Briefing paper - Joint bid for NHSX Wave 2 funding
South East region digital Covid Oximetry @ Home

Background

Access to the remote monitoring of patient vital signs, as part of the broader clinical model and pathway, can support a reduction in hospitalisation of patients, where escalations/admissions are made to acute care, remote monitoring can facilitate a more rapid discharge process and reduce length of stay. This supports the system to manage demand on ambulance and hospital providers, providing care in the community wherever possible.

A digital solution to support the delivery of CO@H across a region offers immediate benefits during the Covid-19 pandemic, supporting clinicians to remotely their patients more effectively and efficiently, to share data between different healthcare organisations.

Additionally, the digital solution has the potential to expand in scope, covering other use cases where remote observations are required from patients and supported by multiple health and care providers within the system. Remote monitoring and digitally enabled pathways will be a fundamental component of care delivery models in the near future.

As a partner in the Hampshire and Isle of Wight STP CO@H steering group, Wessex Academic Health Science Network helped pull together digital solutions that could support a regional CO@H approach. This options appraisal and due diligence was then offered to local South East region and Dorset partners to support the NHSX Wave 2 Innovation Collaborative Funding bid.

This paper outlines the process followed thus far and the procurement and contacting plans.

Options appraisal

The options appraisal of appropriate potential digital solutions included all the products available on the DPS Spark Framework, suppliers that were known to the AHSN Network through the Innovation register and any local products in place in the region.

Collaboration across the Wessex region with a wide-range of clinicians (across primary and secondary care), out of hours providers, acute providers, operational teams and strategic leaders concluded that a regional digital solution would need to answer the following 'pinch points' or common themes:

- Data visibility – no local model could make patient data available to out of hours, NHS 111 and acute providers in a sustainable and simple way
- Digital literacy – current workaround methods did not allow for patients with a wide range of digital literacy to use remote monitoring solutions
- Integration – no solution could provide visibility to the virtual ward and to the registered GP for a patient, therefore a digital solution needed to ensure all data went back to the registered GP
- Procurement – a solution would need to be able to be procured through a framework that allows either direct award or a desktop-based assessment process due to the very short timescale available.

There was only one provider that was able to answer all these requirements and who was already delivering in the NHS with a good reputation.

Product selection/recommendation

The chosen product based on the full options appraisal is Inhealthcare Ltd. A summary of the key features of the product is available in Appendix 1.

The Inhealthcare product allows for the full flexibility to build the CO@H pathway, offers multiple options for contacting patients (depending on their digital literacy), helps clinicians prioritise patients using algorithms that help RAG rate patients, offers an easy to access cloud-based dashboard and allows full (pull/push) SNOMED coded integration into common primary care clinical systems EMIS and Systmone (tpp). With planning, the solution also allows for the push of coded data into common secondary care integration engines.

NHSX Wave 2 Funding opportunity

NHSX announced an opportunity through the Innovative Collaborative programme, to bid for additional money to support the Wave 2 Covid-19 response. The funding available is aimed at providing licenses for a digital product that can facilitate remote monitoring of patients with Covid-19 across a regional footprint. The funding

With short notice the NHS England SE regional team requested that a submission be made for the whole SE region, with ideally one preferred supplier. This accounts for the very short notice move to gain consensus on a joint SE regional bid by the 17th November 2020.

High level requirements

The successful supplier must meet the high-level requirements for delivery of CO@H outlined in Appendix 2.

Procurement and contracting

The product will be produced through the Shared Business Services (SBS) Technology Enabled Care Services framework. This framework provides terms and conditions for the supplier to comply with, assurance around financial stability and robust procurement guidance. It also allows the ability to direct award to a chosen supplier (and avoid a protracted procurement process).

The intention is for each STP/ICS to contract with the supplier for one year with an option to extend for one year. Contracts must be signed by 27th November to benefit from the NHSX funding.

Cost

1. Service licence - £25,000 per STP/ICS region includes:
   a. Access to Inhealthcare Toolkit, cloud hosting, Ongoing maintenance and upgrade, Platform API's, Inhealthcare support desk, Reporting, Training platform, 500,000 communication credits (e.g. phone calls, video calls, text messages)
2. Episodes of care (tbc). Currently under negotiation but based on an estimated total caseload of CO@H patients expected by March 2021 (approx. 1.2% of population, tbc)
   a. £1 per episode of care x 1.2% of population

e.g. for a total STP regional population of 800,000 patients, 1.2% would be 9,600 patients. Therefore total episode cost of £1 per patient = £9,600

3. 25+ Training, customisation and project management days (tbc) @ £500 per day
4. EMIS currently charges 1.5p per registered patient to integrate their clinical system into another supplier. We are working with EMIS, Inhealthcare, NHSX and NHS Digital to raise this issue and work to reduce the cost. An estimate of the cost will be made for each region based on the number of EMIS sites

NB: please note that some customisation dates (that are part of the 25 days) will need to be used for 1st build and testing of the CO@H solution. However, there should be plenty of remainder days for locally developed services

Further detail to follow as soon as possible.

Risks and issues

Risk	Mitigation
Financial sustainability of supplier	Assurance provided through SBS Procurement framework (with full terms and conditions and due diligence through framework protections)
Financial liability into year two	The service is fully funded for year one (assuming full bid funding) and the contract will be for 12 months. The STP/ICS has control over when/or if they would like to continue the service into year two.
May not be successful in bid for NHSX wave 2 funding	There is no intention to go ahead with regional procurement without a successful funding bid. In case of an unsuccessful bid, each system will need to review local priorities and plans and consider whether it would still like to go ahead

Opportunities

- Funding from NHSX will enable the procurement of a remote monitoring digital solution that can be rolled out immediately across the regional footprint
- Funding from NHSX will enable using and testing remote monitoring in Covid but also in other services after the end of a Covid need (e.g. admission avoidance, early discharge, chronic disease management etc.)
- There are likely to be a 'remainder' of patient episodes that can be re-purposed to support other STP/ICS priorities and develop new services if required
- As multiple regions will be rolling out the same digital solution there will be the opportunity for shared learning, shared implementation and shared pathways that will reduce implementation time

Summary

This briefing paper outlines the background and options appraisal for the SE region digital CO@H submission to NHSX for Wave 2 funding. Please note that negotiations with the supplier are still ongoing to ensure clarity and the best deal for the region.

Further details are available from the Wessex AHSN team. Please contact Katie Taylor, Programme Manager, katie.taylor@wessexahsn.net or your local AHSN representative.

Appendix 1 – Inhealthcare product on a page

Example of cloud-based virtual ward data dashboard

Example of patient data on dashboard over time
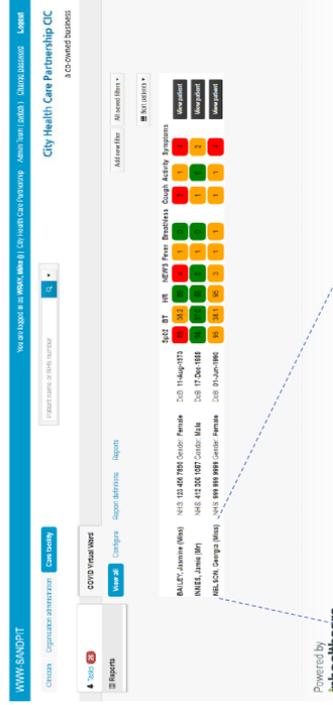
inhealthcare

Key features

App and automated telephone message based remote monitoring

Integration (coded data-push) into Primary care clinical systems

Integration (data-push) with most integration engines in secondary care

Caseload on cloud-based dashboard with deterioration RAG rating

NHS Spine lookup

- Toolkit (module-based software) allows pathway to be localised
- Multiple patient data collection routes allowing for differing digital literacy: Automated phone message, text, app on own device/browser
- NHS Spine look up (for patient demographics data checking)
- Can push coded data into primary care Systmone and EMIS
- Can push coded data into secondary care integration engines such as ENSEMBLE, CERNER (data push)
- Easy to prioritise patients with data shown as RAG rated and coloured to highlight deteriorating patients
- Beyond Covid: use cases across the country for COPD, hypertension, care homes, SBAR and 100 other services

Patient provides vital signs and answers questions through Inhealthcare app or automated phone system

Data displayed on cloud-based database specific to your locality

Coded data pushed into registered GP clinical system

High level requirements document

Covid Oximetry @ Home
Digital solution for regional approach

High Level Requirements Document

Background

Covid Oximetry @ Home (CO@H) virtual wards are a blend of product and process innovations forming a solution to enable the remote community monitoring of oximetry, vital signs, and symptoms of patients in Primary or Secondary Care. This occurs at the request of the referring clinician of patients that have presented to primary care, ED, ambulance service, community care or COVID assessment team via 111/119. It takes into consideration any individual presenting with a new continuous cough, a high temperature or anosmia. The regional SE CO@H design is based on referral of appropriate patients into a local/regional virtual ward model that allows clinicians to collect patient data remotely and monitor for deteriorating conditions. A regional digital solution aims to capture oximetry, vital signs and patient reported symptoms through a digital platform, present the patient data to clinicians responsible for the patient's care and allow secure digital sharing of this data to other relevant stakeholders involved in the health and care pathway.

General requirements

- There needs to be both a patient/service user interface and a clinical interface
- The patient interface should recognise differing levels of population digital literacy and offer an alternative to app-only interface
- Supportive materials in the forms of user guides, videos, posters etc. should be made available as standard for use by all clinical staff and patients (where relevant)
- Solution should be made available to patients following an assessment where referral onto the CO@H virtual ward is deemed appropriate with primary care, emergency department, NHS 111 (through face to face or remote interaction such as telephone appointment)

The solution

- The solution will be subject to a Data Protection Impact Assessment in line with 2018 Data Protection legislation
- The supplier should be able to respond to design/functionality requests from the customer and schedule development accordingly – there should be a process to manage this and timescales that are mutually agreed
- The solution must be kept up to date and be operable on warranted and supported platforms
- User administration (e.g. logins, passwords etc.) can be managed by central CCG/STP team on behalf of an area or delegated to local IT administrators where appropriate
- The solution should be hosted remotely with no on premise storage required

- The supplier must evidence secure data hosting and transfer within the digital solution and to other systems
- Information entered by the patient is available within the clinical interface by default (the patient will need to consent to share this information but this should be a single entry and not an action undertaken at each point content is added/updated)
- Adheres to DCB0129 standards
- Compliant with ISO27001
- Support compliance of provider with adhering to DCB0160 standard

Patient interface

App- interface
- Supported on all platforms; IOS, Android, Windows
- Must be able send data submission requests to patients at scheduled, regular, and pre-determined intervals
- Must be able to collect numerical (e.g. Pulse oximeter reading, heart rate reading, temperature), multiple choice/drop-down and free-text written responses from patients
- Needs to clearly explain to patients the format of data entry into app
- Should be accessible via the app store (both Apple and Android) and/or a link sent to the patient to download
- The solution will be user friendly with particular reference to clarity of screen display and colour choice, emphasis of critical data, minimal keystrokes to achieve required outcome
- Log in specific to a user with username and password
- Push notifications are enabled to remind patients of scheduled data submission
- Content should be fully accessible to the patient without cost
- Should incorporate a user guide/help function that is always accessible to support patient use
- Written instructions should be in 'plain English' and convertible to other languages; Polish, Punjabi, Urdu etc. (this list is not exhaustive)
- Should alert clinician through notifications if patient has failed to complete required data submission
- The system will provide users with the facility to change their password whenever required (i.e. self-service password change).

Alternate interface
- Ideally web-based platform also available to patients
- Must offer alternative to app-based data collection to support patients with lower digital literacy – may include automated phone messages, supported text messaging solution etc.

Clinician interface
- Must allow patients to be 'admitted' onto the virtual ward and basic demographic data entered. At registration, patient's preferred contact method should be able to be indicated
- Clinician interface for patient registration would ideally include NHS Spine look-up to ensure data integrity across the NHS footprint

- Must include all patient submitted data in one browser-based location including: vital signs submitted by patient, multiple choice/ drop-down answers submitted, free-text written responses, any interaction with patient including clinician notes
- Must highlight (through colour coding) submitted data that falls outside of pre-determined ranges
- Web-based and available through a browser on mobile phones, laptops, and tablets
- Log in specific to a user
- Ideally will allow clinician to write patient responses into patient records for those patients who cannot use the patient interfaces (and therefore must receive telephone calls)
- Clinical Interface must be compatible with current infrastructure (a full technical specification will be required to ensure compatibility)
- Must allow discharge and archive of patient records where patient is no longer supported by virtual ward
- Able to download and print patient summary and patient caseload data (to facilitate sharing of information)
- Will enable users to search for patients registered on the virtual ward
- Will create a discharge document (including all patient submitted readings, clinician entries etc.) on discharge from virtual ward
- The system will provide users with the facility to change their password whenever required (i.e. self-service password change).

Interoperability with other systems

- Interface between systems must adopt common messaging standards (e.g. HL7, FHIR etc.) together with exception management logic
- Ideally will be able to 'push' coded (SNOMED or Read code as appropriate) into all registered primary care clinical systems
- Ideally will be able to 'push' coded (SNOMED or Read code as appropriate) into all secondary care integration engines
- Organisations responsible for the patient's direct care (such as the ambulance service, Out of Hours care, NHS 111, secondary care hospitals) should be able to have 'view' access at minimum to the virtual ward dashboard

Reporting

- Capable of providing and reporting on outcome measures of at least: total caseload patient numbers, patient vital signs reported, length of stay on virtual ward, outcome of treatment (e.g. discharged -recovered, discharged- secondary care etc.)
- Reports will be available at different levels e.g. by practice, PCN, locality, regional-wide.

Future development

- A roadmap for system upgrades and development must be maintained and provided to the customer

Training

- The supplier must be able to provide training sessions for staff expected to use the digital solution, offering flexibility as to how and when these sessions take place (e.g. remotely, with flexible dates/times to accommodate staff schedules).
- Training is available to those involved in implementation but not frontline staff to support solution roll-out