



CALL FOR ACADEMIC PROPOSALS: Evaluation of a Digital Solution for the Assessment and Management of Pain in Scottish Care Services

Introduction

This is an academic call for proposals to undertake a cost benefit analysis of a digital solution to assessing and managing pain (PainChek®) when introduced to care services in Scotland. The data will be provided by the Care Inspectorate who have been leading on a implementation trial with a number of services throughout 2023/24.

PainChek® is a clinically validated pain assessment tool initially designed to improve pain management for individuals with moderate to severe dementia in aged care settings. Using a combination of AI technology, facial analysis, and the Numeric Rating Scale (NRS), PainChek® detects pain cues even when they are not overtly obvious. Caregivers can use their smartphone camera to analyse facial expressions, allowing for fast and consistent pain monitoring. PainChek®'s central reporting suite (PainChek® Analytics) securely stores all assessment data, reducing the risk of errors and enhancing overall care quality. With a strong reputation across the industry, PainChek® has facilitated over 4.1 million clinical assessments in aged care facilities worldwide.

The Scottish pilot started in 2022 (Phase 1) where the project team (led by the Care Inspectorate) undertook a small-scale test, producing six months test data from 4 care homes for older people. Scottish Government's TEC programme funded 40 licences which were introduced to services as part of a rolling programme with staggered starts. Some summary figures include:

- 58 social care staff across 4 care homes completing digital pain assessments throughout Phase 1;
- 1705 total pain assessments completed in the 6-month test period following the introduction of PainChek®;
- Across 4 homes median of 80% of residents have had at least one pain assessment per month; and
- Baseline data highlighted 0 documented pain assessments in all 4 care homes.

Phase 2 started in November 2023 with the first service going live in January 2024. The TEC programme funded an additional 400 licences to further test PainChek® in a range of different service contexts. The test will include 11 care services and include a range of user groups and service types (local authority, third sector and voluntary).

The programme team now wishes to understand full cost benefits from the implementation of PainChek® to inform national strategic planning.

The purpose of this independent evaluation is to consider the outcomes from Phase 1 and 2 to undertake a full cost benefit analysis of PainChek® following implementation in Scottish care services.

The Digital Health & Care Innovation Centre (DHI) and the Scottish Government's Digital Health and Care Directorate are jointly funding an academic grant for this piece of work. DHI will be managing the award of the grant on behalf of both parties.

Overview

We expect interested academic institutions to provide a brief response document (maximum 10 pages) clearly setting out their approach to this piece of work and detail 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 of the team, which can be attached and will be included in the scoring.

The approach is anticipated to draw upon both:

- The available data and case studies from the Care Inspectorate's Phase 1 and 2 improvement project; and
- The direct experiences of people within care services, including:
 - social care managers
 - social care staff
 - people experiencing care
 - family and friends
 - best practice and evidence from the literature regarding pain assessment and management

This will enable the academic team to identify how, and to what degree, the introduction of a digital solution to assess and manage pain, has made a difference to services and people experiencing care in Scotland in terms of:

- Associated cost benefit (for example, reduction in hospital admissions and care costs);
- Cost benefit from reduced instances of stress and distress, reduction in falls and associated ambulance call outs and rates of prescribed medication;
- Enhancing of the digital skills and confidence of social care staff;
- Identifying contributing factors to the successful introduction and continued use a digital solution to undertake pain assessment in Scottish social care services; and
- Identifying wider learning relevant to the implementation of digital solutions in social care settings in Scotland.

PainChek® has identified the following potential outcomes for people in care services, care providers and community services:

Care Services	Care Providers	L.A./ Community Services
Comfortable, not in pain	Timely monitoring of pain	Support anticipatory care in community
Reduced distress incidents	Building capability of workforce	Support care home placements better
Reduced falls (not requiring hospital visit)	Reduced dependency levels	

Reduced safeguarding incidents	Improved communications with GPs	
Optimising medication	Reduced polypharmacy	
Better end of life experience	Reduced care home placement breakdowns	
Improved diet, wellbeing and independence		

Background

The aim of the Care Inspectorate pilot is to test the value of using a pain monitoring app, which utilises automated facial analysis and artificial intelligence, on outcomes for residents in care homes, by monitoring quality of life indicators, changes to medicines prescribed and used, and ease of use of the app by staff.

For the 4 homes in Phase 1, we received full medication data and quality of life (QOL) measures for one home. It should be noted a number of challenges led to services dropping out and not being able to provide the requested test data. For Phase 2, the team have tried to mitigate against the risks in the selection of services which started in January 2024. We currently have four services live with another seven services going live in the next few months. Phase 2 is expected to run until December 2024.

Phase 1 highlighted no documented pain assessments in the baseline data for all services. This trend has continued in Phase 2, and appears to be reflective of the wider care home sector in terms of services having limited documented pain assessments. It also means that the use of PainChek®, when compared to ‘normal practice’ may be viewed as an additional assessment measure for staff who are not currently documenting pain assessments. However as the data from Phase 1 shows, there may be real benefits to accurate and regularly documented pain assessments. Phase 2 hopes to recruit learning disabilities services which we understand are more likely to document pain assessments. This will provide helpful comparisons for the Phase 2 evaluation.

Policy context

Access to effective pain management is often viewed as a human right. However, currently, the under-use of pain assessment and documentation of pain is limited with figures as low as 29% across the sector in England. In the Care Inspectorate’s small trial in Scotland, baseline data no documented pain assessments from services considered ‘better performing’ in terms of scrutiny risk.

Scottish Government acknowledge that approximately 90,000 people are currently living with dementia with 30% of these individuals living in care homes. This accounts for at least 66% of the care home population in Scotland and the number is growing. The annual diagnosis is estimated at 20,000 citizens per year. One of the major areas of the Scottish Government National Dementia Strategy is ‘improving integrated home care and dementia palliative and end of life care’. In nursing homes it is estimated around 60% to 80% of people with dementia regularly experience pain.

With 1,400 care homes providing a home to over 50,000 residents of all ages with varying needs ensuring personalised care can be challenging. Over 60% of people experiencing care in care homes are living with dementia or other cognitive and communication issues. Additionally, individuals may incur shorter periods of trauma which may impact temporarily on the ability to verbally communicate or self-report. The use of effective pain assessment is not limited to older adults in care home settings. Those with Autistic Spectrum Disorder (ASD), learning disabilities and other cognitive/communication difficulties may not reliably be able to self-report pain.

The Scottish Government's Digital Health and Care strategy (2021) outlined 6 priority areas which provide the direction for all activities outlined in the delivery plan. This project fits squarely across a number of priority areas in terms of digital access, services, foundations, skills and data driven insight. Published in February 2021, the Independent Review of Social Care placed further emphasis on digital as it provided a clear vision of the future of adult social care. It suggested many opportunities for digital to play key role, both in terms of creating the infrastructure and fully enhancing the citizen's experience of a modern, human-rights and equity based social care system.

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 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.

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 in discussion between the successful academic institution and the Project Steering Group.

Scottish Government will proactively inform stakeholders about the evaluation in advance, however the grant holder will be required to remain mindful about pressures on care homes, staff, residents and their families and it will be important to ensure participation is not onerous or burdensome for participants. The grant holder will be expected to put in place appropriate arrangements for informing participants about the evaluation, what their participation will involve and how the information will be used. It is not anticipated that interviews 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.

The proposal should also describe what approaches might be taken to ensure the final report may be useful both to the funders as well as Scottish care home providers themselves.

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 evaluation experience in a health and/or social care context;
- Options appraisal (ideally of health and care service models);
- Cost benefit analysis expertise; and
- A good understanding of the health and social care landscape in Scotland/UK.

Milestones, Deliverables and Timescales

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

Tender Process:	Date
Issue call for bids	17 th April 2024
Deadline for submissions	24 th May 2024
Contract awarded	21 st June 2024
Kick off meeting	w/c 8 th July 2024
Project milestones with deliverables	Date
Agreed methodology/proposal acceptance	19 th July 2024
Initial analysis report of desktop research & existing data in TEC	25 th October 2024
Draft Evaluation Report	6 th December 2024
Final Evaluation Report	17 th January 2025

Table 1: Project Timetable

Governance

A Project Steering Group with representation from DHI, Scottish Government Digital Health and Care Division and other relevant organisations/experts 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 DHI as the lead commissioning body, working in collaboration with the Scottish Funding Council as the funding body of their contribution.

DHI Lead Contact:

Jennifer Thomas, Research and Knowledge Management Officer: jennifer.thomas@dhi-scotland.com.

Copyright

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 up to £30k, including any relevant VAT. Phasing of payment is detailed in Table 2 below.

Milestone	Completion	Payment
Formal Proposal Acceptance	19 th July 2024	50%
Initial Desktop & TEC Data Analysis Report	6 th December 2024	25%
Acceptance of Formal Evaluation Report	17 th January 2025	25%

Table 2: Project Milestones

Response

You are invited to respond to this document with the following information, with max 10 pages of text:

- 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.

Response proposals are to be submitted to research@dhi-scotland.com. 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 and the TEC Programme. 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 <u>relevant to this project</u> 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 management and quality assurance methodology are also outlined.	5%
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.