

HealthX Call-for-Innovation

Redefining Health Coaching and Patient Education

Although the CFI use cases are centred on Population Health and Community Care (PHCC), the following NUHS institutions and teams are also participating in the CFI:

1. Alexandra Hospital Innovation Lab
2. Alexandra Hospital Metabolic Clinic
3. Ng Teng Fong Hospital Digital Think Tank
4. Nursing Informatics Leads from National University Hospital, Alexandra Hospital and National University Polyclinics
5. CHAMP

1. Background

The NUHS PHCC team delivers population programmes focused on preventive care, chronic disease management, and community-based interventions. These services are currently provided through home visits, community health posts (CHP) and virtual consultation. Selected residents who are motivated are enrolled into structured health coaching engagements, targeting conditions such as diabetes, hypertension, and lifestyle-related risk factors.

With increasing demand for preventive and community care services, there is a need to enhance current delivery models to improve accessibility, consistency, and scalability across the population.

2. Key Challenges

Increasing population health workload

PHCC currently deploys 46 Health Coaches across 88 CHP sites. Based on FY2026 annualised projections, they are expected to support about 6,796 unique residents, including approximately 360 residents enrolled in structured health coaching. This translates to around 148 unique residents per coach each year, before factoring in broader responsibilities such as screening, care navigation, health education, community activities, documentation and escalation.

A time- and location-dependent delivery model

Health coaching and patient engagement are currently constrained by structural, operational and resource limitations.

Health coaching is manpower-intensive, requiring repeated one-to-one engagements over time. A typical structured session requires trained staff, with initial visits lasting about 60 minutes and follow-up visits about 30 minutes.

Health coaching capacity is constrained by the available workforce and is difficult to scale through manpower alone. While NUHS serves approximately **1.2 million residents**, only 5,783 unique residents attended CHP in FY2025, with 152 enrolled in structured health coaching—just

2.6% of CHP attendees. This limited reach highlights a significant opportunity to better engage residents who may benefit from preventive care, chronic disease management support and behavioural coaching.

AI-enabled health coaching can extend the reach and impact of existing programmes beyond current workforce capacity. By providing accessible, timely and personalised support outside conventional one-to-one encounters, it can augment rather than replace Health Coaches. This would allow health coaches to focus on residents with higher-touch needs, while routine education, behavioural reinforcement, progress monitoring and follow-up are delivered more efficiently through digital channels.

Accessibility is limited because services remain tied to fixed locations and scheduled appointments. This reduces flexibility, delays engagement and may affect completion of planned intervention milestones, particularly for chronic disease management programmes and working adults.

The patient experience may also be affected by variations in service delivery, as patients may occasionally need to visit different CHP locations to access care due to capacity considerations. This can introduce some discontinuity in care and may impact the consistency of patient engagement over time.

At a system level, these factors contribute to scalability limitations and variability in service quality. Differences in delivery approaches across personnel can lead to inconsistent patient experiences and outcomes.

Growing Demand for Health Education Amidst Static Delivery Models

Current patient education offerings are largely limited to static content, such as webpages and reference materials, which do not facilitate interactive learning, personalised guidance or real-time engagement. While these resources provide information, they are less effective in addressing individual learning needs and supporting behaviour change.

At the same time, digital utilisation data indicates substantial demand for health education among residents. In 2024, the NUHS App recorded 82,772 combined click-throughs to PHCC Health Together and Self-Help Tools. The NUHS website also recorded over 188,678 views across Health Together, Health Library and Community Health pages in 2025. The consistently high level of engagement suggests that residents are actively seeking health information through NUHS channels. This presents an opportunity to transform existing static content into more engaging, interactive and personalised learning experiences that can better support self-care, preventive health and long-term health outcomes.

NUHS App Click-Through rates	CY2023 Actual	CY2024 Actual	CY2025 Actual
NUHS App - Health Together click-through rates (Annual)	49,124	76,064	74,514
NUHS App - Health Together Self-Help Tools click-through rates (Annual)	6,828	6,708	<i>No data</i>
Combined click-through	55,952	82,772	74,514

Website views	CY2023 Actual	CY2024 Actual	CY2025 Actual
NUHS Health Together - Overview	No data available	40,475	63,328
NUHS Health Together Only		38,978	57,705
NUHS Health Library Only		7,832	23,634
NUHS Community Health Only		18,952	44,011
Combined views		106,237	188,678

3. Challenge Statement

How might we enable PHCC to transition from episodic care to a preventive, continuous, and patient-centred care model by leveraging digital solutions that augment health coaching capacity and deliver accessible, consistent, and personalised engagement beyond physical encounters?

4. What Are We Looking For? (To-Be / Ideal State)

a. Health Coaching

Proposed solutions should enable structured, interactive patient engagement using motivational interviewing techniques to support ongoing health coaching. The solution should facilitate functions such as goal setting (e.g. blood pressure, HbA1c, cholesterol levels, BMI), lifestyle counselling (including diet, exercise, and hydration), and behavioural support to reinforce positive health practices.

The digital avatar is intended to augment, not replace, face-to-face interactions with Health Coaches. By providing residents with 24/7 guided support, it can extend workforce capacity while enabling Health Coaches to focus on residents with higher-touch or more complex needs. For example, in the current Primary Care Network partnership programme to lower HbA1c, residents attend monthly health coaching sessions over 6 months. Depending on each resident's digital readiness, the avatar could support 2 to 3 of these sessions, reducing the need for all 6 sessions to be conducted face-to-face. Face-to-face sessions can then be prioritised for key touchpoints such as initiation, review or escalation, while avatar-generated summaries are reviewed by the Health Coach on the next working day to maintain oversight, continuity and safety. During health coaching, Health Coaches use Motivational Interviewing techniques and assess the resident's readiness to change using the Transtheoretical Model. They explore what matters most to the resident, identify clinical, social and other concerns, and support the resident to set S.M.A.R.T. lifestyle modification goals that can be tracked across the six-session coaching journey. Each session concludes with documentation of progress and planning for the next review.

A sample of the documentation template is attached in Annex A.

Overall, the solution should enhance existing care delivery by augmenting current resources, while maintaining continuity and consistency in patient engagement.

b. Patient Education

The proposed solution should strengthen patient education by providing interactive, responsive access to health information. Instead of relying on static materials or one-way videos, it should allow users to explore content through guided prompts or query-based interactions.

All responses should be grounded in approved organisational materials and aligned with clinical guidelines and policies. The solution should also support multi-language capabilities to cater to a diverse patient population and improve accessibility.

The intended outcome is to improve patient comprehension, retention of information, and ability to self-manage health conditions effectively.

5. General Requirements

The proposed solution should meet the following broad requirements:

a. Patient Experience

The solution should provide on-demand access to health coaching and education services across multiple platforms (e.g. mobile, web, and community-based devices), independent of physical location. User interaction should be intuitive and accessible, supporting personalised experiences that take into account individual health status, engagement history, and behavioural context.

b. Content and Safety

All outputs must be based on approved clinical materials, organisational policies and standard operating procedures to ensure accuracy and safety. Clear safeguards should keep responses within approved boundaries and prevent misleading, inappropriate or potentially unsafe information.

The solution should integrate with existing institutional content repositories as trusted sources of reference.

The solution should support appropriate content governance processes, including the ability for authorised personnel to review, update, approve, and retire coaching and educational content as clinical guidelines, organisational policies, and programme requirements evolve.

The solution should provide mechanisms to recognise and appropriately handle out-of-scope, clinical, urgent, or emergency-related queries, including escalation to appropriate healthcare services or care teams where required.

c. Analytics and Monitoring

The solution should provide capabilities to capture and generate insights on usage, engagement, and behavioural trends. It should support mechanisms to identify potential risks, such as disengagement, and enable timely follow-up where required. Functionality to summarise interactions and support downstream workflows is preferred.

The solution should support appropriate human oversight mechanisms, allowing authorised personnel to review interactions, intervene where necessary, provide feedback to improve AI performance, and support governance of patient-facing content and interactions.

In addition, the solution should provide capabilities to monitor AI performance, including response quality, safety incidents, escalation rates, user feedback, and adherence to approved content and safety boundaries.

d. Integration and Patient Context

To support personalised and context-aware health coaching, the solution should be capable of integrating with relevant NUHS systems and digital health platforms, subject to governance and security approvals.

The solution should be able to consume patient-context information, where appropriate, to support tailored coaching interventions and educational recommendations.

Examples may include:

- Demographic information
- Relevant clinical observations, measurements, and health data
- Health screening results
- Patient goals and care plans
- Enrolment in NUHS programmes

The solution should demonstrate the ability to securely exchange data with enterprise healthcare systems using industry-standard integration approaches.

In addition, vendors should articulate their proposed approach to integration with existing NUHS patient engagement platforms, including WhatsApp-based engagement ecosystem: CHAMP.

e. Scalability and Operations

The solution should be designed to operate at scale within the public healthcare environment, supporting large user volumes and concurrent access.

The solution should align with prevailing governance, privacy, cybersecurity, operational, and data protection requirements and support reliable deployment within enterprise healthcare environments.

Vendors should describe their approach to system reliability, monitoring, maintenance, incident management, and business continuity to support sustained operations.

f. Interoperability and Technical Standards

The solution should align with prevailing healthcare interoperability, technology, and data exchange standards to facilitate integration within the NUHS digital health ecosystem.

Vendors should describe their support for relevant standards and frameworks, where applicable, including:

- HL7 FHIR (Fast Healthcare Interoperability Resources)
- HL7 messaging standards
- RESTful APIs
- OAuth2 / OpenID Connect, or equivalent authentication standards

- Industry-standard audit logging and monitoring practices

The solution should support a modular, API-driven architecture to enable secure integration with healthcare systems, patient engagement platforms, analytics platforms, and enterprise applications. Preference will be given to solutions that adopt open standards and interoperable architectures to minimise vendor lock-in and support long-term integration within the broader NUHS digital ecosystem.

Where proprietary approaches are utilised, vendors should clearly describe how interoperability, portability, and future integration requirements will be supported.

6. Intended Outcomes

The proposed solution is expected to improve the overall effectiveness and reach of health coaching and patient education programmes. Specifically, it should increase service coverage without a proportional increase in manpower, improve adherence to health interventions, and enhance patient understanding through more engaging and responsive education.

It should also support more consistent delivery of care, reduce missed intervention milestones, and enable a more proactive, data-informed approach to population health management.

Outcome area	Expected value
Access and reach	Provide residents with on-demand access to trusted coaching and education beyond fixed locations and scheduled encounters.
Workforce augmentation	Allow Health Coaches to extend their reach and focus human effort on residents requiring complex support, escalation or deeper behavioural intervention.
Consistency and safety	Ground responses in approved content and defined boundaries to reduce variability and support safe, consistent engagement.
Resident engagement	Support goal setting, periodic follow-up and responsive education to help residents understand and self-manage their conditions.
Operational scalability	Increase service coverage without requiring manpower to grow at the same rate as resident demand.
Population health intelligence	Generate insights on utilisation, engagement and behavioural trends to support proactive follow-up and programme improvement.

Annex A

NUHS Community Care Team	
{NUHS Health Coaching / CHP:47278} – Staff to select “Health Coaching” and include CHP site details	
Name of Person spoken to, Relationship to Patient:	Self {NUHS Health Coaching - language:47275} – Staff to select language used
Time of Contact:	16:31 – xxxx – Staff to input duration of session
Session	{NUHS Health Coaching Session:47280} – Staff to select session number
Stage of Change	
{NUHS Health Coaching - Stages of Change:39714} – Staff to select current stage of change	
What Matters to You:	
{NUHS Health Coaching - What matters to you:39191} – Staff to select from options provided	
What you want to work on and Achieve	
{NUHS Health Coaching - Goals and Target:39192} Staff to select from options provided	
Goals & Target:	
Diet {NUHS Health Coaching Diet (Main):47273} Staff to select from options provided {NUHS Health Coaching Diet - Optional (Main) (Optional):47354} Staff to select from options provided and indicate if action plan is on track	

{NUHS Health Coaching Diet - Optional (Main) (Optional):47354} Staff to select from options provided and indicate if action plan is on track

Lifestyle

{NUHS Health Coaching - Lifestyle (Main):47279} Staff to select from options provided

{NUHS Health Coaching -Lifestyle Optional (Main) (Optional):47355} Staff to select from options provided and indicate if action plan is on track

{NUHS Health Coaching -Lifestyle Optional (Main) (Optional):47355} Staff to select from options provided and indicate if action plan is on track

How are you progressing:

Free Text input by Health Coach

Escalation / Case Huddle:

{Case escalation/ huddle (if applicable):45175::"Attendees: ","Discussions/ Plans: "} - Staff to select from options provided

AAC Huddle

Attendees	AAC Staff
Discussion/Plans	{AAC huddle:41069} - Staff to select from options provided

{NEHR access (if applicable):49865::"Access to NEHR for review of"}

Next Follow up Plan / Date:

Free Text input by Health Coach