Circle of Care for Home

Community Stroke Services Sheffield

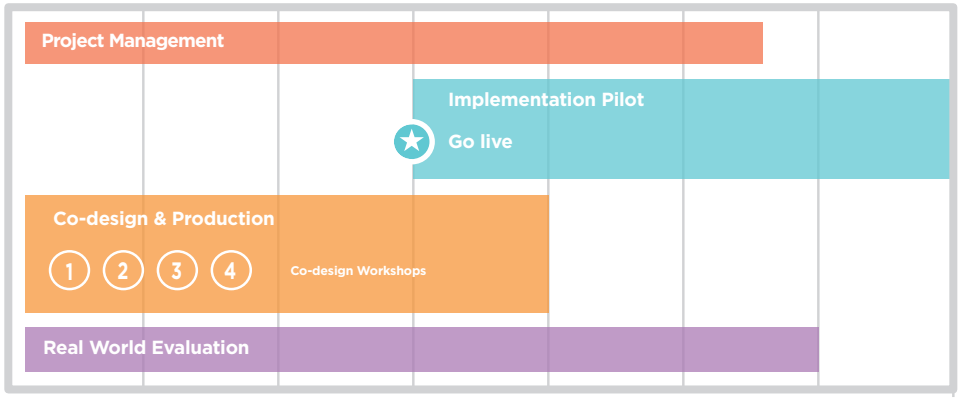
Project Report

Part 1 - January 2021

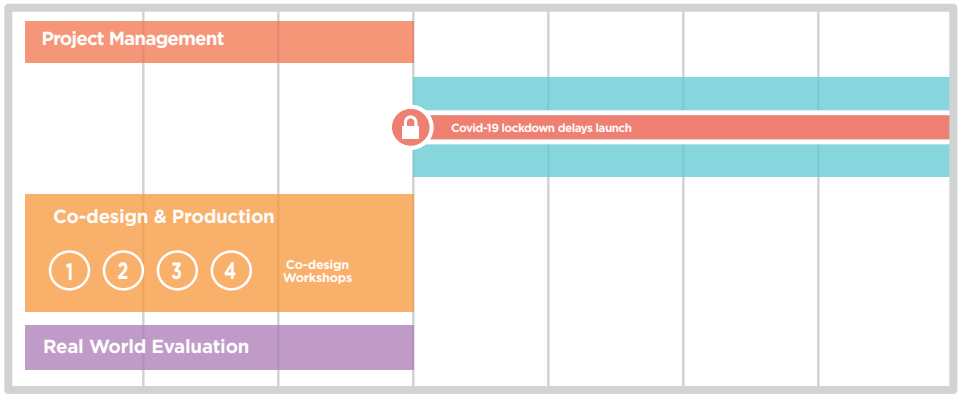
Foreword

Before we go into more detail regarding the Circle of Care for Home project, we would like to explain what this volume contains. Covid-19 disrupted the launch of the pilot programme and put this aspect of the project on pause for most of 2020.

What we planned:



What actually happened:



As a result we have decided to split the project report into two volumes. This first volume contains a brief summary of the process undertaken so far including a series of **co-design workshops (p3)** and the **real world evaluation (p4).** We continue with an illustrated description of the proposed **new service pathway (p6)**. For those who are new to Sensory Technologies eShift®, the technology underpinning this new service, we have put together a summary to help explain **how eShift® communicates with SystmOne (p7)**. Our **logic model (p8)** illustrates how we see Band 4 professional development as well as how their development can be tailored towards a number of efficiency savings. We close this volume with an example of some of the **resources (p10)** that are being designed to help staff as they start working in this new way, as well as a description of the **training (p11)** that still needs to be delivered to staff before they can start.

When restrictions are lifted and the project pilot can safely resume, we will follow up with a second volume.

The project so far...

The Sheffield Community Stroke Service (CSS) at Sheffield Teaching Hospitals NHS Foundation Trust, delivers home based rehabilitation and wants to develop a Band 4 Specialist Rehabilitation Assistant role. This new role would enable them to carry out assessment and therapy tasks with patients who have had a mild stroke, whilst being directed in real time by a registered therapist who would have traditionally undertaken the role.

Sensory Technologies eShift® will be used to support and enable a workforce transformation, aiming to provide a service that improves the quality, safety and efficiency of care within the stroke pathway. The technology also provides far greater connectivity between members of the team operating throughout the community.

During the past 5 years, we have successfully co designed and implemented a new model of nursing for end of life patients at St Luke's Hospice utilising the same digital platform for delegation and direction. This new project will be evaluated by a team

The Team

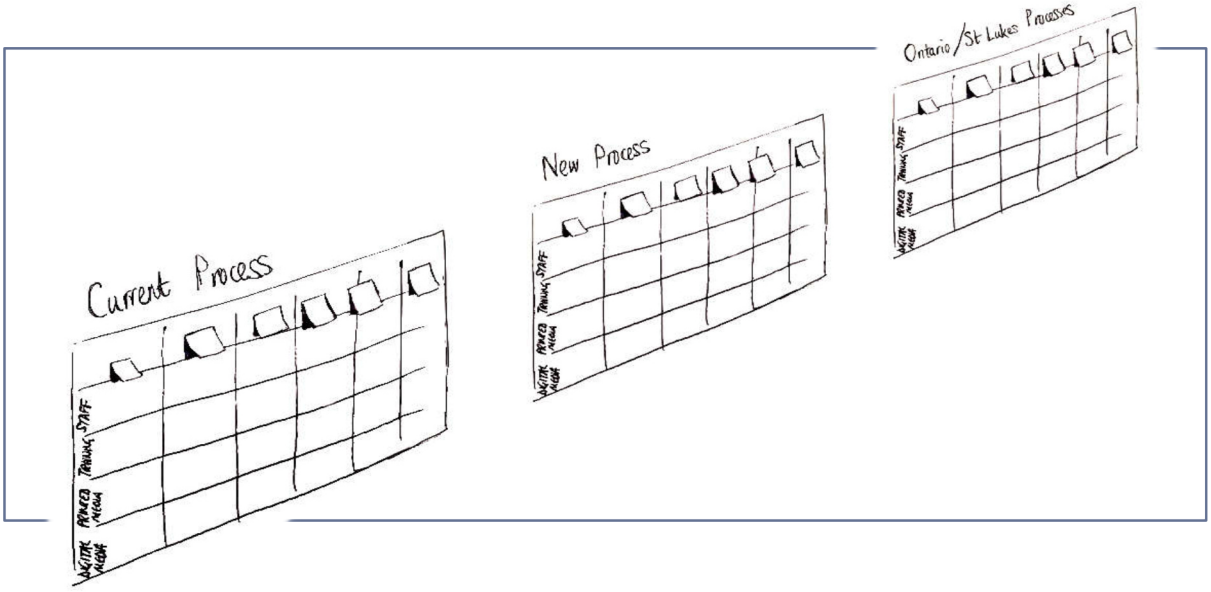
Name	Role
Sue Mawson	Director
Ali Ali	Clinical Lead
Mandy Higginbottom	Community Services Lead
Steven Ariss	Evaluation
Jo Blackburn	Evaluation
Joe Langley	Co-Design
Chris Redford	Design & Visual Communication
Natalie Jones	Implementation
Helen Hilell	CSS Team Lead
(Various)	Patient Participants

Co-design workshops

To define:

- **The new service pathway and the digital/physical forms required to support it.**
- **A definition of 'appropriate' patients for this pathway along with inclusion/ exclusion criteria.**
- **The Band 4 role and any training needs**
- **The Rehab Directors role and any training needs**
- **Technological training needs**
- **Clinical and technological risks and risk mitigations**

Members of the research team ran three workshops, which were each attended by different groups of people from service users to healthcare professionals. This diversity of participants allowed us to iterate and build upon our learning at each workshop. Each session was facilitated by a researcher who was unfamiliar with the existing Stroke pathway which helped to stop any assumed knowledge from going unsaid and opened the floor to anyone regardless of their specialism.



The co-design workshops involved comparing **processes** and **resources** from the current stroke services pathway, the proposed new pathway, as well as the eRehab pathway already established in Ontario and St Luke's Hospice.

Processes are anything that happens from when patients are screened and referred into the community stroke service up to the point where they are discharged.

Resources include staff training, printed/digital media, communication systems or anything that can be used to support staff in their delivery of the service.

This enabled us to see what resources could be directly transferred into the Sheffield Stroke process from other cases, what could be kept from the existing process and what resources needed to be modified or created from scratch for this new service.

Real world evaluation

The project is using an ongoing theory-based proportionate evaluation method, designed to provide appropriate evidence; related to usefulness of findings at specific stages of development and implementation. The evaluation framework has been informed by a recent evaluation of a similar intervention for community hospice services, using the same technology platform (Arris [sic] et al, 2017).

Data collection has been a combination of participant/non-participant observation, documentary analysis, interviews, group discussions, literature reviewing, routinely collected quantitative data and surveys. Once the early, small-scale intervention has been implemented, we will explore key service-level variables, such as hours of work for various grades and roles of staff members and types, numbers and lengths of therapy interactions.

Key measures of success are being iteratively explored in the following areas:

1) Process level outcomes

2) Patient experiences
Patient experiences are assessed through the ongoing inclusion of patients and carers in the co-design process. We will also monitor feedback from patients through the 'friends and family test', consultation with the experience and engagement group and patient-reported experience measures (PREMs).

3) Patient outcomes
Clinical outcomes will be evaluated through the use of the Barthel Index of activities of daily living to measure improvements achieved through the rehabilitation service. We will also explore the feasibility and usefulness of other data, such as analysing hospital admission data and incorporating the length of time receiving rehabilitation into the analysis.

4) Staff experiences
We will use the Workforce Dynamics Questionnaire (WDQ) to monitor a wide range of workforce variables, to understand in detail any positive or negative effects of the planned changes.

5) Sustainability and spread
We will also explore the likelihood of sustaining the intervention and provide evidence for sustainability. This will include exploring quantitative outcomes and an assessment of the return on investment for the technology, and development of the band-4 workforce, in relation to workforce effectiveness and cost.

This evaluation process has led to the current version of the **logic model (p8)**

Band 4 staff competency standards

Domain 1.0	**Specialist Knowledge** Demonstrate knowledge and understanding of:
1.1 Anatomy	The anatomy and physiology of Stroke including: • Have an understanding of the impact of weakness, reduced range of movement and abnormal muscle tone on movement. • To know the importance of raising concerns to the appropriate professional. • To be aware of normal systems that contribute to postural control: to include; musculoskeletal; neuromuscular and sensory. To have an understanding of: • Normal swallowing process. Dysphagia – causes and consequences • Has a working knowledge of the risk management and ethical considerations in dysphagia
1.2 Mental capacity	Issues around consent and mental capacity. • To assess whether a client is able to participate in an assessment or treatment programme • To be able to gain consent for appropriate treatment • To complete the consent to share information with the client on the assessment proforma • To establish the client can follow instruction's appropriately • To assess pain levels and how this would impact on the therapy session
1.3 Communication	Have an understanding of the reasons for communication disability: • Knowledge of the stroke association accessible information guidelines. Making information accessible for people with aphasia (link) • To enable people with communication disability to communicate using a range of resources • Understands the nature and process of normal communication. • Demonstrates knowledge of communication disorders in discussion with the SLT.

1.4 Anatomy	To have an understanding of: • Hemianopia, diplopia (double vision), visual inattention. • Difficulties in tracking and scanning • To have a basic understanding of the impact of visual impairments and how they impact on daily life • To have an understanding of visual impairment screening tests • To have an understanding of treatment strategies for visual deficits
1.5 Exercise	To have an understanding of exercise in stroke rehabilitation: • Barriers to exercise • Benefits to exercise • Recommendations for frequency and quantity of exercise required • Knowledge of flexibility and strengthening exercises • To be aware of the importance of exercise for strengthening, endurance and flexibility • Have an awareness of other treatments for physical rehabilitation including mental rehearsal, and constraint induced movement therapy
1.6 Continence	Incontinence issues: • Knowledge of the types of incontinence within the stroke population • Knowledge of advice to reduce incontinence • Referral options available for continence issues
1.7 Cognition	To have an awareness and understanding of the role of an Occupational therapist in assessment and the treatment of patients with cognitive problems. To have an understanding of the following skills and be able to recognise difficulties with the above cognitive skills in functional tasks. • Orientation in time and place • Short term/ working memory • Attention / concentration • Sequencing • Problem solving • Insight and awareness • Initiation • Self-monitoring • Perseverance • Planning and organisation

1.8 Psychological Support	To be aware of the psychological and emotional problems in people with stroke and neurological disability (e.g. depression, emotionalism, anxiety, self-esteem, confidence, well-being, challenging behaviour). To be aware of the assessments or psychological and emotional problems. To be aware of the stepped approach to provision of emotional support- support from staff, peer support, organisations such as Stroke Association etc.; Improving access to psychological therapies and psychology. To be aware of support services for carers.
1.9 Splints	Understand the rational for the use of Splints. Have a basic knowledge of types of splints commonly issued locally.
Domain 2.0	**Specialist Knowledge** Demonstrate knowledge and understanding of:
2.1 Assessments	Carry out specific subjective and objective assessments of stroke patients. This may include: • Balance scales • Functional assessments • Mobility assessments
2.2 MDT	Have an active role within the MDT for stroke patients, including: • To attend weekly meetings in order to prioritise and highlight caseload for yourself • To request PT/OT review as indicated following assessment • Refer to MDT as appropriate
2.3 Patient engagement	Support patient adherence • To demonstrate the practical application of techniques that may aid communication and support adherence to therapy programmes. i.e. basic understanding of motivational interviewing techniques • To work through a therapy care plan/patient goals with the patient providing expert knowledge on sustaining self-management and self-rehabilitation. • Is able to apply alternative and supportive communication strategies with aphasic patients • Is able to recognise complex questions which require referral back to a therapist

2.4 Vision	To conduct a visual screen under the direction of a therapist. To initiate a programme to improve scanning skills with a hemianopia To observe, liaise with colleagues and accurately record problems related to vision To describe to patients/ family how visual problems will impact and functional activities To refer for an orthoptic assessment To apply basic compensatory strategies for visual impairments in functional activities
2.5 Exercise	Provide a suitable exercise programme which this may include postural advice and exercise • To ensure patients have written/ illustrated copies of exercise programmes • To supervise and progress an exercise programme including strengthening and balance exercises and functional practice • To increase the number of repetitions of exercises as discussed with the therapist. Progress the difficulty of exercises and Feedback to the therapist. • Recognise when patients may be suitable for other treatments such as mental rehearsal, and constraint induced movement therapy and refer on as appropriate
2.6 Cognition	To undertake a basic cognitive screen (?ACE- 3) To feedback and evaluate the effects of the impairment in function and discuss this with OT. To initiate some basic treatment approaches for cognitive impairments within functional activities.eg: external memory aids and external strategies To progress a cognition programme under direction and supervision of an OT To answer questions from the patient and carer/family relating to difficulties resulting from changed cognition. To understand when to refer complex questions onto trained staff To apply basic compensatory strategies for cognitive impairments within functional activities under supervision of OT

2.7 Psychological Support	To recognise the signs, symptoms and impact of psychological and emotional problems in people with stroke (e.g. depression, emotionalism, anxiety, self-esteem, confidence, well-being, challenging behaviour), and report back to registered staff To undertake basis assessments of mood on instruction (such as Signs of Depression scale, PHQ9, GADS7) and report findings To demonstrate listening skills and empathy with patients To recognise the signs, symptoms and impact of psychological and emotional problems in carers and report back to registered staff Support people with stroke and their carers in accessing resources to support self-management such as referring themselves to the peer support service or depression and anxiety services and report back to therapist/psychologist
2.8 Rehabilitation	To carry out an appropriate subjective Assessment To assess range of movement in the major Joints To carry out Oxford Muscle Testing to assess muscle strength To identify abnormal muscle tone To follow the assessment process for initial visits as per the assessment form proforma and to carry out light touch sensation testing for the upper and lower limbs To be aware of possible changes in sensation in stroke and neurological conditions and how this may impact on mobility To be aware of the risks of skin damage and injury if there are changes in sensation and to observe for signs of pressure damage and refer to the appropriate professional when indicated
2.9 Splints	To recognise when the patient's limbs are becoming tighter or more supple and feedback concern about fit of splints to therapist To don/doff a splint To instruct carers how to don/doff and care for a splint To support the patient and carer in following a regime for wearing the splint as advised by the therapist.

Domain 3.0	**Teaching** Demonstrate competence in:
3.1	Demonstrate an ability to teach others about the specialist area of stroke and the role of Band 4 Assistants. (This will include bands 2/3 and students). To work in the patient's home environment with the support of the student for a joint session. The session should not exceed the competency of the band 4 who is responsible for the care delivered.
Domain 4.0	**Home Care** Demonstrate competence in:
4.1	To have a working knowledge of indicators that carers are experiencing difficulty with manual handling or that unsafe techniques are in use. Demonstrate an awareness of safeguarding issues and processes and identify and report back to the appropriate professional immediately with any Safeguarding concerns Demonstrate knowledge of, and provide information to patients and carers about services and support beyond the community stroke team To have an awareness of common adaptations and telecare and to identify needs for adaption/telecare to the appropriate professional. Ensure all equipment is kept clean and in good working order. Order , fit and demonstrate equipment following instruction of therapist Identify where there may be a change needed in packages of care after

Domain 5.0	**Team working**
5.1 Stroke Pathway	Understand the stroke pathway Understand how people are referred to and discharged from the service To communicate appropriately with all members of the MDT
5.2 Carers	Recognises and appropriately addresses risk factors to carers and informs the responsible therapist To demonstrate a specific set of exercises, stretches or positioning to carers To demonstrate to carers how to assist a person to walk when it is appropriate to do so. To describe to patients, carers and family how stroke can affect communication.

The new service pathway

Participant Key

- Service User
- Rehab Director *Senior Therapist*
- Rehab Director *Clinical Lead*
- Admin
- Nurse
- Consultant
- Band 4
- Acute Therapist
- Senior Therapist
  - *Occupational Therapist*
  - *Physiotherapist*
  - *Speech and Language*
  - *Psychologist*
- Available via E-shift

1 Screen & Consent
- Screening Crib Sheet
- Flag for E-shift

2 Request for Service

3 Triage & Allocation
- E-shift record created

4 Initial Assessment
- Senior therapist shadows band 4
- Follow steps below

5 Treatment Plan

6 Repeat Visits
- Submit E-shift Forms

E-shift Forms
- RNLI
- Berg
- PHQa
- Cognition & Perception
- Goal Review & Evaluation
- TUG

7 Review & Rehab

8 Discharge
- Submit E-shift Forms

E-shift Forms
- TOMs
- Barthel Score
- Discharge Report

4. Initial Assessment Breakdown

Arrival at patient's home
E-shift Forms
- Check-in

Introduction, explanation & consent
E-shift Forms
- Health Profile

Medical History
- Previous vs current ability

E-shift Forms
- Clinical Assmnt
- Neuro Assmnt
- Functional Mobility
- Environment
- Equipment
- Fall Risk Assmnt

Mobility
- Stair ability, transfers and sensation

E-shift Forms
- Upper Limb Functional Scale
- Lower Limb Functional Scale

Senses, mood, meds & devices
- Hearing & Vision
- Mood
- Continence
- Meds & Equipment
- Driving

Support, cognition & environment
E-shift Forms
- Citywide Care Alarm
- Keysafe
- Alarms

Sleep, diet & lifestyle
- Check swallowing

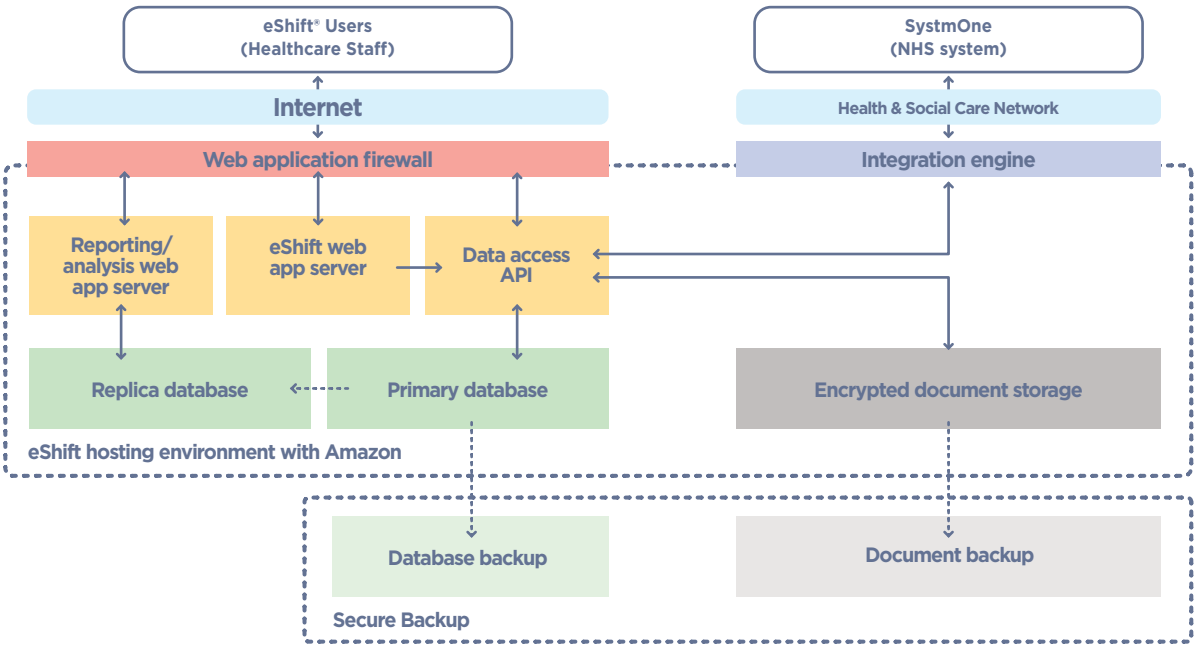
E-shift Forms
- Barthel Score
- TOMs
- Medication Checking

Goals and challenges
E-shift Forms
- Therapy Care Plan
- Goal Setting

Technology integration

How eShift communicates with NHS systems

In this service we are working with Sensory Technologies eShift® which hosts all patient data and integrates with SystmOne, the clinical system and database used throughout the NHS in the UK. The diagram below describes each part of the eShift® platform. Hopefully this gives a comprehensive but understandable summary of the platform and provides reassurances around patient data security, stability and ease of management.



Jargon buster

Web app firewall

Secures and encrypts communications between users and the server. Prevents intrusion from unauthorised users or attackers.

Integration engine

Is a toolbox that can translate between many different data formats and sends data out in response to authorised requests.

Reporting/analysis web app server

Same as the 'web app server' but focused on assembling reports. This system accesses the replica database in order not to slow down the primary database.

eShift web app server

Receives and processes web page requests from users, authorises their credentials and assembles and returns the requested web pages.

Data access API

Provides consistent security and interface to the database across multiple applications. Sends data to authorised web pages without refreshing entire web pages.

Replica database

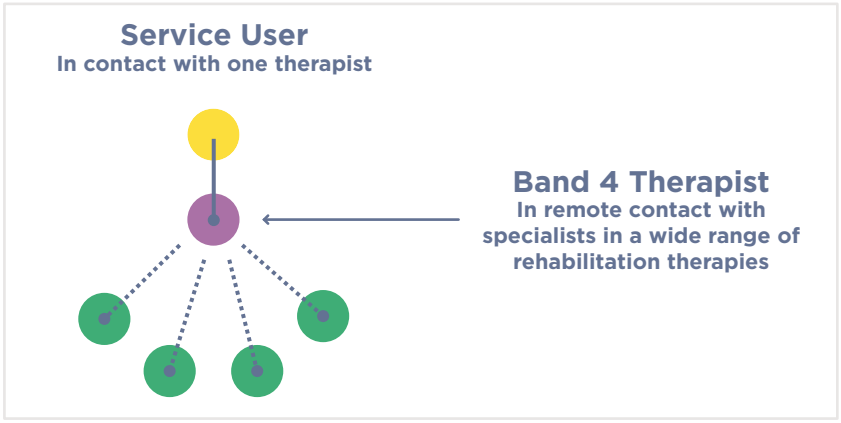
Continuously synchronised with the primary database in order to minimise data loss if the primary database becomes unavailable.

Database & Document backup

Backups are saved multiple times a day to a secondary location. This is extra insurance against data loss in the case of a catastrophic failure of both hosting systems.

Our new service

We have made good progress on the new service, despite the delays to the pilot programme caused by Covid-19 in 2020. Through working with the research team, we have laid out the plans for how the new service should run, and by including the service users and professionals in a series of co-design workshops we have made sure that all the relevant needs are being addressed. There are several benefits to the new service, with the most advantageous being that the service user has remote access to a much wider range of specialist therapists, who can offer their recommendations to specific cases.



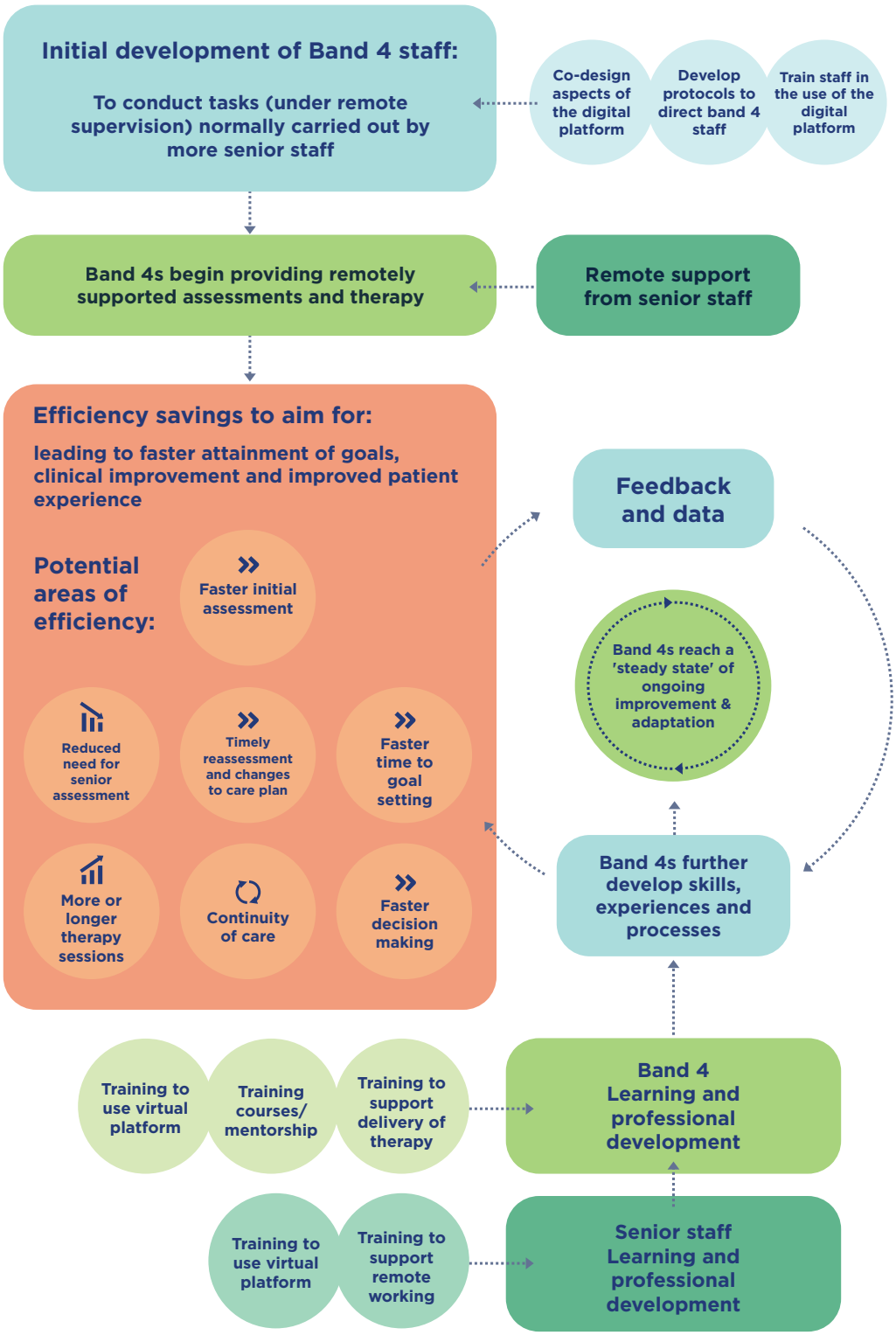
The next page features a walkthrough of the process from start to finish and all the participants who will be involved at each step. Along the way you'll notice boxes like these:

This box contains a list of all the relevant documents that should be completed at each step.

At Step 4. 'Initial Assessment' we break this down into the individual steps and sections of the online platform that need to be completed. To make this as easy as possible for the attending therapists we are working with the research team to create some compressed information resources. You can find examples of these on page 5.

Logic model

This logic model is derived from the **real world evaluation (p4)** work completed to date. It describes how aspects from the process so far (at the top of the diagram) and continued training and personal development (feeding in from the bottom) will contribute to the Band 4 staff reaching a steady state of improvement and adaptation as the process is developed and refined. The efficiency savings that can be aimed for are listed in further detail on the next page.



Logic model - Efficiency savings

	Short term	Med term	Long term
Faster initial assessment	Therapy can start without delay	Fewer patients waiting for assessment Improved patient experience	Reduced length of stay or greater improvement in outcomes Improved patient therapy progression
Reduced need for senior assessment	Patients assessed in a timely manor regarding transfer to other services	Assessments used for decision making and transfers when appropriate	Therapy is patient driven Improved patient therapy progression
Timely reassessment and changes to care plan	Band 4s make autonomous or supported decisions during therapy sessions	Continuity of care	Fewer therapy sessions needed to experience the same outcomes Improved patient therapy progression
Faster time to goal setting	Goals can be determined and "tried" with patient during therapy sessions	Regular patient contact will support goal setting during sessions	Faster goal achievement and potential increase in goals attained
More or longer therapy sessions	Increased frequency of rehab therapy sessions	Improved patient confidence in rehab journey due to consistency	Reduced length of stay or greater improvement in outcomes Greater chance of hitting NICE guidelines (45mins x 5days/week)
Continuity of care	Consistent progression Development of therapeutic relationships Band4s recognise progression or unmet needs	Improved patient confidence in rehab journey due to consistency	Reduced length of stay or greater improvement in outcomes Improved patient therapy progression
Faster decision making	Input to decisions from the wider team	Improved patient therapy progression Time consuming meetings can be streamlined	Reduced length of stay or greater improvement in outcomes Improved patient experience

Staff resources

Circle of Care for Home

- Willing participants (Consent to be filmed)
- Patients who require further assessment in familiar settings
- Independent or supervised participants
- Cognitive assessment score below (MoCA >26). Previous cognitive deficit and good level of functional ability
- Has a GP in Sheffield
- Is discharged to place of residence

Referrals accepted from:

- Acute service *- clinic*

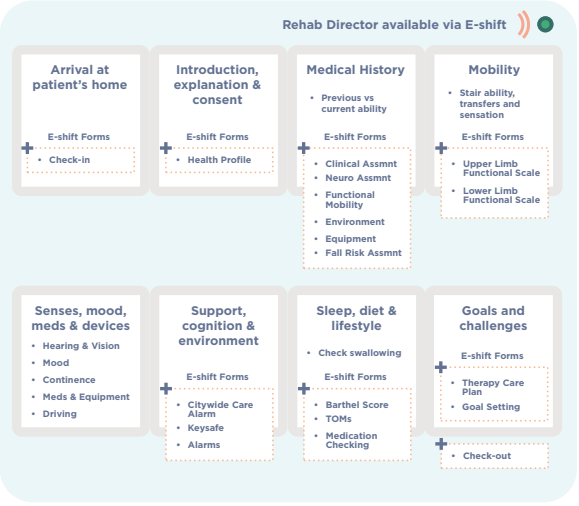
- Rehab unit *- GP*

Referrals without sufficient information may be excluded from Band 4 allocation if lack of information prevents reliable triage.

Circle of Care for Home

- Require Rehabilitation Assistants (RA) support or have declined recommended support.
- New cognitive impairment affecting function
- Expected or current capacity assessment needs
- Safeguarding concerns
- Require assistance of 2 to mobilise
- Complex tonal management needs
- Known/suspected functional overlay
- Requiring psychological intervention as an in-patient and/or moderate to severe EDM score and evidence of depression or anxiety.
- Those requiring (?) put for return to driving
- Those requiring vocational rehabilitation
- Location with little or no phone signal

Together with the researchers, we've started developing some resources that can be used by staff to help them during the initial assessment and screening process. The above cards contain a condensed version of the screening criteria. The image to the right is a condensed version of each step of the initial assessment to help the Band 4 staff work through all the necessary steps without worrying about missing a step. These materials will be made available to all staff and can be printed and folded as a discreet way of carrying information from house to house.



What's left to do?

There is still lots to do as Covid-19 has disrupted our plans. As you have seen the service has been planned and integrated with the online platform that will help patient information be safely archived, but at the same time be made available to the remote therapists so that they can provide rehabilitation recommendations as efficiently as possible. Now we need to ensure that all staff are adequately trained and qualified to work in this new way.

Band 4 staff Clinical training

During the initial phase of the pilot, the band 4 staff will be working alongside more experienced therapists, shadowing them, and stepping in to perform rehabilitation where appropriate. This will be a chance for the band 4 staff to become familiar with the initial assessment process with another therapist present.

There will be a number of group reflection sessions across services to make sure that care is being provided consistently across a distributed workforce.

Meeting with Inhealth and Sensory Technologies

We have arranged a meeting between the teams managing the separate IT systems that need to come together to make this service work.

Band 4 staff & senior therapists Technology training

There needs to be training across the board for staff using the new system of online records. This includes any admin, consultants or rehab directors working remotely.

Safety training

Staff need to become familiar with the following: organisational safety, data safety, patient safety, staff safety in the field. Lone workers in potentially unsafe conditions should initially be ruled out of the pathway. Cases like these will be looked at again after an assessment in a safe hospital setting.