Digital Health & Care Innovation Centre

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Care Homes Assessment Tool Proof Of Concept

Stage 2 Report – Executive Summary

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The DHI was established as a collaboration between the University of Strathclyde and the Glasgow School of Art and is part of the Scottish Funding Council's Innovation Centre Programme. The DHI is also part-funded by Scottish Government. DHI supports innovation between academia, the public and third sectors, and businesses in the area of health and care.

A collaboration between
INNOVATION SCHOOL THE GLASGOW SCHOOL OF ART
University of Strathclyde Glasgow

Introduction

This document is an Executive Summary of the End of Stage Report for the Care Homes Assessment Tool Proof of Concept (CHAT Stage 2).

The report has been produced by the Digital Health & Care Innovation Centre (DHI) and Scottish Care to;

- share learnings from CHAT Stage 2 with key stakeholders and project participants,
- formally report to the Scottish Government Digital Health & Care Directorate as funders of CHAT,
- and outline any next steps/ recommendations.

Background

The effects of the coronavirus pandemic began to escalate in Scotland in March 2020. In response to this, DHI and Scottish Care agreed to collaborate on the development of a digital Care Homes Assessment Tool (CHAT) for Covid-19 following positive findings from a Stage 1 Test of Change undertaken in June 2020.

CHAT Stage 2 sought to develop the wireframes tested in Stage 1 into an initial production version and develop an associated service model.

Objective:

To rapidly develop and test a live implementation of the CHAT in at least two Health Board/HSCP areas to improve local operational decision-making in Care Homes, aid communication in situations where external clinical support is required and provide early notification of a potential viral outbreak within this sector.

Anticipated Key Deliverables:

- Develop an early-stage production version of the digital tool for readiness by November 2020. This would support the COVID-19 pandemic in Care Homes, but with the capability of being enhanced to cover other deteriorating situations.
- Establish impact metrics for the project and undertake an independent evaluation to evidence performance against these.
- Develop a service model that could be scaled nationally, including the development of workflow and data flows to external clinical top cover.
- Produce staff training materials for users of the Care Home Assessment Tool (CHAT).
- Produce a Service Implementation Pack to support adoption and spread nationally.
- Implement a 'live' small scale service in Care Homes within at least two Health Board/HSCP test beds.
- Produce an End of Stage 2 Project Report.

Project Partners & Roles

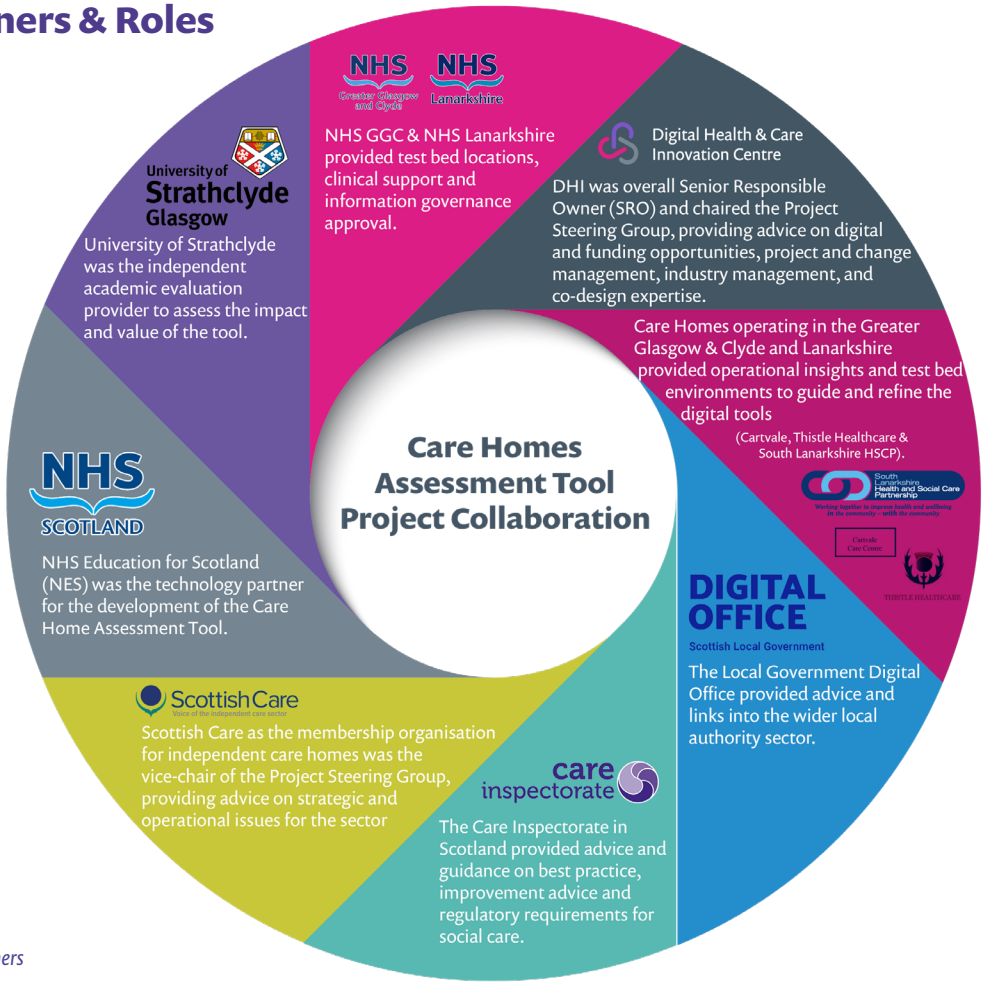

Figure 1: CHAT Project Partners

Report Structure

9 key work packages were identified with lead organisations assigned to each.

Work Package	Work Package	Work Package
1	Project Management	DHI
2	Service Model Review	DHI
3	Application Development	NES
4	Service & Infrastructure	NES
5	Dashboards	NES
6	Governance & Compliance	DHI
7	Training & Guidance	DHI
8	Evaluation	UoS
9	Dissemination	Scot Care/DHI

The insights captured from the project are presented around the workpackages in the following sections along with lessons learned, conclusions and recommendations.

Key Findings

Workpackage 1: Project Governance & Management

The CHAT project spanned 3 waves of the Covid-19 pandemic within care homes (Aug 20 – June 22).

Significant challenges were experienced in terms of steering group representation and attendance whilst running an innovation project in the midst of a pandemic. It took until Nov 2020 to get the steering group meetings onto a regular monthly schedule. Many of the steering group members had to juggle competing operational pressures on a daily basis. NES Digital as the application developer for CHAT also had to redistribute its capabilities and capacity to competing and national digital developments which coincided with the peaks of the Covid-19 infection escalations (Figure 2).

Due to capacity issues, DHI frequently had to divert resource from project management to support implementation and cover other gaps as partners had to step away.

However, despite all this the project steering group members attended meetings throughout the project when they were able and gave their time and personal commitment to its delivery, they made significant efforts to provide help and support where requested.

The identification of an overarching Product Owner for a national digital service such as CHAT was not resolved over the duration of the project. This is a significant issue that needs to be addressed if national digital solutions for social care/integrated care services are to be adopted at scale in Scotland.

There is a risk that with the growing interest in digital solutions for social care, a plethora of unconnected products and services appear with no clear overarching architecture which enables data flow and information sharing. It may be that the National Care Service could lead such developments. The "National Care Service for Scotland" consultation[1] document states:

"The National Care Service (NCS) will be responsible for… digital enablement."

Further discussion with NCS may inform a suitable way forward for national digital products in the social care/integrated care space, although this is not likely to be resolved over the short term.

[1] https://www.gov.scot/publications/national-care-service-scotland-consultation/pages/5/

Workpackage 2: Service Model Review

Overall, CHAT was perceived by front line service staff to have positive value by enabling clear structured communication between care homes and the GP/or 'top clinical cover' for deteriorating resident situations.

The standard workflow developed in Stage 1 was seen to largely align with the current workflows in most of the Stage 2 care homes and GP practices that were identified to take part. A refined workflow version was developed for Stage 2 to reflect an email workaround approach as it was not possible to activate the anticipated Electronic Document Transfer (EDT) process due to capacity issues in the NHS technical support teams.

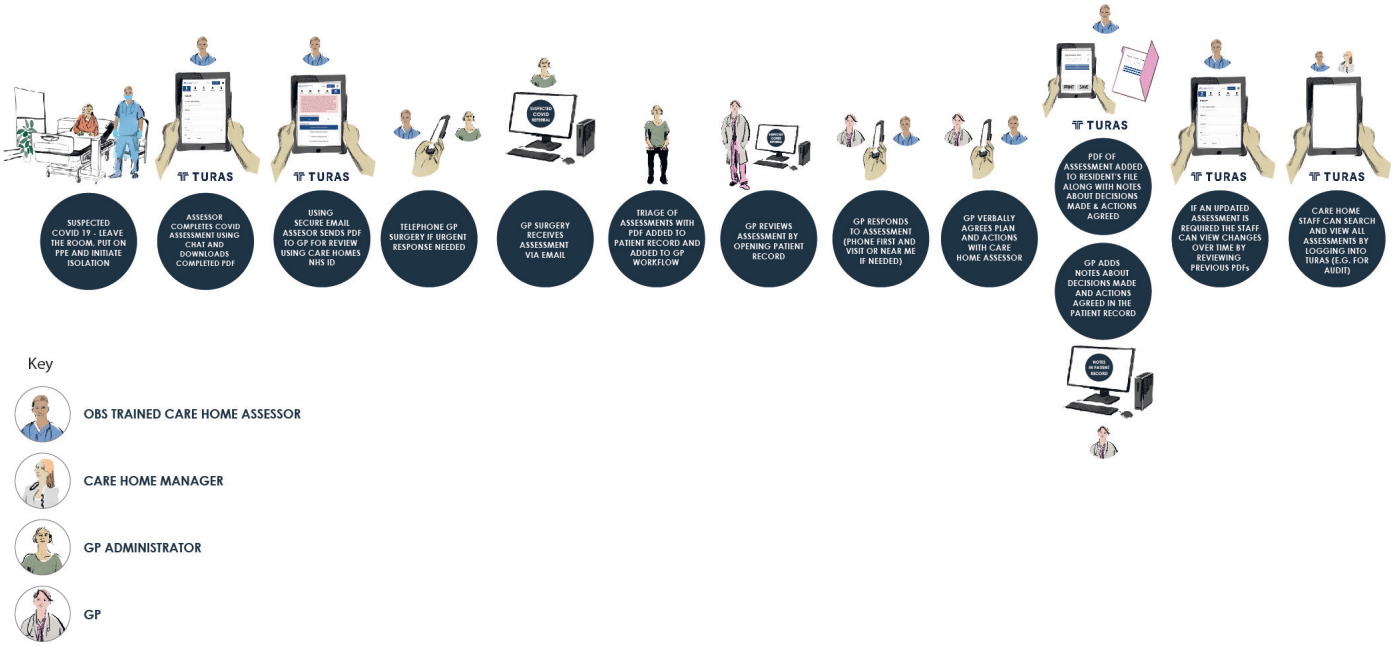

Figure 2: High-Level Service Workflow Teal and Raman 2021; Illustration credit: Tessa Mackenzie

Care home staff and GP practice staff were positively engaged in the workflow review and contributed to discussion on potential challenges when using CHAT. A more effective use of time and limited resources would involve collaborative co-design sessions with all the key stakeholders and the developer to input and feedback on development as it progresses. This approach worked successfully in Stage 1, however the capacity challenges experienced throughout Stage 2 did not enable this to happen.

There were obvious good relationships already in place between the identified care homes and the GP practices and it would have been interesting to see how CHAT worked in an environment where good relationships and communications were not established.

Using the Stage 1 High-level Service Model as a starting point for Stage 2 was anticipated to accelerate development, however the current variation of service models within care homes across Scotland needs to be mapped to inform any digitally enabled national future stage model.

CHAT Stage 2 ended up supporting a simplified 1:1 relationship between care homes and GP practices due to project constraints, rather than ensuring a digital solution could address the complexity of service models across Scotland e.g one care home to many GP practices.

Workpackages 3,4 & 5: Application Development

The application itself was considered simple and easy to use.

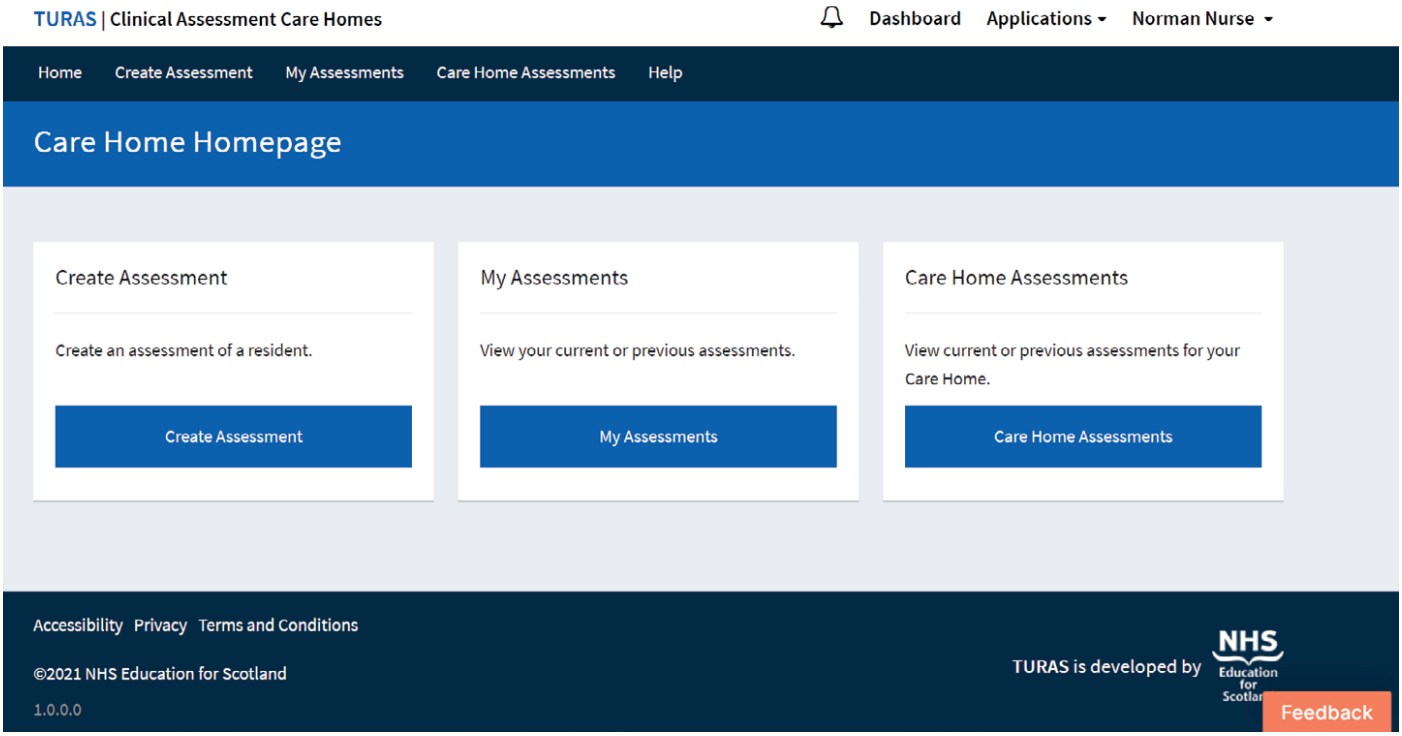

Figure 3: TURAS User Dashboard

However, as noted previously the current over-simplified 1:1 relationship between care homes and GP practices used within the project cannot be scaled nationally as many homes in Scotland support their residents to remain with their legacy GP's in the communities they previously lived in. A more sophisticated response needs to be found to match individual residents to the correct health professional. The escalation route used in the project was also limited to 'in hours' only and consideration would need to be given to suitable Out of Hours communications. Any future application would also need to provide two-way communication and information flow between the care home, GP practices/Out of Hours Services and expand its usage to non-infection related conditions experienced by residents.

The use of EDT as an automated delivery route for the assessment was not tested during Stage 2, however this usage was anticipated to have inherent difficulties as the refresh rate for EDT (approx. hourly) does not support urgent communications which would be required for a deteriorating resident situation. The interim use of secure email provided a more timely communication channel, but this does not automatically transfer information into the GP Docman system creating risk and inefficient pathways. Integration with other care homes systems would also be required to support more efficient storage. Data quality and lack of interoperability between legacy systems are systemic problems which will require decisions and investment to be made at a national level.

The current TURAS security restriction to public sector nominated email accounts only (implemented because of the Ukraine War) would need to be addressed to enable private sector homes to utilise CHAT on an ongoing basis.

It is recommended that a systems architecture approach to future solution design should be adopted. Although organically growing a solution is acceptable for a Proof of Concept, a more structured approach is required for national scale and maintenance.

Scottish Care and others are keen that decision support tools such as RESTORE2/NaRT would be an integral part of CHAT. A future CHAT should link with the Right Decision Support Service which has already validated toolkits, is UK CA marked, and supported by services and Scottish Care, rather than recreating stand-alone decision support solutions

Workpackage 6: Governance & Compliance

Information Governance

There continues to be significant challenges in navigating and aligning information governance and compliance processes and documentation across different providers and sectors. Developing documents and navigating disconnected processes took up a huge amount of time and resource for a project of CHAT's size.

The suite of current documentation requirements is large and contains duplication. CHAT has developed a suite of template documents to support IG compliance and there appears significant opportunity for streamlining aspects of these.

Care home providers were less experienced in information governance than the NHS and had the additional complexity of confirming risk liability with their insurers. Support and guidance provided by expert NHS IG colleagues enabled progress to be made.

If integrated care is to become a reality in Scotland, information governance and compliance processes need to be clear, streamlined and be accompanied by readily available professional IG support. It is suggested that the Care Inspectorate should consider a requirement to identify responsible officers for IG documentation and approvals within the sector.

Clinical Governance

Although a Scottish Government led Care Homes Clinical and Professional Advisory Group (CPAG) had been established to provide national Covid-19 clinical guidance for care homes, they were unable to address the requirement of the small CHAT project in a timeous way due to significant competing pressures evident at that time. Unfortunately, significant time was lost awaiting responses from CPAG/its sub-group at important stages in CHAT's development.

The project-based CHAT Clinical Sub-Group then operated well on an agile basis, with members providing expert advice and steering the documentation via local processes.

It is recommended that a consistent and national approach to clinical governance and compliance for care homes would be useful to support consistency, reduce inefficiency and ensure high service standards and streamlining approvals for future digital innovations. This may involve agile, short-life groups including reps from national and local stakeholders to provide expertise and help navigate this complex area.

Workpackage 7: Training & Guidance

The level of digital skills for staff working within care homes is extremely variable. To support the introduction of CHAT into practice a flexible approach was adopted. This supported basic skills and confidence levels in the use of digital devices by

- working with Barclays Digital Eagles on online training;
- the development of User Guides which could be referenced as needed;
- and the scheduling of virtual training sessions on CHAT at times which suited staff availability.

In-person training sessions were not possible due to Covid-19 restrictions.

In practice, there were very low levels of attendance at the virtual training sessions, and it was difficult to ascertain if this was because of other priorities within the care home or a lack of perceived value from the use of CHAT. A more comprehensive approach to the training and upskilling of care home staff in digital is required to support development and adoption of suitable digital solutions.

Workpackage 8: Evaluation

The University of Strathclyde research team designed the evaluation to be both pragmatic and agile to work around the ongoing and evolving priorities that the COVID-19 pandemic presented. Their original aim was to evaluate the: (i) efficiency, (ii) data quality, (iii) care process, (iv) training, (v) scalability, and impact of CHAT during live implementation in NHS Greater Glasgow and Clyde and NHS Lanarkshire over the course of the pandemic. This had to be changed in response to the challenges encountered during CHAT and was revised to evaluate: i) perceptions of CHAT, (ii) barriers and enablers of CHAT, (iii) potential changes to the tool, (iv) alongside lessons learnt and facilitators for uptake at a national level.

A total of 7 care homes and associated GP practices were identified to participate in CHAT with 4 going live during the period of the project due to capacity and other Covid-19 related local challenges. A total of 11 CHAT forms were initiated by the care homes with 9 submitted.

As only 4 out of the 7 identified care homes submitted forms using CHAT, the findings presented in the full evaluation report are based on a subsample of these staff alongside inputs from both GP practices and the steering group. Although Strathclyde's evaluation approach remained agile throughout, the engagement from participants was not as high as they would have liked and the findings are therefore tentative and limited in terms of generalisability.

The findings from this small evaluation tentatively suggest that the use of CHAT should be further developed and evaluated within care home settings. Future developments may consider:

- Including a wider range of clinical applications to make the use of CHAT suitable for general use
- Incorporating validated risk assessment tools to support diagnosis and triage
- Supporting direct communication with external clinical support and integration with electronic health records
- Ensuring adequate resource (policy, organisational, workforce, finance) to support the successful use of CHAT in care home setting
- The timing of future implementations of CHAT and surrounding contextual factors to optimise uptake and use
- Future evaluations to further determine the feasibility and efficacy of CHAT to inform decisions re future national uptake

Workpackage 9: Dissemination

Limited dissemination during the project timelines took place beyond the funders and project partners due to the need to prioritise use of project resources on delivery.

Participation in the Nordic Gerontology Conference in June 2022 identified there are some interesting developments in the use of digital within social care/integrated care starting to emerge in Denmark, and it would be useful to maintain relationships to support ongoing knowledge exchange. Further dissemination is planned following the publication of the End of Stage Report.

Lessons Learned

Putting the specific issues associated with the Covid-19 pandemic to the side, the key learnings from the project were;

- Keep initial scope of innovative digital solutions simple to accelerate adoption within tight timescales and add on enhancements/functionality in an incremental way.
- Oversimplification of any service model will limit ability to scale. Undertake survey to map variation of service models operating across the country to inform specification for a national digital application.
- Collaborative co-design workshops involving all key stakeholders can be managed effectively on-line and should involve application developers sharing iterative versions to demonstrate progress and support adoption in an agile way.
- Information and Clinical Governance processes need to be clarified and simplified at a national level.
- Alternative solution to support timely and two-way transfer of information between care homes and NHS is required (in-hours and out of hours), as EDT does not provide a time sensitive approach.
- Need for a consistent approach to be in place nationally to support Care Homes staff training and digital upskilling.
- A future CHAT solution ought to be developed to an agreed solution architecture model to assure scalability and maintainability.

Conclusion & Recommendations

CHAT was a tactical response which was progressed in the midst of a pandemic to support a specific issue around improving local operational decision-making in Care Homes, and aiding communication with NHS colleagues in situations where external clinical support is required for a Covid-19 deteriorating resident case.

The project took significantly longer to implement than originally scheduled for a number of reasons. Primarily these were around capacity within the existing care homes to fully engage, capacity challenges for the application developer, and the time it took to navigate and complete the clinical and information governance processes whilst riding 3 waves of an ever-shifting Covid-19 environment.

However, putting the challenges of the pandemic to one side, there does appear to be general agreement that a digital tool to support consistent and structured assessments and communication would be valuable in support of integrated care. To achieve this at a national level, a single Product Owner who has the necessary authority to take on the responsibility for management and development of such a tool would be required. There appears no obvious current product owner within the Scottish social care environment who is positioned to do this, although the planned establishment of a National Care Service may address. Any future development of a Care Homes Assessment Tool should take into consideration the very detailed insights generated from the service modelling, the clinical and information governance experiences and technical requirements outlined in this Proof of Concept.

While practical usage of CHAT to carry out individual assessments has been low, the project has provided a plethora of useful insights which can be used to support future digital development around information sharing within an integrated health and social care environment. In effect, CHAT has operated as a microcosm to inform the larger system issues in our quest for early intervention and integrated care.

Short Term Recommendations (3-6 months)

- NES to put the CHAT into hibernation in July 2022, retain code and application backlog to inform future developments.
- DHI and Scottish Care share the CHAT Stage 2 Report with key stakeholders to support knowledge exchange and gather views on next steps.
- Scottish Government commission a survey to map the variation of care home service models operating across the country to inform the functionality and standards required for care homes assessment tools.
- All to use the findings of this report to further promote the need for comprehensive digital skills and training programmes for staff working in care homes
- DHI and Scottish Care raise issue with Scottish Government around fundamental need to develop consistent and streamlined Clinical and Information Governance processes in support of innovation.

Medium Term Recommendations (6-12 months)

- Identify a Product Owner to take on responsibility for development of a Care Home Assessment Tool to the next stage, learning from Stage 2.
- Consider who might be best placed to undertake any application development for CHAT Stage 3 bearing in mind that the current version of the application is not scalable, and NES have indicated that they have not built any capacity to support this into their development plans for 2022/3.
- Consider if the learning and insights gained from CHAT Stage 2 could usefully inform an application to the TEC (Technology Enabled Care) Programme for development of a Remote Health Pathway as part of the InHealthcare contract which has already been procured by Scottish government. However, to note that this will not resolve in isolation many of the systemic challenges identified in this project and will need a product owner.
- Consider adoption of the openEHR Framework[1] which advocates disaggregation of application development from data management[2] which in turn will open up competition from a wider spectrum of application developers, speed up application development whilst maintaining the confidentiality, integrity and availability of the citizen and patient data.
- There are fundamental issues around identity management which need to be addressed e.g. identify which staff are in which care homes, supporting which residents; which roles care home staff perform, which resident is supported by which aspects of the wider health and care system.

Long Term Recommendations (1-5 years)

- Note that the National Digital Platform is anticipated to provide the foundational architecture going forward for individual applications to connect and transact with the wider health system.
- Consider how the National Care Service could support strategic development of an integrated digitally enabled Health & Social Care system.
- Consider how adoption of a vendor neutral Open EHR model for National Care Service [3], would support the National Care Service Strategy.