CALL FOR ACADEMIC PROPOSALS:
Evaluating a Digitally Enabled Supported Self-Management Service for Weight Management and Active Living

Introduction

This is an academic call for proposals to undertake an independent evaluation of an innovative digital supported self-management service for weight management and active living developed by the Digital Health and Care Innovation Centre (DHI) Rural Centre of Excellence Living Lab Programme in collaboration with health and care and industry partners. The Rural Centre of Excellence (RCE) for digital health and care innovation in the Moray region is awarding an academic grant for this piece of work as part of the DHI Moray Growth Deal and Living Lab Programme.

The purpose of this work is to inform the potential adoption and scalability of this new and emerging digital service within the Scottish digital health and care context. This evaluation will analyse and appraise the user experience, explore benefit and impacts on a service and systems level as part of an early implementation feasibility phase within health and social care services across the Moray and Grampian regions. This call is potentially one of several additional opportunities which may be available to academic partners with expertise in the evaluation of digital health and care interventions aligned to the Active Living and Supported Self-Management themes of the Living Lab Programme over the next three years.

Background

The prevalence of obesity in Scotland is one of the highest in Europe with two-thirds of adults overweight and one-third obese. The health, social and economic consequences of obesity and inactive lifestyles are well documented. This includes risk of developing a range of long-term conditions (LTCs) including Type 2 diabetes, cardiovascular disease and hypertension. Obesity can affect not only our health, but also our ability to lead happy, fulfilling lives. People living with LTCs are the most frequent users of health care services and are increasingly linked to modifiable risk factors which include weight, smoking and a sedentary lifestyle. Keeping active can help people stay at a healthy weight or lose weight. It can also lower the risk of LTCs, as well as reduce stress and boost mood. Many people find it difficult to adhere to the diet, lifestyle, behavioural and psychological changes necessary to effectively manage their LTCs.

In addition to the health and wellbeing impacts, there is an increased, unsustainable demand on the NHS and other public services for weight management interventions and significant socioeconomic implications. The annual cost of treating conditions associated with being overweight and obese is estimated to range from £363 million to £600 million. The total annual cost to the Scottish economy of obesity, including labour market related costs such as lost productivity, is estimated to be between £0.9 billion and £4.6 billion (Obesity Indicators 2018, Scottish Government).

With staff shortages and patients waiting on average more than a year to be seen by specialists in secondary care for weight management interventions, there is a need to explore new innovative models of care and optimise digital technologies.

Supported Self-Management

With an ageing, increasingly overweight and sedentary population compounded by the COVID 19 pandemic, health and care services are radically rethinking the best approaches to deliver much needed support to patients. Increasing shifts towards alternative supported self-management models of care represent a change from the traditional provider–patient relationship to a model in which patients play a key role in guiding their own care, in collaboration with health care providers. (Fryer et al., 2016). These approaches are intended to empower individuals with a focus on increasing the level of "patient activation" and person-centred care. There is compelling evidence that effective supported self-management leads to better clinical outcomes, improves wellbeing and satisfaction with care received and reduced health care utilisation (Boger et al 2015).

In addition, the use of digital technologies and self-monitoring tools are increasing. The evidence bases for activity interventions combined with self-monitoring tools have shown significant results in increasing physical activity (Hamasaki 2016, Funk and Taylor, 2013, Matthews et al., 2014, McCallum et al 2021). The use of wearable devices including step counters such as Fitbits® promotes an average increase in activity levels of around 2,000-2,500 steps per day (Alhyas et al., 2012). This is of particular note when their use is linked to behaviour change strategies including building confidence, goal setting, self-monitoring (recording and reporting back 7-day average), problem-solving (adapting walking behaviour to suit weather and setting), social support and feedback (Chan et al., 2008).

However, despite an array of digital products available on the market, the major challenge with the current service delivery models across health and care is that the digital systems for clinical assessment, activity monitoring, dietary journaling, goal setting, two-way messaging and online guidance, do not integrate with each other - or with NHS systems. This lack of integration makes it difficult to personalise the service, provide targeted intervention and improve patient outcomes. The service cannot effectively scale to support more patients due to the effort required to act across these silo-ed elements.

The greatest value would be derived from co-designing and integrating technologies in a way that can be applied and adapted across many existing services pathways to better support patients to self-monitor and sustain healthy lifestyles and behavioural changes. Essentially, this represents a 'first line' digital service with the potential to offer support to patients living with a range of LTCs linked to lifestyle including type 2 diabetes, pre-diabetes, obesity, and non-alcoholic fatty liver disease (NAFLD).

Policy context

The pervasiveness of the obesity problem, and the health and economic consequences of obesity, mean that tackling it is a key priority and a major challenge for government and its delivery partners. The Scottish Government published A Healthier Future - Scotland's Diet and Healthy Weight Delivery Plan in 2018. The plan sets out a vision for everyone in Scotland to eat well and have a healthy weight. In particular, physical activity plays an important part in maintaining a healthy weight and tackling obesity.

The physical activity delivery plan A More Active Scotland sets out what the Scottish Government, and partners, are doing to encourage and support people in Scotland to be more active, more often.

The [Digital Health and Care Strategy](#) meanwhile, outlines the commitment of the Scottish Government to deliver technology and information systems to transform how health and care services are delivered. Robust evaluation of spread and adoption of proven, cost and clinically effective digital technology within services across Scotland is critical to the success of this strategy.

The Rural Centre of Excellence (RCE) for Digital Health and Care Innovation in the Moray region: Living Lab Programmes

The RCE is the first project to commence as part of the Moray Growth Deal. DHI has worked closely with the Moray community and partners since 2018 to identify and refine the key challenges and opportunities digital health and care innovation could bring to the local region and takes into consideration our experiences over the last 18 months in response to the Covid-19 pandemic. The funding programme aims to support the remobilisation of health and care services and the economic recovery of the Moray region, by investing in research and innovation activities aligned to the digital health and care agenda.

This programme of work will follow the DHI model for research and design activity using Living Lab methodology for co-designed person-centred services, providing a unique opportunity for clinical stakeholders, citizens, academia, and industry to come together to develop innovative solutions to help meet current and future service needs. This evaluation commission will appraise the outputs from one of five Living Lab Programmes: Weight Management and Active Living.

Over the next 24 months - and building on learning from an earlier DHI simulation project (Phase One) - this current project will aim to co-design, develop and deploy into a real-world environment a digital application that will allow 150 patients to securely share health data including activity levels, daily step count, nutrition and sleep patterns from connected devices. The app will aim to use and patient-reported experience measures (PREMs) to obtain data on patients' perceptions of their health and experiences whilst using the service with the aim of improving quality of care and targeting support provided, and asynchronous virtual clinics will be offered to patients who are struggling to maintain changes in behaviour. A key objective of the digital service is to enable patients to securely share health and lifestyle data including information and data on activity levels and daily step count from their own connected devices, including Fitbits® and smartphones.

Clinicians will be able to send personalised messages back to patients to help support and maintain behaviour change, provide clinical guidance and achieve goals around increasing activity and staying motivated using a two-way messaging service. The team will explore how to personalise this messaging based on the data captured collaboratively with the patient. The technical aspects of this digital platform will be provided via DHI and Digital industry partners (established in Phase One) who have set up a digital platform that can already demonstrate connections into NHS Grampian data stores - including SCI Store and Docman. This will be built upon for this project. Initial discussions and first implementation phase of work will involve clinicians working in NAFLD, type 2 diabetes and pre-diabetes, to develop an implementation plan and protocol.

It is anticipated that the duration of the implementation and evaluation phase will be 12 months and will commence once the product development and testing has been completed.

We are looking to engage an academic partner to lead the design and delivery of an evaluation approach of this exciting, translational research and innovation work focused on optimisation of digital technologies and enabling infrastructures to support self-management.

There will be some flexibility required on behalf of the academic partner given Living Lab methodologies are being deployed and the digital services is being developed iteratively and in collaboration with NHS stakeholders.

The evaluation should seek to draw on the experiences, learning and any available assets from Phase One development activities, and tailor an evaluation approach suitable for this next phase of early implementation. This will involve working closely with the DHI project team and also health and care professionals working across NHS Grampian and Moray Health and Social Care Partnership and potentially local third sector leisure service providers and service users.

Eligibility to apply

The following eligibility criteria apply to this grant award:
- The applicant organisation must be a Scottish Higher Education Institution (HEI).
- Funds cannot be redistributed by the awarded party, except without express permission by the DHI.
- Bids must be costed in line with the Higher Education Institution's bidding policies. DHI expects the HEI research office to be involved in communication.
- DHI expects bids to be costed at 80% Full Economic Costing.

Specification

- Develop and conduct an evaluation and analysis of the new digital service delivery model based on user experience and feedback, to assess its impact in terms of supporting self-management and behavioural change for service users and potential efficiencies for service providers.

- It is anticipated that a cohort of 150 patients will be recruited into the project and be invited to use the new digital service supported by health and care service providers. The academic partner will be required to develop the evaluation protocol and shape the study design.

- Conduct an analysis to identify the wider benefits and impacts of this digital service and its potential contribution to health and care across Scotland if it was deployed at scale.

Approach

HEIs are requested to identify their proposed methodologies as part of their submission. The approach to this piece of work has not been defined in advance - although it is expected to incorporate mixed methods - and it is envisaged that this will be refined between the successful academic institution and the evaluation Steering Group. This evaluation forms part of a Living Lab (an iterative, user-centred, design-driven) approach to foster innovation, and aims to demonstrate impact by embedding outputs into real-world contexts or scaling up and influencing policy and regulations.

DHI - working in collaboration with health and social care project partners - will proactively engage with stakeholders about the evaluation in advance. However, the grant holder will be required to remain mindful about ongoing pressures on health and care services and must ensure participation is not onerous or burdensome for participants. The grant holder will be expected to put in place appropriate arrangements for any corresponding ethical approval, informing participants about the evaluation, what their participation will involve and how the information will be used.

It is not anticipated that fieldwork will involve the discussion of sensitive or emotive issues, however, as with any research, there is potential for unanticipated issues to emerge during data collection.

Skills required

The HEI will offer, either directly, or through engagement with third parties, a combination of experience and expertise in the areas listed below:

- Service/product evaluation experience, particularly in a digital health and social care context and within the domain of healthy living, weight management and active living.
- Options appraisal/systems thinking and an understanding of existing health and care delivery models within this area, so able to define benefits and wider impacts from a health and economic perspective.
- A good understanding of the health and social care landscape in Scotland including knowledge of the enablers and barriers to adoption of new technologies, and the value of user-led design approaches.

Deliverables

- An evaluation plan identifying the methodologies and approaches which will be used to conduct this evaluation including outline of planned engagement approaches with HCP and service users, data collection plan and approach to ethical approval.
- An evaluation report which provides a description of how well the digital service worked in terms of useability and acceptability and identification of potential impacts and benefits (including projected cost benefit) of the digital service from a service and system-wide level.
- A report with recommendations based on user feedback experience as to how the digital service could be further developed to make it available to other user groups and/or optimise its potential.
- An interim report should be presented to the evaluation Steering Group six months from the start of the recruitment phase of the project.

Milestones and Timescales

We anticipate the commission milestones will follow the timescales set out in Table 1:

Tender Process:	Date
Issue call for bids	November 2022
Deadline for submissions	December 2022
Contract awarded	December 2022
Kick off meeting	January 2023
Project milestones with deliverables	**Date**
Evaluation and data plan	Within 3 months – Estimated March 2023
Interim Evaluation Report	Within 6 months of evaluation commencing
Final Evaluation Report	Within 6 months of interim report

Table 1: Project Timetable

Governance

An evaluation Steering Group with representation from the DHI Rural Centre of Excellence, NHS Grampian, Moray Health and Social Care Partnership and project partners will oversee delivery of this project. It will sign-off project deliverables and provide advice/support the addressing of key issues.

Management arrangements

The grant award process will be managed by the DHI as the lead commissioning body, working in collaboration with the Moray Growth Deal Board as the funding body of their contribution.

DHI Lead Contact:

Jennifer Thomas, Skills and Project Manager: jennifer.thomas@dhi-scotland.com.

Copyright

The DHI and Scottish Government will retain copyright of any outputs, partial or final, created as a result of the deliverables indicated in section 5, including reports, evidence collection instruments created for this purpose, presentations, etc.

Conflicts of interest

There will be a requirement to state no conflict of interest exists or declare any actual or potential conflicts of interest.

Budget

The total budget available for this project is **£50,000**, including any relevant VAT. Phasing of payment is detailed in Table 2 below.

Milestone	Completion	Payment
Formal proposal accepted	December 2022	40%
Interim Evaluation Report	June 2023	30%
Formal Approval of Final Evaluation	February 2024	30%

Table 2: Project Milestones

Response

We expect interested academic institutions to provide us with a brief response document (maximum of 10 pages) clearly setting out their approach to this piece of work and details of associated costs. Please note, applicants may provide additional information in appendices, but only the application will be scored, with the exception of one-page CVs which can be attached and will be included in the scoring.

You are invited to respond to this document with the following information:
- Your proposals for delivering on the requirements, scope, methods and deliverables described above. You should detail:
  - your understanding of the main issues to be addressed;
  - how you intend to deliver on the requirements; and
  - the methodology you propose to use.

- The expertise and experience of the team undertaking the work, referencing the skills detailed in the '*Skills required*' section of this document. This should include *one-page* CV[s] and statement of availability of the individual/s who will undertake the work. CVs can be attached into the application and will be taken into account in the assessment of applications.
- Brief summaries of similar work undertaken, including contact information (name and telephone number or email address) for at least one reference.
- Proposals should also detail all risks and constraints identified for this project, including an assessment of impacts and proposed mitigation actions.
- A realistic timetable of activities, including contingency management, to meet the timescales outlined in the '*Milestones, Deliverables and Timescales*' section of this document.
- A breakdown of costs, including any expenses.
- An outline of anticipated ethical issues, including data protection and research governance, and the impact of the ongoing pandemic.

Response proposals are to be submitted to rce@dhi-scotland.com by **5pm** on **Friday 2nd December 2022**. To assist with the completion of your response, you may contact jennifer.thomas@dhi-scotland.com for further information.

Additional information can be given in appendixes, but only the application will be assessed, unless otherwise mentioned.

Evaluation

Proposals will be evaluated against each other in an objective manner by a team consisting of representatives from DHI Rural Centre of Excellence and partner representatives. The Evaluation Panel will score each Bidder's response using the criteria shown in the following table.

The Bidder(s) selected will be chosen based on the best value for money. This means suitable quality, delivery, level of risk and response to customer needs at best price.

Criteria	Description	Weighting
Understanding the purpose of the work, context and background and proposes a methodology that meets all the requirements of the tender specification	The proposal clearly demonstrates understanding of the context of this project, including the strategic and policy drivers. Proposal demonstrates that all the requirements of the specification have been addressed and understood and that the proposed methodology is appropriate and capable of successfully delivering all the required outcomes.	30%
Relevant skills and expertise of team to be appointed to deliver the project	Proposal demonstrates availability of the required combination of expertise and experience among team members to be appointed to the project.	20%
Experience and reputation in undertaking similar work	Proposal demonstrates evidence of previous work undertaken in the past 3 years relevant to this project including the names(s) of clients who can be approached for comments.	20%
Risk Management and Quality Assurance	The proposal provides evidence that the main risks involved with the project have been identified and adequately addressed. Details of the bidder's risk	5%

	management and quality assurance methodology are also outlined.	
Timetable	The proposal provides a detailed timetable of events to ensure that deadlines can be met and explicitly identifies any contingency.	10%
Price	The proposal is competitively priced and represents good value in the context of the goods/services to be delivered over the life of the contract. Costs are clearly demonstrated and justified. Best value bids will demonstrate an appropriate combination of cost and quality.	15%

In the event of a number of proposals being received, short listed HEI's may be invited to provide a presentation to the Evaluation Panel or interview to demonstrate their understanding of the project. The following scoring convention will be used to assess each of the responses to the above quality questions.

Score	Descriptor
4	Excellent response - is excellent overall and will include a balance of completely relevant elements of the Contract as specified (but not limited to the specifications) The response is comprehensive, unambiguous and demonstrates a thorough understanding of the requirement and provides details of how the requirement will be met in full
3	Good response - is relevant and will include a balance of elements of the Contract as specified (but not limited to the specifications) The response is sufficiently detailed to demonstrate a good understanding and provides details on how the requirements will be fulfilled
2	Acceptable response - will include some elements of the Contract as specified (but not limited to the specifications) The response addresses a broad understanding of the requirement but lacks details on how the requirement will be fulfilled
1	Poor response - is partially relevant and will include few elements of the Contract as specified (but not limited to the specifications) The response addresses some elements of the requirement but contains insufficient/limited detail or explanation to demonstrate how the requirement will be fulfilled
0	Unacceptable - Nil or inadequate response Fails to demonstrate an ability to meet the requirement

The Evaluation Panel reserves the right to recommend that if the score for any one criterion is "0", that the Contractor not be recommended. That is, they reserve the right to veto a Contractor if it does not meet at all any one of the criteria.