the Contract. Funding support shall be granted subject to the mutual agreement between the relevant Participants and MOH on the terms and conditions of the Contract.

### Operating Subvention

- 8.5. Operating subvention for the provision of home care services may also be extended to Awardees subject to the Awardees meeting MOH's subvention requirements, through the home care provider(s) in their Project teams. Operating subvention will only be extended for home-based care services, e.g. home medical, home nursing or home personal services, that the home care provider is providing during the period of funding for the Project.
- 8.6. The relevant home care provider(s) must pass pre-operations audits conducted by MOH, including MOH-appointed auditors, before operating subvention may be disbursed. Continuation of operating subvention for home-based care services beyond the Project funding period will be subject to the home care provider's compliance with subvention requirements.

## 9. PROPOSAL SUBMISSION

### Overview of Proposal Submission

- 9.1. Project proposals will be submitted through a two-stage process, as follows:
  - a) Project Abstract. Project teams are to first submit an abstract of their proposed Project, using the "Project Abstract Submission Template" that can be downloaded from the following National Medical Research Council (NMRC) webpage at [http://www.nmrc.gov.sg/content/nmrc\\_internet/home/grant/compgrants/careathomegrant.html](http://www.nmrc.gov.sg/content/nmrc_internet/home/grant/compgrants/careathomegrant.html). Participants shall furnish all necessary information and documents as required in the template. Two hardcopies of the Project Abstract and any supporting documents should reach MOH **no later than 6 November 2015 at 1700hrs**. 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 proposed Project in greater detail for the second stage.



- b) **Project Proposal.** MOH will inform the respective Team Leads of shortlisted Project teams via email to submit their detailed Project Proposal 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. There is no limit to the length of the Project Proposal. Two hardcopies of the Project Proposal and any supporting documents should reach MOH no later than the deadline stated by MOH in the invitation.
- 9.2. All submissions to MOH must be clearly marked as “Care-at-Home Innovation Grant”, and addressed to:
- Care-at-Home Innovation Grant Secretariat  
Ageing Planning Office  
Ministry of Health  
College of Medicine Building (COMB)  
16 College Road Singapore 169854
- 9.3. In addition to submitting hard copies, Participants shall email soft copies of their Project Abstract and Project Proposal to [NIC\\_Ageing@moh.gov.sg](mailto:NIC_Ageing@moh.gov.sg) by their respective deadlines.
- 9.4. MOH reserves the right not to accept late submissions.

### **Project Abstract**

- 9.5. Project Abstracts should include, but shall not be limited to, the following:
- Objective of the Project;
  - Key components and innovations of the Project;
  - How the Project could address the Challenge Statement;
  - Summary of Project implementation plan, timelines and milestones; and
  - Summary of Project evaluation framework and Key Performance Indicators (KPIs) to track.
- 9.6. The length of the Project Abstract should not be longer than 5 pages.

### **Project Proposal**

- 9.7. Project Proposals should include, but shall not be limited to, the following:
- Objective of the Project;
  - Description on the key components and innovations of the Project and how the Project could address the Challenge Statement, including computations on KPIs;
  - Description on the care model of the Project and how home care services delivered under the Project could meet the needs of home care clients;
  - Detailed Project implementation plan, timelines and milestones;
  - Detailed Project evaluation framework and KPIs to track;

- Scalability and sustainability of the Project;
- Fees and charges to home care clients;
- Required funding for the Project;
- Challenges in Project design;
- Discussion on key assumptions of the Project;
- Detailed Project evaluation framework ; and
- IP declaration.

9.8. Additional guidance on completing Project Proposals are as follows:

- a) Roles and Responsibilities. The roles and responsibilities of every member of the Project team must be clearly specified. Specifically, Project teams are to articulate which member will be in charge of tracking outcome measures, ensuring quality and safety of care for clients and administering of the funding if awarded.
- b) Care Model. Project teams are expected to articulate in detail their care model and approach towards care planning and service delivery to their home care clients. Project teams will be expected to pilot the proposed care model if awarded. They will also be expected to ensure safety and well-being of clients involved in any activity conducted in relation to the Care-at-Home Innovation Grant is not compromised in manner whatsoever. Home care providers may refer to MOH's [Guidelines for Home Care](#) for reference on ensuring the quality and safety of care for clients.
- c) Implementation Plan. Project teams are required to describe all implementation activities, stages, milestones and targets.
- d) Computation of KPIs. Project teams are required to state the current and target KPIs based on the following indicators. Specifically for productivity, Project teams are required to provide detailed estimations to quantify productivity gains before and after their proposed Project.

Key Area	KPI
Productivity	<p>Achieve <u>at least 50% improvement in productivity</u> as required by the Challenge Statement. Productivity KPIs are to be measured as follows:</p> <ul style="list-style-type: none"> <li>• <i>(Mandatory)</i> Average number of client-hours<sup>1</sup> per care staff per day</li> <li>• <i>(Mandatory)</i> Number of clients that each care staff can provide direct care<sup>2</sup> to per day</li> <li>• <i>(Optional)</i> Any other potential productivity benefits, e.g:                             <ul style="list-style-type: none"> <li>○ Reduction of manpower utilisation</li> <li>○ Reduction in traveling time</li> <li>○ Reduction in number of visits needed (e.g. due to better preventive care)</li> </ul> </li> </ul> <p>Project teams are required to report the existing baseline for these KPIs in their Project Proposal and set targets to be met at the end of the project. Project teams are to also indicate how these KPIs are to be measured.</p>
Quality	<p>Achieve <u>same or better clinical/client outcomes</u> with at least 50% improvement in productivity as required by the Challenge Statement. Project teams are to propose <u>at least two clinical/client KPIs</u> to track. Possible clinical / client KPIs can include:</p> <ul style="list-style-type: none"> <li>• Customer satisfaction</li> <li>• Level of caregiver stress / burden</li> <li>• Improvement in functional, physiological, emotional, behavioural and/or cognitive wellbeing as measured by appropriate tools</li> <li>• Number and frequency of hospital (re)admissions of enrolled clients</li> <li>• Number of nursing home (NH) admissions</li> </ul> <p>Project teams are required to report the existing baseline for these KPIs in their Project Proposal and set targets to be met at the end of the project. Project teams are to also indicate appropriate tools for measuring these KPIs.</p>

<sup>1</sup>This is computed by taking the total number of direct care hours received by all home care clients served in the day, divided by the total number of care staff needed for the day to serve these clients. Time spent on traveling, administration and other non-client-facing activities should be excluded.

<sup>2</sup> Refers to direct rendering of health or social support to a home care client by a care staff e.g. through home visits or tele-consultations. Phone calls made to clients shall not be considered.

Capacity	<ul style="list-style-type: none"><li>• <i>(Mandatory)</i> Cumulative number of home care clients to be served by the end of the funding period</li><li>• <i>(Mandatory)</i> Number of home care clients that can be enrolled at any point in time by the end of the funding period</li></ul> <p><u>Note:</u> It is the responsibility of Project teams to source for and enrol eligible home care clients into their service to meet their capacity targets. MOH and AIC may refer suitable clients to Project teams on an opportunistic basis, but it is not the responsibility of MOH and/or AIC to ensure that Project teams meet their capacity targets.</p>
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- e) Budget. Project teams are required to articulate the total required resources and budget to implement their Project. Qualifying costs include:
- Developmental Costs. New equipment, IT hardware and software that are assessed to be necessary to operationalise and evaluate the Project. Other developmental costs will be assessed on a case-by-case basis.
  - Operating Costs. Incremental expenditure on manpower (EOM), and other operating expenses (OOE) including the engagement of consultancy services, communications, public relations and promotions, travelling and transport that are assessed to be above and beyond the standard operating costs of delivering home care services prior to the implementation of the Project and necessary to operationalise and evaluate the Project.
- f) Declaration of IP. Project teams are required to disclose and describe any Background IP (whether owned by the member of the Project team or a third party) mentioned in the Project Proposal, as well as any and all Foreground IP created, invented, generated, produced or discovered in preparing the Project Proposal. 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 Project.

### Other Things to Note

9.9. All information submitted pursuant to the Care-at-Home Innovation Grant including supporting technical data and applicable documentation must be in the English language.

9.10. The following Proposals will be rejected:

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

9.11. Participants should ensure that all information contained in the Proposals and any other information submitted to MOH relating to the Care-at-Home Innovation grant is complete, accurate and not misleading.

## 10. EVALUATION AND AWARD

### Evaluation

10.1. Proposals will be evaluated by an Evaluation Panel comprising evaluators from multidisciplinary backgrounds, including representatives from MOH, AIC, IDA, MOHH, SPRING, the restructured hospitals and the intermediate and long-term care industry.

10.2. Shortlisted Project teams may be required to present their Project(s) (at their own cost and expense) and answer questions from the Evaluation Panel. Details on the presentation (if any) will be released to the shortlisted Participants at a later date.

10.3. The criteria listed below shall be used for the evaluation of the Project Proposals:

Component	Evaluation Criteria
General	<ul style="list-style-type: none"><li>• Background of Team Lead</li><li>• Track record and financial capacity of home care provider(s)</li><li>• Track record and financial capacity of solutions provider(s)</li><li>• Addressed Challenge Statement</li></ul>
Business	<ul style="list-style-type: none"><li>• Scalability of proposed solutions</li><li>• Sustainability of proposed solutions</li><li>• Innovativeness of proposed solutions</li></ul>
Performance	<ul style="list-style-type: none"><li>• Care model</li><li>• Productivity benefits</li></ul>
Implementation	<ul style="list-style-type: none"><li>• Project feasibility in the local context</li><li>• Reasonableness of funding request and charges</li></ul>

10.4. The Evaluation Panel reserves the right to reject any or all Proposals submitted pursuant to the Care-at-Home Innovation Grant, without being obliged to give any reason thereof.

### Negotiation

10.5. Where a Project Proposal is selected by the Evaluation Panel for consideration for award, the relevant Participants in the Project team will be notified. The terms of the Project, Project milestones, and funding quantum will be separately negotiated and agreed to between MOH and the Participants in the Project team.

### Award

10.6. The final decision to award the Care-at-Home Innovation Grant will be made by MOH on the Evaluation Panel's recommendation. MOH and the Evaluation

Panel shall not be obliged to enter into any correspondence with any Participant regarding reasons for non-acceptance of their Proposal.

## Progress Reports

10.7. Awardees will be required to submit progress reports on all Project-specific KPIs, progress of the Project implementation and any challenges that may impede progress to MOH at the reporting frequency stated in the Contract.

## 11. IMPORTANT DATES TO NOTE

11.1. The timeline for key activities under the Care-at-Home Innovation Grant is set out below.

Activity	Date
Call for Proposals	21 August 2015 (Fri)
Public Briefing	26 August 2015 (Wed)
Industry Networking Session	4 September 2015 (Fri)
Deadline for Submission of Project Abstract	6 November 2015 (Fri)
Deadline for Submission of Project Proposal	January 2016
Formal Presentation	March 2016
Announcement of Results	By April 2016

## 12. CONTACT DETAILS

12.1. Enquiries regarding the Care-at-Home Innovation Grant should be emailed to [NIC\\_Ageing@MOH.gov.sg](mailto:NIC_Ageing@MOH.gov.sg).