

NORTH MERSEY AND WEST LANCASHRE CCGS JOINT COMMITTEE

REVIEW OF NORTH MERSEY HYPER ACUTE STROKE SERVICES

FRIDAY 5TH NOVEMBER 2021

10-11AM

MS TEAMS

A G E N D A

1. Welcome and Apologies

2. Review of North Mersey Hyper Acute Stroke Services:
 - Pre-consultation Business Case
 - Public Consultation Plan

3. Any other business



NHS Knowsley CCG
NHS Liverpool CCG
NHS South Sefton CCG
NHS Southport and Formby CCG
NHS West Lancashire CCG

NORTH MERSEY AND WEST LANCASHIRE CCGS JOINT COMMITTEE
FRIDAY 5TH NOVEMBER 2021

Title of Report	Comprehensive Stroke Centre Proposal
Lead Governor	Jan Ledward, Chief Officer, Liverpool CCG and C&M HCP Stroke Programme SRO
Report Author	Carole Hill, Director of Strategy, Communications & Integration, Liverpool CCG
Summary	<p>The purpose of this paper is to present the proposal for a reconfiguration of hyper-acute stroke services across North Mersey and West Lancashire, adopting a new model of care to improve health outcomes for people who experience stroke.</p> <p>The proposal is set out in a pre-consultation business case developed by the providers of hyper acute stroke services for these populations.</p> <p>The paper also sets out plans for a formal public consultation on this proposal.</p>
Recommendation	<p>That the Joint Committee:</p> <ul style="list-style-type: none">➤ Endorses the pre-consultation business case developed by providers, which sets out the proposed new model of care and proposed service reconfiguration to establish a Comprehensive Stroke Centre;➤ Approves the plan for a formal public consultation;➤ Notes that the Joint Committee will receive a report setting out the findings from the public consultation and a final business case for approval, in due course.

PROPOSAL FOR A COMPREHENSIVE STROKE CENTRE FOR HYPER ACUTE STROKE SERVICES

1 PURPOSE

The purpose of this paper is to present the proposal for the reconfiguration of hyper-acute stroke services across North Mersey and West Lancashire, adopting a new model of care to improve health outcomes for people who experience stroke.

The Joint Committee is asked to:

- Endorse the pre-consultation business case developed by providers, which sets out the proposed new model of care and proposed service reconfiguration to establish a Comprehensive Stroke Centre;
- Approves the plan for a formal public consultation;
- Notes that the Joint Committee will receive a report setting out the findings from the public consultation and a final business case for approval, in due course.

2 BACKGROUND

A stroke is a serious life-threatening medical condition that occurs when the blood supply to part of the brain is cut off by a blood clot or bleeding from a blood vessel. Strokes are a medical emergency and urgent treatment is essential. The sooner a person receives treatment for a stroke, the better the chance of recovery. Stroke strikes suddenly and can result in a devastating range of disabilities or death. It is one of the most significant public health issues of our time, with a profound and growing impact on society, our economy, individuals and families:

- Stroke is the leading cause of disability and the fourth largest cause of death in the UK;
- Stroke costs the UK economy £26 billion per year, including £3.2bn cost to NHS, £5.2bn to social care and £15.8bn in informal care. This is forecast to rise to between £61bn and £91bn by 2035. The cost of someone having a stroke over a year is over £45,000;
- There are 80,000 stroke admissions in England each year and over 1 million stroke survivors, half of whom have a disability resulting from their stroke;
- By 2035, the number of strokes will increase by almost half and the number of stroke survivors by a third;
- Half of stroke survivors are living with four or more other health conditions.

Transforming stroke care is a priority within the NHS Long Term Plan, which points to strong evidence that hyper acute interventions such as brain scanning and treatments such as thrombolysis are best delivered as a centralised hyper-acute stroke service delivered by a smaller number of well-equipped and staffed hospitals. This would see an increase in the number of patients receiving high-quality specialist care, meeting seven-day standards for stroke care which comply with national clinical guidelines.

In addition, mechanical thrombectomy¹ and thrombolysis² can significantly reduce the severity of disability caused by a stroke. Reconfiguring stroke services into specialist centres would increase the use of both treatments.

The Long-Term Plan also proposes higher intensity care models for stroke rehabilitation in the community, delivered in partnership with voluntary organisations including the Stroke Association, to support improved outcomes to six months and beyond.

3 CURRENT POSITION IN NORTH MERSEY AND WEST LANCASHIRE

The current providers of inpatient stroke services are Liverpool University Hospitals (at both the Royal Liverpool and Aintree sites) and Southport & Ormskirk Hospitals NHS Trust. Tertiary neuroscience services are provided by The Walton Centre NHS Foundation Trust, which delivers regional thrombectomy services across most of the Cheshire & Merseyside footprint. The Walton Centre receives transfers of eligible patients for thrombectomy.

The most recent data on the number of confirmed strokes for each of the Hospital trusts providing hyper acute stroke services is as follows:

Strokes admitted - 19/20				
	Aintree	Royal	Southport	Total
19/20 reported stroke numbers	524	556	397	1477

4 THE CLINICAL MODEL OF CARE

The proposal for a Comprehensive Stroke Service should meet the following clinical standards:

- 90% of patients should be directly admitted to a specialist stroke unit;
- Patients should have access to specialist stroke care 24 hours a day, 7 days a week. This standard is not met in all sites;
- People with stroke should be treated on a specialist stroke unit for at least 90% of their hospital stay. For North Mersey this is only 62%;
- A specialist stroke unit should have at least 500-600 confirmed stroke admissions per year to provide the scale required to deliver effective and efficient 7-day services. Not all sites currently achieve the minimum recommended number of strokes per annum;

¹ **Thrombectomy**, also known as mechanical clot retrieval, is the surgical removal of a blood clot in an artery. It is used to treat some strokes caused by a blood clot (ischaemic stroke) and it aims to restore blood flow to the brain.

² **Thrombolysis** is the breakdown of blood clots formed in blood vessels, using medication.

- None of the 3 current North Mersey Hyper Acute Stroke Units (HASUs) at the Royal, Aintree and Southport hospital sites admit patients to the clinical standard of 90% of patients treated within 4 hours;
- Patients should be assessed by a specialist stroke consultant, stroke trained nurse and therapist within 24 hours. Currently there are insufficient numbers of stroke consultants and other specialist staff to meet this standard on all sites;
- Following a brain scan, suitable patients should have thrombolysis within 1 hour of arriving at hospital. In North Mersey thrombolysis was provided to 7.2% of patients in 2018/19, the target in the NHS Long Term Plan is 20% by 2025;
- Patients requiring medical thrombectomy should receive it as soon as possible and within 5 hours of arriving at hospital. In North Mersey 1.4% of patients received this in 2019/20, the NHS Long Term Plan target is 10% by 2022;
- After the first 72 hours, or once they are stable, patients should continue to be cared for on a stroke unit until they can be discharged with a comprehensive plan for ongoing rehabilitation, either to home or inpatient rehabilitation. In North Mersey, there is variation between CCG populations in the scope of the early supported discharge pathway

The proposed new model of care would mean that suspected acute stroke patients would be taken by ambulance or referred by GP directly to a new single comprehensive stroke centre, which would be co-located with acute neurosurgical and stroke thrombectomy services.

Patients self-presenting at other local A&E sites would be reviewed, with an on-site stroke specialist nurse, before being transferred to the stroke centre.

The model of care would require the establishment of an Acute Stroke Admission Unit, co-located with A&E which would receive patients directly at the front door. Patients deemed not to have had a stroke but in need of other care would be referred to A&E.

The service would have direct access to specialist scanners in order to maximise the number of patients who are able to receive thrombectomy and thrombolysis. Co-location with the Walton Centre thrombectomy service would significantly increase the number of patients that are able to access thrombectomy within the appropriate time window, which is crucial as outcomes are better the sooner this treatment is delivered.

After the initial 72 hours of stroke care, patients would continue to be managed at an acute stroke unit for further care at a hospital closest to home, if not suitable for discharge. It is expected that up to 50% of patients would be discharged from hospital with support from the ESD (Early Supported Discharge) team, supporting patients to recover in their own homes.

For those patients who require palliative care, there would be agreed pathways, designed with the palliative care teams of the two adult acute hospital trusts and with community services.

5 PROPOSAL FOR A COMPREHENSIVE STROKE CENTRE

The proposal that has emerged has been co-designed by clinical staff from the three trusts that currently provide stroke care locally - Liverpool University Hospitals NHS Foundation Trust (LUHFT), Southport and Ormskirk Hospital NHS Trust and The Walton Centre NHS Foundation Trust. Commissioners, patients who have experienced hyper acute stroke services and the Stroke Association have also been closely involved in the process.

The preferred clinical model that emerged from an options appraisal process was for a centralised **Comprehensive Stroke Centre on the Aintree Hospital site, co-located with specialist services provided by the Walton Centre and with post 72 hours care provided closer to home at either Aintree, Broadgreen or Southport hospitals.** This clinical model would bring together stroke clinicians across the system into one networked team, providing a single comprehensive stroke service for the populations of Liverpool Sefton, Knowsley and West Lancashire.

The development of the proposal was paused during the Covid-19 pandemic. In the autumn of 2020, the North Mersey Stroke Board, which has overseen this programme, reconvened to take forward the proposal and has completed a Pre-Consultation Business Case (PCBC), which sets out the model of care, the options appraisal process and the proposal for the configuration of a new Comprehensive Stroke Centre. The PCBC is at **Appendix 1.**

6 SCRUTINY AND ASSURANCE

As part of the NHS England assurance process, this proposal has recently been reviewed by an independent NHS Clinical Senate to ensure there is a sound clinical evidence base and compliance with clinical best practice and standards. The Clinical Senate review endorsed the new clinical model of care and the proposal for the reconfiguration of local hyper acute stroke services. The report from the Clinical Senate is at **Appendix 2.**

The proposal has been reviewed by NHS England through a two-stage process, to seek assurance that commissioning CCGs are complying with their statutory duties and other responsibilities under the CCG Assurance Framework.³ Following the recent stage two assurance checkpoint, NHS England has confirmed its support for the proposal, which a requirement in advance of public consultation.

NHS bodies have a legal duty to consult with local authority Health Overview and Scrutiny Committees (OSC). NHS commissioners for the populations of Knowsley, Liverpool, Sefton and West Lancashire have presented the proposal to each local authority OSC to consider whether it represents a substantial variation in the way that services are currently delivered. Each OSC agreed that the proposal does represent a substantial variation in the way hyper acute stroke services are currently delivered and have subsequently agreed to form a joint OSCs to review the proposal prior to launching a formal public consultation. The date for the meeting of the Joint OSC is 12th November.

³ <https://www.england.nhs.uk/wp-content/uploads/2018/03/planning-assuring-delivering-service-change-v6-1.pdf>

Commissioners have also engaged with the Cheshire and Merseyside ICS regarding the additional revenue and capital investment required to deliver this proposal. The ICS has confirmed its support for the proposal and the inclusion of this investment in future financial plans.

7 ENGAGEMENT AND COMMUNICATIONS

Patients, public and key stakeholders have and will be involved throughout every stage of this process. Effective involvement requires an open and transparent approach to explaining the proposal to change the delivery of hyper acute stroke services; providing opportunities to provide views and influence this change.

As part of the process to develop potential options for the future of services, stroke survivors were involved in co-design workshops, alongside clinical teams from the Royal, Aintree and Southport hospitals, and the Walton Centre.

Pre-consultation engagement was also undertaken to obtain valuable insights from people who have experience of hospital stroke services, also involving the Stroke Association which gave access to their network of support groups in every part of the catchment area. The findings from this early-stage engagement are at **Appendix 3**.

Subject to the endorsement of the proposal, set out in the PCBC, by the Joint Commissioning Committee and the review of consultation plans by both the Joint Committee and the Joint OSC, commissioners will launch a formal public consultation, planned from 22nd November 2021 to 14th February 2022. The consultation will provide opportunities for people to give their views on the proposal. The consultation plan is at **Appendix 4**.

The public consultation materials are currently in draft and will be shared when produced.

8 EQUALITY IMPACT ASSESSMENT

Equality Impact Assessments (EIA) are a means of showing how commissioners and providers show 'due regard' to the Equality Act 2010 when making changes to services. These duties ensure that consideration is given, and actions are taken to avoid discrimination, promote equality of opportunity and foster good relations between people who have a protected characteristic and people who don't.

A pre-consultation equality impact assessment has been completed to inform the development of the proposal, which is appended to the pre-consultation business case.

Following the public consultation, a final EIA will be produced which takes account of the findings from the feedback from patients, public and stakeholders, along with any mitigations to improve equality and address inequalities.

9 INDICATIVE TIMELINE AND MILESTONES

The table below sets out the key milestones and dates for the remaining elements of the service change process.

	Activity	Indicative Timescales
	Pre-consultation Business Case Completed	October 2021
	Individual OSCs to consider whether proposal represents a substantial variation	July 2021
	NHS England Stage 2 Assurance Process	August 2021
	Joint OSC to review the proposal and consultation plan	5 th November 2021
	Formal Public Consultation (subject to CCG and OSC reviews)	22 nd November 21 – 14 February 22
	Public consultation report and Equality Impact Assessment completed	March 2022
	Final business case, informed by public consultation to Joint OSC	May 2022
	Commissioners approve Final Business Case (ICB)	May 2022

10 CONCLUSION

This paper sets out the proposal for a Comprehensive Stroke Centre to deliver a new model of care for hyper acute stroke services for the people of Knowsley, Liverpool, Sefton and West Lancashire. This proposal is designed to improve outcomes for people who experience stroke and eliminating unwarranted variation in care and outcomes by bringing together stroke services with access to the best treatments, delivered by a networked team of specialist clinicians, providing consistently high-quality stroke care 24/7, regardless of where people live across this catchment area.

Review of North Mersey Hyper Acute Stroke Services

Pre-Consultation Business Case

11/1/2021

Version 1.14 Joint Committee

Table of Contents

1	Foreword.....	5
	To fully meet people’s needs, we need a system capable of delivering the right kind of healthcare, in the right setting.....	5
2	Executive Summary.....	6
3	Introduction	9
3.1	National Context and Challenges.....	9
3.2	North Mersey Stroke Review Background	10
3.3	Stroke in North Mersey.....	11
3.4	Current Stroke services in North Mersey.....	16
3.5	Scope and purpose of the Pre-Consultation Business Case.....	19
3.6	Alignment with Local NHS plans	19
4	Clinical Case for Change	22
4.1	National and Local context	22
4.2	The Clinical Case for Change for North Mersey.....	23
4.2.1	Clinical Activity.....	24
4.3	Workforce Challenge.....	25
4.4	Length of Stay	25
4.5	Organisational Form.....	26
4.6	Conclusion.....	26
5	Clinical Vision for the Future.....	27
5.1	Clinical Vision for Stroke Services	27
5.2	Hospital Acute Care.....	27
5.3	Urgent Stroke services	27
5.4	Mechanical Thrombectomy	28
5.5	Community Rehabilitation	28
5.6	Prevention.....	29
5.6.1	Cheshire & Merseyside	29
5.6.2	Local	30
6	Proposed Model of Care	30
6.1	Urgent Care in the Comprehensive Stroke Centre	32
6.2	Thrombectomy and Thrombolysis.....	32

6.3	Acute Stroke Care	33
6.4	Post-Acute Care.....	33
6.5	Early Supported Discharge Team	34
6.6	Psychological Care.....	34
6.7	Post in-patient care: Life After Stroke Support.....	34
6.8	End of Life Care	34
6.9	Treatment in a non-CSC Hospital	35
6.10	Research and Academia	36
6.11	Digital and Technology Innovation	37
6.12	Organisational Form.....	37
6.13	Risks.....	38
7	Impact of Proposed Model of Care	39
7.1	Clinical Activity	39
7.2	Impact on Bed Configuration	41
7.3	Estates Configuration.....	42
7.4	Impact on Workforce	42
7.5	Implication to Patient Travel Times	44
7.6	Interdependent Services	46
7.6.1	Northwest Ambulance Services (NWAS).....	46
7.6.2	Radiology.....	47
7.6.3	Pharmacy	47
7.6.4	Pathology	47
7.6.5	Orthoptics	48
7.6.6	Psychology.....	48
7.7	Quality Impact.....	48
7.8	Equality Impact	49
7.9	Sensitivity Analysis	49
7.9.1	Growth	49
7.9.2	Average Length of Stay	50
7.10	Patient Stories.....	51
8	Finances	53
8.1	Financial overview.....	53
8.2	Financial implications of the short-listed options.....	54
8.3	Costs of the Preferred Option.....	54

9	Option Development and Appraisal	56
9.1	Options Appraisal process.....	56
9.2	Governance Arrangements.....	56
9.3	Developing the options appraisal framework.....	58
9.4	Determining the long list of options	59
9.5	Determining the short list of options.....	60
9.6	Description of short-listed options	61
9.6.1	Option A1 – Do nothing - current service configuration.....	61
9.6.2	Option A2 – Do nothing – current service configuration with.....	62
9.6.3	Option B1 – Consolidate Aintree site and Royal Liverpool site (on to Aintree site) leave S & O.....	63
9.6.4	Option B3 – Consolidate Aintree and Southport (on to Aintree site) leave	65
9.6.5	Option C3 – One Comprehensive Stroke Centre on Aintree Site plus 2	66
9.6.6	Option E1 - One Comprehensive Stroke Centre at Aintree and 1 other ASU at.....	67
9.6.7	Option E4 - One Comprehensive Stroke Centre at Aintree and 1 other ASU at.....	68
9.7	Determining the preferred option	69
10	Pre-Consultation Engagement	70
10.1	Stakeholder engagement.....	70
10.2	How pre consultation has informed options	73
10.3	Cheshire and Merseyside Engagement.....	75
10.4	Future Stakeholder Engagement and Consultation.....	75
11	Clinical Senate Review	76
12	<i>Programme Management</i>	76
	<i>This section will discuss the business continuity plans and implementation timelines.</i>	76
12.1	Business Continuity Plan	76
12.2	Outline plans for Implementation	77
13	References	78
14	Appendices.....	80
14.1	Appendix 1 – Service Pathway	80
14.2	Appendix 2 Cheshire and Merseyside Stroke numbers 2013-2020.....	82
14.3	Appendix 3 North Mersey Stroke Services Current Workforce Gaps for 2018/19 and 2019/20	83
14.4	Appendix 4 Benefits Realisation Plan.....	84
14.5	Appendix 5 Integrated Stroke Team Model.....	91

14.6	Appendix 6 Clinical Activity Assumptions	92
	2018/19 and 2019/20 Activity Data.....	92
14.7	Appendix 7– Risk Register	99
14.8	Appendix 8 Workforce – WTE in post per Site.....	101
14.9	Appendix 9 - Travel times	102
14.10	Appendix 10 - Northwest Ambulance Service increase in activity (Based on 18/19 Activity data)	103
14.11	Appendix 11 Quality Impact Assessment.....	104
14.12	Appendix 12 Equality Impact Assessment	113
14.13	Appendix 13 Sensitivity Analysis	133
14.14	Appendix 14 Model data - see sheets on attached – Based on 18/19 staffing and activity data	135
14.15	Appendix 15 North Mersey Stroke Board Terms of Reference	141
14.16	Appendix 16 Clinical Reference Group Terms of Reference	149
14.17	Appendix 17 Long List of Options Appraisal	154
14.18	Appendix 18 Short list scoring for preferred option	155
14.19	RCP and North Mersey Staffing Standards	156

1 Foreword

As clinical leaders our aim is to deliver the best possible healthcare for our patients. People's health needs are changing and under the current way we have arranged our NHS, we are not always able to deliver care to the standards we would like. We believe we need to change our models of healthcare delivery now, so we can be in a position to provide high quality care in the long term.

To fully meet people's needs, we need a system capable of delivering the right kind of healthcare, in the right setting. When people do need hospital care, we believe that were necessary centralising key services is important, so that patients have access to the best possible care.

The North Mersey Stroke services have reviewed their current services and have developed a plan to transform its hospital services with an aim to: -

- Provide the best stroke service in the country
- Have all patients receive the right care in the right place first time
- Have a service that is sustainable clinically and financially
- Improve patient outcomes
- Give patients the best possible experience.

In our plans we have based our transformation on the following principles: -

- Services will be delivered by teams of specialist professionals whose skill will meet the needs of patients
- Services will be delivered by a sustainable workforce
- Services will meet clinical standards and best practice
- Variations in quality and standards of care will be eliminated.
- Services will be centralised whenever clinically necessary and local whenever possible.

To achieve our plans will require a significant amount of change to the stroke services of North Mersey but these are essential if we are going to deliver a better service that are sustainable.

Our plans are incorporated within this pre consultation business case. This case explains why change is necessary and what we are proposing change in the future. The change to the way we deliver services is required to improve patient outcomes and experience. We have throughout this case used clinical evidence and standards to shape our proposed new model of stroke care. The case has been developed by our clinical teams from the North Mersey Stroke Services who are fully committed to securing a better future for their services.

2 Executive Summary

A stroke is a serious life-threatening medical condition that occurs when the blood supply to part of the brain is cut off by a blood clot or bleeding from a blood vessel. Strokes are a medical emergency and urgent treatment is essential. The sooner a person receives treatment for a stroke, the better the chance of recovery. It is one of the most significant public health issues of our time, with a profound and growing impact on society, our economy, individuals, and families.

This pre-consultation business case (PCBC) sets out a proposal for an integrated model of care and the future configuration for hyper-acute stroke services for the populations of Liverpool, Sefton, Knowsley and West Lancashire.

This document provides a comprehensive representation of the case for change, a clinical vision, a proposed model of care, the process by which options were identified and appraised and it sets out a preferred option for the future delivery of these services. The PCBC contains detailed modelling to evidence the impact of the proposal on a range of factors, including activity, workforce, finance, capital and estates.

While there have been some significant improvements in stroke prevention, treatment and patient outcomes since the 2007 National Stroke Strategy, major challenges remain across the whole stroke pathway locally. A number of Acute Stroke Units do not meet national guidelines and there are gaps and unwarranted variation across the stroke care pathway.

Transforming stroke care is a priority within the NHS Long Term Plan.

The plan points to strong evidence that hyper acute interventions such as brain scanning, and thrombolysis are best delivered as part of a networked 24/7 service. The plan supports centralised hyper-acute stroke care delivered by a smaller number of well-equipped and staffed hospitals, based upon clear evidence of the greatest improvements in adopting this model of care. This would see a reduction in the number of stroke-receiving units, and an increase in the number of patients receiving high-quality specialist care, meeting seven-day standards for stroke care, which meet national clinical guidelines.

In addition, mechanical thrombectomy and clot-busting treatment (thrombolysis) can significantly reduce the severity of disability caused by a stroke. Reconfiguring stroke services into specialist centres would improve the use of thrombolysis and further roll out mechanical thrombectomy. This model of care would ensure 90 percent of stroke patients receive care on a specialist stroke unit and that all patients who could benefit from thrombolysis receive it. This combination of specialist stroke care, thrombolysis and thrombectomy would result in the NHS having the best performance in Europe for people with stroke. The North Mersey health and care system is committed to transforming hyper-acute stroke services to deliver the best possible outcomes and experience for our population.

The North Mersey Stroke Plan is part of the Cheshire and Merseyside Health and Care Partnership cardiovascular disease (CVD) programme.

The current providers of inpatient stroke services for North Mersey are Liverpool University Hospitals NHS FT, which delivers stroke services across two sites at the Royal Liverpool and Aintree Hospitals, and Southport & Ormskirk Hospitals NHS Trust (Southport & Formby District and General Hospital). Tertiary neuroscience services are provided by The Walton Centre NHS Foundation Trust, which delivers regional thrombectomy services across most of the Cheshire & Merseyside footprint.

The current provision of both acute and rehabilitation/support services across Liverpool, Knowsley and Sefton is subject to significant variation in pathways, clinical standards and health outcomes. This proposal seeks to address this variation, to ensure that the whole North Mersey population would have access to a gold standard, integrated, whole pathway service.

The PCBC sets out a preferred option for a single North Mersey comprehensive stroke centre, co-located with A&E and with direct access to specialist scanners in order to maximise the number of patients who are able to receive thrombectomy and thrombolysis. The proposal would see all North Mersey patients receive their care at the Liverpool University Hospitals Aintree site from a hyper-acute stroke centre, co-located with acute neurological and stroke thrombectomy services provided by the Walton Centre.

After the initial 72 hours of stroke care, patients would continue to be managed at an acute stroke unit, if not suitable for discharge. Medically stable patients requiring further in-patient rehabilitation or complex discharge planning would be transferred to a local rehabilitation unit for in-patient rehabilitation or discharged from hospital with support from uniformly delivered, gold standard, early supported discharge services, to optimise their recovery in their own homes. This model of post-acute stroke care responds to the needs and preferences of patients, carers and families, who have told us that they want to receive as much care as practicable close to home.

The process to identify and appraise options, set out in detail in this document, has been robust and inclusive, involving clinicians, patients and partners from across the North Mersey footprint.

Following appraisal of a long list, a short list of seven options have been modelled in detail and evaluated using comprehensive criteria and scoring of the impact of each option on health outcomes, patient experience, deliverability, strategic alignment, clinical standards, clinical sustainability and value for money.

The PCBC details how patients, public and key stakeholders have been engaged and involved in shaping the proposal. The document also sets out the next stages for engagement and a public consultation, which would be led by commissioners, as it is considered that the proposal may constitute a substantial variation in service.

The proposals for the future delivery of hyper-acute stroke care for the North Mersey population have been formed with strong consensus amongst clinicians, providers and commissioners. The whole health and care system is aligned behind these proposals, driven by our shared ambition to improve health outcomes for our population.

3 Introduction

This chapter provides an introduction to the North Mersey Stroke services. This chapter describes the background, purpose and scope of this pre-consultation business case.

3.1 National Context and Challenges

A stroke is a serious life-threatening medical condition that occurs when the blood supply to part of the brain is cut off by a blood clot or bleeding from a blood vessel. Strokes are a medical emergency and urgent treatment is essential. The sooner a person receives treatment for a stroke, the better the chance of recovery. Stroke strikes suddenly and can result in a devastating range of disabilities or death. It is one of the most significant public health issues of our time, with a profound and growing impact on society, our economy, individuals and families:

- Stroke is the leading cause of disability and the fourth largest cause of death in the UK.
- Stroke costs the UK economy £26 billion per year, including £3.2bn cost to NHS, £5.2bn to social care and £15.8bn in informal care. This is forecast to rise to between £61bn and £91bn by 2035. The cost of someone having a stroke over a year is over £45,000.
- There are 80,000 stroke admissions in England each year and over 1 million stroke survivors, half of whom have a disability resulting from their stroke.
- By 2035, the number of strokes will increase by almost half and the number of stroke survivors by a third.
- Half of stroke survivors are living with four or more co-morbidities.
- Nearly half of stroke survivors feel 'abandoned' after leaving hospital (Stroke Association, 2017).
- A broad pattern of psychological difficulties can also be expected to affect recovery and disability following stroke; with high rates of anxiety, depression and cognitive impairment being well established as common effects affecting function and recovery post-stroke (**ref 1**); such effects can be predicted to increase hospital re-admission and un-planned care risks (**ref 2**).

While there have been some significant improvements in stroke prevention, treatment and patient outcomes since the 2007 National Stroke Strategy, major challenges remain across the whole stroke pathway within Cheshire & Merseyside. Poorer services risk increased mortality and leave stroke survivors with significant disability. A number of Acute Stroke Units do not meet national guidelines and there are gaps and unwarranted variation across the stroke care pathway. Challenges include:

- **Ongoing rehabilitation and care:** Too many stroke survivors leave hospital with inadequate rehabilitation and ongoing care in place leading to onward disabilities (mental and/ or physical), driving onward (avoidable) health and social care costs.
- **Urgent & emergency care:** Efforts to reconfigure acute stroke services have been slow and patchy and there has been a failure to roll-out of effective new treatments such as mechanical Thrombectomy.
- **Preventing avoidable stroke:** Too many people are living with undiagnosed or poorly managed cardiovascular risk factors such as raised blood pressure and cholesterol and atrial fibrillation (AF), leaving them at high risk of stroke.
- **Workforce:** Workforce challenges exist across the pathway with too few nurses, consultants and therapists, as well as a lack of stroke awareness, to ensure all patients get the treatment and support they need. A common lack of clinical psychology/neuropsychology input into community stroke care and stroke rehabilitation support also exists, across Cheshire and Merseyside, counter to national guidelines (Royal College of Physicians, 2016).

- **System Leadership:** A lack of joined-up commissioning and provision across whole health care systems is preventing the delivery and embedding of consistent improvements in the stroke pathway.

Transforming stroke care is a priority within the NHS Long Term Plan. The plan points to strong evidence that hyper acute interventions such as brain scanning, and thrombolysis are best delivered as part of a networked 24/7 service. The plan supports centralised hyper-acute stroke care delivered by a smaller number of well-equipped and staffed hospitals, based upon evidence of the greatest improvements in adopting this model of care. This would see a reduction in the number of stroke-receiving units, and an increase in the number of patients receiving high-quality specialist care, meeting seven-day standards for stroke care which meet national clinical guidelines.

In addition, mechanical thrombectomy and clot-busting treatment (thrombolysis) can significantly reduce the severity of disability caused by a stroke. Reconfiguring stroke services into specialist centres would improve the use of thrombolysis and further roll out mechanical thrombectomy. This model of care would ensure 90 percent of stroke patients receive care on a specialist stroke unit and that all patients who could benefit from thrombolysis (about 20 percent) receive it. This combination of specialist stroke care, thrombolysis and thrombectomy would result in the NHS having the best performance in Europe for people with stroke.

The Long-Term Plan also proposes higher intensity care models for stroke rehabilitation in the community, delivered in partnership with voluntary organisations including the Stroke Association, to support improved outcomes to six months and beyond.

3.2 North Mersey Stroke Review Background

The Northwest Coast Strategic Clinical Network (NWC SCN) team (now the Cheshire and Mersey Integrated Stroke Delivery Network, C & M ISDN), were engaged to develop the Stroke Case for Change with the involvement and engagement of clinical leads and stakeholders across Cheshire and Merseyside. This work was commissioned by the Cheshire and Merseyside Healthcare Partnership as a part of the CVD Programme (2018) and was completed in May 2019. This was in response to concerns about performance and sustainability of some stroke units across the patch.

The case for change set out a clinical vision for the development of Stroke services for Cheshire and Merseyside including North Mersey reflecting national guidance and best practice. It also recognised that further clinical engagement was required to develop the new clinical model for the future. Liverpool Clinical Commissioning Group are the lead commissioner for stroke services and using the work already complete by NWC SCN have taken responsibility to develop this Pre-Consultation Business Case for North Mersey services.

In October 2019 the Royal Liverpool University Hospitals NHS Trust and Aintree University Hospital NHS Trust merged to form Liverpool University Hospitals NHS Foundation Trust.

3.3 Stroke in North Mersey

The four North Mersey Clinical Commissioning Groups: – NHS Knowsley CCG, NHS Liverpool CCG, NHS Southport & Formby CCG and NHS South Sefton CCG, have a long history of collaboration, with the majority of services they commission provided by the same NHS Trusts for their combined registered population.



North Mersey is one of the most deprived areas of the country, with more than 4 out of 10 residents living in the 10% most deprived neighbourhoods in England. Deprivation is strongly associated with poor health outcomes from childhood through to old age. People in North Mersey live shorter lives than the national average and spend a greater proportion of their life living with disability and poor health. Despite the best efforts of the health and care system, health outcomes for the population are not improving and the inequalities gap is widening. Partners across commissioning and provision are committed to greater collaboration, including joining-up commissioning to address the huge challenges we face.

The infographics below provide a clear overview of the health needs of our populations.



"Be the reason someone receives better care today"

If Knowsley was a village of just 100 people...

42



Children are overweight or obese by year 6

17



Adults suffer from depression

11



5-16 year olds have a MH disorder

31



Will die from cancer

69



Adults are overweight or obese

3



Adults under 40 have Type 2 diabetes

59



people are living with a long term condition

12



Will die from heart disease

22



Are smokers

81



Is the average age that women will live to

26



People take less than 30 mins exercise a week

77



Is the average age that men will live to

7



People are over 75

Statistics from PHC are for the Knowsley Local Authority area, pop: 147,000

Liverpool

Cheshire & Merseyside
Health & Care Partnership



"Be the person someone needs to help care today"

If Liverpool was a village of just 100 people...

38



Children are overweight or obese by year 6

19



Adults suffer from depression

10



5-16 year olds have a MH disorder

30



Will die from cancer

64



Adults are overweight or obese

4



Adults under 40 have Type 2 diabetes

55



people are living with a long term condition

11



Will die from heart disease

22



Are smokers

80



Is the average age that women will live to

25



People take less than 30 mins exercise a week

76



Is the average age that men will live to

6



People are over 75

Statistics from PHE are for the Liverpool Local Authority area, pop: 467,000



"Be the change you want to see in the world"

If Sefton was a village of just 100 people...

34



Children are overweight or obese by year 6

20



Adults suffer from depression

9



5-16 year olds have a MH disorder

29



Will die from cancer

68



Adults are overweight or obese

3



Adults under 40 have Type 2 diabetes

60



people are living with a long term condition

10



Will die from heart disease

16



Are smokers

82



Is the average age that women will live to.

32



People take less than 30 mins exercise a week

78



Is the average age that men will live to

10



People are over 75

Statistics from PHE are for the Sefton Local Authority area, pop: 177,000

North Mersey includes acute hospital sites at Aintree, Royal Liverpool, Broadgreen and Southport and Ormskirk.



North Mersey has a growing and ageing population. Over the next ten years plus, the largest population increase is predicted in people aged 65 and over. Southport has a particularly elderly population of around 21% of their residents are aged over 65 years old. Liverpool's over 65 population is 14%.

Research shows that atrial fibrillation increases the risk of stroke by a factor of 5 and data suggests that in North Mersey 77% of all patients with atrial fibrillation have been diagnosed. Nationally this figure is 70%.

In North Mersey there were 1372 patients diagnosed with Stroke between April 2018 and March 2019, 1477 in 2019 to 2020. In 2018 to 2019 Stroke prevalence across North Mersey is 0.18% compared to a national average of 0.12%.

Unhealthy lifestyle behaviours such as smoking, and obesity increase the risk of avoidable disease and disability such as stroke.

Smoking: despite a decline in the number of people smoking, smoking remains the main cause of preventable disease in the UK, accountable for 1 in 6 deaths in England. Mortality rates due to smoking are three times higher in the most deprived areas than in the most affluent areas. Smoking has decreased nationally from 18.4% in 2013 to 14.4% in 2018.

Obesity: obesity is a major cause of many diseases including stroke, on average, obesity deprives people of an extra nine years of life. Obesity is a serious and growing problem.

Over the next five years in North Mersey the number of people living with major health problems is projected to increase significantly.

3.4 Current Stroke services in North Mersey

The current providers of inpatient stroke services in North Mersey are the Liverpool University Hospitals NHS Foundation Trust located at: -

- Royal Liverpool hospital site - Hyper Acute Stroke Unit (HASU) and Acute Stroke Unit (ASU)
- Broadgreen Hospital - Rehabilitation
- Aintree Hospital site - HASU and ASU

Southport and Ormskirk Hospital Trust located at: -

- Southport & Formby District and General Hospital - HASU and ASU

The number of strokes recorded in the last three years for all three sites is as follows: -

		University Hospital Aintree	Royal Liverpool University Hospital	Southport and Formby District General	Total
2019/20	Number of patients (72h cohort) (Team Centred)	524	556	397	1477
2018/19	Number of patients (72h cohort) (Team Centred)	502	570	300	1372
2017/18	Number of patients (72h cohort) (Team Centred)	444	653	343	1440

Source: SSNAP 2017/18, 2018/19 and 2019/20

North Mersey hospital sites offer the following stroke services: -

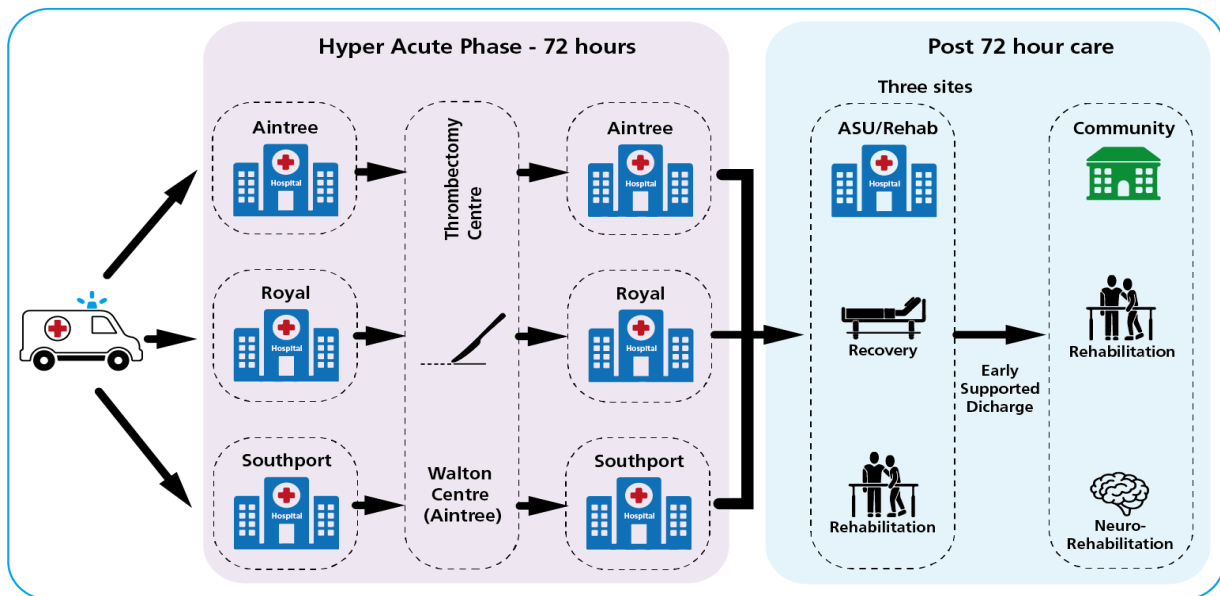
- Hyper Acute Stroke and Acute Stroke Services
- Hospital Rehabilitation
- Outpatient services

Current North Mersey Bed Model: -

North Mersey Stroke Service – Current Bed Model					
Bed Numbers	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	4	7	3		14
> 72 hours	29	7	19		55
Rehab				21	21
Total	33	14	22	21	90

There are currently **90** beds dedicated to stroke services and 14 are exclusively for the first 72 hours of critical care spread across the three sites.

Current North Mersey Stroke Services Configuration



There were in the region of 7,200 patients in 2018-19 and 7,800 patients in 2019-20 per annum who present to any of the three hospital A&E departments with suspected stroke symptoms. They can be classed into three categories: -

- Stroke patients – diagnosed as stroke patients and treated accordingly (circa 1,500 patients 2018-19 & 19-20)
- TIA – a transient ischemic attack (TIA) is like a stroke, producing similar symptoms, but usually lasting only a few minutes and causing no permanent damage (circa 2,200 patients 2018-19 and 1,900 in 19-20)
- Mimics - diagnosing stroke is not always straightforward. Stroke mimics such as Todd's paresis or hemiplegic migraine account for a significant amount of possible stroke hospital attendances (circa 3,500 patients 2018-19 and 4100 in 2019-20)

All three services provide thrombolysis to patients as part of the Hyper Acute phase of care as the delivery of this treatment is time critical. If mechanical thrombectomy is required this requires a transfer to The Walton Centre for this specialist procedure, there are only 24 accredited centres in the UK to perform this treatment.

Thrombolysis, also called fibrinolytic therapy, is the breakdown of blood clots formed in blood vessels, using medication. This restores the blood flow to the brain and prevents any further damage.

Thrombolysis is most effective if started as soon as possible after the stroke occurs and certainly within 4.5 hours. It's not generally recommended if more than 4.5 hours have passed, as it's not clear how beneficial it is when used after this time.

Before thrombolysis can be used, it's very important that a brain scan is done to confirm a diagnosis of an ischaemic stroke. This is because the medicine can make the bleeding that occurs in hemorrhagic strokes worse.

The percentage of patients receiving thrombolysis at each site is as follows: -

		University Hospital Aintree	Royal Liverpool University Hospital	Southport and Formby District General
2019/20	Percentage of all stroke patients given thrombolysis (Team Centred)	47 (8.9%)	46 (8.2%)	28 (7%)
2018/19	Percentage of all stroke patients given thrombolysis (Team Centred)	49 (9.4%)	47 (8.5%)	32 (9.7%)
2017/18	Percentage of all stroke patients given thrombolysis (Team Centred)	41 (8.5%)	76 (10.8%)	42 (11.4%)

Mechanical Thrombectomy

A small number of severe ischaemic strokes can be treated by an emergency procedure called a thrombectomy. This removes blood clots and helps restore blood flow to the brain. Thrombectomy is only effective at treating ischaemic strokes caused by a blood clot in a large artery in the brain.

It's most effective when started as soon as possible after a stroke. The procedure involves inserting a catheter into an artery, often in the groin. A small device is passed through the catheter into the artery in the brain. The blood clot can then be removed using the device, or through suction. The procedure can be done under local or general anesthetic.

Tertiary neuroscience services are provided by The Walton Centre NHS Foundation Trust which delivers regional thrombectomy services across most of the Cheshire & Merseyside footprint. The Walton Centre does not house a Hyperacute Stroke Unit, but pathways exist to transfer eligible patients for thrombectomy. This is a time critical procedure but currently requires patients from Southport and the Royal Liverpool to be transferred to the Aintree site. This is a relevantly new treatment, locally and nationally it is not currently available 24 hours a day 7 days a week due to the shortage of qualified specialists to perform the procedure. The Walton Centre is currently offering a service 8am to 11pm, 7 days per week, there are plans to expand to 24/7 cover by the end of 2021.

The number of patients receiving thrombectomy in North Mersey is summarised below: -

Thrombectomy Activity			
	2017/18	2018/19	2019/ 20
Aintree	1	4	9
Royal	5	6	7
Southport	3	3	5
Total	9	13	21

This activity is significantly short of the targets set in the NHS LTP (10% of stroke patients =147) and reflects the difficulties in accessing a HASU in a timely manner and the current level of service provision for thrombectomy.

3.5 Scope and purpose of the Pre-Consultation Business Case

The purpose of this PCBC is to detail the case for change for North Mersey Stroke Acute Services, describe the options appraisal process undertaken by Liverpool CCG, and to set out the preferred option for public consultation.

The scope of this PCBC is the acute stroke services that are currently provided by the two North Mersey hospitals and the impact on any co-dependent services i.e., mechanical thrombectomy and diagnostic imaging.

This service review is focused primarily on where best to deliver services effectively across the North Mersey footprint. This review considers any investment that is required to provide a safe service that is consistent and sustainable.

Due to the recent merger of Aintree University Hospital Foundation Trust and the Royal Liverpool University Hospitals NHS Trust into the newly formed Liverpool University Hospitals NHS Foundation Trust this review will also consider the organisational form of the North Mersey Stroke Services.

The PCBC recognises the importance of a standardised end to end clinical pathway for stroke patients; however, community rehabilitation and thrombectomy services are not part of the PCBC but will be referenced through this document as part of the work running alongside the acute hospital work due to their critical interdependencies.

3.6 Alignment with Local NHS plans

There are a number of strategic programmes being implemented in North Mersey that are inter-dependent with the stroke programme:

Royal Liverpool and Aintree Merger into Liverpool University Foundation Trust - The merger of the two acute trusts took place in October 2019. The business case described a vision for clinical services that comprises single service, city-wide delivery in a number of key areas including stroke alongside trauma and orthopaedics, emergency general surgery and haemato-oncology. Development of a single service, city-wide inpatient stroke service was a key component of the Patient Benefits Case for merger.

One Liverpool Plan – Liverpool’s Integrated Care Partnership set out its proposal for One Liverpool, an integrated, place-based strategic plan for the city. This strategy builds upon the Healthy Liverpool Blueprint which set out ambitions to develop a single-service, city-wide acute model for stroke services. **(Ref 4)**

Sefton Health and Care Transformation Programme – Sefton Health and Care Transformation Programme has been established as a Partnership to develop ‘place-based’ care across Sefton, integrating acute, community, mental health, social care and primary care services around the needs of the local population. The potential impact of some of the emerging scenarios for the stroke pathway may impact upon emergency and urgent care activity at Aintree which is considered in the proposed model of care. **(Ref 5)**

West Lancashire has developed their strategy “Building for the Future” and “are committed to improving the health and well-being of people living in West Lancashire”. **(Ref 6)**

The Acute Sustainability workstream, as part of the Sefton Health & Care Transformation Programme is focusing on developing sustainable solutions for acute and specialist care for the population of Southport & Formby. Stroke is a priority within this work given the age profile of the local population and the need to be able to access “first class” hyperacute care underpinned by supportive rehabilitation. There have been concerns expressed on the sustainability of stroke services at Southport due to the consultant workforce challenge; this poses a significant risk to Southport patients and the potential knock-on impact to other services. **(Ref 7)**

Thrombectomy – The NHS Long Term Plan aims to expand mechanical thrombectomy treatments from 1% to 10% of stroke patients, which will allow 1,600 more people to be independent after their stroke each year. During 2019 the plan commits to working with Royal Colleges to pilot a new programme for hospital consultants to be trained to offer mechanical thrombectomy.

NHS England Specialised Commissioning Team is working closely with the Walton Centre to develop these services and ensure they are available 24/7. This is one of the work programmes in the North Mersey Stroke Board that will enable better outcomes for patients and aligns with the redesign of acute services. The current thrombectomy pathway is included in **appendix 1**.

The C&M Health and Care Partnership – Highlighted stroke services across Merseyside and the wider region as a high priority and commissioned the Transformation Unit via the C & M CVD Board to conduct a review of services, including North Mersey services. This resulted in an “Outline Service Change Proposal”. This work was the catalyst and foundation to the production of this PCBC. **(Ref 7)**

Stroke services features as a priority in the Joint Strategic Need Assessment of Liverpool, Sefton and Knowsley.

Commissioners

- There are five Clinical Commissioning Groups (CCGs) and NHS England NHSE Specialist commissioners (Medical Thrombectomy) that commission stroke services or related services (Medical Thrombectomy). The CCGs are: -
- NHS Liverpool CCG
- NHS South Sefton CCG

- NHS Southport and Formby CCG
- NHS West Lancashire CCG
- NHS Knowsley CCG

Community Rehabilitation

The current provision of both acute and rehabilitation services across Liverpool, Knowsley and Sefton is subject to significant variation in pathways, clinical standards and health outcomes. The North Mersey Stroke Board remit includes a programme to establish a consistent, best practice rehabilitation stroke pathway to address variation and to ensure that the whole North Mersey population has access to a quality service. This programme is not within the scope of this pre-consultation business case, but as a key dependency it is essential that a comprehensive single rehabilitation pathway is established alongside the proposal for a North Mersey Hyper Acute Service.

4 Clinical Case for Change

This chapter describes why change is necessary. It describes the North Mersey Stroke Service current level of standards and clinical outcomes and how the current configuration of services is not always delivering the best clinical outcomes and patient experience. The case for change shows that services need to be reconfigured to improve quality of care and for services to be clinically sustainable.

4.1 National and Local context

The NHS Long Term Plan highlights that stroke is the fourth single leading cause of death in the UK and the single largest cause of complex disability. Stroke mortality has halved in last two decades. However, without further action due to changing demographics the number of people living with a stroke will increase by almost half, and the number of stroke survivors living with a disability will increase by one third by 2035.

The plan supports centralised HASU care delivered by a smaller number of well-equipped and staffed hospitals that are networked 24/7 and can also provide thrombolysis and mechanical thrombectomy. This will increase the number of patients that receive high quality specialist care, improve clinical outcomes and the service sustainability.

The long-term plan clearly states that within the next five years all stroke units will need to meet the NHS seven-day standards for stroke care and the National Clinical Guidelines for stroke.

It stated that Integrated Stroke Delivery Networks would be established by April 2020 to reconfigure stroke services into specialist centres that will improve the use of thrombolysis and further roll out the use of mechanical thrombectomy. This would ensure that 90% of stroke patients receive care on a specialist stroke unit and that all patients that can benefit from thrombolysis (20%) receive it. Expanding mechanical thrombectomy - from 1% to 10% of all stroke patients nationally would enable an extra 1,600 patients to live independently. The combination of the specialist units, thrombolysis and thrombectomy would result in the NHS having the best outcomes for stroke patients in Europe.

NHS Long Term Plan milestones for stroke care in the acute sector: -

- In 2019 the NHS will, working with the Royal Colleges, pilot a new credentialing programme for hospital consultants to be trained to offer mechanical thrombectomy.
- By 2022 the NHS will deliver a tenfold increase in the proportion of patients who receive Thrombectomy after stroke.
- By 2025 we will have amongst the best performance in Europe for delivering thrombolysis to all patients who could benefit.

The onset of the Covid-19 pandemic in March 2020 has inevitably impacted on the achievement of these intentions within planned timescales. This is also the case for the progression of the North Mersey hyper-acute stroke proposal. The programme was paused between March and July 2020. The emergence of a second wave of COVID did not lead to a further pause but progress has been slower due to the pressure on providers and clinicians.

In reviewing best practice, the greatest improvements in outcomes have been seen in areas that have adopted a similar model of care to the one proposed in this PCBC.

A research paper based on the Manchester and London configurations was published in the BMJ in January 2019 called “*Impact and sustainability of centralising acute stroke services in English and metropolitan areas: retrospective analysis of hospital episode statistics and stroke national audit data*”. This research concluded that Manchester had a significant decline 1.8% in mortality in patients treated at a hyper stroke acute unit, indicating 69 fewer deaths per year. The number of patients treated in the unit also increased from 39% in 2010-12 to 86% in 2015/16. Furthermore, in both Manchester and London hospitals length of stay reduced, in London more than 90% of patients were treated in the hyper acute stroke unit.

Conclusions from the research: - Centralised Models of acute stroke care, in which all stroke patients receive hyperacute care, can reduce mortality and length of hospital stay and improve provision of evidence, based clinical interventions. Effects can be sustained over time. **(Ref 8)**

SNNAP have completed research that advises that the optimal size of a stroke unit is at least 600 strokes per year. Units of this size achieve economies of scale and are therefore more likely to be sustainable. Currently, none of the three units in North Mersey have a patient population larger than 600. **(Ref 9)**

4.2 The Clinical Case for Change for North Mersey

There is now a wealth of evidence that the way hospital stroke services are organised can have a major impact on outcomes for stroke **(Ref 10)**. Sentinel Stroke National Audit Programme (SNNAP) measures the quality and organisation of stroke care in the NHS and is the single source of stroke data in England, Wales, and Northern Ireland.

Current North Mersey stroke services have a number of key challenges in meeting the stroke clinical standards (SSNAP) that impacts upon patient care. The clinical standards require/recognise: -

- That the most important care for people with any form of stroke is prompt admission to a Hyper Acute Stroke Unit (HASU). In North Mersey none of the three HASU admit patients to the clinical standard of 90% of patients within 4 hours; current performance is 38% based on 2019/20 data.
- That a stroke unit undertakes adequate volumes of activity to maintain clinical quality, outcomes and a sustainable unit; In North Mersey none of the three HASU’s achieved the minimum recommended number of 600 strokes per annum (Based on SSNAP data).
- That 90% of stroke patients should remain on a stroke unit for 90% of their care to ensure continued specialist care. In North Mersey only 73% of patients achieve this standard in 2019/20
- That HASUs enable patients to have rapid access to the right skills and equipment and be treated 24/7 on a dedicated unit, staffed by specialist, multi-disciplinary teams; In North Mersey there are insufficient number of stroke consultants and other specialist staff to ensure that consultants assess 95% of patients within 24 hours; the current performance is 81% based on 2019/20 data.
- That following a brain scan, suitable patients should have thrombolysis as soon as possible and within 1hour on arriving at hospital. In North Mersey thrombolysis is provided to 7.2% in 2019/20 of patients and the target in the NHS LTP is 20% by 2025.
- Therapy services; including Occupational therapy, Physiotherapy and Speech and Language Therapy (SALT) are currently not delivering the recommended amount of therapy support and

the service is falling short particularly in SALT. The relatively small size of the teams in the individual Trusts can leave teams vulnerable to the impact of annual leave, sickness, and maternity leave. Posts can be spread across a variety of clinical areas due to only part time positions available in specialist areas. These factors can make recruitment, retention and resilience difficult. Vacancies that cannot be filled creating gaps in service delivery, impacting upon quality of patient and staff experience.

- That patients are transferred home as soon as possible with early supported discharge. In North Mersey there are 5 commissioner areas that have varying levels of early supported discharge that impacts the three units' current hospital length of stay. The variation is from 18 to 20 bed days based on 2019/20 data.
- That following a brain scan; suitable patients have a mechanical thrombectomy as soon as possible and within 5 hours of arriving at hospital. In North Mersey mechanical thrombectomy was provided to 1.4% of patients in 2019/20, the NHS LTP target is set at 10% by 2022.
- That ideally designated Thrombectomy Centres are co-located or networked with HASUs. In Cheshire and Merseyside, the Walton Centre is the designated Thrombectomy Centre which is located on the Aintree site. Patients from the Royal Liverpool, Southport and the rest of Cheshire and Merseyside are required to transport patients by ambulance which is difficult to achieve within the 4.5-hour window.
- If hyper acute patients cannot access a specialist stroke unit, they become a medical outlier elsewhere in the hospital, time is taken for them to access a stroke bed impacting upon the quality of intervention on the clinical pathway. Delays happen as patients do not have access to the right people at the right time.

North Mersey stroke providers do not meet all the current quality standards of SSNAP (which measures whether services are delivering quality standards) and will be required to achieve additional standards to thrombolysis and thrombectomy as defined in the NHS LTP in the future.

The provider performance against SSNAP standards is shown below for October to December 2019:

-

Oct 19 - Dec 19	Case ascertainment	Audit compliance	Scanning	Stroke Unit	Thrombolysis	Specialist Assessment	Occupational Therapy	Physiotherapy	Speech & Language Therapy	MDT Working	Standards by discharge	Discharge process
University Hospital Aintree	A	A	A	D	C	B	A	C	C	B	A	A
Royal Liverpool University Hospital	A	A	B	F	D	C	A	B	C	A	B	A
Southport and Formby District General	A	B	B	F	D	D	B	B	E	C	C	B

Clinical Activity

Only the Royal Liverpool Hospital has previously treated more than 600 stroke patients up to 2017/18, however, this is now no longer the case. Overall, in Cheshire and Merseyside in the last seven years there has been a cumulative increase of 0.65% in stroke patients see **appendix 2**.

For Strokes in North Mersey, there has been a cumulative growth of 0.6% between 2013/14 and 2019/20 as seen in the table below: -

Strokes in North Mersey each year – SNNAP data				
Year	Aintree	Royal Liverpool	Southport	Total
2013-2014	421	633	362	1,416
2014-2015	495	604	370	1,469
2015-2016	476	633	339	1,448
2016-2017	452	625	361	1,438
2017-2018	446	650	343	1,439
2018-2019	502	570	300	1,372
2019- 2020	524	556	397	1,477

4.3 Workforce Challenge

Workforce is a key limiting factor in delivering and providing services 24 hours, 7 days a week. This is particularly relevant for stroke consultants as in North Mersey the number of stroke consultants is 54% under the recommended level (ref Meeting the Future Consultant Workforce Challenge: stroke Medicine – British Association of Stroke Physicians July 2019). In North Mersey there are currently 10 WTE consultants in post (although 3 of these posts are filled by locums); to meet the required standards in the existing configuration of services, an additional 10.4 WTE consultants would need to be recruited.

There are particular concerns for the Southport site that operates with only 1 substantive and 1 locum consultant.

There is also a shortage of skilled staff including speech and language therapists, clinical psychologists, stroke nurses and occupational therapists, to meet current and future demand. There is a national shortage in all of these professions, creating difficulties in recruitment. The most recent SSNAP Data shows that 40% of all stroke consultant posts across the country are vacant.

In the current configuration there is currently a shortage of the following groups of staff (**see appendix 3**) when assessed against Royal College of Physician standards: -

North Mersey Staffing shortage based on RCP standards		
Staff group	2018/19 Gap WTE	2019/20 Gap WTE
Consultants	10.4	-4.0
Nurses	23.4	20.6
Therapies	7.4	9.0
Clinical Psychologists	1.1	0.7

4.4 Length of Stay

Discharging people from hospital and into rehabilitation is crucial in delivering high quality care and better outcomes. It is also expensive to keep people in hospital if they can be safely cared for

elsewhere. In North Mersey the average length of stay varies across the three sites from 17 days to 22 days (based on 2018/19 data) and 18 days to 20 days (based on 2019/20 data), the national average is 18.4 days (SSNAP 2018/19 data) and 15 days (SSNAP 2019/20). Demand and capacity modelling has also identified a lack of beds in the current configuration of 3 HASU and 5 acute rehabilitation beds.

4.5 Organisational Form

The geographical proximity of the current three North Mersey stroke services and a good level of collaboration facilitated by the Trusts, CCGs' and the Strategic Clinical Network (now ISDN) have enabled the teams to work closely and develop this business case. However, organisational boundaries still exist that in many ways still challenge collaborative working, mainly due to different policies, processes and financial and contractual arrangements. To enable the three services to operate effectively in the future and operate in a network will require a different model.

To ensure that the patients in North Mersey receive an equitable and sustainable service that manages all risks across the geographical patch will require an even more integrated approach.

4.6 Conclusion

The immediate challenges facing stroke services in North Mersey mean that patients and carers are experiencing: -

- Poorer health outcomes
- Poorer long-term quality of life
- Increased likelihood of admission to residential or nursing home
- Poorer patient experience
- Unsustainable services

These challenges will only increase as demand for services grow. The case for change is overwhelming and services need to change as quickly as possible.

5 Clinical Vision for the Future

This chapter will describe the overall vision and the ambition for stroke services setting out the new clinical pathways.

5.1 Clinical Vision for Stroke Services

The North Mersey vision for the whole stroke pathway is to prevent ill health, provide outstanding urgent and acute care and consistently provided, integrated community care closer to home.

For Hospital acute stroke services in North Mersey, the ambition is to deliver high quality, clinically sustainable and accessible services 24 hours a day, 7 days per week. The objectives to be achieved are:

- Improve earlier access to specialised hyper acute stroke care and ensure patients receive 90% of care on a stroke unit
- 24 hours 7 day a week access to treatments like thrombolysis and mechanical thrombectomy
- Reduce mortality for stroke patients (more people will live)
- Reduce the impact of disability to stroke survivors
- Improve quality of life by patients being able to return home rather than receive care in a residential or nursing home
- Fulfil the best practice recommendations as set out in the National Stroke Strategy 2007 (**Ref 11**) and the NHS Long Term Plan
- The service to achieve to achieve an overall A grade for SSNAP performance
- That patients will be able to return home earlier from hospital with Early Supported Discharge package
- The service will be fully integrated across Hyper-acute, Acute and hospital rehabilitation

The Benefits Realisation Plan at **appendix 4** quantifies, with timescales, the extent of the improvements expected.

5.2 Hospital Acute Care

This business case is primarily focused on acute hospital care; however, it is recognised that to improve the quality of the service requires improvements in the provision of mechanical thrombectomy and community rehabilitation (including Early Supported Discharge). In North Mersey both these services are being reviewed with an ambition to improve access and overall quality of service at the same time as improving acute care.

5.3 Urgent Stroke services

The National Stroke Strategy 2007 and the most recent 2016 edition provide guidance on recommended best practice. This is also supported by the NHS Long Term Plan and recent research undertaken on the redesign services in Manchester and London (**Ref 8**).

It shows that if stroke patients receive specialist assessment and intervention in the hyperacute phase (the first 72 hours after a stroke) this reduces mortality and improves long term outcomes. To achieve this hyperacute stroke services need to provide high quality rapid access to specialist stroke physicians and diagnostics that results in interventions taking place as quickly as possible.

A meta-analysis of stroke studies showed that treatment with thrombolysis had an average increase in survival of about 10% for patients treated within 3 hours. Treatment within 3 hours resulted in good outcomes for 32.9% versus 23.1% who did not receive treatment (**Ref 12**). Centralised hyperacute stroke services have also reduced mortality rates (between 1.6% and 2.8%) and the length of hospital stay (-1.4 and 2 days) (**Ref 13**).

Centralised HASUs have also been proven to be more sustainable in the longer term due to consolidation of specialist clinicians, rather than specialist staff spread thinly over a number of smaller units.

The North Mersey vision is to create a Comprehensive Stroke Centre that takes patients directly from ambulances and will deliver the following to provide the best outcomes (**Ref 14 & 15**): -

- Access 24 hours 7 days a week
- Rapid and accurate diagnosis (CT perfusion and MRI imaging)
- Clinical expertise 7 days per week
- Direct access to CSC (100% on arrival)
- Treat a minimum of 600 patients per year
- Provide thrombolysis to **95%** of patients who require the treatment
- Co-located with a designated thrombectomy centre
- First 72 hours of care provided on the CSC
- Access to a full MDT to SSNAP standards
- Step down of post 72-hour care to a hospital close to home or home if clinically fit
- Imaging within 1 hour and arrival to needle (thrombolysis) within 30 minutes
- All patients will have seen a stroke consultant, stroke nurse and therapist within 24 hours
- Thrombectomy within 5 hours for 10% of patients
- Consistent Early Supported discharge to Community Rehabilitation

5.4 Mechanical Thrombectomy

Patients requiring a mechanical thrombectomy will be assessed in the Comprehensive Stroke Centre, which would be integrated and co-located on the same site with thrombectomy services. The service will be available to patients 24 hours 7 days per week.

5.5 Community Rehabilitation

Rehabilitation has been recognised by both patients and clinicians as just as important as acute care if the very best outcomes are to be achieved for patients. Stroke teams from Cheshire and Merseyside have produced a vision for an integrated community stroke team model (**appendix 13.5**). This described access to full rehabilitation support including occupational therapy, physiotherapy and speech and language therapies, psychology and emotional wellbeing, social work, orthotics, orthoptics and wheelchair services, spasticity clinics, vocational support and support family and carers, available for as long as clinically indicated. Life after stroke services, including social groups and peer support; exercise, health and fitness; and family and carer support are part of the model. The model describes holistic reviews at 6 months, 12 months and annually thereafter, with the option of re-referral into the integrated team if needed. This model is in line with the new national service specifications published in October 2020.

Although this business case focus is on the acute hospital care, the North Mersey Stroke Board has identified rehabilitation as a priority and new services will align with the hospital care. In order to support the development of a programme of work with a focus on developing Integrated Community Stroke Teams in North Mersey, a separate Clinical Reference Group has been established in February 2021. This CRG will report to the North Mersey Stroke Board, the terms of reference will be taken to the North Mersey Board for ratification once agreed. A gap analysis of current services, staffing and referral criteria is currently being undertaken. This will form the foundation of a “Case for Change” paper describing the gaps and inequalities in Integrated Community Stroke provision.

5.6 Prevention

Although the focus of this business case is on hospital acute care of stroke, it is acknowledged that the prevention of stroke is a key priority for North Mersey. The vision is to make every contact count and ensure that every part of the health system views prevention as part of their business. The aim is to support people so they can improve their lifestyles and therefore improve health outcomes. Clinicians have identified the following factors as crucial to improving stroke prevention: -

- Reduction in smoking rates
- Improvements in diabetes detection and care
- Better identification and management of high blood pressure and atrial fibrillation
- More widespread use of statins
- Initiatives to address obesity and increase physical activity

Several initiatives are beginning to have an impact on primary and secondary prevention of stroke and other non-communicable diseases. These include: -

5.6.1 Cheshire & Merseyside

The Health Care Partnership is the lead sustainability and transformation partnership in the North Region for the Public Health England CVD Prevention Programme. The Prevention Board has overseen the introduction of blood pressure testing guidelines for use outside general practice; training for non-clinical community partners to test blood pressures in community settings; training for community pharmacists; embedding Making Every Contact Count within provider organisations; working with the Academic Health Science Network to promote adoption of atrial fibrillation testing devices in general practice and elsewhere. An easy to use and information rich, public and professional facing Happy Hearts website has been set up. **(Ref 16)**

The National Diabetes Prevention Programme (Healthier You) is now available to all people across Cheshire and Merseyside who are at risk of developing diabetes, defined as those with an HbA1c reading of 42-47 mmol/mol or have previously been diagnosed with gestational diabetes. This is a nine-month programme of support to lose weight, make healthier food choices and increase activity. Sessions are delivered virtually or face to face in groups across community settings. **(Ref 17)**

The NHS Digital Weight Management Programme offers a 12-week digital support programme via their smartphone or computer, for adults living with obesity (BMI of 30+ kg/m²-adjusted appropriately for ethnicity) plus either diabetes, or hypertension, or both, to help manage their weight and improve their health. Patients are referred by their GP practice and offered one of three levels of intervention.

5.6.2 Local

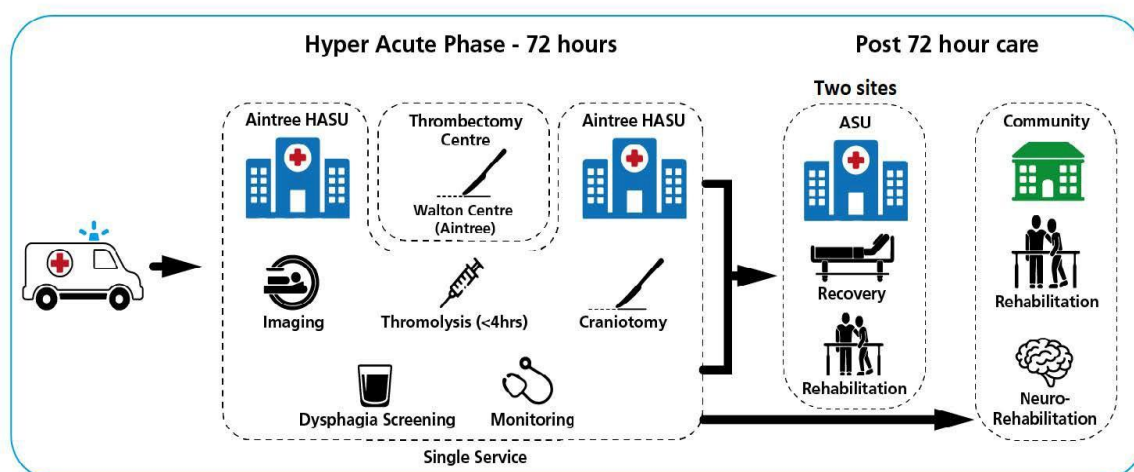
Local partners (PSS, Stroke Association and Liverpool Diabetes Partnership) maximised delivery of opportunistic blood pressure and atrial fibrillation testing in work and other community settings; GPs check pulses of over-65s attending for any reason to identify and treat atrial fibrillation; increased use of newer anti-coagulant drugs (historically Liverpool has a low performance on this); medicines management reviews of people on atrial fibrillation register to encourage uptake of anticoagulation; work with practices who are 'outliers' in identification and management of atrial fibrillation to increase performance in this area; commissioned Stroke Association to do holistic post-stroke reviews – this increased uptake of the reviews from a baseline of 19% to 75% in 2018/19, identifying 1,672 unmet needs, 77 of which related to management of atrial fibrillation and blood pressure and a further 53 to medication issues.

6 Proposed Model of Care

This section will describe the proposed model of care and will describe with evidence the impact the proposals will have on the safety, effectiveness and experience of care.

The Stroke service configuration in the new proposed model is illustrated below: -

Proposed North Mersey Stroke Services Configuration

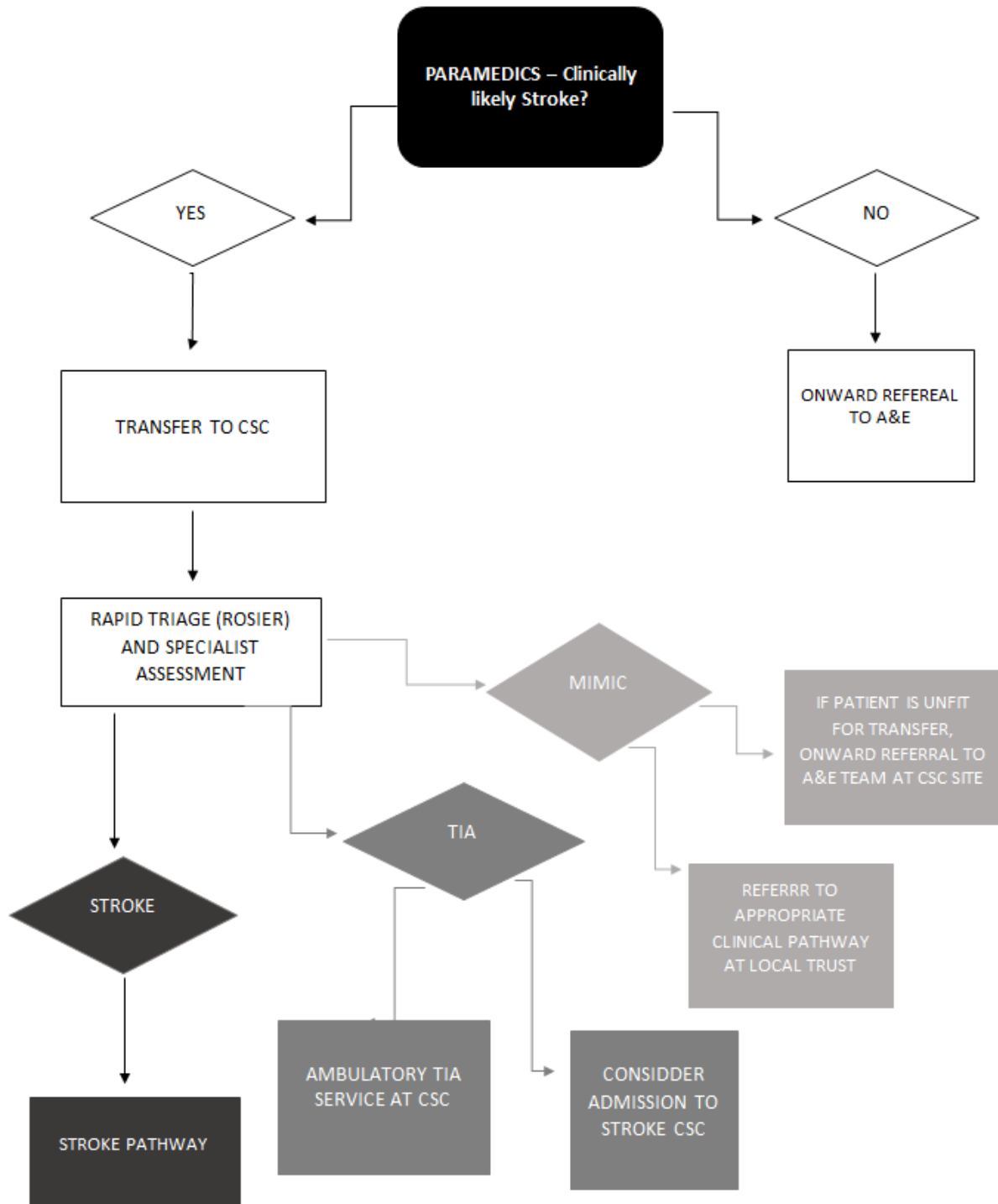


A Comprehensive Stroke Centre is where a hospital meets the standard to treat the most complex stroke cases. This would include:

- Availability of advanced imaging techniques, including MRI, MRA, CTA, CT and CTP
- Availability of personnel trained in vascular neurology, neurosurgery and endovascular procedures
- 24/7 access to thrombolysis and thrombectomy
- 24/7 availability of personnel, imaging, operating room and endovascular facilities
- ICU/neuroscience ICU facilities and capabilities
- Experience and expertise treating patients with large ischemic strokes, intracerebral haemorrhage and subarachnoid haemorrhage

Acute stroke patients (FAST + patients ref) would be taken by ambulance or referred by GP directly to a new comprehensive stroke centre co-located with acute neurosurgical and stroke thrombectomy services based on the Aintree Hospital site, which is co-located with the Walton Centre, the regional provider of the thrombectomy service. This will be the North Mersey Comprehensive Stroke Centre (CSC).

The Acute stroke patients proposed pathway: -



To enable thrombolysis to be administered quickly the ambulance or GP will notify the CSC that the patient is in transit.

The Royal Liverpool and Southport sites would no longer provide the first 72 hours of care (hyper acute phase of treatment) as this would all be centralised on the Aintree site. However, Southport and Broadgreen sites would provide post 72-hour care that would enable patients to be closer to home for their rehabilitation phase of treatment. The Royal Liverpool would also not provide any post 72-hour care, there would be no inpatient stroke care provided on this site. However, it is recognised that patients in other specialities may have strokes and support will be required from stroke clinicians.

6.1 Urgent Care in the Comprehensive Stroke Centre

The Comprehensive Stroke Centre (CSC) would review all acute (<72 hours from onset) stroke patients. The CSC would be co-located with A&E and accept patients directly at the front door without the need for pre-referral. The centre would have direct and priority access to a CT scanner including CT angiograms and CT perfusion studies to ensure patients are rapidly assessed and managed. There would also be rapid access to an MRI scanner and to ultrasound carotid doppler imaging.

Patients deemed not to have had a stroke and to need other specialist care would be referred to another appropriate clinical pathway, facilitated by co-location with ED and AMAU. All other patients would move on through the stroke pathway.

There would be 7 days a week on site consultant presence to support the hyper acute work; 8am to 8pm, 7 days a week to meet the requirements of 7-day standards. This would be supported by 7-day therapies support, made possible by the pooling of clinical resources. At all other times the hyperacute service would be supported by a middle grade doctor on site, with support from an on-call consultant available over the telephone or via telemedicine video link.

The Aintree site will benefit from co-location and collaborative working with Walton Centre colleagues to develop a new 19 bedded CSC that includes an ambulatory facility, full therapy rooms that are located close to the current A&E, Radiology services and Thrombectomy centre. The current Aintree HASU and ASU will become the post 72-hour care centre with 35 beds.

6.2 Thrombectomy and Thrombolysis

The centre would benefit from direct access to specialist scanners in order to maximise the number of patients who are able to receive thrombectomy and thrombolysis. These treatments significantly reduce disability and death and are cost effective for stroke patients. Co-location with the Thrombectomy service, within the Walton Centre, would significantly increase the number of patients that are able to access thrombectomy within the appropriate time window and would also significantly reduce the time to treatment for thrombectomy, which is crucial as outcomes are better the sooner this treatment is delivered.

The Walton Centre is currently offering a service 8am to 11pm, 7 days per week, there are plans to expand to 24/7 cover by the end of 2021.

Good Practice Example: Mechanical thrombectomy for large vessel occlusion stroke

University Hospitals of North Midlands NHS Trust has implemented a pathway to offer mechanical thrombectomy to treat large vessel occlusive strokes in suitable people. After implementing the pathway 94% of people with severe strokes due to large vessel occlusion, who received mechanical thrombectomy, were discharged to their own homes rather than to a nursing home; 23% were discharged home within 1 week. Before implementing the treatment pathway, when only intravenous tissue alteplase was used, 70% of patients were discharged to inpatient rehabilitation, with significant annual costs. There has been £0.8 million savings from a reduction in the length of stay in hospital and £1.6 million savings from a reduction in social care costs. **(Ref 18 & 19)**

6.3 Acute Stroke Care

After the initial 72 hours of stroke care patients from the North Mersey catchment area would continue to be managed at an acute stroke unit, where possible close to their home if they are not suitable for discharge. The acute stroke units are essentially wards with access to acute stroke medical and nursing care as well as rehabilitation space and expertise.

The following sites will have the following number of post 72-hour care beds: -

Aintree - 36 beds (mixture ASU and Rehabilitation)

Southport - 16 beds (mixture ASU and Rehabilitation)

Broadgreen - 23 beds (Rehabilitation)

The units will provide **(Ref 20)**: -

- Specialist nursing staff trained in urgent management of people with stroke
- Stroke specialist rehabilitation staff
- Access to diagnostics, imaging and cardiology investigations
- Access to tertiary services for neurosurgery and vascular surgery
- Consultant reviews 5 days a week
- Senior advice available from CSC via telemedicine out of hours
- Medical cover (junior doctor) 24/7
- Consultant Nurse support at Broadgreen

In the patient engagement events with post stroke survivors, they stated that patients would be prepared to travel further for specialist and hyperacute care but would want to be closer to home for their acute or rehabilitation treatment.

Aintree and Broadgreen sites are part of Liverpool University Hospitals and so repatriation should be easy to achieve. Repatriation from the CSC to Southport will be made possible by an agreement under the collaborative network model.

6.4 Post-Acute Care

Medically stable patients that require further in-patient rehabilitation or complex discharge planning would be transferred to a rehabilitation unit for in-patient rehab. It is expected that up to 50% of

patients would be discharged from hospital with support from the ESD (Early Supported discharge) team, supporting patients to optimise their recovery in their own homes.

6.5 Early Supported Discharge Team

In order for the above model to be effective, it is essential that an effective and uniformly delivered ESD service is embedded across North Mersey. This would ensure that discharges from inpatient beds happened in a timely manner and ensure a reduced length of stay.

In January 2020 a new national service specification was published for early supported discharge and community care following a stroke. The North Mersey CCGs have compared their currently commissioned services with this specification the ISDN has completed a gap analysis. There are significant differences both when compared with the national specification and between the CCG areas. The North Mersey CCGs will incorporate their intention to develop a consistent, gold standard stroke rehabilitation service in 2021/22 commissioning plans.

6.6 Psychological Care

Stroke survivors are often challenged by a broad pattern of psychological difficulties, which can impact on recovery following stroke; with high rates of anxiety, depression and cognitive impairment being well established as common effects affecting function and recovery post-stroke (**Ref 1**); and such effects can be predicted to increase hospital re-admission and un-planned care risks (**Ref 2**).

RCP guidance indicates the need for clinical psychology input to support an optimal rehabilitation model of care, across stages of care (including ward-based care) and new National Stroke Programme rehabilitation guidance recommends, even more strongly, that clinical psychology input must be a core consideration in routine MDT rehabilitation (also providing service design and workforce planning guidance in this).

Accordingly access to clinical psychology across all stages of rehabilitation is necessary to be embedded in North Mersey service redesign; with access to lower-level emotional support as part of the Stroke Association offer also being seen to be of value to support best outcomes.

6.7 Post in-patient care: Life After Stroke Support

All patients would be able to access Stroke Association support, including conducting 6-month reviews. Patients are currently offered 6 weeks, 6 months and 12 months follow up hospital appointments. Such periodic follow ups (up to and including at 12 months post-stroke) have been demonstrated to be of value in providing necessary touch points to identify ongoing support needs, requiring support planning; recognising, for example, that ongoing psychological and social effects can progress and exacerbate ongoing disability, if not identified and intervention/ support not offered. Access to such follow up reviews should continue to be made available, with the possibility made more accessible by the provision of telephone and video consultations also. Access to follow up support (including access to ongoing emotional support and formal psychological care, where such need is raised) and should also continue to be made available.

6.8 End of Life Care

For those patients who require palliative care there would be agreed pathways to optimise care, designed with the palliative care teams of the 3 adult acute hospital trusts across North Mersey and with community services.

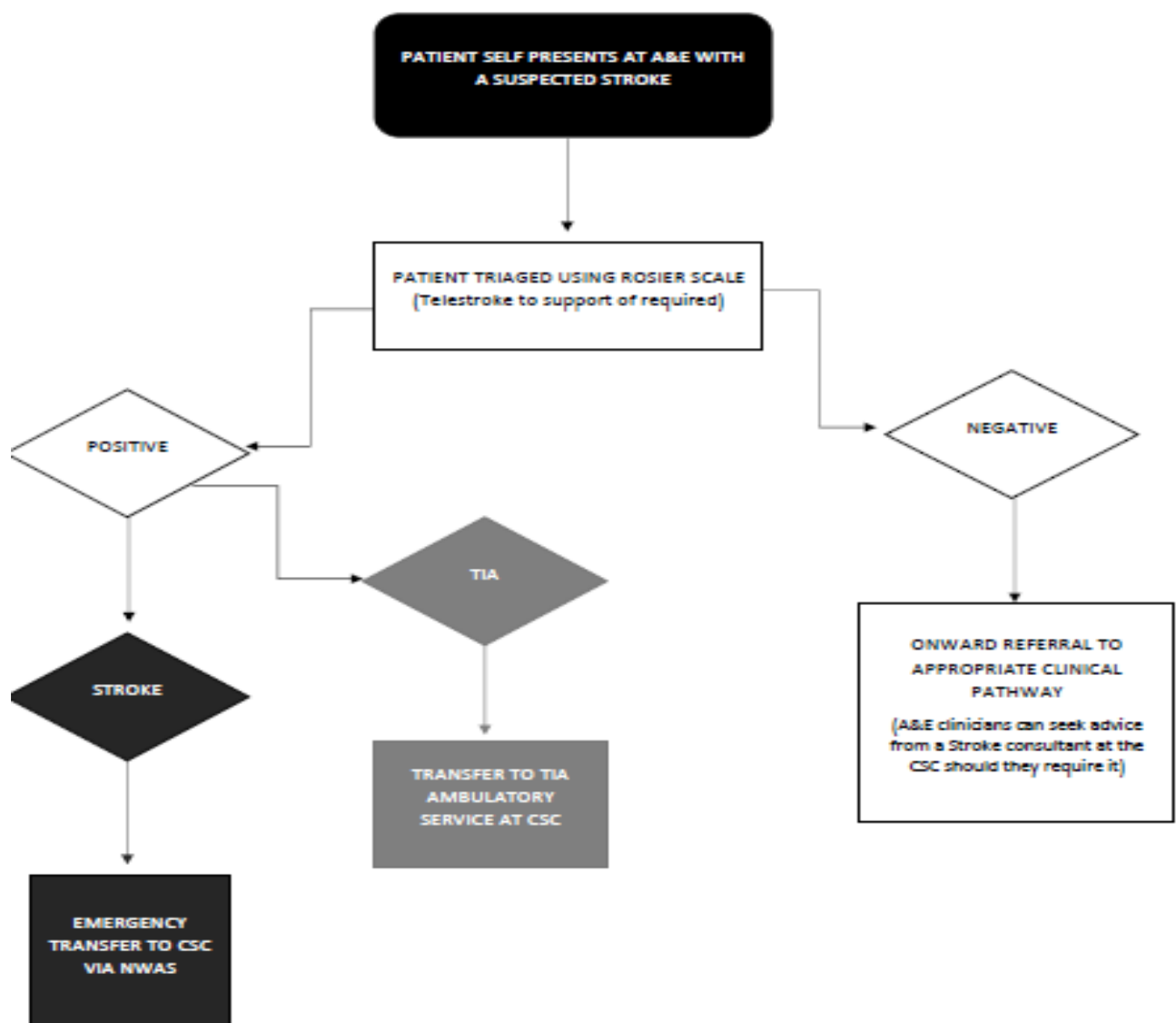
6.9 Treatment in a non-CSC Hospital

Patients self-presenting to surrounding A&Es (Southport and Royal Liverpool) would be reviewed, with an on-site stroke specialist nurse, before being transferred to the Comprehensive Stroke Centre, if required.

Some patients who are brought to hospital with suspected strokes have not actually had a stroke. This includes patients with mimic symptoms, TIAs and some that require neurology input. In the new model of care the clinicians at non-CSC hospitals (Southport and the Royal Liverpool) would be able to link with the CSC by telemedicine. If the patient needs the care of the CSC they will be transferred immediately, if they require any other care this will be delivered from the receiving hospital site.

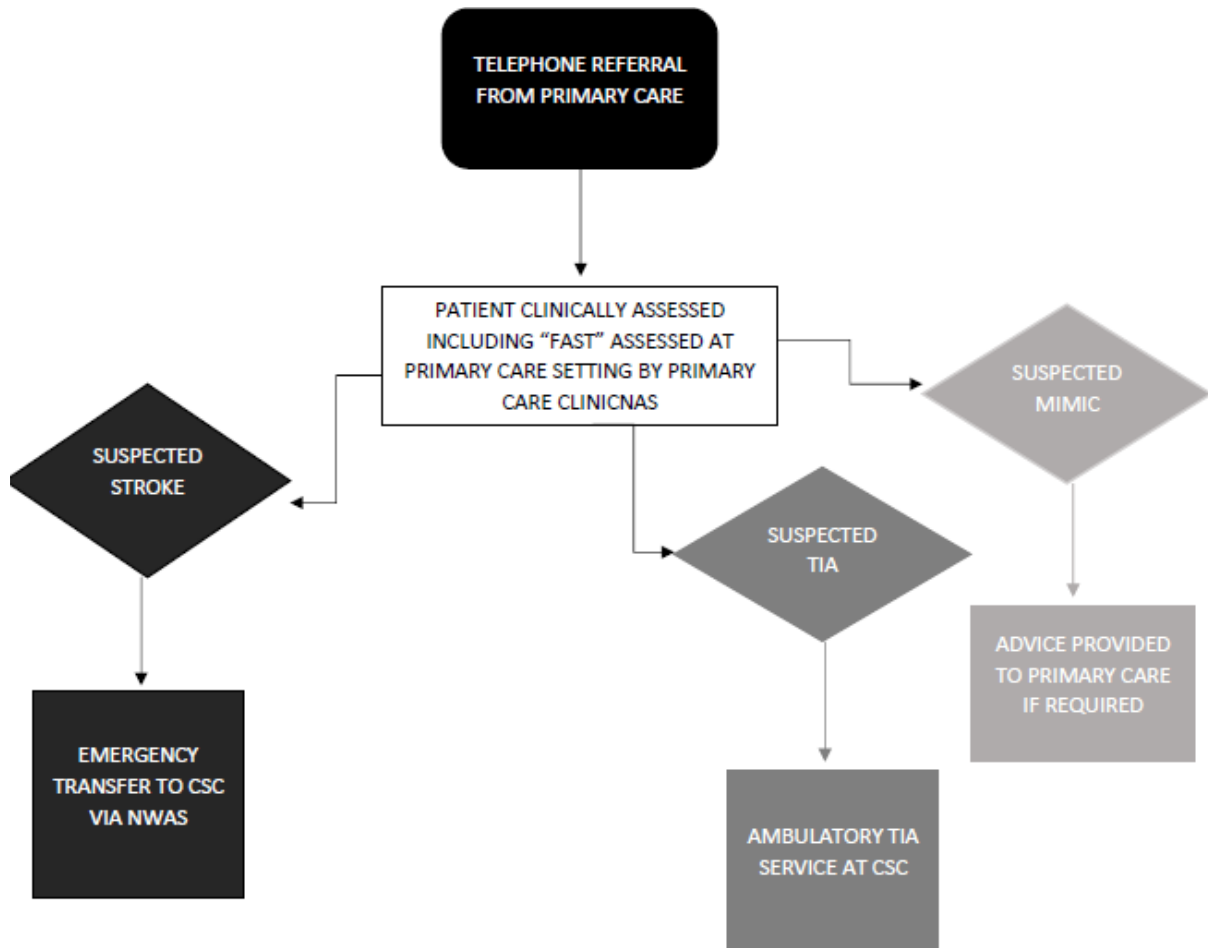
It is expected that the majority of TIA patients identified by paramedics would go directly to the CSC for assessment and treatment if required.

Proposed pathway for treatment in a non-Comprehensive Stroke Centre Hospital:



The CSC will also accept direct GP stroke / TIA urgent referrals for an immediate see and treat service. Due to travel time for Southport patients their TIA patients will attend the local hospital for initial assessment but transfer to the CSC if they require urgent treatment.

Proposed pathway for telephone referral from Primary Care:



If a mimic does not require further hospital care, the patient will be discharged with appropriate follow up care in the local hospital. If the condition requires the support of the CSC, then the patient will be transferred accordingly.

Assumptions to the scale of transfers from hospitals have been built into capacity models (based on 2018/19 and 2019/20 data) see **appendix 13.6**.

6.10 Research and Academia

As this transformation will create the regions (and one of the countries) largest stroke services it would present excellent opportunities to deliver high quality research.

Existing local research teams will be able to work more efficiently from a single acute receiving site to identify and recruit potential research candidates, ensuring more patients than ever are able to take part and benefit from acute stroke research.

Close links with our neighbouring neuroscience centre, rehabilitation wards, community rehabilitation services, regional specialist cardiothoracic trust, the Stroke Association and Liverpool and Lancaster Universities will also enhance the range of research studies that can be undertaken. Research opportunities are specifically seen in the fields of stroke-related psychological and quality of life research, where doctoral clinical psychology and PhD relationships can provide potential opportunities and in hyper-acute stroke care reflecting the benefits of being co-located with the regional neuroscience centre.

The expectation is that the new North Mersey Acute Stroke Service will apply for Hyperacute Research Centre status, whilst working closely with all of the other stroke services in the region to enhance research.

6.11 Digital and Technology Innovation

Currently each acute stroke service in North Mersey has access to their own telemedicine service where consultants can be contacted virtually out of hours to assess patients when they are in A&E and may require thrombolysis. None of the telemedicine solutions have the ability to link with another system. In Spring 2019, The Clinical Network together with the CVD R Board were successful in a bid for innovation funds to procure and implement a telemedicine solution with the potential to link for MDT meetings and cross site working in the future.

This upgrade of telemedicine and the software's ability to link in with other stroke Services virtually will support the proposals for North Mersey. If a suspected stroke patient presents to either Royal Liverpool or Southport site where there is no hyperacute stroke service, a consultant at the Comprehensive Stroke Centre at Aintree can assess the patient virtually using telemedicine. This assessment will dictate whether a patient will be transferred to the Comprehensive Stroke Centre or if they remain at the original presenting Trust. This digital solution will ensure that all suspected stroke patients that attend a non-Comprehensive Stroke Centre will receive a consultant assessment and reduce unnecessary transfer of patients between Trusts. It will also allow the teams across the North Mersey patch to hold MDT meetings to discuss operational issues, patient pathways and general service issues.

In line with the NHS Long Term Plan, we will use advanced and innovative technology in order to ensure we maximise our consultant decision making and patient safety and ensure the highest number possible of patients are able to access the most effective treatments in a timely manner.

An example of this is the ongoing work funded through the Stroke Strategic Clinical Network, in conjunction with the Radiology Network in Cheshire and Mersey to implement artificial intelligence technology to assist clinician reviews of CT angiograms. This will help to ensure timely diagnoses of large vessel occlusion and so identify patients potentially suitable for intra-arterial thrombectomy at the Walton centre. Similarly, CT perfusion imaging will identify patients with salvageable brain tissue that may have previously been outside of the appropriate treatment time window but may now also benefit from such intervention.

6.12 Organisational Form

There are many different organisational forms that the North Mersey Stroke Service could operate under, from joint venture to single provider model. All of which have their advantages and disadvantages.

A light touch approach at this stage may deliver the desired outcomes of managing clinical risk effectively across the footprint. This could be an agreement of a networking approach, covered by a Memorandum of Understanding, appropriate Service Level Agreements and governance structure.

This could include agreement of: -

- Recruitment and retention (including joint appointments)
- Pathway agreements
- Repatriation of patients
- Management and mitigation of risks collectively

The organisational form will be developed in the first phase of implementation.

6.13 Risks

There are a number of risks to implementing the new stroke model of care. The risk register is set out in **appendix 13.7**.

7 Impact of Proposed Model of Care

This section will describe the impact that the proposed model of care will have on where clinical activity is undertaken and what changes will be required to the estate, workforce, patients travel and interdependent services.

7.1 Clinical Activity

Clinical activity volumes have been assessed using both SSNAP and Trusts HES data. The Clinical Reference Group had undertaken a number of audits to support some of the assumptions. The aim was to gain the most accurate level of clinical demand on the stroke services inpatient, A&E and clinical support services (**appendix 13.6**).

The only way to ascertain the number of suspected stroke patients attending any of the three A&E departments was from stroke nurse referral records.

The table shows the level of activity for suspected stroke by site: -

A&E attendances for suspected stroke				
	Southport	Aintree	Royal Liverpool	Total
Attendances 2018/19	1,380	3,380	1,923	6,683
Attendances 2019/20	1,905	3,464	2,506	7,875

The above highlights that Aintree has a far higher referral rate from A&E for a stroke nurse assessment. Aintree also has a higher ratio of suspected stroke referrals compared to confirmed stroke. A&E attendances are a mixture of ambulance attendance and patient walk-ins. There is an opportunity to work more closely and train A & E departments to improve the quality of referrals for stroke patients using FAST and ROSIER tools for the accurate identification of stroke patients.

For the purposes of modelling; the following clinical activity has been used from both SSNAP and HES data and shows the summary of stroke, TIA and mimic inpatient admissions per site based on

2018/19 data: -

Summary of Stroke, TIA and Mimic Inpatient Admissions				
	Aintree	Royal Liverpool	Southport	Total
Strokes	547	624	350	1,521
TIA	60	92	88	240
Mimics	201	90	100	391
Admission to CSC	808	806	538	2,152

2019/20 data: -

Summary of Stroke, TIA and Mimic Inpatient Admissions				
	Aintree	Royal Liverpool	Southport	Total
Strokes	593	597	426	1,616
TIA	86	58	88	232
Mimics	201	90	100	391
Admission to CSC	880	745	614	2,239

There are assumptions to the amount of the current unmet demand built into this activity. In **appendix 13.6** assumptions have been made to the likely demand of Stroke, TIA and other / mimic patients excluding any other medical inliers on the stroke units/ wards. The above is assumed to the base year demand for future modelling.

A large number of suspected strokes were admitted to the three hospitals however, later confirmed not to be a stroke. Only a small number were admitted to the three stroke units as identified above. **The average length of stay (ALOS) for each of the sites was as follows based on:**

2018/19 data: -

North Mersey Stroke Services Inpatient Average Length of Stay			
Average Length of Stay	Aintree	Royal Liverpool	Southport
Stroke	22	18	16.6
TIA	2.4	3	2.2
Other	6	5.8	5.4

2019/20 data: -

North Mersey Stroke Services Inpatient Average Length of Stay			
Average Length of Stay	Aintree	Royal Liverpool	Southport
Stroke	19.4	20.2	18.6
TIA	2.2	3	6.2
Other	4.8	6.1	5.4

Note: The Royal Liverpool ALOS also includes time spent in the Rehabilitation unit at the Broadgreen site.

Southport has the lowest length of stay and this is due to: -

- Discharge process for patients who require assessment for long term nursing or residential home, this has significantly reduced the time waited for assessment.
- ESD outreach service has been introduced for Southport and Formby residents (not West Lancashire) since August 2019.

- Relocation to a new ward area which has much improved the environment and the ability to accept stroke patients in a timely manner and treat earlier and thereby discharge earlier.

The SNNAP national average was 18.4 in 2018/19 and 15 in 2019/20 for comparison purposes.

For all future modelling purposes, the ALOS of stroke patients is at 18.4 for Aintree, 18 for the Royal Liverpool and 16.6 for Southport. It is assumed that Aintree will be able to reduce ALOS due to a review of processes and additional nursing and therapy staffing.

All TIA patients and mimics have been modelled at 2.4 and 6 days respectively.

7.2 Impact on Bed Configuration

The clinical activity from 7.1 has been used to calculate the demand on the CSC, beds and clinical support services.

It is assumed that all emergency stroke patients and the majority of TIA patients and a proportion of mimics would attend the centralised CSC for initial assessment. It is assumed that the current large volumes of mimics being referred as suspected stroke patients would be reduced with the introduction of training to A & E teams.

There would also be a percentage of GP referrals for TIAs that would be assessed at the centre for Aintree and Royal Liverpool patients, Southport patients would be seen locally and if required redirected to the CSC.

Modelling this information into the future state identifies the required bed configuration based on 2018/19 data:-

North Mersey Stroke Service – Required Beds					
Bed Numbers	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	19	0	0	0	19
> 72 hours	35	0	15	0	50
Rehab	0	0	0	23	23
Total	54	0	15	23	92
Current Beds	33	14	22	21	90
Change in bed base	21	-14	-7	2	2

*Stroke activity has significantly increased between 2018/19 and 2019/20 data sets. Whilst it is not expected that growth at this level will be a continued trend (*Table – SSNAP activity in North Mersey over 6 years* on Page 25 shows that 2018/19 was a lower rate of strokes across north Mersey and the updated data for 2019/20 is more in line with the figures that would be expected, based on activity over the last 6 years), it's important to have a Stroke service that meets the demand of the population.

Based on the new data it has been determined the CSC needs to be built to accommodate 20 Hyper Acute beds.

Overall, demand and capacity highlights the requirement for North Mersey to increase HASU beds by 5 and reduce ASU rehabilitation.

This will result in a CSC with 19 Hyper acute beds (an increase of 5 overall) at Aintree with a 35 bedded post 72-hour care facility. The Royal Liverpool would close 14 beds on site leaving 15 gerontology / neurological beds on the ward. Southport would also be required to reduce 5(4 based on 19/20 data) stroke beds on site, however, it is expected that two beds will remain for neurological patients. Broadgreen requires an additional 2 rehabilitation beds to improve flow from the CSC and ensure patients are rehabilitated closer to home.

7.3 Estates Configuration

The stroke services estate would need to be developed to facilitate the new service model. This will require a new CSC on the Aintree site that has a Stroke A&E admission area, ambulatory area, therapy assessment & treatment rooms and a 20-bed ward (with flexibility to move to 23 beds due to modelled increase in demand in future years).

Four potential areas have been identified to accommodate the new CSC and two of them are located adjacent to the A & E department, close to radiology services and the Thrombectomy centre. There is also direct ambulance access to those buildings. The current occupants of these areas' will be required to move to another location on site. A further option to create a new build alongside the ED and AMAU is also being explored. This will require capital investment both in creating the new CSC and relocating other services to new a location. The exact location of the HASU is dependent on the complex integration programme for the new Liverpool University Hospitals NHS Foundation Trust that is only part way through the 5-year plan. The estimated capital cost of £4M is included in the financial section. Stroke is recognised in the integration programme as a priority.

The Broadgreen site has already increased the ward by two beds for winter pressures with the potential to maintain a 23-bed facility all year around to meet demand.

The Southport site will accommodate the 16 designated stroke beds and 2 Neurological beds in its current ward space.

7.4 Impact on Workforce

Stroke services are composed of several different staff groups working together as a multidisciplinary team to deliver care to stroke patients. Stroke is a consultant led service supported by medical staff, nursing, physiotherapy, occupational therapy; speech and language therapy, dieticians, orthoptics and clinical psychologists. The baseline whole time equivalent workforce numbers in post for stroke service in each site is shown in **appendix 8**.

The workforce model required has been modelled (Appendix 14 – Option C3) using Royal College of Physicians guidelines as is summarised as follows: -

North Mersey Stroke Services Workforce Gaps – using RCP Guidelines					
Staff Type	2018/19 WTE	2019/20 WTE	Required WTE	2018/19 Gap WTE	2019/20 Gap WTE
Medical	10.0	10.0	14.0	-4.0	-4.0
Nursing	158.3	161.57	174.6	-16.3	-13.03
Therapy	57.8	56.5	69.2	-11.4	-12.7
Management and administration	14.7	14.7	14.7	0.0	0.0
Grand Total	240.8	242.87	272.5	-31.7	-29.63

Based on RCP guidelines there would be staffing gaps of nearly 30 WTE's in all aspects of the multidisciplinary team.

The Clinical Reference Group considered all the identified gaps in all the staff groups and concluded that recruitment would be difficult due to national shortages. Therefore, the professional leads reviewed the staffing models and using RCP guidelines and their professional judgement developed an alternative staffing model. This would include developing new roles at assistant level to support the qualified grades to create a North Mersey Staffing Model that would complement the service configuration. The service still aspires to achieve RCP staffing standards in the future when staff supply meets demand.

The service would aspire to recruitment to all 14 consultant posts but recognise the difficult in achieving this aim. Therefore, a target of 12 consultants with the support of a mix of staff grades and nurse consultants has been agreed in the first phase of recruitment. The staff grade and consultant nurse posts would be new posts in the structure but would reduce the need for consultant from 14 posts to 12. Although these posts cannot fully replace the consultant role, they can provide vital support and skill working alongside consultants. There are further opportunities to develop Advanced Practitioner roles to support the new configuration of services.

A full review of nurse staffing has enabled the clinicians to agree a different skill mix of qualified and unqualified that has created a more realistic nursing model for recruitment purposes. There are currently new Band 4 Nursing roles being developed in LUHFT that would potentially fit this model of care. This in turn would increase the overall staff numbers which would improve patient care.

The Therapy teams conducted a similar review that again has resulted in a skill mix change that would enhance staff numbers and thereby the quality of care.

The full staff analysis using North Mersey staffing standards are included in **appendix 13.19**.

The use of North Mersey staffing standards results in much improved staffing numbers that would be realistic to achieve and would improve patient care.

The table shows the staffing gap using North Mersey Staffing Standards: -

Staff Type	2018/19 WTE	2019/20 WTE	Required WTE	2018/19 Gap WTE	2019/20 Gap WTE
Medical	10.0	10.0	12.0	-2.0	-2.0
Nursing	158.3	161.57	169.2	-10.9	-7.63
Therapy	57.8	56.5	66.2	-8.4	-9.7
Management and Administration	14.7	14.7	14.7	0.0	0.0
Grand Total	240.8	242.87	262.1	-21.3	-19.23

A workforce strategy will be developed to plan the recruitment and retention taking into consideration the requirements and sustainability of each site.

There will be a requirement to transfer resources from the Royal Liverpool and Southport to the centralised unit that will be managed through staff engagement and organisation change methodology.

7.5 Implication to Patient Travel Times

This section describes the impact of the preferred option on travel times.

The first part of this section covers ambulance journey times and is applicable to the whole patient population.

The second part covers public transport and car travel. Because of the way that local public transport planning is organised, it has not been possible to model the public transport and car travel implications in the same way across the whole of Knowsley, Liverpool, Sefton and West Lancashire. Therefore, this information only covers Liverpool City Region residents.

It's important to stress that the majority of patients travel to hospital by ambulance following a stroke, and therefore public transport and/or car travel implications of the preferred option would be most likely to impact on patients and visitors. Equally, where this did mean an increased journey compared to current arrangements, in most cases this would only be for the first 72-hours of care – at this point patients would either be discharged to continue their recovery at home or transferred to Broadgreen or Southport if this was closer to home than Aintree.

Ambulance journeys to hospital

Using Northwest Ambulance Service (Nwas) data from previous ambulance transfers, the tables below show the postcode areas that would be likely to see an increase of more than ten minutes (rounded up or down to the nearest minute) because patients would be taken to the Comprehensive Stroke Centre at Aintree Hospital, rather than the Royal Liverpool or Southport hospitals. These times are averages, and will depend on the exact addresses, and road conditions on the day, so they're only meant to give a rough indication of the change.

Liverpool postcodes which would see an increase of more than ten minutes journey time if patients were taken to Aintree rather than the Royal:

Postcode	Journey time to the Royal Liverpool Hospital	Journey time to Aintree Hospital
L1	9 minutes	20 minutes
L3	8 minutes	20 minutes
L7	9 minutes	19 minutes
L8	11 minutes	27 minutes

West Lancashire and Southport & Formby postcodes which would see an increase of more than ten minutes journey time if patients were taken to Aintree rather than Southport Hospital:

Postcode	Journey time to Southport Hospital	Journey time to Aintree Hospital
L40	20 minutes	32 minutes
PR4	26 minutes	39 minutes
PR8	9 minutes	36 minutes
PR9	13 minutes	44 minutes

Some other areas would also see increases – or decreases – in journey times, however we have only highlighted those where the change would mean an increase of more than ten minutes. Although patients are currently more likely to be taken to a hospital closer to where they live, ambulance crews make decisions based on a number of different factors – there aren't set rules about which hospitals people in each area are taken to.

It is important to set into context that any increase in travel times would be offset against the benefits of the new clinical model, which would see suspected stroke patients received directly into a stroke assessment unit which would enable quicker access to diagnostics and the right care.

Travel by public transport and car (Liverpool City Region residents)

Using the postcodes from stroke and TIA patients from 2018/19, travel times have been mapped to current hospital sites and then to the new proposed Comprehensive stroke centre at Aintree. This information shows the difference in travelling times for these cohorts of patients.

Travel by car: Travel times to access acute stroke services are shown at appendix 13.9 for both current state and proposed future state. This shows that 100% of these patients can access one of the three current HASUs within 30 minutes using a vehicle during morning and evening peak traffic (7-9am and 4-7pm) i.e., this journey is likely to be quicker during non-peak hours and weekends. It also shows that

the majority of patients (95% in the morning and 96% in the evening) at all three current centres can access services within 20 minutes. It is important to remember that the three services are not currently meeting the required clinical standards.

The travel times for the future state are also shown at appendix 13.9 and show that 100% of patients using a vehicle would access stroke services within 45 minutes. Access to the Aintree site within 30 minutes would be achievable for 87% of patients in the morning and 90% in the evening, a reduction of 13% and 10% respectively.

Currently it takes people in the most deprived parts of West Lancashire over 60 minutes to travel to Southport Hospital on public transport. Car access to Southport Hospital from Skelmersdale is around 20-30 minutes.

Some practical examples of car travel implications: People in some other areas of south Liverpool can currently travel to the Royal Liverpool Hospital in 10 – 20 minutes, but the journey to Aintree would take around 20 – 30 minutes. For Speke residents, travel times to Aintree and the Royal are broadly the same. The journey to Aintree takes around 30 - 40 minutes for Southport residents.

Travel by public transport: The travel times using public transport (bus and rail) for families visiting relatives is as follows: currently 99% of visitors can access the three HASUs within 60 minutes. In the new proposed model, over 80% of patients would access the Aintree site within 60 minutes. Almost 100% of visitors would have arrived at Aintree within 90 minutes on public transport.

Some practical examples of public transport implications: People in Toxteth can currently access stroke services at the Royal Liverpool in 20 – 30 minutes by public transport, while Aintree is a 30 – 60-minute journey. Speke residents can currently access the Royal Liverpool in 45 – 60 minutes, and Aintree in 60 – 90 minutes. Southport residents can reach Southport Hospital in 20 – 45 minutes, while Aintree is up to a 90-minute journey.

It is important to note that the majority of stroke patients receiving hyper acute care would be repatriated to a local hospital or to home after 72 hours.

7.6 Interdependent Services

The following services have been fully engaged in the redesign process and have supported an impact assessment of stroke redesign on their services.

7.6.1 Northwest Ambulance Services (NWS)

The major impact on NWS is the number of extra journeys and in some cases the length of those journeys.

- Patients from Southport to Aintree is an increase length of journey
- Patients from South of the Royal Liverpool site to Aintree is an increase length of journey
- Repatriation to Southport is a new journey
- Repatriation to Broadgreen is an increase in length of journey
- Transfer of walk-in patients from Emergency Departments to CSC will be a new journey.

An overall estimate to the increase in the number of journeys and additional cost has been included in the financial model **Appendix 10**. An indicative additional financial cost has been included at £175,000 based on 2018/19 data.

7.6.2 Radiology

The major impact on the radiology service will be to the services at Aintree, it is envisaged that an extra 2,562 patients and will attend the CSC which will require an additional 3,884 extra radiology tests which include MRI, CT and carotid Doppler (using 2018/19 data). Based on 2019/20 data the estimated number of additional patients attending the CSC is 2,506, which will require an additional 3,906 tests. Currently there is an assumption only 10% of TIA GP referrals from Southport & Ormskirk Hospital will transfer, however, depending on the resources available at Southport site, there may be the need for all of these patients to transfer to the CSC. This would increase the total number of additional radiology tests to 4,167. See **appendix 6** for details.

The additional workload at Aintree is a result of patient transfers from Southport and Royal Liverpool and therefore an expectation of resource transfers from each of the sites. However, there is a significant risk that due to pressures on all existing services that there will be no ability to transfer staff or fully meet the required financial resources on each site. This is reflected on the PCBC risk register and will require careful management and negotiation.

The Radiology department is currently undertaking a full demand and capacity review and will incorporate this transfer workload into their plans for the future. Currently, all capacity is committed to current demand and any further work would require an expansion of space and equipment.

An indicative financial value of an additional £90,000 over and above transferred resources has been built into the financial model to reflect strokes share of the step cost changes. If resources do not transfer from other sites, then additional costs will be incurred.

7.6.3 Pharmacy

The pharmacy department have assessed their impact on the service and have identified improved efficiencies and productivity due to centralisation. This will need some management and negotiation due to the impact on the workforce across all three sites. The financial section reflects an indicative value of efficiencies that requires further exploration into what is releasable.

The transfer of extra pharmacy drugs will be a direct transfer from site to the central unit. The most expensive drug usage is for the thrombolysis drug (alteplase) which is classed as a “high-cost drug” and therefore is financially reimbursed from the department of health as a pass-through charge. This will therefore have no financial impact on any of the Trusts with regard to transfers.

7.6.4 Pathology

The pathology services on both the Aintree and Royal Liverpool sites are provided by Liverpool Clinical Laboratories (LCL), so the service will be the same regardless of where the blood is taken in the future.

The Southport service receives pathology from Whiston hospital, and this would need to be a transfer of resources. LCL have assessed the impact of the additional tests at Aintree and confirmed that they can absorb the workload with the transfer costs.

7.6.5 Orthoptics

Visual impairment can be one of the only problems or may be one of several disabilities caused by stroke. Stroke related visual impairment occurs in about 60% of acute stroke survivors. Currently, there is very little orthoptics input to stroke acute service nationally and locally. The Royal College of Physicians recommends that every stroke patient has a practical assessment of vision and an examination of the visual field and eye movements. Orthoptists should form part of the acute core stroke disciplinary team.

To provide an orthoptics service to North Mersey stroke service would require investment in 1.8 WTE Orthoptists. Providing orthoptics across 3 sites would require considerable investment and is likely to be unsustainable.

7.6.6 Psychology

RCP and National Stroke Programme guidance strongly recommends that clinical psychology input must be a core consideration in routine MDT rehabilitation. Indicating the need for stroke clinical psychology access to provide specialist assessment, clinical guidance, training and clinical support to staff and to provide direct patient treatments and onward care facilitation: in order to support optimal clinical rehabilitation outcomes. National Stroke Programme guidance; further provides clear recommendations on how this input into MDT care should best be provided.

2.1 WTE additional Clinical Psychologists for the North Mersey system are recommended to enable this need (then supporting provision of 1.0 Broadgreen / Royal based; 0.7 WTE Aintree based; and 0.5 Southport based), this then bringing the North Mersey system total to 2.2 WTE.

7.7 Quality Impact

The quality impact assessment was undertaken on all of the shortlisted options and is included at **appendix 13.11**. The assessment consistently demonstrates that the preferred option will have the positive impacts on patient care categories including: -

- Patient Safety
- Patient experience
- Clinical effectiveness
- Equitable
- Efficient

The evidence from the reconfigurations from London and Manchester who also centralised specialised hyper acute care is overwhelming in terms of: -

- Preventing people dying prematurely; reducing mortality by between 1.8% (69 lives), and 1% (96 lives) in London. This would represent in North Mersey 26 lives if achieved similar levels.
- Enhancing the life of people with long term-term conditions; the increased use of thrombolysis and thrombectomy will reduce the impact of disability on patients and allow patients to return home (rather than a nursing home) or even resume a normal life.
- Helping people to recover from episodes of ill health following injury; providing rehabilitation services that are appropriately staffed, closer to the patient's home with managed early supported discharge and community rehabilitation services.

- Ensuring that people have a positive experience of care; providing specialised care in a Comprehensive Stroke Centre with all the appropriate stroke experts and equipment and then providing recovery and rehabilitation closer to home.
- Treating and caring for people in a safe environment and protecting them from avoidable harm; providing the right people in the right place at the right time to provide specialised stroke treatment will prevent avoidable harm. Receiving thrombolysis and thrombectomy within specified time frames improves outcomes. Patients receiving a successful thrombectomy are less likely to have serious disability within the first 90 days after stroke.

The research also demonstrated that a centralised stroke centre provided financial savings of £811 per stroke patient within the first 90 days. The scale of savings for each area will be dependent on the scale of improvements based upon the before and after centralisation. The starting position and the potential for improvement amongst other factors will drive the size of the financial benefit. However, using the £811 as a guide for financial efficiencies this would represent £1.1 million for North Mersey. These financial savings would mainly be achieved in the community and social care as on average only the first 18 days of 90 days are within the acute hospital setting. However, there is an opportunity to reduce length of stay in the acute hospitals due to improved outcomes.

The Benefits Realisation plan (**appendix 13.4**) highlights the areas that North Mersey clinical teams have targeted for improvement and the impact on metrics that will ultimately improve patient care.

7.8 Equality Impact

The purpose of this assessment is to explore the potential positive and negative consequences of the proposal on protected characteristic groups

The whole purpose of the redesign is to improve access to specialist care for people who suffer the life-threatening condition of stroke. The assessment at **appendix 13.12** demonstrates that the improved access is for all people including those with protected characteristics.

7.9 Sensitivity Analysis

7.9.1 Growth

In assessing the likely growth of stroke services in North Mersey the following issues have been considered: -

- The major impact on the service in the future is a growing and ageing population. North Mersey and particularly in Southport has an already large elderly population
- There is also an emerging theme of younger people having strokes linked to lifestyle choices
- Prevention programmes to detect and treat those at risk of stroke
- There has been a cumulative growth of 0.6% in Strokes numbers in North Mersey in the last seven years
- Stroke numbers in North Mersey have not increased year on year, however 2019/20 data shows the highest number of recorded strokes in the last 7 years
- Risk that North Southport patients are treated at Preston.

Taking the above into consideration for the purposes of this business case a growth factor of 0.5% a year has been considered. This has been modelled in **appendix 13.13** using 2018/19 data and 2019/20 data

A 5-year projection at growth of 0.5% using 2018/19 data would see the inpatient admission of an extra 38 stroke patients, 6 TIAs and 10 mimics. This would require the bed base across the three sites to increase by 2 to 3 beds in total. However, 2019/20 data shows a significant increase in stroke patients across North Mersey (mainly in Southport), which when compared to 2018/19 data (shown in the table below),

difference between 18/19 and 19/20	Aintree	Royal	Southport	Total
strokes	46	-27	76	95
TIA	26	-34	0	-8
mimics	0	0	0	0
total	72	-61	76	87

The additional 87 patients are already higher than the planned growth over 5 years based on the 18/19 data. Factoring this information into the bed modelling, this would require an additional 3-4 beds across the three sites in the next 5 years.

This would require 6 extra staff and would cost an additional £190k per annum plus non pay costs. This would only cover direct stroke costs; further costs would be incurred in clinical support services.

The new HASU development requires 20 beds at 90% capacity however plans are to build the unit big enough to expand to 23 beds. Southport's current ward allows for 22 beds and will reduce to 18 (including Neuro beds) beds leaving capacity of 4 to grow. Therefore, a 5-year growth would be consumed within the planned footprint, but further work will be required to plan for the following 5 years.

7.9.2 Average Length of Stay

The average length of stay (ALOS) will have a massive impact on beds and resources. The plans for centralisation and staffing should have a positive impact in reducing the ALOS to the planned 18.4 days for the centralised unit with opportunities to reduce further. This is linked to two major enablers a 24/7 thrombectomy service and a to specification ESD and Community Rehabilitation service. The impact of increasing or reducing the ALOS by 1 day is: -

- Beds increase/decrease 3.5 beds
- Staff numbers increase/decrease by 6.4 WTE
- Costs increase/decrease by £254k per annum

Annual capacity and demand reviews should be undertaken as part of annual operational planning to effectively manage the service.

7.10 Patient Stories

To illustrate the potential impact this change in service will have on patients' outcomes this section provides some patient stories looking at the before and after reconfiguration.

Angela Patient Story 1

Before

Angela a 70-year-old female had a sudden onset of loss of speech and right arm and leg paralysis at 07:30 on a Saturday morning, family rang 999 at 08:00 FAST positive, category 2 ambulance with paramedic sent arrived within 15 minutes, on scene 40 minutes transferred to local HASU travel time 20 minutes.

Pre-hospital call by paramedics, arrived Resus assessed by Stroke Nurse ROSIER positive 09:15, urgent CT Brain performed 15 minutes post arrival at ED (09:30).

Telestroke Consultant contacted (10:00), assessed patient and confirmed diagnosis of left middle cerebral artery ischaemic stroke with an NIHSS of 27 indicating a severe stroke, there were no contraindications to thrombolysis which was commenced at 45 minutes post arrival at ED (10:00; 2 hours post event).

1 hour post thrombolysis no improvement (11:00), re-contacted and advised CT angiogram performed at 11:20 reviewed by Telestroke consultant 12:00 identified a large vessel occlusion of left middle cerebral artery advised contact Thrombectomy centre. Thrombectomy Centre accepted patient for Thrombectomy at 12:20. NWAS contacted, and category 2 paramedic ambulance arrived at 12:40, left ED at 12:50, arrived at Thrombectomy Centre 13:20, nursed in corridor as no bed available at Thrombectomy centre and patient was outside time window 13:30 (within 6 hours of event) for Thrombectomy so not performed and then awaited transfer back to local HASU arrived back at HASU at 17:00 with persistent symptoms and signs of a severe stroke.

After

Angela 70-year-old female sudden onset of loss of speech and right arm and leg paralysis at 07:30 on a Saturday morning, family rang 999 at 08:00 FAST positive, category 2 ambulance with paramedic sent arrived within 15 minutes, on scene 15 minutes transferred Comprehensive Stroke Centre 40 minutes.

Pre-hospital call by paramedics, arrived Resus assessed by Stroke Nurse ROSIER positive 09:05, urgent CT Brain performed 15 minutes post arrival at ED (09:20). Seen by Stroke Consultant in CT identified no haemorrhage, commenced thrombolysis as no contraindications at 09:20 (1 hour 50 mins post event) and CT angiogram performed at same time 09:20 which confirmed large vessel occlusion of left middle cerebral artery. Patient transferred to monitored bed in HASU, Thrombolysis continued, co-located thrombectomy centre contacted and accepted patient for thrombectomy at 09:30. Patient transferred for thrombectomy at 09:45, thrombectomy commenced at 10:00, clot retrieved, transferred back to HASU at CSC at 11:00.

Patient transferred home from CSC if well enough or repatriated to local hospital for acute care and rehabilitation.

Benefits

Thrombolysis: 1 hour 50 post event versus 2 hours post event.

Thrombectomy at 2 hours 30 mins post event rather than missing thrombectomy window of 6 hours.

Single ambulance transfer to CSC compared to 2 for local HASU and thrombolysis and then further transfer for thrombectomy leading to significant delays.

Patient monitored in appropriate bed in CSC throughout acute phase including thrombolysis, thrombectomy and transfer back to co-located HASU bed from thrombectomy suite.

Therefore

Right treatment right time in right place with competent staff leading to better clinical outcome and better patient experience.

Fred Patient Story 2

Before

Fred was a previously well 41-year-old man. He was at home with his family one Saturday afternoon when he developed a sudden weakness of his left side and slurred speech. His family called an ambulance, and he was transferred to his local AED. On arrival he was immediately assessed by the stroke nurse, it was clear that Fred was having a big stroke. A CT brain scan was organised. The CT scan showed a clot in the right middle cerebral artery and with support from the consultant at home via telemedicine; Fred received thrombolysis treatment with 35 minutes. The team felt Fred would probably need thrombectomy treatment however this wasn't available at weekends.

Fred didn't improve with the thrombolysis treatment and for over a week his condition remained critical as he suffered with the effects of cerebral oedema. Fred spent many weeks' tube fed and dependant.

Against the odds Fred began to improve and started a journey of over six months of rehabilitation in hospital with support from doctors, nurses, physiotherapists, speech therapist, psychologists and occupational therapists as well as countless others.

Fred was able to return home and able to walk with further support from community teams and the stroke association. The physical and psychological effects of his stroke were profound. Longer term Fred continued to struggle with pain and seizures as a consequence of his stroke. Fred was unable to return to his job.

After

The team reflected on how life could have been different for Fred had stroke services been centralised. He may have had his thrombolysis treatment even quicker, with rapid access to specialist CT scans including CT Angiogram. He would have been able to be transferred directly for thrombectomy. His time in hospital and complications could have been reduced. His level of disability would have been less, and he may have returned to work and all his usual activities.

8 Finances

This chapter sets out the financial modelling undertaken for the short-listed options and then provides an analysis of the additional costs to be met to implement the preferred option.

8.1 Financial overview

Due to the complexities of tariff and the “Acting as One” contract agreement the financial section will focus purely on the change in the costs.

North Mersey providers and commissioners have worked under the “Acting as One” contract agreement in recent years, prior to the introduction of the temporary financial regime currently in place to support COVID arrangements and recovery. These arrangements have followed a “block contract” style approach linked to a fixed allocation supported by additional direct payments to address the impact of COVID.

It is anticipated that providers and commissioners will revert to a similar style contract as “Acting as One” from 22/23 onwards to enable the health and care system to focus upon ensuring that value for money is provided for taxpayer funds.

The proposed changes within this business case will see activity moving from one Trust to another and across sites. Whatever financial framework exists in the future, there will be a requirement to transfer income across provider contracts without destabilising Trusts or services. It is recognised that this is not a simple process, and a detailed understanding of current and future service delivery models will be required to reach agreement of impact between collaborating Trusts.

The price tariff is not always helpful in determining the fair amount that should be paid for a given activity and it is recommended that it should not be used as the currency for transfer of income across provider contracts.

The only true way to understand the costs of the proposed service is to determine the change in costs. The financial analysis in this section has determined the changes in the cost base as the additional cost of implementing the proposed model of care. This principle is consistent with a system approach to healthcare provision.

Current North Mersey stroke services, across three providers, cost in the region of £9.2 million, employing 242 WTE staff.

The COVID pandemic may have a long-term impact on service delivery models across a broad range of pathways, including Stroke services. It is too early to assess this with any degree of accuracy and therefore the financial consequences of the new model may be subject to change as these become clearer.

Financial implications of the short-listed options

The financial implications of the shortlisted options are set out in appendix 14. The summary includes costs from the proposed enhancement in workforce using RCP standards plus the impact of new building and NWS running costs. It also provides an estimated cost of the capital build for each of the options. This analysis shows that the preferred option C3 is the second most cost effective to A2 “Do nothing with enhancements”. This was a like for like comparison used for scoring the appraisal.

Costs of the Preferred Option

The preferred option was then reviewed further by clinicians in terms of staffing and what could be achieved to improve the service. This resulted in the development of the North Mersey Staffing Standard (NMSS). The service still aspires to RCP standards and the National Stroke Programme but accepts that due to workforce capacity constraints this will not be possible in the short term. The preferred option has then been modelled using the North Mersey Stroke Standard (NMSS).

The assessment of full cost of the proposed service indicates additional investment of £2.182m at 18/19 prices in terms of increased annual revenue costs to meet North Mersey Stroke Standard workforce levels. The cost to meet the RCP proposed model has been estimated at £2.763m using the same price basis. It is anticipated that the new service model will be introduced during 22/23 and costs are assumed to be c. 10% higher than modelled at this stage, leading to a revised requirement of c. £2.400m for the North Mersey Stroke Standard and c. £3.040m for the introduction of the RCP model.

The introduction of similar service models has demonstrated that wider savings are delivered through improved recovery and avoidance of ongoing support costs for patients. It is unlikely that any reduction in hospital bed days will result in tangible savings, given the underlying pressures that exist in the NHS at present. The cost of developing the existing building footprint to meet the specification for a hyper acute stroke service is estimated at £2.5m. Further diagnostic and relocation costs totalling £1.5m have also been identified. The total anticipated capital requirement for this proposal is £4.0m and this has provisionally been included within future capital plans.

The Cheshire and Merseyside Integrated Care System (ICS) Exec Team have reviewed the outline financial implications and have recommended that revenue funding support for the proposal is prioritised from the 22/23 growth allocation. The ICS and LUHFT are working closely to understand the timing of capital requirements and inclusion of resource within overall ICS capital allocations.

8.2 Financial implications of the short-listed options

The financial implications of the shortlisted options are set out in **appendix 14**. The summary includes costs from the changes in workforce using RCP standards plus the impact of new building and NNAS running costs. It also provides an estimated cost of the capital build for each of the options. This analysis shows that the preferred option C3 is the second most cost effective to A2 “Do nothing with enhancements”. This was a like for like comparison used for scoring the appraisal.

8.3 Costs of the Preferred Option

The preferred option was then reviewed further by clinicians in terms of staffing and what could actually be achieved to improve the service. This resulted in the development of the North Mersey Staffing Standard (NMSS). The service still aspires to RCP standards and National Stroke Programme but accepts that due to staff shortages this will not be possible in the short term. The preferred option has then been modelled using the NMSS.

The table below provides a comparison between RCP cost and NMSS costs based on activity and workforce data from 2018/19: -

North Mersey Stroke Services option appraisal costs		
Financial Impact of each option	Preferred Option RCP Standards	Preferred Option NMSS

	£'000	£'000
Direct Staffing Revenue Costs	£2,100	£1,100
NWAS	175	175
Radiology	90	90
Pharmacy	-107	-107
Capital Charges	250	250
Estates Soft and Hard FM	375	375
Total Revenue	2,883	1,883
Capital Costs	4,000	4,000

In summary, the total additional cost for the preferred option is £1.5M revenue and £4M capital. It is possible to phase these costs over a two-year period as part of a staged implementation programme.

The Quality Impact section 7.7 highlights from previous research the potential to achieve financial savings across a 90-day pathway. Using this research information shows a potential £1.2 million saving which is more likely to be in the community and care settings.

9 Option Development and Appraisal

This chapter summarises the options appraisal process for this service review. It discusses the different steps of the options appraisal process and then details the governance arrangements put in place to ensure the robustness and transparency of the options appraisal process.

9.1 Options Appraisal process

The options appraisal process for this service review consisted of four discrete steps: -

- Develop and agree the options appraisal framework
- Determine the long list of options
- Appraise the options and create short lists of options
- Appraise the short list and select a preferred option

9.2 Governance Arrangements

This service review falls into the acute hospital service review within the Health Care Partnership via the Cardiovascular Disease Board and led by Liverpool CCG. The governance arrangements have been designed to reflect the stakeholder led nature of the options appraisal process.

The North Mersey Stroke Board was established to consider proposals put forward by the Clinical Reference Group and make recommendations to the Committee's in Common (CIC) and the provider Trust Boards. The chair of the Board is the Director of Strategy for Liverpool CCG. The Board has a defined membership of both clinical and non-clinical stakeholders. The terms of Reference are shown at **appendix 15**.

The Joint CIC was responsible for agreeing proposals from the Stroke Board and sharing with the Joint Governing Body of Liverpool CCG, Knowsley CCG, South Sefton CCG, Southport and Formby CCG and West Lancashire CCG for final approval.

Two groups were established to support the review and selection of the preferred clinical model option: -

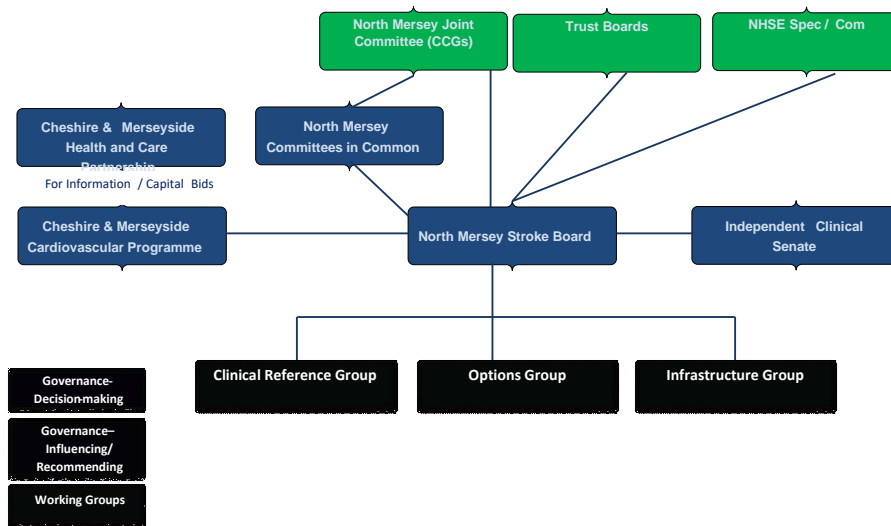
Options Group was an open stakeholder forum that convened at workshops held at different locations. The objective of the workshops was to gather views from across the North Mersey stroke care system on clinical models of care and the selection of a preferred model of care. The workshops scored the long list and the short list of options. These formed a recommendation for the Clinical Reference Group to consider.

The Clinical Reference Group is a clinical body with defined membership that met monthly to develop the options appraisal framework and the long list of options. It considers its feedback from the Options Group and recommended a preferred model of care option to the North Mersey Stroke Board. The CRG chair is Dr Paddy McDonald, Clinical Lead for stroke services from Southport and Ormskirk NHS Trust. The terms of Reference are shown at **appendix 16**.

The infrastructure group never formally met but information was provided to CRG by the programme lead from corporate services and clinical support services with regard to the short-listed options impact on clinical activity, demand and capacity, workforce and estates.

Governance Arrangements for North Mersey Stroke Services:

STROKE GOVERNANCE STRUCTURE



The main three working groups met regularly through the development of the preferred option.

Meetings of the Key Working Groups		
Date of Meeting	Name of Meeting	Purpose
31 st July 2019	Workshop 1	To develop and agree the case for change
3 rd September 2019	CRG 1	Develop terms of reference and programme team Agreed case for change
12 th September 2019	NMSB 1	Agreed terms of reference Agreed case for change
13 th September 2019	Workshop 2	Agreed option appraisal criteria Developed long list of options Agreed short list of options
1 st October 2019	CRG 2	Reviewed scoring of long list Agreed short list of options Reviewed modelling information
10 th October 2019	NMSB 2	Agreed short list of options Reviewed Thrombectomy action plan Reviewed ESD analysis
8 th November 2019	CRG 3	Developing current sustainability plans Reviewing & modelling activity information Agreed Estates Specification
18 th November 2019	CRG (away day)	Developed modelling information
27 th November 2019	Workshop 3	Developed the short list options Agreed staff engagement methods Patient engagement feedback
12 th December 2019	NMSB 3	Patient engagement feedback Options development
9 th January 2020	NMSB 4	Presented current sustainability plans Options development
13 th January 2020	CRG 4	Modelling of Options Plan the next Workshop Agree Interdependent Services
3 rd February 2020	CRG 5	Activity and modelling options Plan of final workshop
12 th February 2020	Workshop 4	Selected preferred option
13 th February 2020	NMSB 5	Presented current sustainability Presented preferred option
15 th December 2020	CRG Workshop	Review of Emergency Stroke Pathway
7 th January 2021	CRG Workshop	Confirmation of Emergency Stroke Pathway

9.3 Developing the options appraisal framework

Evaluation criteria are an important component of any options appraisal process, pre-agreed criteria help assess the relative merits of options in a structured and objective way. The CRG considered a number of different appraisal criteria but consider that a “critical success factor” (CSF) framework was the most appropriate. Options would be assessed in terms of whether or how well they would meet criteria that are by definition “critical” to the success of the programme.

The CSF framework was agreed at Workshop 2 on 13/09/2019.

There were six CSF's

- **Patient Outcomes and Experience** – delivery of a high-quality stroke service that would improve mortality, morbidity, reduce disability and provide access and equity of service at the right time
- **Deliverability** – the practicality of the implementation including feasibility, estates and equipment and competition factors if any
- **Alignment and Strategic Fit** – alignment with strategic aims of all stakeholders and the NHS long term plan
- **Risk Execution** – ability to maintain and improve performance in terms of any regulatory, statutory requirement and clinical standards (SNNAP)
- **Clinical Sustainability** – will this improve recruitment retention, critical mass, rota sustainability, contributions to training and research
- **Value for Money** – ability to reduce duplication and waste, standardise pathways, site optimisation and cross cover.

The score was to compare to the current service provision. The scoring matrix used was as follows:

Score	Description
3	A significant improvement of the service high level of certainty – substantial evidence
2	An improvement of the service with some certainty and some evidence
1	A slight improvement of the service but lacks evidence
0	No change in service delivery
-1	Slightly worse than the current service but the case is weak and lacks significant evidence
-2	Worse than the current service but there is evidence to support
-3	Significantly worse than the current service and supported by substantial evidence

9.4 Determining the long list of options

The long list of options were developed at workshop 2 held on 13/09/2019 with careful consideration of clinical quality requirements, sustainability challenges and service co-dependencies. The CRG to ensure that every possible option could at least be consider produced 26 different clinical models. Although they at an early stage recognised weakness in some of the options that had been developed CRG agreed it would be prudent to assess all options against the agreed appraisal criteria. To develop the long list of options the CRG consider every possible permutation of service delivery on the four current sites.

The long lists of options were as follows: -

A. Do Nothing

A1 – Current configuration of services

A2 – Current configuration of services – with enhancements

B. Consolidate 3 HASU's into 2

This option consolidates 3 HASU's onto two sites: leaving one of the current HASU's untouched. Creating in total 2 HASU's with 3 post 72 hours acute and rehabilitation services.

- B1 – Consolidate Aintree and Royal (on to Aintree) leave S & O. (creates CSC on Aintree)
- B2 – Consolidate Aintree and Royal (onto Royal) leave S & O. (creates CSC on Royal site)
- B3 – Consolidate Aintree and S & O (onto Aintree site) leave Royal Liverpool. (creates a CSC on Aintree)
- B4 – Consolidate Aintree and S & O (onto S & O site) leave Royal Liverpool. (creates a CSC on S & O site)

C. Consolidate 3 HASU's into 1, creating a CSC

Merge all 3 HASU's onto one site and 2 post ASU's.

- C1- One Comprehensive Stroke Centre on the Royal Liverpool site plus 2 Acute rehab
- C2- One Comprehensive Stroke Centre on S & O site plus 2 Acute rehabs
- C3- One Comprehensive Stroke Centre on Aintree site plus 2 Acute rehabs
- C4- One Comprehensive Stroke Centre on Broadgreen site plus 2 Acute rehabs

D. Consolidate 3 HASU and ASU into 1 CSC

Merge all 3 HASU's and ASUs onto one site – total centralisation

- D1- One Comprehensive Stroke Centre on Aintree site - no repatriation
- D2- One Comprehensive Stroke Centre on Royal Liverpool site - no repatriation
- D3- One Comprehensive Stroke Centre on S & O - no repatriation
- D4 - One Comprehensive Stroke Centre on Broadgreen site - no repatriation

E. Consolidate 3 HASU into CSC and 1 other ASU

Merge all 3 HASU's and have only one other ASU

- E1-One Comprehensive Stroke Centre at Aintree site and 1 other ASU at Broadgreen site
- E2-One Comprehensive Stroke Centre at Royal Liverpool site and 1 other ASU at Aintree site
- E3-One Comprehensive Stroke Centre at Royal Liverpool site and 1 other ASU at S & O site
- E4-One Comprehensive Stroke Centre at Aintree site and 1 other ASU at S & O site
- E5-One Comprehensive Stroke Centre at Broadgreen site and 1 other ASU at Aintree site
- E6-One Comprehensive Stroke Centre at Broadgreen site and 1 other ASU at S & O site

F. Create comprehensive Stroke Centre on more than one site any permutation of options.

Create full CSC on any of the three sites – with full services

9.5 Determining the short list of options

The long list of options was appraised against the CSFs at a workshop on the 13/09/2019. This produced a short list of options for a full appraisal.

The workshop appraisal is shown at **appendix 17**.

The finalised short list of options shown in order of ranking: -

C3 - One Comprehensive Stroke Centre on Aintree site plus 2 Acute rehabs

E4 - One Comprehensive Stroke Centre at Aintree site and 1 other ASU at S & O site

E1 - One Comprehensive Stroke Centre at Aintree site and 1 other ASU at Broadgreen site

B3 – Consolidate Aintree and S & O (onto Aintree site) leave Royal Liverpool site (creates a CSC on Aintree)

B1 – Consolidate Aintree and Royal (on to Aintree) leave S & O (creates CSC on Aintree)

A2 – Current Configuration of services – with enhancements

A1 – Current Configuration of services

CRG reviewed the outcome from the workshop and the short-listed options on the 01/10/2019. The group agreed with the workshops findings and reported to NMSB on the 10/10/2019.

9.6 Description of short-listed options

The short-listed options have been modelled (based on activity and workforce data from 18/19) to understand the impact on clinical activity, beds, estates, workforce, quality, equity and finance this was used to inform the appraisal process.

9.6.1 Option A1 – Do nothing - current service configuration

This is the do-nothing option - all services continue to operate unchanged.

The clinical teams note the following: -

Patient Outcomes and experience

- This would not improve the patient outcomes
- This option would not fully support access to thrombolysis and thrombectomy

Deliverability

- There would be minimum impact on estates and equipment

Alignment and Strategic Fit

- This option would not meet the strategic aims of local commissioners, HCP and the NHS Long Term Plan

Risk Execution

- North Mersey stroke service would not improve performance against the clinical standards

Clinical Sustainability

- This option does not address the sustainability issues of operating three small stroke units
- None of the stroke units would be compliant with recommended levels of stroke patients above 600
- The difficulty in recruiting specialist staff to three units would still persist. The requirement under RCP for the number of consultant posts in this option is 20.4 WTE; currently only 10 WTE in post (3 of which are locums)

- Creating a North Mersey network would help manage risks across the four sites and aid recruitment and short-term sustainability

Value for Money

- The consequence of poor outcomes would impact on length of stay, disability, extra support in the community and mortality. This option would provide no value for money

Clinicians felt that the service performance would worsen as even more difficult to recruit to sub-standard service and the longer term would see poor patient outcomes, experience and poor staff satisfaction.

9.6.2 Option A2 – Do nothing – current service configuration with enhancements

This option would address some of the deficiencies in clinical standards identified in the current service. This option would introduce enhancements to the current service on all four sites.

The following additional enhancements are incorporated into this option: -

- Increase HASU beds at Aintree site by 3 to a total of 7
- Create a dedicated stroke unit at the Royal Liverpool site on ward 2Y with 7 HASU and 7 ASU beds that are protected
- Create 2 extra HASU beds and reduce 2 ASU beds at Southport site
- Create 2 extra beds on Broadgreen site
- Invest in staffing to provide care and rehabilitation to the new bed base
- Create a North Mersey Stroke Services Network that manages all risks on all sites.

Considerations

Enhancing services on all four sites and improved staffing levels is likely to improve performance against clinical standards and thereby improve some outcomes.

However, it was noted by clinicians that: -

Patient outcomes and Experience –

- This option would not fully support access to thrombolysis and thrombectomy
- This option should improve access to HASU with increased capacity therefore proving better outcomes

Deliverability –

- There would be minimum impact on estates and equipment
- Financial investment required both Revenue and Capital

Alignment and Strategic Fit –

- This option would not meet the strategic aims of local commissioners, HCP and the NHS LTP
- Commissioner would accept this as a short-term solution

Risk Execution –

- North Mersey stroke service may improve performance against some of the clinical standards, however, it still may not fully achieve them or other standards

Clinical Sustainability –

- This option does not address the sustainability issues of operating three small stroke units. However, it is recognised that it would improve the sustainability issues in the short term
- None of the stroke units would be compliant with recommended levels of stroke patients above 600
- The difficulty in recruiting specialist staff to three units would still persist. The requirement under RCP for the number of consultant posts in this option is 20.4 WTE; currently only 10 WTE in post (3 of which are locums)
- Creating a North Mersey network would help manage risks across the four sites and aid recruitment and short-term sustainability

Value for Money

The additional staffing costs to recruit to RCP for the new bed configuration would be £2.3M.

See **appendix 14** for the detail activity, bed and financial monitoring.

9.6.3 Option B1 – Consolidate Aintree site and Royal Liverpool site (on to Aintree site) leave S & O (creates CSC on Aintree)

This option merges the Royal Liverpool and Aintree HASU units onto the Aintree site, but Southport remains as a HASU. Acute hospital stroke services would operate at Aintree, Broadgreen and Southport.

The beds from the Royal Liverpool site would transfer to Aintree requiring an additional 7 HASU and 7 ASU on site. The current stroke unit would be unable to accommodate this number of beds, and this would require the development of a 15 bedded HASU. The beds at Southport site would be unchanged.

Considerations

This option would improve the service significantly for those patients accessing Aintree but have limited impact on Southport patients.

However, it was also noted by clinicians that: -

Patient outcomes and Experience

- This option would not fully support access to thrombolysis and thrombectomy as Southport patients would still have to transfer to Aintree for thrombectomy services
- Patient from Liverpool would have to travel further to Aintree but travel time in most cases is minimal
- This would improve access to some patients to Hyper Acute Care quicker but not all the population

Deliverability

- Requires significant investment into finding and developing the estate, it would displace some services currently on Aintree site

Alignment and Strategic Fit

- This option would not fully meet the strategic aims of local commissioners, HCP and the NHS LTP
- It would provide an improved option for part of the population of North Mersey

Risk Execution

- Only some of the clinical standards would be met for the services consolidated onto one site
- Inequitable service across North Mersey

Clinical Sustainability

- This option does not address the sustainability issues of the most fragile stroke unit at Southport. It could destabilise Southport further as staff move to the bigger centralised unit or leave the service
- Only one of the stroke units would be compliant with recommended levels of stroke patients above 600
- The difficulty in recruiting specialist staff to two units would still be an issue. The requirement under RCP for the number of consultant posts in this option is 17 WTE; currently only 10 WTE in post (3 of which are locums).
- Creating a North Mersey network would help manage risks across the three sites and aid recruitment and short-term sustainability

Value for Money

- This would require a purpose built HASU/CSC on the Aintree site that would require a capital investment of £3M revenue
- The additional staffing costs to recruit to RCP for the new bed configuration would be £3.1M

See **appendix 14** for the detail activity, bed and financial monitoring.

9.6.4 Option B3 – Consolidate Aintree and Southport (on to Aintree site) leave **Royal Liverpool HASU (creates CSC on Aintree)**

This option merges the Royal Liverpool and Southport HASU units onto the Aintree site, but the Royal Liverpool remains as a HASU. Acute hospital stroke services would operate at Aintree, Broadgreen and Southport.

The beds from the Southport would transfer to Aintree requiring an additional 5 HASU on site. The current stroke unit would be unable to accommodate this number of beds, and this would require the development of a 12 bedded HASU. The beds at the Royal Liverpool would be unchanged.

Considerations

However, it was noted by clinicians that: -

Patient Outcomes and Experience

- This option would not fully support access to thrombolysis and thrombectomy as the Royal Liverpool site would still have to transfer to Aintree and would not have direct access to HASU
- Patient from Southport would have to travel further to Aintree but travel time in most cases is not excessive
- This would improve access to some patients to Hyper Acute Care quicker but not all the population

Deliverability

- Considerable investment in estate and the ability to find buildings on site
- Recruitment of additional staff when there is a national shortage

Alignment and Strategic Fit

- This option would not fully meet the strategic aims of local commissioners, HCP and the NHS LTP

Risk Execution

- North Mersey stroke service may improve performance against the clinical standards for the Aintree site. However, this would not be true for patients on the Royal Liverpool site
- Inequitable service across North Mersey

Clinical Sustainability

- This option addresses the sustainability issues of the most fragile stroke unit at Southport. However, it could destabilise the Royal Liverpool as staff may choose to move to the bigger centralised unit or leave the service
- Only one of the stroke units would be compliant with recommended levels of stroke patients above 600

- The difficulty in recruiting specialist staff to two units would still persist. The requirement under RCP for the number of consultant posts in this option is 17 WTE; currently only 10 WTE in post
- Creating a North Mersey network would help manage risks across the three sites and aid recruitment and short-term sustainability

Value for Money

- The additional staffing costs to recruit to RCP for the new bed configuration would be £3.0M
- This would require a purpose built HASU/CSC on the Aintree site that would require a capital investment of £3M revenue.

See **appendix 14** for the detail activity, bed and financial monitoring.

9.6.5 Option C3 – One Comprehensive Stroke Centre on Aintree Site plus 2 **Acute rehabs**

This option would see all three HASU's coming together to create a Comprehensive Stroke Centre on the Aintree site having a total of 19 beds plus an acute stroke ward with 35 beds. Acute stroke ward would also be located at Broadgreen site (23 beds) and Southport site (15 beds).

This option provides a centralised CSC to provide direct access to specialist urgent care and acute / rehabilitation close closer to home for patients.

Considerations

However, it was noted by clinicians that: -

Patient outcomes and Experience

- This option would fully support access to thrombolysis and thrombectomy in a timely manner and increasing numbers of patients receiving treatment thereby improve patient outcomes
- The increase travelling time for Southport patients and any south Liverpool patients would be offset by the direct access to specialist treatment that will improve outcomes
- Reduce the pressure in A&E departments due to direct access to CSC

Deliverability

- Considerable investment in estate and the ability to find buildings on site
- Recruitment of additional staff when there is a national shortage

Alignment and Strategic Fit

- This option will meet the strategic aims of local commissioners, HCP and the NHS LTP

Risk Execution

- The clinical standards would improve and therefore improve patient outcomes
- This option will meet best practice guidelines

Clinical Sustainability

- North Mersey stroke service is likely to improve performance in all aspects of clinical standards and therefore patient outcomes and experience
- This option addresses the sustainability issues of the most fragile stroke unit at Southport. However, there is still a risk of destabilising one of the ASUs
- The CSC would be compliant with recommended levels of stroke patients above 600
- The difficulty in recruiting specialist staff will still exist however the new service would be attractive to potential employees. The requirement under RCP for the number of consultant posts in this option is 14 WTE; currently only 10 WTE in post. However, this is more achievable and places fewer burdens on current post holders
- Creating a North Mersey network would help manage risks across the three sites and aid recruitment and short-term sustainability

Value for Money

- This would require a purpose-built CSC on the Aintree site that would require a capital investment of £4M revenue
- The additional staffing costs to recruit to RCP for the new bed configuration would be £2.8M
- There are potential significant savings due to the reduced mortality and disability due to improved outcomes. In the acute sector this is likely to be in the length of stay.

9.6.6 Option E1 - One Comprehensive Stroke Centre at Aintree and 1 other ASU at Broadgreen

This option would merge the three HASUs into one CSC but also merge either one of the ASUs onto the Aintree site, with an additional ASU at Broadgreen site.

This option provides a centralised CSC to provide direct access to specialist urgent care and acute/rehabilitation closer to home for some patients but not all.

However, it was noted by clinicians that: -

Patient outcomes and Experience

- This option would fully support access to thrombolysis and thrombectomy in a timely manner and increasing numbers of patients receiving treatment thereby improve patient outcomes
- The increase travelling time for Southport patients and any south Liverpool patients would be offset by the direct access to specialist treatment that will improve outcomes
- Reduce the pressure in A&E departments due to direct access to CSC
- This option will not meet the needs of all patients; in all engagement events patients have been clear that they are willing to travel for specialised care, but rehabilitation needs to be closer to home

Deliverability

- The Estate requires to build both CSC and extended ASU may be difficult to deliver both in terms of available estate and financially

- The recruitment of additional staff when there is a national shortage will be difficult. This option would have the added complication of trying to relocate staff to a central site, this has proved difficult in other redesigns locally

Alignment and Strategic Fit

- This option will meet the strategic aims of local commissioners, HCP and the NHS LTP

Risk Execution

- North Mersey stroke service is likely to improve performance in all aspects of clinical standards and therefore patient outcomes and experience

Clinical Sustainability

- This option addresses the sustainability issues of the most fragile stroke unit at Southport. However, there is still a risk of destabilising one of the ASUs.
- The CSC would be compliant with recommended levels of stroke patients above 600
- The difficulty in recruiting specialist staff to two units would still persist but made easier if the new service is attractive to potential employees as meets standards. The requirement under RCP for the number of consultant posts in this option is 14 WTE; currently only 9 WTE in post. However, this is more achievable than any of the other options
- Creating a North Mersey network would help manage risks across the three sites and aid recruitment and short-term sustainability

Value for Money

- This would require a purpose-built CSC on the Aintree site that would require a capital investment of £10M
- The additional staffing costs to recruit to RCP for the new bed configuration would be £3.1M.

9.6.7 Option E4 - One Comprehensive Stroke Centre at Aintree and 1 other ASU at [Southport](#)

This option would merge the three HASUs into one CSC but also merge either one of the ASUs onto the Aintree site, with an additional ASU at Southport site.

This option provides a centralised CSC to provide direct access to specialist urgent care and acute/rehabilitation closer to home for some patients but not all.

However, it was noted by clinicians that: -

Patient outcomes and Experience

- This option would fully support access to thrombolysis and thrombectomy in a timely manner and increasing numbers of patients receiving treatment thereby improve patient outcomes
- The increase travelling time for south Liverpool patients would be offset by the direct access to specialist treatment that will improve outcomes
- Reduce the pressure in A&E departments due to direct access to CSC

- This option will not meet the needs of all patients; in all engagement events patients have been clear that they are willing to travel for specialised care, but rehabilitation needs to be closer to home

Deliverability

- The Estate requires to build both CSC and extended ASU may be difficult to deliver both in terms of available estate and financially
- The recruitment of additional staff when there is a national shortage will be difficult. This option would have the added complication of trying to relocate staff to a central site, this has proved difficult in other redesigns locally

Alignment and Strategic Fit

- This option will meet the strategic aims of local commissioners, HCP and the NHS LTP

Risk Execution

- North Mersey stroke service is likely to improve performance in all aspects of clinical standards and therefore patient outcomes and experience

Clinical Sustainability

- This option addresses the sustainability issues of the most fragile stroke unit at Southport. However, there is still a risk of destabilising one of the ASUs.
- The CSC would be compliant with recommended levels of stroke patients above 600
- The difficulty in recruiting specialist staff to two units would still persist but made easier if the new service is attractive to potential employees as meets standards. The requirement under RCP for the number of consultant posts in this option is 14 WTE; currently only 9 WTE in post. However, this is more achievable than any of the other options
- Creating a North Mersey network would help manage risks across the three sites and aid recruitment and short-term sustainability

Value for Money

- This would require a purpose-built CSC on the Aintree site that would require a capital investment of £10M
- The additional staffing costs to recruit to RCP for the new bed configuration would be £3.1M.
- 9.6.7 Option E4 - One Comprehensive Stroke Centre at Aintree and 1 other ASU at S & O

9.7 Determining the preferred option

The short-listed options were modelled to determine their impact on clinical activity, beds, estate, workforce, quality, equality and finance and this was provided in summary form at the workshop on the 12/02/2020. Modelling information for each option is shown in **appendix 14**.

The short-listed options were appraised at the workshop on the 12/02/2020 using the same appraisal criteria and scoring system. The workshop recommended a preferred option of: -

C3 One Comprehensive Stroke Centre on the Aintree Site with acute rehabilitation on Aintree, Southport and Broadgreen.

The scoring was conclusive and is shown at **appendix 18**.

10 Pre-Consultation Engagement

This chapter will outline how stakeholders, patients and the public have been involved in the development of options.

10.1 Stakeholder engagement

Stakeholders have been engaged in the development of the PCBC through a number of different routes. These include: -

- **Overview and Scrutiny Committees (OSCs)** – the case for change was presented to Liverpool City Council’s Social Care and Health Select Committee and Sefton OSC during autumn 2019, in preparation for the development of the PCBC.
- **Joint Committees in Common** – the Committee in Common brings members of each CCG's governing body together for decision making on issues that affect North Mersey. The case for change and an interim report has been presented to the Joint CIC of North Mersey CCGs and a further presentation took place in March 2021.
- **North Mersey Stroke Board (NMSB)** – This is a formal monthly meeting whose membership includes senior managers from the 3 acute provider Trusts, 5 CCG’s, The Stroke Association and NHSE specialist commissioners.
- **North Mersey Stroke Clinical Reference Group** – A group of clinical experts who work in the North Mersey stroke services and the Strategic Clinical Network who have designed all workshops and provided clinical expertise to the PCBC.
- **North Mersey Co-Design Workshops** – Four workshops were held between July 2018 and February 2019. These workshops were open to all staff working in stroke services in North Mersey, including teams from Liverpool University Hospitals NHS Trust, Southport & Ormskirk Hospitals NHS Trust, and The Walton Centre NHS Trust.

Stakeholder mapping was undertaken prior to commencing the workshops to identify which groups of staff were involved in the delivery of stroke services. This supported the ambition of the workshops being co-design and ensured relevant participation based on insights and experience of service delivery. The mapping also took into account staff working in co-dependent services. Based on the mapping, staff were directly invited to participate in each workshop.

A group of stroke survivors, identified by The Stroke Association, were also involved in the workshops. The workshops agreed the case for change before undertaking a process of options development

including appraising a long list and short list of options before recommending a preferred clinical model.

After each workshop a written briefing was produced for all staff working in stroke services, which line managers and those who attended in person were tasked with cascading across their organisations. This was supplemented through inclusion in corporate communication channels. Through this process, workshop attendees were able to keep wider teams informed of the development work but also gather their thoughts and ideas to share at the following workshops.

An overview of each workshop and how the engagement informed the options development process is provided below.

North Mersey Co-Design Workshops Workshop 4: February 2019

During the session, attendees discussed and scored the shortlisted options for the proposal for the future stroke service model.

Key feedback obtained from the workshop included:

- There is a strong preference for the option of centralising hyper acute stroke services from the current three sites onto the Aintree site
- Acute stroke care and rehabilitation would need to be provided by Aintree Hospital, Broadgreen Hospital and Southport Hospital.

As a result:

- Feedback was considered by the CRG and used to develop this PCBC.

North Mersey Co-Design Workshops Workshop 1: July 2019

The workshop provided an opportunity to discuss the current challenges in delivering hyper-acute stroke services, share ideas about service provision and begin the process of mapping out the possibilities for future stroke care.

Colleagues joined in conversations and tabletop activities to share expertise and knowledge and debate ways on how to improve care and develop and improve stroke services.

During the workshop, participants focused on a variety of issues from current challenges, through to staffing issues and how long it would take to establish the new services models at different hospitals across the area.

Key feedback obtained from the workshop included:

- More access to thrombectomy treatment is required
- Community Rehabilitation, including Early Supported Discharge (ESD), is an integral part of a good stroke service and there is a need to develop these services alongside acute services
- If we don't work together as a North Mersey Stroke Service, we are doing our patients a dis-service and will fail to make stroke outcomes better
- New ways of delivering stroke services have been introduced across other parts of the country through the creation of comprehensive stroke units (hubs) in a central location with a link to local acute trusts (spoke) which have delivered significant improvement in outcomes for patients
- There was a strong view across clinicians, commissioners, support services and patients, that stroke care could and should be improved. There was also a strong commitment to making consistently high-quality care available for all stroke patients, regardless of where they live, or are treated.

As a result:

- The case for change was validated
- Opportunities were identified which informed the options appraisal and a long list of potential options were developed for what the new service could look like.

North Mersey Co-Design Workshops Workshop 2: September 2019

The session was used to score a number of potential options for how stroke services in North Mersey could be delivered in the future. It was a complex task but proved useful as the session generated lots of important feedback which needed to be considered when deciding the best options for how the services could be delivered.

Key feedback obtained from the workshop included:

- Potential solutions have all been captured accurately and the process being undertaken is considered thorough
- More detail, including looking at the estates and workforce implications, is required to understand impact and feasibility
- Detailed exploration of the impact of potential solutions on co-dependent services is needed
- Further exploration of improvement opportunities from an expanded patient perspective should be considered.

As a result:

- Further engagement sessions were delivered with stroke survivors and their families alongside the Stroke Association to capture feedback from direct users of the services to help inform the development process

- Project leads from co-dependent service considered as critically linked to the delivery of stroke care we appointed into the project team to offer further specialist advice and input into the development of the PCBC.

North Mersey Co-Design Workshops Workshop 3: November 2019

The event brought together clinicians from the three acute trusts delivering stroke services across North Mersey, commissioners, stroke patients and representatives from the Stroke Association to discuss the various proposals that had been suggested for how services could be delivered. Feedback from engagement sessions with stroke survivors and their families was shared, alongside how it applied to the review and the options development work. The discussions centred on the pros and cons for each of the service models recommendations and encouraged teams to consider which would deliver the best experience and care for stroke patients and their relatives.

Key feedback obtained from the workshop included:

- Patients and representatives highlighted that they felt that the immediate aftercare following discharge could be greatly improved. There was strong support for bringing local stroke services together in a single location; however some concerns were raised around distance to travel and the ability for emergency teams to get the patient to hospital in time
- Some also highlighted issues around the lack of consistent support for family and friends
- The group agreed to shortlist 5 clinical models of care that would be modelled for the impact on patients, quality, workforce, finance, activity and estate.

As a result:

- A steering group (MDT) from the three organisations was established to explore how the system can work closer together as the model for the future is developed.

The financial implications of the shortlisted options are set out in **appendix 14**. The summary includes costs from the changes in workforce using RCP standards plus the impact of new building and NWS running costs. It also provides an estimated cost of the capital build for each of the options. This analysis shows that the preferred option C3 is the second most cost effective to A2 “Do nothing with enhancements”. This was a like for like comparison used for scoring the appraisal.

Lived experience engagement sessions - During autumn 2019 commissioners worked with the Stroke Association to visit six local groups for stroke survivors, to talk about the review and gather feedback from those with lived experience of hospital stroke services. The sessions involved 80 stroke survivors and more than 20 carers/volunteers. The information gathered from discussions with stroke survivors, their families and carers was written up into a report.

10.2 How pre consultation has informed options

This development of the preferred option and the PCBC has been clinically driven by the CRG and the workshops. The workshops have also had strong and consistent attendance from stroke survivors. The outcomes from these events have informed the engagement with NMSB and Joint CIC. So fundamentally, the clinicians and patients have not just informed the development of the preferred option but actually co-designed the option.

The engagement with stroke survivors provided an opportunity to test the case for change and some of the clinical views with a group of people who had lived experience of local stroke service and carers who were able to offer a different but equally important perspective. Headlines from the report were presented to the third stroke workshop on 27 November 2019 and have influenced not only the options development process but also the awareness of areas to consider and where further insights and potential mitigation may be required. These areas will be explored further during the formal consultation process.

The key themes from this engagement were as follows:

- A majority of both stroke patients and their carers were in favour of bringing stroke services together in one single location. They could see the benefit of developing a 'centre of excellence' staffed by specialists and providing a comprehensive range of support services at one centralised location.
- However, there was both concern and some scepticism from stroke survivors and their carers that such a centre could operate without substantial changes being made to the current structure relating to admissions and post stroke support services. Much of the criticism about the treatment of stroke patients was about getting to the hospital in the first place and what happened immediately after being discharged in terms of quality, quantity and a range of support services.
- The families of stroke patients made the point that any centralised centre must have good communication/transport links and adequate car parking facilities.
- Stroke patients and their families viewed the treatment of stroke survivors as a process that should move smoothly from one phase to the next. The current treatment of stroke patients does not achieve that objective for all patients. Whilst the engagement was originally designed to get specific feedback about the potential for centralising hospital stroke services, the conversations ranged over a much broader set of issues. Respondents wanted to talk about their experiences of stroke care and life after stroke, which highlighted opportunities for improvements across several areas. Some stroke patients experienced delays in getting to hospital once stroke symptoms were confirmed and others complained about the lack of aftercare and support after leaving hospital. These shortcomings can have long lasting impacts.
- The experience of stroke survivors and their families was not defined by their hospital care alone. The review should also consider how these wider issues impact on patient outcomes, including rehabilitation support, and how they plan to be addressed.
- There are a minority of stroke patients who disagree with the concept of centralisation, favouring instead the existing provision of the three providers of stroke services. They were concerned about the elimination of stroke services close to home and doubted that ability of a centralised unit to cope with the volume of demand, particularly at a time of financial constraints and staffing shortages. They favoured increased investment in existing provision.

The principles of realigning hospital services based on an integrated city-wide approach, has been part of ongoing discussions with local communities across North Mersey over the last few years under the

umbrella of the Healthy Liverpool Programme, the One Liverpool Plan, the Shaping Sefton Plan and Liverpool University Hospitals NHS Foundation Trust's Integration Programme.

Priorities around hospital treatment have been a recurring theme within most engagement activities delivered within recent years and people have consistently ranked being offered the same, high standard of treatment regardless of where treatment takes place as their priority, very closely followed by being seen by the right staff who are experts in the treatment/management of their condition. Short travel time for one off appointment such as surgery has been the least important priority. However, wanting to travel as little as possible has been highlighted to patients and local communities on several occasions. The recent trauma and orthopaedics consultation identified willingness to travel for the majority of participants as a maximum of 45 minutes for an elective admission.

The consensus generally from system wide engagement has been that having the highest standard of treatment and being seen by the best staff for their health care needs is more important to people than the location of treatment. However, generally people do want care as close to home as possible. This has been shown as especially important for the elderly, those with multiple/long term conditions and those without transport.

Collectively, the existing system feedback and the feedback obtained from those with lived experience of stroke services highlight the importance of an integrated end to end pathway for stroke patients; which has been referred to throughout this document. The North Mersey Stroke Board is focussed on the three key work streams of Acute Care, Thrombectomy services and Community Rehabilitation.

10.3 Cheshire and Merseyside Engagement

The NM Board and the CRG membership includes the Cheshire & Merseyside ISDN lead and the Clinical Network Manager who throughout the development of this PCBC have advised on the work undertaken both locally and nationally to ensure the North Mersey plans are aligned.

A meeting with the lead clinician at St Helens and Knowsley took place on the 3rd February 2020 to discuss North Mersey plans and lessons learnt from the Mid Mersey merger of stroke services. The North Mersey plans have also been presented to the NW SCN Stroke Leaders meeting held on the 18th February 2020.

10.4 Future Stakeholder Engagement and Consultation

Staff

Structured staff engagement plans for Liverpool University Hospitals NHS FT, Southport and Ormskirk NHS Trust and The Walton Centre NHS FT will be developed to ensure that communication and engagement remains a strong focus as the project continues to the next phase. This will provide staff with an opportunity to receive information and updates, but also enable them to further contribute to shaping and influencing plans for the future. The intention is to continue workshop events through the process of development and approval of a full business case.

Patients, the public and wider stakeholders

Subject to approval from NHS regulators, Trust boards and the Joint Committee of North Mersey CCGs, the preferred option would be put to public consultation. The consultation will provide opportunities for people to share their views and highlight whether there is any other information that needs to be considered in decision-making. As part of this process CCGs will also engage with Overview and Scrutiny Committees (OSCs) in the four local authority areas, in line with statutory requirements. Detailed plans for public consultation, including timescales for communicating with OSCs and other stakeholders, will be developed over the coming months.

11 Clinical Senate Review

This section will discuss the review undertaken by the clinical senate and the feedback provided.

Liverpool CCG (on behalf of Knowsley CCG, South Sefton CCG, Southport & Formby CCG and West Lancashire CCG) commissioned the NW Clinical Senate to undertake an independent clinical review, in line with the NHS England & Improvement stage 2 assurance process of proposed models of care for the future delivery of stroke services in the North Mersey area.

The review was held on 26th and 27th April 2021.

The review considered the future provision of hyper acute and acute stroke care across the North Mersey Area. This included the case for change, preferred model and decision-making process.

The panel fully support the direction of travel and agree the preferred option will benefit patients and services; additional evidence is required to enable the review team to provide the clinical assurance required. The evidence will be provided as the work progresses and the full business case is written.

Additional information is required on the following areas:

- Clinical governance arrangements
- Recruitment and retention plan
- IT and digital plans
- Funding of Early Supported Discharge across all CCGs.

12 Programme Management

This section will discuss the business continuity plans and implementation timelines.

12.1 Business Continuity Plan

A stroke business continuity plan (SBCP) has been developed to ensure that the current services can be sustained and improved throughout the lifecycle of the proposed reconfiguration programme. The fragility of some of the services and the length of time for the new build means there may need to be a phased approach to implementation.

Sustainability of services is key; these actions will improve the sustainability of the service in the short term.

The current governance arrangements will remain in place to monitor and support the implementation of the SBCP and continued development of the long-term business case.

The CRG with the support of operational managers from S & O NHS Trust and LUHFT with additional support from the LUHFT Integration Team (PMO) will provide the necessary programme support through the life cycle of the project.

12.2 Outline plans for Implementation

The current governance arrangements would be maintained to manage the implementation. This will be multi-disciplinary approach using the CRG as the main driver.

The CRG with the support of operational managers from S & O NHS Trust and LUHFT with additional support from the LUHFT Integration Team (PMO) will provide the necessary programme support through the life cycle of the project. The clinicians' involvement will continue in the implementation phase via workshops and staff engagement events as set out in the staff engagement plan. There are also plans to provide additional training to the leaders of the service with regard to managing change and staff engagement.

When the North Mersey Stroke network is established a Partnership Board having senior leadership representation from both Trusts would be created to manage the overall implementation. The Partnership Board would report back into Trusts governance and also the North Mersey Board.

The implementation of the SBCP will provide a solid foundation before moving to the new centralised CSC with ASU and rehabilitation.

13 References

Ref 1 Stroke Association 2013; Lesniak, 2008

Ref 2 Williams, 2005; Pohiasvaara et al, 2001

Ref 3 Royal College of Physicians 2016

Ref 4 One Liverpool

<https://www.liverpoolccg.nhs.uk/about-us/publications/one-liverpool-2019-2024/>

Ref 5 Sefton Care and Transformation Programme – Shaping Sefton

<https://www.southseftonccg.nhs.uk/what-we-do/our-5-year-strategy/>

Ref 6 West Lancashire – Building for the Future

<https://www.westlancashireccg.nhs.uk/building-for-the-future/>

Ref 7 Acute Sustainability Programme – Cheshire and Merseyside Health Care Partnership

<https://www.cheshireandmerseysidepartnership.co.uk/our-work/delivering-care-more-efficiently/acute-sustainability>

Ref 8 was ref 6 National stroke strategy 2007 page 23

Ref 8 Impact and sustainability of centralised acute stroke services in English Metropolitan areas: retrospective analysis of hospital episode statistics and stroke national audit

Ref 9 Recommended by SNNAP and also in research “Feasibility of a hyper-acute stroke unit model of care across England: a modelling analysis”

1. Michael Allen¹,
2. Kerry Pearn¹,
3. Emma Villeneuve¹,
4. Thomas Monks²,
5. Ken Stein¹,
6. Martin James³

<https://bmjopen.bmj.com/content/7/12/e018143>

Ref 10 Stroke Services: Configurations Decision Support Guide, Tony Rudd and Nighat Hussain, 2015

Ref 11 National Stroke Strategy 2007

Ref 12 Emberston et al (2014) Lancet. [https://doi/10.1016/S0140-6736\(14\)60584-5](https://doi/10.1016/S0140-6736(14)60584-5)

Ref 13 Morris et al (2014) impact on centralising acute stroke services in English metropolitan areas on mortality and length of stay: difference-in-difference analysis BMJ2014;349: g4757

Ref 14 Standards for providing safe acute ischaemic stroke and thrombectomy services P White et al (September 2015)

Ref 15 National Clinical guidelines for stroke, Intercollegiate Stroke Working Party

Ref 16 <https://www.happy-hearts.co.uk>

Ref 17 2016 National Clinical Guidelines for Stroke

Ref 18 Page 15 of this document sets out the case study:

<https://www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/measuring-uptake/NICE-Impact-stroke.pdf>

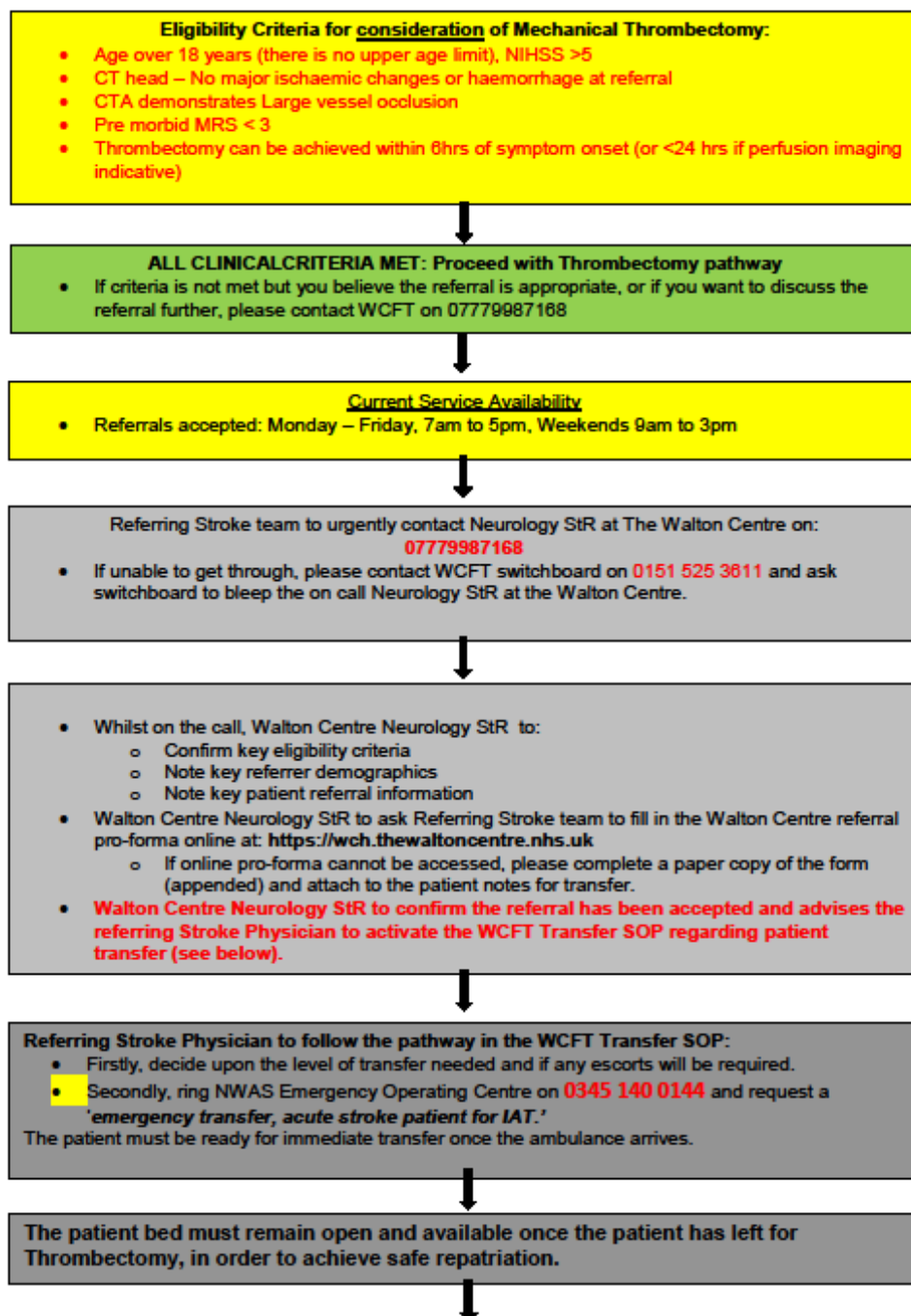
Ref 19 Wider context of Long-Term Plan and Specialised Services

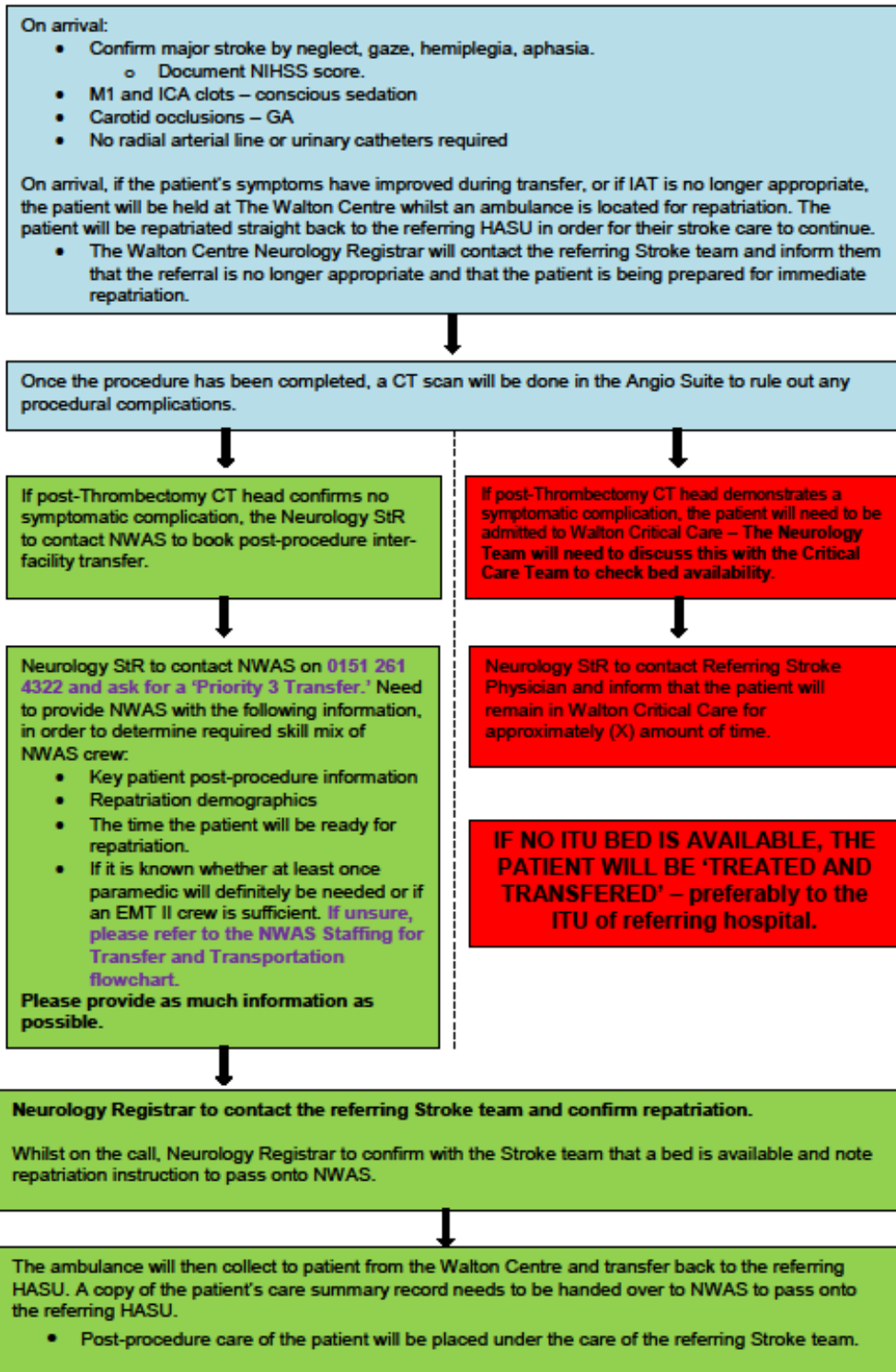
<https://www.england.nhs.uk/wp-content/uploads/2018/09/spotlight-on-specialised-services.pdf>

14 Appendices

14.1 Appendix 1 – Service Pathway

Appendix 1 – Service Pathway





14.2 Appendix 2 Cheshire and Merseyside Stroke numbers 2013-2020

Strokes in Cheshire and Merseyside - SNNAP								
	Aintree	Chester	Royal Liverpool	Southport	Whiston	Warrington (non-routinely admitting)	Wirral	Total
Apr 2013 – Mar 2014	421	256	633	362	645	393	680	3390
Apr 2014 – Mar 2015	495	398	604	370	679	383	711	3640
Apr 2015 – Mar 2016	476	382	633	339	661	396	637	3524
Apr 2016 – Mar 2017	452	371	625	361	738	320	642	3509
Apr 2017 – Mar 2018	446	332	650	343	822	223	641	3457
Apr 2018 – Mar 2019	502	382	570	300	819	263	645	3481
Apr 2019- Mar 2020	524	384	556	397	1055	N/A	614	3530
Diff 2013 - 2019	103	128	-77	35	410	N/A	-66	359

14.3 Appendix 3 North Mersey Stroke Services Current Workforce Gaps for 2018/19 and 2019/20

North Mersey Stroke Services Workforce Gaps – using RCP Guidelines, based on 18/19 staffing figures					
Staff Type	2018/19 WTE	19/20 WTE	Required WTE	2018/19 Gap WTE	2019/20 Gap
Consultant	10.0	10.0	20.4	-10.4	10.4
Medical	10.0	10.0	20.4	-10.4	-10.4
Ward Manager	3.0	4.0	3.4	0.0	0.0
Consultant Nurse	1.0	2.0	1.0	0.0	+1.0
Specialist Stroke Nurses	22.3	22.3	22.3	0.0	0.0
Nursing Registered	70.8	70.22	109.2	-41.94	-42.52
Nursing Unregistered	60.9	63.05	45.8	15.1	+17.25
Nursing	158.3	161.57	182.1	-23.36	-20.53
Physiotherapy	16.3	16.1	21.2	-4.9	-5.1
Occupational Therapist	15.1	14.6	20.1	-5.0	-5.5
Speech & Language Therapist	6.9	6.9	10.0	-2.9	2.9
Clinical Psychologist	0.1	0.5	1.2	1.1	0.7
Dietician	4.3	4.3	3.8	+0.3	+0.3
Therapy Assistant/Assistant Practitioners	15.1	14.1	9.2	+5.9	+4.9
Therapy	57.8	56.5	65.5	-7.7	-9.0
Management	1.5	1.5	1.5	n/a	n/a
Administration	13.2	13.2	13.2	n/a	n/a
Management and Administration	14.7		14.7	n/a	n/a
Grant Total	240.8	242.87	282.7	41.9	39.83

14.4 Appendix 4 Benefits Realisation Plan

SSNAP Domain	Description	Expected Impact					Attribution	Measurement		Interdependencies
		What	Current SSNAP Score	Expected SSNAP Score	Source of Standard	When		What	How often	
	Activity at HASU to be optimal numbers	HASU site to admit at least 600 stroke patients per year			1) RCP National Clinical guideline for stroke, Fifth edition (2016) 2) Stroke services; configuration decision support guide	Within 12 months of implementation	HASU	Confirmed Stroke activity (patient centred 72-hour cohort, SSNAP)	Reviewed quarterly	NWAS
	Meet safe staffing guidelines	HASU, ASU and rehabilitation sites to be safely staffed			North Mersey Staffing Standards National Clinical Guideline for Stroke 2016	Within 12 months of implementation within 5 years	HASU	Review staffing numbers of consultants, nurse, therapy numbers and ratios per bed	Reviewed quarterly	HR Recruitment and retention
	Increase the number of patients who receive thrombectomy	Increase the number of patients who receive thrombectomy from 1.4% to 10% over time	1.4% (19/20)	To be in the National top quartile	NHSE Long term Plan Jan 2020	Within 24 12 months of implementation	HASU	% of patients receiving thrombectomy (SSNAP)	Reviewed quarterly	Diagnostics Non HASU sites if patients present there initially The Walton Centre
	Requirement of Locum and agency staff to cover rotas	Negate the requirement of locum and agency staff by utilising the current staff who are in			Current locum and agency staff requirements to fulfil rotas across the 3 sites in North Mersey	Within 24 months of implementation	HASU, ASU and rehabilitation sites	Understand gaps in work force and recruit to vacancies	Reviewed quarterly	HR Recruitment and retention

		permanent positions across the 3 sites in North Mersey and recruit to new posts created for the North Mersey Stroke Network								
Domain 1	Scanning	Assessing indicators regarding the timeliness of scanning, such as proportion of patients scanned within 12 hours	Aintree B Royal L'Pool B Southport A	Within 12 months: A	SSNAP	Within 12 months and 24 months	HASU	Domain 1 in SSNAP	Reviewed quarterly	Radiology
Domain 2	Stroke Unit	Assessing indicators regarding the timeliness of admission to a stroke unit such as proportion of patients directly	Aintree D Royal L'Pool E Southport E	Within 12 months: B Within 24 months: A	SSNAP	Within 12 months, 24 months	HASU	Domain 2 in SSNAP	Reviewed quarterly	Bed capacity and patient flow

		admitted to a stroke unit within 4 hours								
Domain 3	Thrombolysis	Assessing indicators regarding the timeliness of thrombolysis received, such as proportion of patients given thrombolysis and proportion who received thrombolysis within 1 hour	Aintree C Royal L'Pool D Southport D	Within 12 months: B Within 24 months: A	SSNAP	Within 12 months, 24 months and 36 months	HASU	Domain 3 in SSNAP	Reviewed quarterly	Bed capacity and patient flow
Domain 4	Specialist Assessments	Assessing indicators regarding review by specialists such as consultant physicians, nurse trained in stroke management	Aintree B Royal L'Pool D Southport C	Within 12 months: B Within 24 months: A	SSNAP	Within 12 months and 24 months	HASU	Domain 4 in SSNAP	Reviewed quarterly	HR Recruitment and retention

		t and stroke consultants within 24 hours								
Domain 5	Occupational Therapy	Assessing indicators regarding the access to therapy such as median percentage in days an inpatient received occupational therapy	Aintree C Roya Liverpool A Southport B	Within 12 months: B Within 24 months: A	SSNAP	Within 12 months, 24 months	HASU	Domain 5 in SSNAP	Reviewed quarterly	HR Recruitment and retention
Domain 6	Physiotherapy	Assessing indicators regarding the access to therapy such as median percentage in days an inpatient received physiotherapy	Aintree C Royal L'Pool A Southport B	Within 12 months: B Within 24 months: A	SSNAP	Within 12 months, 24 months s	HASU	Domain 6 in SSNAP	Reviewed quarterly	HR Recruitment and retention
Domain 7	Speech and Language Therapy	Assessing indicators regarding the access to therapy such as median percentage in days an	Aintree E Royal LPool D Southport E	Within 12 months: C Within 24 months: B	SSNAP	Within 12 months, 24 months and 36 months	HASU	Domain 7 in SSNAP	Reviewed quarterly	HR Recruitment and retention

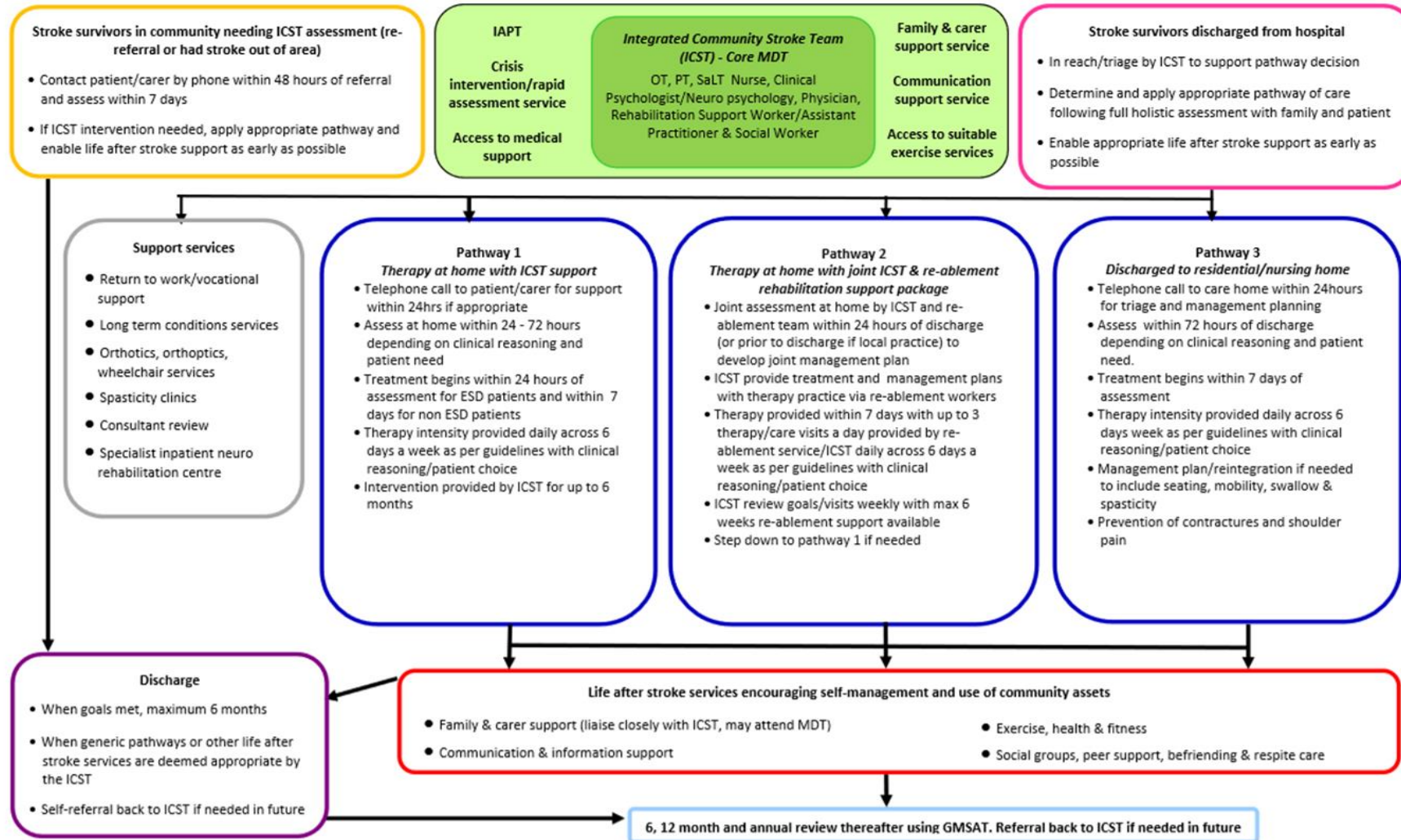
		inpatient received speech and language therapy								
Domain 8	Multidisciplinary Team Working	Assessing the use of multidisciplinary teams such as proportion of patients reviewed by occupational therapist, physiotherapist and speech and language therapist	Aintree C Royal LPool B Southport C	Within 12 months: B Within 24 months: A	SSNAP	Within 12 months and 24 months	HASU	Domain 8 SSNAP	Reviewed quarterly	HR Recruitment and retention
Domain 9	Discharge	Assessing indicators regarding the appropriate discharge of patients such as proportion of patients screened for nutrition and seen by a dietician	Aintree C Royal LPool B Southport A	Within 12 months: A	SSNAP	Within 12 months	HASU	Domain 9 in SSNAP	Reviewed quarterly	HR Recruitment and retention

Domain 10	Discharge processes	Assessing indicators regarding the appropriate process of discharge such as proportion of patients referred to a stroke specific ESD	Aintree A Royal LPool B Southport D	Within 12 months: B Within 24 months: A	SSNAP	Within 12 months and 24 months	HASU	Domain 10 in SSNAP	Reviewed quarterly	HR Recruitment and retention Availability and capacity of ESD/ Community rehab team
	Reduce average length of stay for stroke patients	Length of stay at each site is currently: Aintree: 22 days Royal: 18 days Southport: 17 days			In SSNAP the national average length of stay is 18 days	On implementation	HASU	Reduce the average length of stay to 18 days initially with a target of 17 days after full programme of work is complete	Reviewed quarterly	Bed capacity and patient flow
	Reduce the mortality rates of stroke patients in North Mersey	Standardised Mortality rate for North Mersey =1.13 - national Average 1.05 based on 2017-2019	Current 1.13	Within 12 months 1.10, within 24 months 1.05	HES data	Within 24 months of implementation	HASU	Review the annual HES data to identify the decrease in stroke deaths in North Mersey	Reviewed Annually	

	Patients who are suspected TIA patients to be triaged and seen on arrival at HASU	All suspected TIA patients to be triaged, receive diagnostics and be assessed on arrival at HASU			National Clinical Guidance states that all suspected TIA patients should be seen in clinic within 24 hours of triage	On implementation	HASU	Reduce the number multiple visits to hospital for patients with suspected TIA by having access to diagnostics and specialist nurses on admission to hospital	Reviewed monthly	Electronic patient records Stroke specialist nurses Diagnostics
	Increasing patient satisfaction	An increase in staff who would recommend stroke services in North Mersey				Within 12 months of implementation	HASU	% of patients who would recommend stroke services in North Mersey	Reviewed monthly	
	Increasing staff satisfaction	An increase in staff who would recommend stroke services in North Mersey				Within 12 months of implementation	HASU	% of staff who would recommend stroke services in North Mersey	Reviewed monthly	

14.5 Appendix 5 Integrated Stroke Team Model

Appendix 1: Integrated community stroke team model



COMMUNITY REHABILITATION POST DISCHARGE PHASE
LONGER TERM SUPPORT

14.6 Appendix 6 Clinical Activity Assumptions 2018/19 and 2019/20 Activity Data

Suspected stroke patients attend all three A&E departments. Coding or recording those attendances to a stroke speciality is not possible. Therefore, it is not possible to ascertain the number of suspected strokes from this data source.

The only source of data for suspected stroke in A&E is from stroke nurses paper records. This data provided the following number for suspected strokes per A&E

Table: 18/19 and 19/20 A&E attendances for suspected stroke

A&E attendances for suspected stroke				
	Southport	Aintree	Royal Liverpool	Total
Attendances 2018/19	1,380	3,380	1,923	6,683
Attendances 2019/20	1,905	3,464	2,506	7,875

To ascertain the number of inpatient strokes, data from SSNAP and HES diagnostic coding (ICD10) was utilised. TIA's data was calculated using internal coding data and A&E sample data. It is much more difficult to calculate mimic attendances and mimics patients that go on to be admitted. As mimics attending A&E could be coded against a wide range of specialities.

Therefore, to calculate the number of mimic attendances in A&E at each site, a sample was taken at each site and extrapolated to provide the total number of mimic attendances for suspected stroke.

A & E attendances for suspected stroke					
	Southport No	Aintree No	Royal No	Total	%
Attendances	1,380	3,380	1,923	6,683	
Sample size	124	286	1,282	1,692	
Stroke	35	72	505	612	36.17
TIA	17	29	125	171	10.11
Other	72	185	652	909	53.72
	*	**	***		
* Sample size 9%					
** Sample size 8%					
*** Sample size 67%					

This sample tells us that for every patient that attends A&E 53% fall into the category mimic/other. This percentage has then been applied to the 3 sites total A&E attendances to give the total number of mimics that attend a&e with suspected stroke. 2019/20 data has also applied this same assumption.

Table: Total number of mimics 2018/19

A&E attendances for suspected stroke 18/19				
	Southport	Aintree	Royal Liverpool	Total
Attendances 2018/19	1,380	3,380	1,923	6,683
Total number of Mimics	731	1,791	1,019	3,542

Table: Total number of mimics 2019/20

A&E attendances for suspected stroke 19/20				
	Southport	Aintree	Royal Liverpool	Total
Attendances 2019/20	1,905	3,464	2,506	7,875
Total number of Mimics	1010	1836	1328	4174

Stroke, TIA's and Mimics admitted into Hospital – 18/19 and 2019/20 data

To identify the number of strokes admitted into hospital a combination of SSNAP and coding data was used. From the totals each of these data sources produced, the average was taken.

Table: 18/19 strokes admitted

strokes admitted - 18/19				
	Aintree	Royal	Southport	Total
SSNAP 19/20 reported stroke numbers	502	570	300	1372
ICD10 coded strokes in each site	592	677	401	1670
Average number of strokes form two sources	547	624	351	1521

Table: 19/20 strokes admitted

strokes admitted - 19/20				
	Aintree	Royal	Southport	Total
SSNAP 19/20 reported stroke numbers	524	556	397	1477
ICD10 coded strokes in each site	662	637	454	1753
Average number of strokes form two sources	593	597	426	1616

TIA patients admitted into hospital was calculated using TIA's admitted to a stroke ward(coding), TIA admitted to any other ward within the hospital(coding) and a review of A&E sample data. For the 19/20 TIA data, we have utilised the same a&e sample review from 18/19. From the 3 data sources the median figure is taken.

Table: 2018/19 TIA patients admitted

TIA admitted to stroke ward				
	Aintree	The Royal	Southport	Total
TIA ICD coded to any ward	190	203	80	473
TIA ICD10 coded to stroke ward	50	92	48	190
A & E sample coded to stroke ward	60	40	88	188
Assumption from data sources	60	92	88	240

Table: 2019/20 TIA patients admitted

TIA's admitted - 19/20				
	Aintree	Southport	Royal	total
TIA coded to stroke ward	86	58	58	202
TIA coded to any ward	264	188	185	637
a& e sample (from 18/19)	60	88	40	188
Assumption from data sources	86	88	58	232

To calculate the number of mimic patients, a sample of A&E patients was taken, and patients were reviewed to see if they were admitted to the stroke unit. Only mimics admitted to the stroke unit have been included in the baseline numbers. It is assumed that providing better training to A&E staff that mimics referred to the stroke team will reduce.

Table: 2018/19 and 2019/20 Mimic patients admitted

Mimics admitted				
	Aintree	Royal	Southport	Total
18/19 A&E sample review of mimics admitted to stroke ward	201	90	100	391
Assumption from data source	201	90	100	391

This has allowed us to produce the following number for patients admitted that fall under the three categories across the three sites.

Summary of Stroke, TIA and Mimic patients' admissions

Table: 2018/19 Stroke, TIA and mimic patients admitted summary

Summary of Stroke, TIA and Mimic Inpatient Admissions				
18/19				
	Aintree	Royal Liverpool	Southport	Total
Strokes	547	624	350	1,521
TIA	60	92	88	240
Mimics	201	90	100	391
Admission to CSC	808	806	538	2,152

Table: 2019/20 Stroke, TIA and mimic patients admitted summary

Summary of Stroke, TIA and Mimic Inpatient Admissions				
19/20				
	Aintree	Royal Liverpool	Southport	Total
Strokes	593	597	426	1,616
TIA	86	58	88	232
Mimics	201	90	100	391
Admission to CSC	880	745	614	2,239

Transfer of patients to the Comprehensive Stroke Unit.

Using all of the data collected has allowed the following table to be produced, which estimates the number of attendances the CSC can expect.

***Note: In the original version of the PCBC, a different mimic figure was calculated based on the 18/19 data. This figure has been reinterpreted (still using the 18/19 data) and the data is shown below alongside the original interpretation of the 2018/19 data. The 2019/20 updated figures are also presented below.**

Table: Attendances at CSC based on 18/19 data (Original version used throughout business case)

Transfer of patients to the Comprehensive Stroke Unit - 2018/19 data		
Attendances to Centralised site	Attend	Notes
Activity currently at Aintree A & E	3,380	Current activity
The Royal Strokes	624	100% of assumed strokes transfer
The Royal TIA's	791	See below - from outpatients
The Royal Mimics	180	20% of A & E Attendances
Southport Strokes	350	100% of assumed strokes transfer
Southport TIA's	417	See below - from outpatients
Southport Mimics	200	20% of A&E attendances
Transfer of patients	2,562	additional patients
Grand Total	5,942	
Patients per day	16	

Table: Attendances at CSC based on 18/19 data (new interpretation of data version)

Attendances at centralised site 2018/19	Attend	Notes
Activity currently at AUH A&E	3,780	Current nurse referral total (3,380) & the additional estimated 400 TIA referrals from GP's
Royal Strokes	624	stroke modelled figure - 100% of patients would transfer
Royal TIA	791	100% of TIA A&E and GP refs would transfer. (391 and 400)
Royal Mimics	204	Assumed 20% of A&E mimic attendances would transfer
Southport Strokes	350	stroke modelled figure - 100% of patients would transfer

Southport TIA	417	current assumption is all A&E referrals would transfer to csc (377) and 10% of GP referrals would also transfer (40). It is also being considered that all GP TIA referrals also transfer, which would increase this figure.
Southport Mimics	146	Assumed 20% of A&E mimic attendances would transfer
Transfer of patients	2532	Additional patients
Grand Total	6,312	
Patients Per day	17.29	

Table: Attendances at CSC based on 19/20 data

Attendances at centralised site 19/20	Attend	Notes
Activity currently at AUH A&E	3,864	Current nurse referral total (3,464) & the additional estimated 400 TIA referrals from GP's
Royal Strokes	597	stroke modelled figure - 100% of patients would transfer
Royal TIA	627	100% of TIA A&E and GP referrals would transfer.
Royal Mimics	266	Assumed 20% of A&E mimic attendances would transfer
Southport Strokes	426	stroke modelled figure - 100% of patients would transfer
Southport TIA	391	current assumption is all A&E referrals would transfer to csc (366) and 10% of GP referrals would also transfer (251), which is 25. It is also being considered that all GP TIA referrals also transfer, which would increase this figure by 240 patients
Southport Mimics	201	Assumed 20% of A&e mimic attendances would transfer
Transfer of patients	2508	
Grand Total	6,372	
Patients Per day	17.46	

Radiology – Additional Tests

Table: Additional radiology test based on patients that would transfer across to the CSC at Aintree site – 18/19 data

Transferred patients impact on Aintree radiology 18/19 data						
	%	Stroke	%	TIA	Mimic	Total
patients transferring		974		1208	350	2532
carotid Doppler	75	731	33	399	116	1245
MRI	28	273	15	181	53	506
CT	100	974	50	604	175	1753
CT Angio	15	146	15	181	53	380
additional tests		2123		1365	396	3884

Table: Additional radiology test based on patients that would transfer across to the CSC at Aintree site – 19/20 data

Transferred patients impact on Aintree radiology 19/20 data						
	%	Stroke	%	TIA	Mimic	Total
patients transferring		1023		1018	466	2507
carotid Doppler	75	767	33	336	154	1257
MRI	28	286	15	153	70	509
CT	100	1022	50	509	233	1764
CT Angio	15	153	15	153	70	376
additional tests		2229		1150	527	3906

*Note: If all TIA GP referrals from Southport were to transfer over to the CSC at Aintree site, this would increase the total number of additional tests to 4167

14.7 Appendix 7– Risk Register

Work stream	Interdependencies	Risk Type	Risk Description			Likelihood	Consequence Score	Current Risk Score	Score Trend: No change Increased Score Decreased Score	Mitigating Action	Likelihood	Consequence Score	Current Risk Score	Risk Owner	Risk Manager
Stroke	Development of PCBC	Lack of Programme Manager	No funding for the programme support	Not enough resources to complete programme of work	The PCBC will not be developed to indicative timeframe	3	4	12	Increased	Bid for programme support costs with clear rationale submitted to CCG. Interim arrangements in place to maintain current team but not to develop any further. Bid made by SRD to C & M Health and Care Partnership. Support from Network lead and LUHFT Integration PMO	2	4	8	Jan Ledward	Carole Hill
Stroke	Communications and Engagement Plan	Stakeholder Engagement	Lack of support from stakeholders	Not enough expertise (staff, public & patients) to design and agree new models of care	Inability to redesign the Stroke model of care and unable to meet the NHSEI assurance framework for service change	3	4	12	Unchanged	North Mersey Stroke Board and CRG in place to oversee the project. Clinical workshops held at start of review with good attendance. Stroke Association engaged in the process. Communications and engagement sub group established to oversee development of consultation plans, including approach for different stakeholder audiences. Early engagement with Overview and Scrutiny Committees (OSCs) has started.	2	4	8	C Hill	H Johnson Trust Comms Leads
Stroke	Delivery of new model of care	Lack of workforce and configuration of services	Shortage of appropriately trained workforce to provide required services - out of hours cover, thrombectomy service.	Care not provided to the appropriate clinical standards	Sub optimal patient care	4	4	16	Unchanged	Establish workstream to mitigate the short term sustainability issues, workforce group to be set up once Programme Manager support is in place	4	4	16	N Holland M Carmichael J Ross	Helen Murphy
Stroke	Developing PCBC	Reputational	Concerns raised by local politicians that has a negative impact on the project	Active campaigns against the service change	Delays or stops the service change process	3	3	9	Unchanged	One to one meetings with politicians. Invite politicians to public and patient reference group	2	3	6	Jan Ledward/ Carole Hill	Trust Comms leads
Stroke	Developing PCBC with all stakeholders involved in the service change	Legal	West Lancashire not engaged in the project and impact on their patients and any subsequent claim of lack of public engagement and consultation	Population in West Lancashire not engaged or consulted in process	Does not meet NHSEI assurance process, therefore PCBC would not be approved. Potential for judicial review	3	4	12	Decreased	Meeting with West Lancashire management team 19.08.19 to confirm part of programme. Agreement to how public consultation is undertaken still to be confirmed. Joint Committee to be established January 2021, West Lancs joining the committee, this has been agreed by all GBs.	1	4	4	Jan Ledward	Carole Hill
Trauma and Orthopaedics	Patient access and booking	Delivery	No definitive decision has been made regarding registrar clinic templates and if they need to have their own template and patients or share with their consultant.	If the registrar has their own clinic it means twice the number of patients can be seen. Without knowing this the minimum number of patients are being booked into clinics.	Capacity will be reduced considerably and patients wait times will be increased.	3	3	9	Unchanged	The hub has decided not to open any registrar templates until the new year to give the team further time to plan. The team require confirmation from the hub to understand when these templates will be open.	2	2	4	A Penketh	C Mountfield
Trauma and Orthopaedics	Patient access and booking	Delivery	The current week 2 clinics plan is still not clear, the patient access team are always running 3 weeks behind.	The patient access team cannot properly plan their workload as the plans keep changing and clinics are being moved and cancelled.	Risk of patient appointments will not be booked in on time and risk of complaints, DNA's and patients turning up to an appointment that has actually been cancelled.	4	3	12	Unchanged	The hub need to ratify the plans thoroughly to avoid any further changes and release the plans to patient access.	1	2	2	A Penketh	L Black
Haematology	Workforce	Resource	Lack of management in speciality.	Operationally there are no service leads to support operational management of the service or the project.	Delays to decision making and escalation of issues.	5	4	20	Closed	Deputy Director of Ops is making arrangements to second a manager into the Haematology service. This will not mitigate the risk immediately as there may be a delay in timescales for appointment, the appointment will also need a period to embed themselves into the service.	4	3	12	L Yung D Simcox	L Yung D Simcox
Stroke	Finance	Estates	Estates specification requires additional estate in prime location	Not enough space for all services to be on prime location. Cost and requirement for capital funding could be prohibitive.	Estate will not support the clinical model	3	4	12	Unchanged	Work with Estates team and other services to produce a plan that provides the best overall outcome for patients and VFM. Estates group to be established as per revised meeting and governance structure, Programme Manager support needed to progress this work.	3	3	9	Carole Hill	Helen Murphy
Stroke	Workforce	Workforce risk	A change to service at this scale and centralisation of Hyper Acute Stroke services may destabilise neighbouring stroke units	Staff leave the service during the period of change to work in neighbouring services	The stroke unit become unsustainable due to lack of workforce	3	4	12	Unchanged	Strong comms and engagement with all Trusts and stroke teams. Joint recruitment across sites. Develop single service model to manage associated risks	2	4	8	N Holland M Carmichael J Ross	Trust Workforce Leads
Clinical Haematology - Anticoagulation Service	Sefton CCG	Commissioner Support	Lack of ICE interface in Southport, Sefton, Formby	Sefton GPs do not have full access ICE system for results, they have read-only rights.	Sefton GPs will not have access to the same systems available to others, the service would be operating 2 systems. Financial savings will be impacted	3	3	9	New	Requires a request to Sefton Commissioners to make funding available for the system to be extended to Sefton GPs. Dave Simcox progressing.	3	3	9	D Simcox	D Simcox
Stroke	Digital	Digital	Different patient systems across Trusts	Inability to share patient information across provider Trusts	Unable to access patient history, duplication of tests	3	3	9	New risk	Digital working group to be established reporting to the North Mersey Board, this group will be set up when Programme Manager is in post.	2	3	6	tbc	Programme Manager
Stroke	Workforce	Workforce	Lack of a developed recruitment and retention plan	Inability to recruit the appropriate workforce with the necessary skills to support the comprehensive stroke centre	Unable to deliver the proposed model of care with North Mersey stroke standards, services do not integrate	3	3	9	New risk	Workforce group to be established reporting to the North Mersey Board, this group will be set up when Programme Manager is in post.	2	3	6	tbc	Programme Manager
Stroke	Finance	Finance	Lack of capital and revenue funding to deliver the proposed stroke model of care	Unable to fund the development of the estate required at ALH, unable to fund the recruitment of additional staffing to deliver the model	CSC to be delivered from current state which is not fit for purpose with inappropriate staffing model	3	4	12	New risk	Finance work to be established, reporting to North Mersey Board, inaugural meeting taking place on 24/06/21. This group will progress funding the proposed model.	2	4	8	DOFs from CCGs and Provider Trusts	C Hill
Stroke	Early Supported Discharge	ESD	Differences in ESD service across the North Mersey footprint	Inequity of service across the NM area.	ESD package received may be improved or lesser depending on the CCG area that you live	3	3	9	New risk	North Mersey ESD group established chaired by T O'Keefe, reporting into NM Stroke Board. All areas now have an ESD service, a gap analysis is underway to identify differences in service provision.	2	3	6	C Hill	P O'Keefe
Stroke	Changes to CCGs	Organisational form	Change of organisational form from CCG to ICS by April 2022	Lack of clarity and decision making while changes are taking place	Governance routes become unclear whilst CCGs will be aligning to ICS model	3	4	12	New risk	Regular discussions with Commissioners taking place, LCCG linking in to C & M ICS, including invitation to Joint Committee. AO & Chair appointments planned for Sept 21	2	4	8	J Ledward	C Hill

Risk Key		Likelihood				
		1 Rare	2 Unlikely	3 Possible	4 Likely	5 Almost Certain
Conseq	5 Catastrophic	5	10	15	20	25
	4 Major	4	8	12	16	20
	3 Moderate	3	6	9	12	15
	2 Minor	2	4	6	8	10
	1 Negligible	1	2	3	4	5

Grading Risk: 1-3 Low Risk; 4-6 Moderate Risk; 8-12 High Risk; 15-25 Extreme Risk

14.8 Appendix 8 Workforce – WTE in post per Site

North Mersey Stroke Services – Baseline Workforce								
Baseline Staffing								
Staff Type	Aintree 2018/19	Aintree 2019/20	Royal L'Pool & Broadgreen 2018/19	Royal L'Pool & Broadgreen 2019/20	Southport 2018/19	Southport 20	Total 2018/19	Total 2019/20
Consultant	4.0	4.0	4.0	4.0	2.0	2.0	10.0	10.0
Staff Grade								
Medical	4.0	4.0	4.0	4.0	2.0	2.0	10.0	10.0
Ward Manager	1.0	1.0	1.4	2.0	1.0	1.0	3.4	4.0
Consultant Nurse	0.0	1.0(ANP)	1.0	1.0	0.0	0.0	1.0	2.0
Specialist Stroke Nurses	8.0	8.0	8.3	8.3	6.0	6.0	22.3	22.3
Nursing Registered	27.9	27.9	26.7	26.22	16.1	16.1	70.8	70.22
Nursing Unregistered	21.2	21.2	23.5	25.55	16.3	16.3	60.9	63.05
Nursing	58.1	59.1	60.8	63.07	39.4	39.4	158.3	161.57
Physiotherapy	5.6	5.6	6.7	6.7	4.0	3.8	16.3	16.1
Occupational Therapist	5.8	5.8	5.3	5.3	4.0	3.5	15.1	14.6
Speech & Language Therapist	2.0	2.0	3.6	3.6	1.3	1.3	6.9	6.9
Clinical Psychologist	0.1	0.1	0.0	0.0	0.0	0.4	0.1	0.5
Dietician	1.0	1.0	3.3	3.3	0.0	0.0	4.3	4.3
Assistant Practitioners	5.7	4.8	6.8	6.8	2.5	2.5	15.1	14.1
Therapy	20.2	19.3	25.7	25.7	11.8	11.5	57.8	56.5
Management	0.5	0.5	0.5	0.5	0.5	0.5	1.5	1.5
Administration	5.7	5.7	6.8	6.8	0.8	0.8	13.2	13.2
Management and Administration	6.2	6.2	7.3	7.3	1.3	1.3	14.7	14.7
Grant Total	88.6	88.6	97.8	100.07	54.9	54.2	240.8	242.87

14.9 Appendix 9 - Travel times

Current Situation						Future Situation																				
Southport Public Transport (AM)			Southport Public Transport (PM)			Southport Drive Time			Aintree Public Transport (AM)			Aintree Public Transport (PM)			Aintree Drive Time											
HOSPITAL Southport			HOSPITAL Southport			HOSPITAL Southport			HOSPITAL (All)			HOSPITAL (All)			HOSPITAL (All)											
Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age						
0	8	1.35%	0	8	1.35%	0	8	1.35%	0	50	2.12%	0	48	2.04%	0	48	2.04%	0	48	2.04%	0	48	2.04%			
20	41	6.94%	20	44	7.45%	5	81	13.71%	10	31	1.32%	10	32	1.36%	5	32	1.36%	5	32	1.36%	5	32	1.36%			
30	168	28.43%	30	126	21.32%	10	219	37.06%	20	243	10.32%	20	211	8.96%	10	211	8.96%	10	211	8.96%	10	211	8.96%			
40	104	17.60%	40	165	27.92%	15	143	24.20%	30	389	16.53%	30	413	17.54%	15	413	17.54%	15	413	17.54%	15	413	17.54%			
50	96	16.24%	50	79	13.37%	20	105	17.77%	40	394	16.74%	40	446	18.95%	20	446	18.95%	20	446	18.95%	20	446	18.95%			
60	71	12.01%	60	75	12.69%	25	30	5.08%	50	360	15.29%	50	319	13.55%	25	319	13.55%	25	319	13.55%	25	319	13.55%			
70	36	6.09%	70	30	5.08%	30	4	0.68%	60	295	12.53%	60	326	13.85%	30	326	13.85%	30	326	13.85%	30	326	13.85%			
80	28	4.74%	80	43	7.28%	35	1	0.17%	70	258	10.96%	70	238	10.11%	35	238	10.11%	35	238	10.11%	35	238	10.11%			
90	21	3.55%	90	15	2.54%	Grand Total	591	100.00%	80	170	7.22%	80	166	7.05%	Grand Total	2354	100.00%	Grand Total	2354	100.00%	Grand Total	2354	100.00%			
120	18	3.05%	120	6	1.02%				90	92	3.91%	90	81	3.44%				90	81	3.44%						
Grand Total	591	100.00%	Grand Total	591	100.00%				120	72	3.06%	171	74	3.14%				120	72	3.06%						
									Grand Total	2354	100.00%	Grand Total	2354	100.00%				Grand Total	2354	100.00%	Grand Total	2354	100.00%			
Aintree Public Transport (AM)			Aintree Public Transport (PM)			Aintree Drive Time																				
HOSPITAL Aintree			HOSPITAL Aintree			HOSPITAL Aintree																				
Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age			
0	5	0.54%	0	5	0.54%	0	5	0.54%	0	50	2.12%	0	48	2.04%	0	48	2.04%	0	48	2.04%	0	48	2.04%	0	48	2.04%
10	31	3.37%	10	32	3.47%	5	32	3.47%	10	31	1.32%	10	32	1.36%	5	32	1.36%	5	32	1.36%	5	32	1.36%	5	32	1.36%
20	228	24.76%	20	198	21.50%	10	198	21.50%	20	243	10.32%	20	211	8.96%	10	211	8.96%	10	211	8.96%	10	211	8.96%	10	211	8.96%
30	266	28.88%	30	299	32.46%	15	299	32.46%	30	389	16.53%	30	413	17.54%	15	413	17.54%	15	413	17.54%	15	413	17.54%	15	413	17.54%
40	238	25.84%	40	268	29.10%	20	268	29.10%	40	394	16.74%	40	446	18.95%	20	446	18.95%	20	446	18.95%	20	446	18.95%	20	446	18.95%
50	89	9.66%	50	65	7.06%	25	65	7.06%	50	360	15.29%	50	319	13.55%	25	319	13.55%	25	319	13.55%	25	319	13.55%	25	319	13.55%
60	25	2.71%	60	17	1.85%	30	17	1.85%	60	295	12.53%	60	326	13.85%	30	326	13.85%	30	326	13.85%	30	326	13.85%	30	326	13.85%
70	12	1.30%	70	14	1.52%	35	14	1.52%	70	258	10.96%	70	238	10.11%	35	238	10.11%	35	238	10.11%	35	238	10.11%	35	238	10.11%
80	11	1.19%	80	11	1.19%	35	11	1.19%	80	170	7.22%	80	166	7.05%	Grand Total	2354	100.00%	Grand Total	2354	100.00%	Grand Total	2354	100.00%	Grand Total	2354	100.00%
90	9	0.98%	90	6	0.65%	Grand Total	921	100.00%	90	92	3.91%	90	81	3.44%				90	81	3.44%						
120	7	0.76%	120	6	0.65%				120	72	3.06%	171	74	3.14%				120	72	3.06%						
Grand Total	921	100.00%	Grand Total	921	100.00%				Grand Total	2354	100.00%	Grand Total	2354	100.00%				Grand Total	2354	100.00%	Grand Total	2354	100.00%			
Royal Public Transport (AM)			Royal Public Transport (PM)			Royal Drive Time																				
HOSPITAL Royal			HOSPITAL Royal			HOSPITAL Royal																				
Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age	Time Band	Count	%age			
0	35	4.16%	0	35	4.16%	0	35	4.16%	0	50	2.12%	0	48	2.04%	0	48	2.04%	0	48	2.04%	0	48	2.04%	0	48	2.04%
10	7	0.83%	10	7	0.83%	5	7	0.83%	10	31	1.32%	10	32	1.36%	5	32	1.36%	5	32	1.36%	5	32	1.36%	5	32	1.36%
20	169	20.07%	20	168	19.95%	10	168	19.95%	20	243	10.32%	20	211	8.96%	10	211	8.96%	10	211	8.96%	10	211	8.96%	10	211	8.96%
30	250	29.69%	30	251	29.81%	15	251	29.81%	30	389	16.53%	30	413	17.54%	15	413	17.54%	15	413	17.54%	15	413	17.54%	15	413	17.54%
40	245	29.10%	40	264	31.35%	20	264	31.35%	40	394	16.74%	40	446	18.95%	20	446	18.95%	20	446	18.95%	20	446	18.95%	20	446	18.95%
50	78	9.26%	50	63	7.48%	25	63	7.48%	50	360	15.29%	50	319	13.55%	25	319	13.55%	25	319	13.55%	25	319	13.55%	25	319	13.55%
60	37	4.39%	60	36	4.28%	30	36	4.28%	60	295	12.53%	60	326	13.85%	30	326	13.85%	30	326	13.85%	30	326	13.85%	30	326	13.85%
70	7	0.83%	70	6	0.71%	35	6	0.71%	70	258	10.96%	70	238	10.11%	35	238	10.11%	35	238	10.11%	35	238	10.11%	35	238	10.11%
80	7	0.83%	80	6	0.71%	35	6	0.71%	80	170	7.22%	80	166	7.05%	Grand Total	842	100.00%	Grand Total	842	100.00%	Grand Total	842	100.00%	Grand Total	842	100.00%
90	4	0.48%	90	6	0.71%	Grand Total	842	100.00%	90	92	3.91%	90	81	3.44%				90	81	3.44%						
120	3	0.36%	120	6	0.71%				120	72	3.06%	171	74	3.14%				120	72	3.06%						
Grand Total	842	100.00%	Grand Total	842	100.00%				Grand Total	2354	100.00%	Grand Total	2354	100.00%				Grand Total	2354	100.00%	Grand Total	2354	100.00%			

14.10 Appendix 10 - Northwest Ambulance Service increase in activity (Based on 18/19 Activity data)

Stroke Resign impact upon the ambulance service						
Activity numbers						
	Stroke	TIA	Mimic /other	Total	76% NWAS	24% Walk In
Southport	350	189	100	639	486	153
Royal	624	188	90	902	686	216
Total	974	377	190	1,541	1,171	370
The options being explored:-						
Option B1 - All southports suspected strokes go to Aintree						
Option B3 - All Royals suspected strokes go to						
Option C3 - All Southport and Royals Strokes go to Aintree						
Option E1 All Southport and Royals Strokes go to Aintree but only Southport go back after 72hrs						
Option E4 All Southport and Royals Strokes go to Aintree but only Royal go back after 72hrs						
We need to understand how NWAS would be able to respond to the service reconfiguration						
Option B1 - All southports suspected strokes go to Aintree						
967 patients from the Southport area would go directly in the ambulance to Aintree rather than Southport						
153 patients who walk-in would need to be transferred from Southport to Aintree						New
67% of the 486 = 325 would return to Southport after their first 72 hours of treatment.						New
					Extra 478 journeys @£250	£119,500
Option B3 - All Royals suspected strokes go to						
1595 patients from the Royal area would go directly in the ambulance to Aintree rather than Southport						
216 patients who walk-in would need to be transferred from Royal to Aintree						New
67% of the 686 = 460 would go to Broadgreen after their first 72 hours of treatment. These transfers currently happen from Royal to Broadgreen - so are not new.						
					Extra 216 patients @250	£54,000
Option C3 - All Southport and Royals Strokes go to Aintree						
So the addition of the transfers above						
					Extra 694patients @250	£173,500
Option E1 All Southport and Royals Strokes go to Aintree but only Southport go back after 72hrs						
486 patients from the Southport area would go directly in the ambulance to Aintree rather than Southport						
153 patients who walk-in would need to be transferred from Southport to Aintree						New
67% of the 486 = 325 would return to Southport after their first 72 hours of treatment.						New
686 patients from the Royal area would go directly in the ambulance to Aintree rather than Southport						
216 patients who walk-in would need to be transferred from Royal to Aintree						New
					Extra 694 patients @250	£173,500
Option E4 All Southport and Royals Strokes go to Aintree but only Royal go back after 72hrs						
486 patients from the Southport area would go directly in the ambulance to Aintree rather than Southport						
153 patients who walk-in would need to be transferred from Southport to Aintree						
67% of the 686 = 460 would go to Broadgreen after their first 72 hours of treatment. These transfers currently happen from Royal to Broadgreen - so are not new.						
686 patients from the Royal area would go directly in the ambulance to Aintree rather than Southport						
216 patients who walk-in would need to be transferred from Royal to Aintree						
					Extra 694 patients @250	£173,500

14.11 Appendix 11 Quality Impact Assessment

Stage 1 Quality Impact Assessments Tool

Scheme that this QIA relates to	North Mersey Stroke Services – hyperacute/acute redesign	Strategic Programme	Stroke	Scheme Overview/ Headline KPI	Increased access to specialist interventions and care
QIA completed by (name(s))	Paula Guest	Designation of person (s) completing QIA	Head of Planning	Date Completed	10 January 2020
Name of Managerial Lead	Jan Ledward	Name of Clinical Lead (if applicable)	Dr Nik Sharma	Name of Executive/SMT Lead	Jan Ledward
Brief Description of the scheme	<p>Transforming stroke care is a priority within the NHS Long Term Plan (LTP). There is strong evidence that hyper-acute interventions such as brain scanning, and thrombolysis are best delivered as part of a networked service available 24/7. The LTP supports centralising hyperacute stroke care (the first 72 hours after a stroke) to be delivered in a smaller number of well-equipped and staffed hospitals. Evidence from London, Manchester and other centralised services shows that more patients survive and with better outcomes if care is planned and delivered in this way.</p> <p>The Cheshire & Merseyside Health Care Partnership (C&MHCP) has identified the transformation of stroke services as a priority for the North Mersey health economy. There are significant specialist stroke workforce issues locally, nationally and internationally. To ensure sustainability of services, 24/7 access to services and to meet clinical standards, there is a need for reconfiguration. A clinically led case for change and service change proposal was endorsed by the C&MHCP; the North Mersey Committees in Common; North Mersey Leadership Group; C&M Acute Sustainability Board; C&M Collaborative Commissioning Forum; C&M Provider Chief Executives Group. Liverpool CCG, working with all North Mersey CCGs and providers, was requested to lead the planning process for the redesign of acute stroke services in the North Mersey area through the development of a pre-consultation business case (the PCBC).</p> <p>The work on the PCBC identified 26 possible models for reconfiguration. Following wide clinical and patient consultation, five shortlisted models have been selected to be fully evaluated for workforce, estates, financial, quality and equality implications. This information will be used to identify a preferred model for recommendation within the PCBC.</p>				

In the description of the models below, the term HASU means hyperacute stroke unit providing care in the first 72 hours. ASU means acute stroke unit, providing acute care after 72 hours. Comprehensive stroke unit provides both HASU, ASU and access to thrombectomy and thrombolysis.

The current configuration of services in North Mersey is that thrombectomy is provided at the Walton Centre; this is a specialised service commissioned by NHSE and cannot be provided at another unit in Cheshire & Merseyside. There are three HASUs (at Aintree, Royal Liverpool and Southport hospitals) which currently provide access to thrombolysis and care for the hyperacute and acute phases and inpatient rehab beds at Aintree, Southport and Broadgreen.

The models are:

1. Do nothing to configuration of services but work more collaboratively within the current service.
This would mean retaining three HASU/ASUs and rehab beds at Broadgreen, patients needing to be transferred to another site for thrombectomy
2. Consolidate Aintree and Royal Liverpool HASUs on the Aintree site, retain Southport HASU.
This would mean two HASU/ASUs and rehab beds at Broadgreen, patients at Aintree site having direct access to thrombectomy but those at Southport needing to be transferred
3. Consolidate Aintree and Southport HASUs on the Aintree site, retain Royal Liverpool HASU.
This would mean two HASU/ASUs and rehab beds at Broadgreen, patients at Aintree site having direct access to thrombectomy but those at Royal Liverpool needing to be transferred
4. Comprehensive stroke unit at Aintree, post-72 hours care at Aintree, Broadgreen and Southport.
This would mean one HASU with direct access to thrombectomy and ASU/rehab beds remaining at Southport; rehab beds at Broadgreen. This is the preferred clinical option and also the option preferred by the stroke survivors and their families/carers.
5. Comprehensive stroke unit at Aintree, post-72 hours care at either Southport or the Royal Liverpool.
This would mean one HASU with direct access to thrombectomy and one other unit, with no beds for rehab at the third unit.

To note: in the responses to the descriptors below, M1 refers to model 1, M2 to model 2 etc.

	The preferred option of the clinicians and of the stroke survivors and their carers/families is Model 4. It is the only one of the options which gives equality of access to comprehensive stroke centre services to patients across the whole North Mersey system while maintaining post-hyperacute inpatient care equitably across the area.			
Intended Quality Improvement Outcome/s:	Increase in number of patients receiving high quality specialist care, meeting seven-day standards for stroke care and national clinical guidelines – 90% of patients receiving care on a specialist stroke unit (currently c.40%) 20% receiving thrombolysis (currently c.10%) 10% receiving thrombectomy (currently c.1%)			
Methods to be used to monitor quality impact (including frequency of monitoring):	Sentinel Stroke National Audit Project (SSNAP) data – national dataset, reports quarterly			
Descriptor		Positive/negative/neutral	Risk score (if negative)	Comments/rationale for the response (Include reason for identifying impact as positive, negative or neutral)
Patient Safety	Is there any identified impact on patient safety? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Neutral	12 12 12	M4 identified as positive because it equitably increases access to specialist care for all patients from across North Mersey. M1 is not sustainable because of workforce issues. M2 & 3 would improve access to specialist care for some parts of North Mersey but would be inequitable and may have a further negative impact on staffing at the smaller unit M5 would have the same benefits for the hyperacute phase of care as M4 but the impact of providing subsequent acute care further from home is not fully understood. It may make it difficult for families, who play a significant part in the patient's recovery journey, to visit; the psychosocial/wellbeing aspect of this may affect physical recovery.
	Are there any impact(s) on Provider organisations and any aspect of shared risk?	M1 Negative M2 Negative M3 Negative	12 12 12	One of the three current units is a fragile service with only one permanent consultant. Should this service be unable to continue there would be

	If yes, please detail the impact(s)	M4 Positive M5 Negative	12	impacts on the other providers which, if not planned for, will affect patient outcomes, patient flows and ability to meet clinical standards. M4 enables equality of access to 24/7 specialist cover and the opportunity to improve patient outcomes and to meet clinical standards
	Are there any impact(s) on any safety, systems in place to safeguard patients and prevent harm? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	One of the three current units is a fragile service with only one permanent consultant. Should this service be unable to continue there would be impacts on the other providers which, if not planned for, will affect patient outcomes, patient flows and ability to meet clinical standards. M4 enables equality of access to 24/7 specialist cover and the opportunity to improve patient outcomes and to meet clinical standards
	Will this change impact on any systems and processes in place to ensure that the risk of healthcare acquired infections to patients is reduced? If yes, please detail the impact(s)	M1 Neutral M2 Neutral M3 Neutral M4 Neutral M5 Neutral		
	Will this change impact on clinical workforce levels, capability and/or skills? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	M1 – current workforce issues in all units meaning clinical standards cannot be met 24/7 for all patients M2, M3 – may improve workforce issues at the larger unit but likely to be at the cost of further negative impact on the smaller unit M4 – can provide 24/7 access to specialist services, opportunities for workforce development and training and greater likelihood of opportunities for research M5 – likely to improve access to specialist medical care but prove more difficult to recruit to therapy roles
	Will this change have any impact on safeguarding children or adults? If yes, please detail the impact(s)	M1 Neutral M2 Neutral M3 Neutral M4 Neutral M5 Neutral		
Patient Experience	Will this change impact on patient experience including consent and	M1 Negative M2 Negative M3 Negative	12 12 12	M1, M2, M3 do not provide equitable improved access to specialist care, meaning those patients who do not benefit from this care could potentially

confidentiality? If yes, please detail the impact(s)	M4 Positive M5 Negative	12	suffer worst outcomes, thereby having a negative impact on their experience. M4 improves access to specialist care while providing subsequent care closer to the patient's home and family. M5 may make it difficult for families, who play a significant part in the patient's recovery journey, to visit; the psychosocial/wellbeing aspect of this may affect physical recovery.
Will this change impact on patients who lack capacity or require advocates to support them? If yes, please detail the impact(s)	M1 Neutral M2 Neutral M3 Neutral M4 Neutral M5 Neutral		
Will this change impact on patients with any recognised disability including the blind, deaf or those with a learning disability? If yes, please detail the impact(s)	M1 Neutral M2 Neutral M3 Neutral M4 Neutral M5 Neutral		This is considered fully in the equality impact assessment (copy attached)
Will this change impact on self-reported experience of patients and service users? Consider: response to national or local surveys, complaints, PALS and incidents. If yes, please detail the impact(s)	M1 Not known M2 Not known M3 Not known M4 Not known M5 Not known		There has been a full pre-consultation engagement programme with stroke survivors and families/carers in all boroughs of North Mersey. A significant majority of the feedback was that at the time of crisis – when the stroke happens – patients want access to the best possible care and accept that this may be further from home. For their recovery, they prefer to be closer to home. Experiences of acute care varied widely - probably because of the extreme challenges currently faced in all three HASU/ASU units. By creating a centre of excellence, it is hoped to improve patient experience of the service.
Will this change have any impact on the patient choice agenda? If yes, please detail the impact(s)	M1 No M2 No M3 No M4 No M5 No		Choice does not apply in urgent care services

	Will this change have any impact on patient/family/carer equality (if yes please also complete a full Equality Impact Assessment in liaison with the CCG Equality Leads). If yes, please detail the impact(s)	M1 M2 M3 M4 Positive M5		An Equality Impact Assessment has been completed and feedback is awaited from the equality lead. M4 is identified as positive because it is the only one of the models which gives equitable access to specialist care whilst retaining local access to inpatient rehab.
	Will this change have any impact on waiting times, RTT, length of stay, access to treatments including medications? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	M1 would mean current performance on acute SSNAP indicators (which is on a downward trajectory) would not improve M2 and M3 may improve some performance indicators at the bigger unit but there would be a likely decline in the smaller unit M5 would improve performance on the acute indicators but likely to decrease performance on the rehab indicators M4 is identified as positive because improvement would be expected against all indicators
Clinical Effectiveness	Will this change impact on the delivery of evidence-based practice, clinical leadership, clinical engagement and/or quality standards? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	M4 is identified as positive as it would improve delivery of evidence-based practice, clinical engagement and quality standards. This is the preferred clinical model. M1 would lead to no change on these areas. M2, M3 and M5 may lead to inequitable change in these areas, some of which may be positive and some negative.
	Will this change have any impact on the implementation of any NICE guidance etc. including the use of nationally approved treatments or drugs? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	As above
	Will this change have any impact on clinical leadership? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	As above

	Will this change reduce or impact on variation in care provision? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	As above
Timely	Will this change have any impact on reducing waits for treatment or services? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	M1 would mean current access to treatment will not improve and may worsen. M2, M3 and M5 would all improve access to some elements of care for some patients but not others. M4 is identified as positive because it is the model which will enable 24/7 staffing; which in turn enables timely delivery of the diagnostic tests and access to subsequent specialist treatment and care.
	Will this change result in harmful delays for both those who receive and those who give care? If yes, please detail the impact(s)	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative		As above
Efficient	Will this change impact on avoiding waste, including waste of equipment, supplies, ideas, and energy? If yes, please detail the impact(s)	M1 Neutral M2 Neutral M3 Neutral M4 Neutral M5 Neutral		
Equitable	Will this change be equitable so that care does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status?	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12	M1 does not improve access to care for any patients in the North Mersey locality. M2, M3 and M5 all improve access to care for some patients from some part of the North Mersey locality. M4 is identified as positive because it is the model which equitably improves access to hyperacute, acute and inpatient rehab care across the whole North Mersey area.
Other	<i>Partnerships / Integration</i> How does the change impact on partnership working and or integration?	M1 Neutral M2 Neutral M3 Neutral M4 Positive		M4 is identified as positive as it creates one North Mersey stroke service, requiring all current partners to work together to deliver a seamless, integrated pathway

		M5 Neutral			
	<i>Prevention</i> How does the change promote self-care and reduce inequality?	M1 Neutral M2 Neutral M3 Neutral M4 Neutral M5 Neutral			This change is to a hyperacute/acute service so does not impact on prevention
	<i>Access</i> Could the change impact positively or negatively on any of the following: a) Patient Choice b) Access c) Integration	M1 Negative M2 Negative M3 Negative M4 Positive M5 Negative	12 12 12 12		As this is an urgent pathway, patient choice does not apply. For access, M1 makes no change to the current state and M2, M3 and M5 improve access for some patients from some parts of North Mersey but this is inequitable. M4 is identified as positive because it equitably improves access and requires integration of current provision into one North Mersey system.
Do any of the criteria above score 8 or more against the CCG matrix?				Yes	
In all cases the completed QIA must be sent to the Quality Team for review by the Managerial Lead via the following email address: lccgcontract.reporting@nhs.net					
Reviewed by clinical lead	Yes/No	Date Reviewed			
Reviewed by Management lead	Yes/No	Date Reviewed		Date Sent to Quality Team by Management lead	
Quality Team Use Only					
Date Received and Logged	15.01.20	Reviewed by Quality Team (name)	Jan Lloyd	Date Reviewed	29.01.20
Date sent to Deputy Chief Nurse by Quality Team	29.01.20	Approved by Deputy Chief Nurse	Yes/No	Response sent back to Management Lead	Yes/No
Comments or feedback following review (As appropriate)	29.01.20: a comprehensive QIA that is easy to follow/understand and identifies the 5 options being considered for the redesign of the North Mersey service. Based on the option chosen for this service it may or may not need escalating to QSOC. If option 4 is chosen it will not need escalation to QSOC. If any of the others are selected this will need escalating to QSOC for review. Sent to Deputy Chief Nurse for review and approval as appropriate (JL)				

<p>NB if a score of 8 is agreed for any area of the QIA it must be returned to the managerial lead to complete the escalation report to QSOC</p>	<p>Approved for onward escalation to QSOC if appropriate – but given this is a NM programme, unsure of governance fit (Kerry Lloyd 03/2/20).</p>
--	--

14.12 Appendix 12 Equality Impact Assessment

Equality Analysis Stroke Pre-Consultation Business Case

Stroke services reconfiguration and service integration preferred model

Knowsley CCG, Liverpool CCG, South Sefton CCG, Southport and Formby CCG, West Lancashire CCG

Start Date:	July 2021	
Equality and Inclusion Service Signature and Date:	Andy Woods	15 th July 2021-10.08.21
CCG Officer Signature and Date:		
Finish Date:		
Senior Manager Sign Off Signature and Date		
Committee Date:		

To support the PCBC and ensure we are pay 'due regard' to our Public Sector Equality Duty (PSED), s149 Equality Act 2010, we have developed a 'pre-consultation Equality Analysis: its purpose is to highlight and advise the engagement/ commissioner teams as to any particular question that needs to be asked linked to the needs of different protected characterises. Section 1 and 2 reiterates the case for change and how this will affect patients. Section 3 identifies equality concerns and the differential table linking particular protected characteristics to particular support needs. Sections 5 and 6 identify the engagement process and any concerns that the engagement/ commissioner teams need to take into consideration. Section 7 onwards are to be completed post consultation.

Details of service / function:
Guidance Notes: Clearly identify the function & give details of relevant service provision and or commissioning milestones (review, specification change, consultation, procurement) and timescales.
A stroke is a serious life-threatening medical condition that occurs when the blood supply to part of the brain is cut off by a blood clot or bleeding from a blood vessel. Strokes are a medical emergency and urgent treatment is essential. The sooner a person receives treatment for a

stroke, the better the chance of recovery. It is one of the most significant public health issues of our time, with a profound and growing impact on society, our economy, individuals, families and our life chances.

Stroke services across North Mersey CCGs and West Lancashire CCG are currently provided by the following Trusts:

- Royal Liverpool hospital site - Hyper Acute Stroke Unit (HASU) and Acute Stroke Unit (ASU)
- Broadgreen Hospital - Rehabilitation
- Aintree Hospital site - HASU and ASU
- Southport & Formby District and General Hospital - HASU and ASU

The Northwest Coast Strategic Clinical Network (NWC SCN) team (now the Cheshire and Mersey Integrated Stroke Delivery Network C & M ISDN), were engaged to develop the Stroke Case for Change with the involvement and engagement of clinical leads and stakeholders across Cheshire and Merseyside. This work was commissioned by the Cheshire and Merseyside Healthcare Partnership as a part of the CVD Programme (2018) and was completed in May 2019. This was in response to concerns about performance and sustainability of some stroke units across the patch.

The case for change set out a clinical vision for the development of Stroke services for Cheshire and Merseyside including North Mersey reflecting national guidance and best practice. It also recognised that further clinical engagement was required to develop the new clinical model for the future. Liverpool Clinical Commissioning Group are the lead commissioner for stroke services and using the work already complete by NWC SCN have taken responsibility to development this Pre-Consultation Business Case for North Mersey services.

The North Mersey Stroke services have reviewed their current services and have developed a plan to transform its hospital services with an aim to: -

- Provide the best stroke service in the country
- Have all patients receive the right care in the right place first time
- Have a service that is sustainable clinically and financially
- Improve patient outcomes
- Give patients the best possible experience.

In our plans we have based our transformation on the following principles: -

- Services will be delivered by teams of specialist professionals whose skill will meet the needs of patients
- Services will be delivered by a sustainable workforce
- Services will meet clinical standards and best practice
- Variations in quality and standards of care will be eliminated.

- Services will be centralised whenever clinically necessary and local whenever possible.

What is the **legitimate aim** of the service change / redesign ?

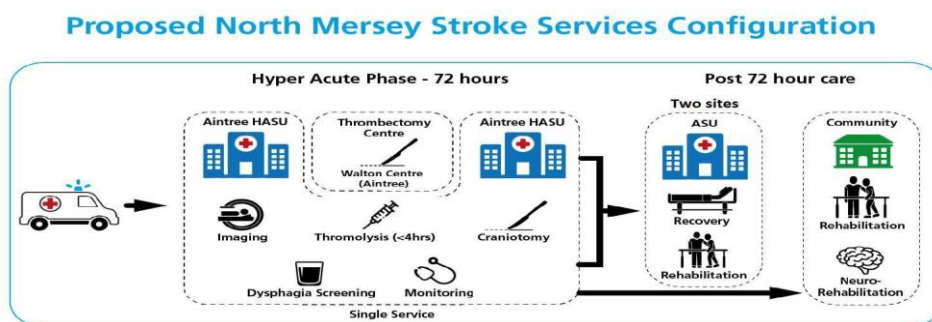
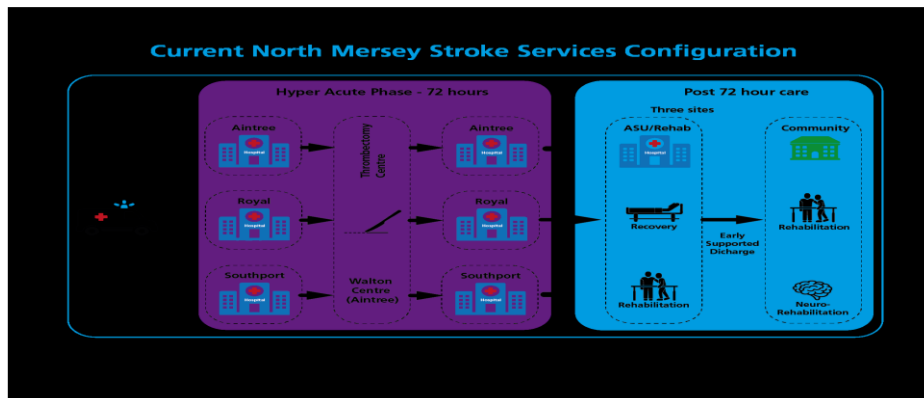
- While there have been some significant improvements in stroke prevention, treatment and patient outcomes since the 2007 National Stroke Strategy, major challenges remain across the whole stroke pathway locally. A number of Acute Stroke Units do not meet national guidelines and there are gaps and unwarranted variation across the stroke care pathway.
- Transforming stroke care is a priority within the NHS Long Term Plan.
- The plan points to strong evidence that hyper acute interventions such as brain scanning, and thrombolysis are best delivered as part of a networked 24/7 service. The plan supports centralised hyper-acute stroke care delivered by a smaller number of well-equipped and staffed hospitals, based upon clear evidence of the greatest improvements in adopting this model of care. This would see a reduction in the number of stroke-receiving units, and an increase in the number of patients receiving high-quality specialist care, meeting seven-day standards for stroke care, which meet national clinical guidelines.
- Access to mechanical thrombectomy and clot-busting treatment (thrombolysis) co located at the Aintree site via the Walton Centre, can significantly reduce the severity of disability caused by a stroke. Reconfiguring stroke services into specialist centres would improve the use of thrombolysis and further roll out mechanical thrombectomy.
- This model of care would ensure 90 percent of stroke patients receive care on a specialist stroke unit and that all patients who could benefit from thrombolysis receive it. This combination of specialist stroke care, thrombolysis and thrombectomy would result in the NHS having the best performance in Europe for people with stroke.
- The North Mersey health and care system is committed to transforming hyper-acute stroke services to deliver the best possible outcomes and experience for our population.
- Effective and efficient use of current resources
- Clinically driven
- Sustainability of services (workforce issues)
- Reduction in variation
- geographical proximity
- That a stroke unit undertakes adequate volumes of activity to maintain clinical quality, outcomes and a sustainable unit; In North Mersey none of the three HASU's achieved the minimum recommended number of 600 strokes per annum. The breakeven number of strokes is 900 and the recommended maximum is 1500.

Change to service

The preferred option for a single North Mersey comprehensive stroke centre, co-located with A&E and with direct access to specialist scanners in order to maximise the number of patients who are able to receive thrombectomy and thrombolysis. The proposal would see all North Mersey patients receive their care at the Liverpool University Hospitals (LUH) Aintree site from a hyper-acute stroke centre co-located with acute neurological and stroke thrombectomy services provided by the Walton Centre.

Stroke services across North Mersey CCGs and West Lancashire CCG are currently provided by the following Trusts:

- Royal Liverpool hospital site - Hyper Acute Stroke Unit (HASU) and Acute Stroke Unit (ASU)
- Broadgreen Hospital - Rehabilitation
- Aintree Hospital site - HASU and ASU
- Southport & Formby District and General Hospital - HASU and ASU



First 72 hours

The proposed model would mean patients who have had a stroke will spend their first 72 hours at a centralised and hyper acute stroke unit at **Aintree, which will act as the HASU Comprehensive Stroke Centre (CSC)**. This will mean a significant increase in the number of patients who will receive Stroke care at Aintree, which will be a well-equipped and staffed site, networked 24/7 and

can also provide thrombolysis and mechanical thrombectomy (co located with the Walton Neurological Centre). This proposal intends to increase the number of patients that receive high quality specialist care, improve clinical outcomes and the service sustainability.

The number of strokes recorded in the last two years for all three sites is as follows: -

		University Hospital Aintree	Royal Liverpool University Hospital	Southport and Formby District General	Total
2019/20	Number of patients (72h cohort) (Team Centred)	524	556	397	1477
2018/19	Number of patients (72h cohort) (Team Centred)	502	570	300	1372
2017/18	Number of patients (72h cohort) (Team Centred)	444	653	343	1440

Source: SSNAP 2017/18, 2018/19 and 2019/20

- **After 72 hours care will be provided by Liverpool University Hospital -Aintree site, Southport & Formby District and General Hospital or Broadgreen Hospital (rehabilitation only).**

After the initial 72 hours of stroke care, patients would continue to be managed at an acute stroke unit, if not suitable for discharge. Medically stable patients requiring further in-patient rehabilitation or complex discharge planning would be transferred to a local rehabilitation unit for in-patient rehabilitation or discharged from hospital with support from uniformly delivered, gold standard, early supported discharge services, to optimise their recovery in their own homes. This model of post-acute stroke care responds to the needs and preferences of patients, carers, and families, who have told us that they want to receive as much care as practicable close to home (see engagement reports supporting the development of the PCBC).

Proposed change

- Extra travel will impact on the timeliness of a patient's admission to the CSC HASU and treatment for impacted CCGs (see page 4 below).**

Reduction in number of units will mean certain CCGs populations for the initial 72 hours (listed below) will experience further travel (by ambulance, though some patients may self-present by car or taxi) and this depending on the CCG population in question, may impact on the timeliness of admission and cause unease and anxiety, as the sooner a person receives treatment for a stroke, the better the chance of recovery.

Changes broken down to each CCG area in North Mersey footprint

- Southport & Formby CCG population- further travel and timelines of admission and access to treatment
- West Lancashire CCG - further travel and timelines of admission and access to treatment
- Knowsley CCG area (Patient flow associated with the LUH Royal site, though some of these patients may access St Helens & Knowsley teaching Hospital). - further travel and timelines of admission
- Liverpool CCG population ((Patient flow associated with the LUH Royal site will experience a change, though some of these patients may access St Helens & Knowsley teaching Hospital)- further travel and timelines of admission. North Liverpool patents flow to Aintree will experience no change
- South Sefton CCG – no change

b. Changes to treatments at Southport & Ormskirk and LUH Royal site

Some patients who have had a stroke whilst already in the Royal site or Southport and Ormskirk may not be able to be transferred to Aintree for the initial 72-hour care on clinical grounds (complex clinical conditions, end of life). These patients will continue to have access to Thrombolysis if required.

c. Post 72 hours, travel and its implications, specifically for family, carers and friends who have a psychological impact on a patient's recovery

Families of patients (key social contributor to a patient's recovery) from Liverpool CCG and KCCG populations flow associated with the LUH Royal site may experience further travel for post 72-hour care if they continue to need acute stroke care (Aintree site or Southport & Ormskirk) as opposed to rehabilitation care only (Broadgreen site). Please page 92 of the PCBC.

Barriers relevant to the protected characteristics.

Barriers to service provision and proposed changes from a patient's perspective, linked to protected characteristics can be.

- a. travel time and its impact on the timeliness of admission for life saving treatments. During the early involvement and engagement sessions outlined in the engagement section below and on page 65 of PCBC stroke survivors supported bringing local stroke services together in

a single location; however, some concerns were raised around distance to travel and the ability for emergency teams to get the patient to hospital in time.

- b. Inequalities of treatment by race, age and disability (people receiving lesser treatments or experiencing discrimination).
- c. Broader areas of inequalities faced by certain demographics in relation to stroke care, prevention and symptoms (consultation may want to consider access to information for participants).

Please note that this document is a North Mersey Impact assessment and individual CCGs need to apply it accordingly to their own populations.

Protected Characteristic	Issue	Remedy/Mitigation
Age:	<p>Strokes can and do occur at any age; however, nearly three-quarters of all strokes occur in people over the age of 65 and the risk of having a stroke more than doubles each decade after the age of 55.</p> <p>Extra travel to HASU will impact on the timeliness of a patient's admission and treatment for impacted CCGs see page 5 above.</p>	<p>All adult age ranges need to be part of the consultation process. Ensure Older citizens are targeted. Any images used as part of the PR campaign must be inclusive and show different age ranges.</p> <p>Depending on the CCG impacted the consultation to provide necessary information to public during the consultation period on further travel and its impact on the timeliness of admission to the CSC in comparison to their current local HASU. The information should include times and distance for ambulance and by car/ taxi (for self-presenting patients)</p> <p>Consultation should clearly outline the significant benefits of the proposed model, including the rationale for the change (sustainability, risks etc.)</p> <p>Consider clinician led workshops or multimedia video to support</p>

	<p>Older people given lesser priority and service. According to Access to stroke care in England, Wales and Northern Ireland: the effect of age, gender and weekend admission (https://academic.oup.com/ageing/article/36/3/247/40499) Older patients are less likely to be treated in a stroke unit than younger patients (risk ratio comparing 85 + years with those <65 years 0.82 (95% CI 0.75–0.90). Seventy-one per cent of patients under 65 years were scanned within 24 h compared to 51% aged over 85 years. Older patients were also less likely than younger ones to receive secondary prevention and some aspects of rehabilitation, especially around higher functioning.</p> <p>Nearly half of stroke survivors feel ‘abandoned’ after leaving hospital (Stroke Association, 2017).</p> <p>Patients who displayed stroke symptoms but have a range of complex conditions which means they are unable to be transferred to Aintree on clinical grounds for the first 72-hour care</p>	<p>information giving and the need for change.</p> <p>Ensure older citizens /patients are targeted and their experience /worries are captured as part of the re-organisation.</p> <p>Older people who have survived a Stroke need to be targeted to understand their previous experience.</p> <p>Currently this is out of scope, but consultation may consider broader questions on this point during workshops or specific targeted work with older citizens</p> <p>Ensure this is clearly communicated in the consultation</p>
Disability.	<p>Stroke is the largest cause of complex disability – over half of all stroke survivors are left with a disability.</p> <p>Stroke has a greater disability impact on an individual than any other chronic disease. Over a third (41%) of stroke survivors are discharged from hospital requiring help with activities of daily living. Hence, it is important that stroke services are organised to reduce this risk of disability as</p>	<p>Ensure disabled communities are part of the consultation and their experience /worries are captured as part of the re-organisation.</p> <p>It is important that stroke services are organised to reduce this risk of disability as well as being able to meet the needs of patients with disabilities.</p>

	<p>well as being able to meet the needs of patients with disabilities.</p> <p>Extra travel will impact on the timeliness of a patient's admission to the CSC HASU and treatment for impacted CCGs (see page 4)</p> <p>Disabled people are more likely to experience health inequalities due to their communication and information need not being met.</p> <p>Disabled people are given less of a service compared to non-disabled people</p> <p>Deaf/deaf people – high blood pressure is one of the major causes of heart attacks and strokes. Deaf people are twice as likely as everyone else to have high blood pressure and not know it. <i>The Sick of It</i></p>	<p>Depending on the CCG impacted the consultation needs to provide necessary information to public on further travel and its impact on the timeliness of admission to the CSC in comparison to their current local HASU. The information should include times and distance for ambulance and by car/ taxi (for self-presenting patients)</p> <p>Consultation should clearly outline the significant benefits of the proposed model, including the rationale for the change (sustainability, risks etc.)</p> <p>Consider clinician led workshops or multimedia video to support information giving and the need for change.</p> <p>Ensure that disabled people's information and communications needs are met through the use of a range of inclusive tools and consultation methods as re the duty to provide reasonable adjustments (Equality Act 2010) and regulatory requirement to meet the Accessible Information Standard.</p> <p>Disabled people (Sensory, physical, learning who have survived a stroke need to be targeted to understand their previous experience.</p> <p>Ensure consultation covers pan disability and support organisations are targeted.</p>
--	--	---

	<p>report (http://signhealth.org.uk/wp-content/uploads/206/09/Sick-Of-It-Report.pdf) and local engagement have identified misdiagnosis and diagnostic overshadowing as key reasons behind this.</p> <p>Visual impairment and blindness – two thirds of people may experience sight loss as a result of a stroke and need access to support.</p> <p>Many people who have experienced a stroke experience mental ill health and it is essential that there is good access to services.</p> <p>Mental health -links with depression and stroke</p> <p>https://www.bhf.org.uk/what-we-do/news-from-the-bhf/news-archive/2020/december/symptoms-of-depression-linked-to-increased-risk-of-heart-disease-and-stroke</p> <p>People with learning disabilities die, on average, more than 14 years younger than the general population, and are significantly more likely to have certain conditions and diseases. They were also 3 times more likely to suffer with hypothyroidism and almost twice as likely to suffer diabetes, heart failure, chronic kidney disease or stroke.</p>	
Gender reassignment	<p>Trans-gender people experience poorer health outcomes and barriers to accessing services. It is not known whether there is a greater or lesser risk of stroke amongst people that have undergone or are going through gender reassignment. Though some reports suggest that Older transgender women who have used hormone therapy for years to help make their outward appearance match their</p>	<p>Ensure Trans community part of consultation process.</p> <p>Consider specific workshop with Trans community</p> <p>Ensure that any PR material, if using images, are inclusive of Trans people.</p>

	<p>gender identity are at increased risk for cardiovascular events like stroke and potentially fatal blood clots than cisgender women (women who identify as the sex they were assigned at birth), according to a paper by a group of cardiologists, gynaecologists, and endocrinologists published in January 2021 in the <i>European Heart Journal</i>.</p>	
Marriage and Civil Partnership	No impact	
Pregnancy and maternity	<p>Pregnancy and the postpartum period are associated with increased risk of stroke, although incidence estimates vary. There are several causes of stroke that are unique to pregnancy and the postpartum period, such as preeclampsia and eclampsia, amniotic fluid embolus, postpartum angiopathy and postpartum cardiomyopathy.</p>	<p>Important for stroke service to have effective, efficient access to obstetric specialist advice and support for pregnant women who have a stroke.</p> <p>Ensure pregnant women and support groups are targeted during the consultation.</p>
Race	<p>Black people are twice as likely to have a stroke at a younger age as white people; this is partly due to a higher prevalence of the risk factors of high blood pressure, diabetes and sickle cell disease than white people.</p> <p>South Asian people have strokes at a significantly younger age than white people, primarily because of greater prevalence of the risk factors of high blood pressure, high cholesterol and diabetes than white people.</p> <p>White people are more likely to have the risk factors of irregular heartbeat, smoking and excess alcohol consumption.</p>	<p>Ensure that Black, Asian and other Minority Ethnic communities are part of the consultation.</p> <p>Ensure that any PR material, if using images, are inclusive of different races.</p> <p>Consider language needs and formats for the consultation.</p>

	<ul style="list-style-type: none"> • people of a South Asian background, may be at a higher risk of developing coronary heart disease, which could lead to a heart attack • people over 65 and of a South Asian background, are at a greater risk of having a stroke • people of an African Caribbean background, may be more likely to have high blood pressure <p>people of African Caribbean and South Asian ethnicity are more likely to get type 2 diabetes than the white population</p> <p>https://pubmed.ncbi.nlm.nih.gov/15637317/</p> <p>Extra travel to HASU will impact on the timeliness of a patient’s admission and treatment for impacted CCGs see above.</p> <p>Racial discrimination can result in inequalities in health and have an impact on opportunities in and quality of life. People from Black ethnic and minority communities consider they receive a lesser service</p> <p>Current stroke activity data is not disaggregated to understand any possible correlation between stroke and ethnicity.</p> <p>Research suggests that black, Asian and other ethnic minorities may have difficulty recognising symptoms of a stroke and experience high levels of prevalence.</p>	<p>Depending on the CCG impacted the consultation needs to provide necessary information to public on further travel and its impact on the timeliness of admission to the CSC in comparison to their current local HASU. The information should include times and distance for ambulance and by car/ taxi (for self-presenting patients)</p> <p>Consultation should clearly outline the significant benefits of the proposed model, including the rationale for the change (sustainability, risks etc.)</p> <p>People from Black Asian Ethnic Minority who have survived a Stroke need to be targeted to understand their previous experience.</p> <p>North Mersey key officers to investigate current disparity in data, re ethnicity.</p>
--	---	---

		<p>Targeted consultation with our black minority and ethnic community and consider workshop style approach</p> <p>‘CCGs may want to ask question about the uptake of early intervention services and understanding of stroke related literature about symptoms.</p> <p>Providing inclusive information and coms of symptoms targeting Black Asian ethnic and minority communities and support organisations</p> <p>Post consultation</p> <p>Dealing with ethnic disparities in stroke will be served by sustained attention to quality improvement in high-impact areas in stroke care, complemented by initiatives that promote cultural competence.</p>
Religion and belief	<p>A person’s religion and/ or belief may impact on how they access medical services or their decisions on treatment options.</p> <p>There is evidence of people being ‘fatalistic’ when facing medical problems, turning to prayer or other forms of ‘spiritual help’ as opposed to medical intervention.</p>	<p>Ensure that religious groups are part of the consultation (and consider that information is given to them as to what the stroke service can do and how lifestyle can affect health).</p>
Sex (Male /Female)	<p>Men are at 25% high risk of having a stroke and at a younger age compared with women. However, as women live longer</p>	<p>Consultation needs to cover both men and women and ensure there is a strong spread of responses from both sexes.</p>

	<p>than men, there are more total incidences of stroke in women.</p> <p>Extra travel to HASU will impact on the timeliness of a patient's admission and treatment for impacted CCGs see page 5 above.</p>	<p>Depending on the CCG impacted the consultation needs to provide necessary information to public on further travel and its impact on the timeliness of admission to the CSC in comparison to their current local HASU. The information should include times and distance for ambulance and by car/ taxi (for self-presenting patients)</p> <p>Consultation should clearly outline the significant benefits of the proposed model, including the rational for the change (sustainability, risks etc.)</p>
Sexual orientation	<p>Members of the lesbian, gay, bisexual and transgender communities (LGBT) have been found to have higher levels of certain health behaviours which increased risk of stroke, such as excess alcohol consumption, drug use and smoking, and lower uptake of screening programmes.</p>	<p>Ensure LGBTQ+ community engaged in consultation.</p> <p>Consider specific network meetings/ events to gather information.</p> <p>Evidence suggests that the gay community is unresponsive to messages and media images that show heteronormative images.</p> <p>Any images used as part of the PR campaign must be inclusive are show same sex couples.</p>
<p>Whilst currently out of scope of Equality legislation it is also important to consider issues relating to socioeconomic status to ensure that any change proposal does not widen health inequalities. Socioeconomic status includes factors such as social exclusion and deprivation, including those associated with geographical distinctions (e.g. the North/South divide, urban versus rural). <i>Examples of groups to consider include:</i></p> <p><i>refugees and asylum seekers, migrant, unaccompanied child asylum seekers, looked-after children, homeless people, prisoners and young offenders, veterans</i></p>		

<p>Health inequalities</p> <p>Socio economic factor</p>	<p>North Mersey is one of the most deprived areas of the country, with more than 4 out of 10 residents living in the 10% most deprived neighbourhoods in England. Deprivation is strongly associated with poor health outcomes from childhood through to old age. People in North Mersey live shorter lives than the national average and spend a greater proportion of their life living with disability and poor health</p> <p>Extra travel to HASU will impact on the timeliness of a patient's admission and treatment for impacted CCGs see page 5 above.</p> <p>Poverty can have long-term implications on an individual's health as well as their general 'life chances' (i.e., their opportunities to improve their socio-economic status and quality of life). Those growing up in poverty as children are more likely to suffer poor physical and mental health in adulthood, and are at increased risk of severe, long-term and life-limiting illnesses. Longitudinal studies have shown that children growing up in poverty have a higher risk of death as adults. This has been studied across almost all conditions including for example, stomach cancer, lung cancer, haemorrhagic stroke, coronary heart disease, respiratory diseases and alcohol-related death.³¹</p> <p>https://www.bma.org.uk/media/2084/health-at-a-price-2017.pdf</p> <p>People from the most economically deprived areas of the UK are around twice as likely to have a stroke, and three times as likely to die from a stroke, than those in the least deprived.</p>	<p>Target impacted areas with high levels of deprivation.</p> <p>Gather postcode details as well as information on their socio-economic situation.</p> <p>Depending on the CCG impacted the consultation to provide necessary information to public during the consultation period on further travel and its impact on the timeliness of admission to the CSC in comparison to their current local HASU. The information should include times and distance for ambulance and by car/ taxi (for self-presenting patients)</p> <p>Consultation should clearly outline the significant benefits of the proposed model, including the rationale for the change (sustainability, risks etc.)</p> <p>For relevant impacted CCGs consider questions as to whether the cost of transport put the family under financial pressure.</p> <p>Ask questions as to whether the patient being hospitalised/undergoing treatment put the family under financial pressure.</p> <p>Ensure a number of VCF organisations who support inclusion</p>
---	---	---

	<p>Disadvantage is that patients may have to travel further for their hyperacute care. Although this may be perceived as disadvantaging older people, in reality people who have had a stroke are in a life-threatening situation and likely to use ambulance services or be driven to the hospital for the first stage of care. The potential improvement in patient outcomes from this model also needs to be considered.</p>	<p>health groups take part in the consultation</p>
<p>Asylum seeker and refugees</p>	<p>People who are seeking asylum are not a homogeneous population. Coming from different countries and cultures, they have had, in their own and other countries, a wide range of experiences that may affect their health and nutritional state. In the United Kingdom they face the effects of poverty, dependence, and lack of cohesive social support.¹ All these factors undermine both physical and mental health. Additionally, racial discrimination can result in inequalities in health and have an impact on opportunities in and quality of life.²</p> <p>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1119741/</p>	
<p>People leaving the criminal justice system</p>	<p>People in contact with the criminal justice system face significant health inequalities:</p> <p>mortality rate for prisoners is 50% higher than the rest of the population</p> <p>people in and out of the criminal justice system are four times more likely to be smokers</p> <p>15% of prisoners had been homeless immediately prior to custody, compared to a lifetime experience of homelessness of 3.5% in the wider population</p>	

	<p>42% of men and women in prison and 17.3% on probation suffered from depression, compared to just over 10% of the rest of the population</p> <p>it is broadly recognised that many prisoners have the biological characteristics of those who are 10 years older than them</p>	
--	--	--

<p><u>1.</u> Does this service go the heart of enabling a protected characteristic to access health and wellbeing services?</p>
<p>Yes</p>
<p><u>2.</u> Consultation</p>
<p>Guidance note: How have the groups and individuals been consulted with? What level of engagement took place. (If you have a consultation plan insert link or cut/paste highlights)</p>
<p>Stakeholders have been engaged in the development of the PCBC through a number of different routes. These include</p> <p>North Mersey Stroke Board (NMSB) – This is a formal monthly meeting whose membership includes senior managers from the 3 acute provider Trusts, 5 CCG’s, The Stroke Association and NHSE specialist commissioners.</p> <p>North Mersey Stroke Clinical Reference Group – A group of clinical experts who work in the North Mersey stroke services and the Strategic Clinical Network who have designed all workshops and provided clinical expertise to the PCBC.</p> <p>North Mersey Co-Design Workshops – Four workshops were held between July 2018 and February 2019. These workshops were open to all staff working in stroke services in North Mersey, including teams from Liverpool University Hospitals NHS Trust, Southport & Ormskirk Hospitals NHS Trust, and The Walton Centre NHS Trust.</p> <p>A group of stroke survivors, identified by The Stroke Association, were also involved in the workshops. The workshops agreed the case for change before undertaking a process of options development including appraising a long list and short list of options before recommending a preferred clinical model.</p>

During the session, attendees discussed and scored the shortlisted options for the proposal for the future stroke service model.

Key feedback obtained from the workshop included:

- There is a strong preference for the option of centralising hyper acute stroke services from the current three sites onto the Aintree site
- Acute stroke care and rehabilitation would need to be provided by Aintree Hospital,

There was a strong view across clinicians, commissioners, support services and **patients**, that stroke care could and should be improved. There was also a strong commitment to making consistently high-quality care available for all stroke patients, regardless of where they live, or are treated.

Feedback from engagement sessions with stroke survivors and their families was shared, alongside how it applied to the review and the options development work. The discussions centred on the pros and cons for each of the service models recommendations and encouraged teams to consider which would deliver the best experience and care for stroke patients and their relatives.

Key feedback obtained from the workshop included:

- Patients and representatives highlighted that they felt that the immediate aftercare following discharge could be greatly improved. There was strong support for bringing local stroke services together in a single location; ***however, some concerns were raised around distance to travel and the ability for emergency teams to get the patient to hospital in time***
- Some also highlighted issues around the lack of consistent support for family and friends

Lived experience engagement sessions - During autumn 2019 commissioners worked with the Stroke Association to visit six local groups for stroke survivors, to talk about the review and gather feedback from those with lived experience of hospital stroke services. The sessions involved 80 stroke survivors and more than 20 carers/volunteers. The information gathered from discussions with stroke survivors, their families and carers were written up into a report.

3. Have you identified any key gaps in service or potential risks that need to be mitigated

No – not at this stage in the process.

Risk	Required Action	By Who/ When
The consultation may not secure feedback from a cross	Part consultation strategy. Responses from written	Comms team / EDI team

section of protected characteristics.	questionnaires to be analysed by protected characteristic.	
Responses from consultation need to be disaggregated for equality analysis	Design consultation process so protected characteristics are easily identified	Comms team/EDI team Meeting on disaggregation of data between equality and comms team to agree process and timescales.
<p>Consultation processes need to include questions about quality-of-service patients received for stroke survivors</p> <p>Views on relocation of specific service element and any impact patients may have felt., specifically the timeliness and impact on treatment</p> <p>Information about potential impact of moving inpatient beds (e.g., travel) and possible mitigations post 72 hours</p>	Design of consultation process	Comms team

Section 7,8 & 9 to be completed post consultation

<p>4. Is there evidence that the Public Sector Equality Duties will be met (give details) Section 149: Public Sector Equality Duty (review all objectives and relevant sub sections)</p>
<p>PSED Objective 1: Eliminate discrimination, victimisation, harassment and any unlawful conduct that is prohibited under this act: (check specifically sections 19, 20 and 29)</p>
<p>Analysis post consultation</p>
<p>PSED Objective 2: Advance Equality of opportunity. (Check Objective 2 subsection 3 below and consider section 4)</p>
<p>Analysis post consultation</p>
<p>PSED Objective 2: Section 3. sub-section a) remove or minimise disadvantages suffered by people who share a relevant protected characteristic that are connected to that characteristic.</p>

Analysis post consultation
PSED Objective 2: Section 3. sub-section b) take steps to meet the needs of people who share a relevant protected characteristic that are different from the needs of people who do not share it
Analysis post consultation
PSED Objective 2: Section 3. sub-section c) encourage people who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such people is disproportionately low.
Analysis post consultation
PSED Objective 3: Foster good relations between persons who share a relevant protected characteristic and persons who do not share it. (Consider whether this is engaged. If engaged, consider how the project tackles prejudice and promotes understanding -between the protected characteristics)
Analysis post consultation
Health Inequalities: Have regard to the need to reduce inequalities between patients in access to health services and the outcomes achieved (s.14T);
[ENTER RESPONSE HERE]
PSED Section 2: Consider and make recommendation regards implementing PSED in to the commissioning process and service specification to any potential bidder/service provider (private/ public/charity sector)
Analysis post consultation
<u>5.</u> Recommendation to Board
Guidance Note: will PSED be met?
[ENTER RESPONSE HERE]
<u>6.</u> Actions that need to be taken
[ENTER RESPONSE HERE]

14.13 Appendix 13 Sensitivity Analysis

Table: Growth in Stroke Mimic and TIA patients at 0.5% year on year. – Based on 2018/19 data

Growth in 5 years @0.5% per year					
Grand Total					
Strokes		561	640	359	1,559
TIA		62	94	90	246
Mimics		206	92	103	401
Total		828	826	552	2,206

Table: Growth in Stroke Mimic and TIA patients at 0.5% year on year. – Based on 2019/20 data

Growth in 5 years @ 0.5% a year growth rate - against 19/20 data				
Patients admitted	Aintree	Royal Southport	Southport	Totals
Stroke	608	612	437	1657
TIA	88	59	90	237
Mimic	206	92	103	401
Total	902	763	630	2295

C3 Comprehensive Stroke Unit on Aintree site – rehab on S & O and Royal site

If growth was 0.05% over 5 years - extra activity

	Aintree				Royal				Southport				Grand Total
	Stroke	TIA	Other	Total	Stroke +	TIA +	Other +	Total	Stroke +	TIA	Other	Total	
Agreed Activity	38	6	10	54	-	-	-	-	9	-	-	-	54
Repatriate	-25			25	16			16				9	
Post >72 hours	13	6	10	29	16			16	9			9	54
Expected length of stay													
< 72 hours	3	2.4	3		0	0	0		0		0		
> 72 hours	4	0	3		0	0	0		0		0		
Rehab	12.4				12				13.6				
Bed days													
< 72 hours	114	14	30	158	-	-	-	-	-	-	-	-	-
> 72 hours	116		30	146	-	-	-	-	-	-	-	-	-
Rehab	161				192				122				
Beds required													
90% occupancy													
< 72 hours	0.3	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
> 72 hours	0.4	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Rehab	0.5			0.5	0.6			0.6	0.4			0.4	
Total Beds	1.2	0.0	0.2	1.4	0.6	0.0	0.0	0.6	0.4		0.0	0.4	

Bed Numbers	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	0.5	0.0	0.0		0.5
> 72 hours	0.4	0.0	0.0		0.4
Rehab	0.5			0.6	1.4
Total	1.4	0.0	0.4	0.6	2.4

1 bed for Tertiary
3 days creates too many beds at aintree

Staff Type	TBA		Staff Numbers				
	Minimum	NMSS	Aintree	Royal	Southport	Broadgreen	Total
	Per 5 beds		Aintree	Royal	Southport	Broadgreen	Total
<72 hours stroke							
WTE Nurses (Ratio 80:20) per bed	2.9	2.52	1.4	0.0	0.0		1.4
WTE Physiotherapist	1.02		0.1	0.0	0.0		0.1
WTE OT	0.95		0.1	0.0	0.0		0.1
WTE Speech Therapist	0.48		0.0	0.0	0.0		0.0
WTE Clinical Psychologist	0.28		0.0	0.0	0.0		0.0
WTE Dietician	0.21		0.0	0.0	0.0		0.0
Therapy assistants	0.5		0.0	0.0	0.0		0.0
Sub Total < 72 hours			1.7	0.0	0.0	0.0	1.7
>72 hours stroke							
WTE Nurses (Ratio 65:30) per bed	1.35		0.6	0.0	0.0	0.0	0.6
WTE Physiotherapist	1.18		0.1	0.0	0.0	0.0	0.1
WTE OT	1.13		0.1	0.0	0.0	0.0	0.1
WTE Speech Therapist	0.56		0.0	0.0	0.0	0.0	0.0
WTE Clinical Psychologist	0.28		0.0	0.0	0.0	0.0	0.0
WTE Dietician	0.21		0.0	0.0	0.0	0.0	0.0
Therapy Assistant	0.5		0.0	0.0	0.0	0.0	0.0
Sub Total > 72 hours			0.9	0.0	0.0	0.0	0.9
Rehab							
WTE Nurses (Ratio ??:?) per bed	1.35		0.7	0.0	0.5	0.8	2.0
WTE Physiotherapist	1.18		0.1	0.0	0.1	0.1	0.3
WTE OT	1.13		0.1	0.0	0.1	0.1	0.3
WTE Speech Therapist	0.56		0.1	0.0	0.0	0.1	0.2
WTE Clinical Psychologist	0.28		0.0	0.0	0.0	0.0	0.1
WTE Dietician	0.21		0.0	0.0	0.0	0.0	0.1
Therapy Assistants	0.5		0.0	0.0	0.0	0.1	0.1
Sub Total Rehab			1.0	0.0	0.8	1.2	3.1
Grand Total			3.7	0.0	0.8	1.2	5.7

RCP Standards

Workforce requirements	Band	Current Funding	RCP Staffing	Gap	Midpoint Pay per WTE	Current Funding (£)	RCP Staffing (£)	Variance (£)
Consultants	Cons	10	0.0	10.0	130,000	0	0	0
Consultant Nurses	B8A	1.0	0.0	1.0	58,225	0	0	0
Stroke Nurses	B7	20.3	0.0	20.3	48,526	0	0	0
Band 7 Nurses	B7	3.4	0.0	3.4	48,526	0	0	0
Qualified Nurses	B5	70.8	2.8	68.0	32,446	0	90,172	-90,172
UnQualified Nurses	B3	60.9	1.2	59.7	22,952	0	26,940	-26,940
Consultant Therapists (new)	B8A		0.0	0.0	58,225	0	0	0
WTE Physiotherapist	B7	16.2	0.5	15.7	48,526	0	26,444	-26,444
WTE OT	B7	14.9	0.5	14.4	48,526	0	25,198	-25,198
WTE Speech Therapist	B7	7.1	0.3	6.8	48,526	0	12,531	-12,531
WTE Clinical Psychologist	B8A	1.2	0.0	1.2	58,225	0	0	0
WTE Dietician	B7	4.1	0.1	4.0	48,526	0	4,839	-4,839
Therapy Assistants	B3	App17	0.2	#VALUE!	22,952	0	5,450	-5,450
Total Staffing		209.9	5.6	204.3		0	191,574	-191,574

14.14 Appendix 14 Model data - see sheets on attached – Based on 18/19 staffing and activity data

Model A2, Model B1, Model B3 etc

Financial Impact of each option	Option 1a Do nothing	Option 1b Enhancements	Option 2a Merge A & S	Option2b Merge A & R	Option3 Merge 3 + 3 Rehab	Option4 a Merge 3 + 2 Rehab	Option 4b Merge 3 + 2 Rehab	Comment
Direct Staffing Revenue costs	0	2,500,000	2,300,000	2,300,000	1,900,000	1,800,000	1,800,000	See next slide
Junior doctors 1 SPR			58,652	58,652	58,652	58,652	58,652	
Porters			14,386	17,250	23,000	23,000	23,000	Extra patients CT/MRI/ultrasound
NWAS	0	0	120,000	54,000	175,000	175,000	95,000	
Radiology			33,300	65,700	90,000	90,000	90,000	MRI - van capacity
Create ANNP's			100,000	100,000	100,000	100,000	100,000	Pay differential
Estates for sfm / hfm	0	0	375,000	375,000	375,000	875,000	875,000	Soft and Hard FM
Orthopdist	0	58,403	58,403	58,403	58,403	58,403	58,403	Band 5 1.8
Total Revenue	0	2,558,403	3,059,740	3,029,004	2,780,054	3,180,054	3,100,054	
Capital costs	0	80000	3,000,000	3,000,000	4,000,000	10,000,000	10,000,000	

A2 Do Nothing to configuration of services but work more collaboratively as a networked service

Protect beds - ie, 80% occupied

Activity and beds

	Aintree				Royal				Southport				Grand Total
	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total	
Agreed Activity	547	60	201	808	624	92	90	806	350	88	100	538	2152
Expected length of stay													
< 72 hours	3	2.4	3		3	3	3		3	2.2	3		
> 72 hours	15.4	0	3		3	0.75	2.8		13.6		2.4		
Rehab	0				12				0				
Bed days													
< 72 hours	1,641	144	603	2,388	1,872	276	270	2,418	1,050	194	300	1,544	
> 72 hours	8,424	-	603	9,027	1,872	69	252	2,193	4,760		240	5,000	
Rehab					7,488								
Beds required 90% occupancy													
< 72 hours	5.0	0.4	1.8	7.3	5.7	0.8	0.8	7.4	3.2	0.6	0.9	4.7	
> 72 hours	25.6	0.0	1.8	27.5	5.7	0.2	0.8	6.7	14.5		0.7	15.2	
Rehab					22.8			22.8					
Total Beds	30.6	0.4	3.7	34.7	34.2	1.1	1.6	36.8	17.7	0.6	1.6	19.9	

Bed Numbers

	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	7.3	7.4	4.7		19.3
> 72 hours	27.5	6.7	15.2		49.4
Rehab				22.8	22.8
Total	34.7	14.0	19.9	22.8	81.5

Staffing Levels

Staff Type	TBA		Staff Numbers				
	Miniumum	NMSS	Aintree	Royal	Southport	Broadgreen	Total
<72 hours stroke	Per 5 beds						
WTE Nurses (Ratio 80:20) per bed	2.9	2.52	21.1	21.3	13.6		56.1
WTE Physiotherapist	1.02		1.5	1.5	1.0		3.9
WTE OT	0.95		1.4	1.4	0.9		3.7
WTE Speech Therapist	0.48		0.7	0.7	0.5		1.9
WTE Clinical Psychologist	0.28		0.4	0.4	0.3		1.1
WTE Dietician	0.21		0.3	0.3	0.2		0.8
Therapy Assistants	0.5		0.7	0.7	0.5		1.9
Sub Total < 72 hours			26.1	26.1	16.3	0.0	68.4
>72 hours stroke							
WTE Nurses (Ratio 65:30) per bed	1.35	1.35	37.1	9.0	20.5	0.0	66.7
WTE Physiotherapist	1.18		6.5	1.6	3.6	0.0	11.7
WTE OT	1.13		6.2	1.5	3.4	0.0	11.2
WTE Speech Therapist	0.56		3.1	0.7	1.7	0.0	5.5
WTE Clinical Psychologist	0.28		1.5	0.4	0.9	0.0	2.8
WTE Dietician	0.21		1.2	0.3	0.6	0.0	2.1
Therapy Assistants	0.5		2.7	0.7	1.5	0.0	4.9
Sub Total > 72 hours			58.3	14.2	32.3	0.0	104.8
Rehab							
WTE Nurses (Ratio ??:?) per bed	1.35		0.0	0.0	0.0	30.8	30.8
WTE Physiotherapist	1.18		0.0	0.0	0.0	5.4	5.4
WTE OT	1.13		0.0	0.0	0.0	5.2	5.2
WTE Speech Therapist	0.56		0.0	0.0	0.0	2.6	2.6
WTE Clinical Psychologist	0.28		0.0	0.0	0.0	1.3	1.3
WTE Dietician	0.21		0.0	0.0	0.0	1.0	1.0
Therapy Assistants	0.5		0.0	0.0	0.0	2.3	2.3
Sub Total Rehab			0.0	0.0	0.0	48.4	48.4
Grand Total			84.4	40.3	49.2	48.4	222.5

RCP Standards

Workforce requirement	Band	Current Funding (WTE)	RCP Staffing (WTE)	Gap	Midpoint Pay per WTE	Current Funding (£)	RCP Staffing (£)	Variance (£)
Consultants	Cons	10.0 ****	19.4	-9.4	130,000	1,300,000	2,522,000	-1,222,000
Consultant Nurses (new)	B8A	1.0 *	1	0.0	58,225	58,225	58,225	0
Stroke Nurses	B7	22.3	22.3	0.0	48,526	1,082,140	1,082,140	0
Band 7 Nurses	B7	3.4 **	3	0.4	48,526	164,990	145,579	19,411
Qualified Nurses	B5	70.8	108.2	-37.4	32,446	2,296,224	3,509,796	-1,213,572
UnQualified Nurses	B3	60.9	45.3	15.6	22,952	1,397,776	1,039,980	357,796
Consultant Therapists	B8A			0.0	58,225	0	0	0
WTE Physiotherapist	B7	16.3	21.0	-4.7	48,526	790,981	1,017,853	-226,872
WTE OT	B7	15.1	20.0	-4.9	48,526	732,750	969,700	-236,950
WTE Speech Therapist	B7	6.9	9.9	-3.0	48,526	334,833	482,286	-147,453
WTE Clinical Psychologist	B8A	0.1 ****	2.2	-2.1	58,225	5,822	128,094	-122,272
WTE Dietician	B7	4.3	3.8	0.5	48,526	208,664	186,485	22,179
Therapy Assistants	B3	15.1	9.1	6.0	22,952	346,575	210,008	136,567
Total Staffing		226.2	265.3	-39.1		8,718,979	11,352,147	-2,633,167

B1 Consolidate Aintree and the Royal (onto Aintree Site) and leave S & O as an HASU

Activity and beds

	Aintree				Royal				Southport				Grand Total
	Stroke	TIA	Other	Total	Stroke *	TIA *	Other *	Total	Stroke *	TIA	Other	Total	
Agreed Activity	1,171	152	291	1,614	-	-	-	-	350	88	100	538	2,152
Repatriate	624			624	624			624					
Post >72 hours	547	152	291	990	624			624	350		100	538	2,152
Expected length of stay													
< 72 hours	3	2.4	3		0	0	0		3	2.2	3		
> 72 hours	3	0	3		0	0	0		13.6		2.4		
Rehab	12.4				12				0				
Bed Days													
< 72 hours	3513	364.8	873	4750.8	0	0	0	0	1050	264	300	1614	
> 72 hours	3513	0	873	4386	0	0	0	0	4760		240	5000	
Rehab	6782.8				7488								
Beds required													
90% occupancy													
< 72 hours	10.7	1.1	2.7	14.5	0.0	0.0	0.0	0.0	3.2	0.8	0.9	4.9	
> 72 hours	10.7	0.0	2.7	13.4	0.0	0.0	0.0	0.0	14.5		0.7	15.2	
Rehab	20.6			20.6	22.8			22.8					
Total Beds	42.0	1.1	5.3	48.5	22.8	0.0	0.0	22.8	17.7		1.6	19.3	

Bed Numbers	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	14.5	0.0	4.9		19.4
> 72 hours	13.4	0.0	15.2		28.6
Rehab	20.6			22.8	43.4
Total	48.5	0.0	20.1	22.8	91.4

Staffing Levels	Staff Numbers						
Staff Type	TBA		Aintree	Royal	Southport	Broadgreen	Total
	Minimum	NMSS	Aintree	Royal	Southport	Broadgreen	Total
<72 hours stroke	Per 5 beds						
WTE Nurses (Ratio 80:20) per bed	2.9	2.52	41.9	0.0	14.2		56.2
WTE Physiotherapist	1.02		3.0	0.0	1.0		4.0
WTE OT	0.95		2.7	0.0	0.9		3.7
WTE Speech Therapist	0.48		1.4	0.0	0.5		1.9
WTE Clinical Psychologist	0.28		0.8	0.0	0.3		1.1
WTE Dietician	0.21		0.6	0.0	0.2		0.8
Therapy Assistants	0.5		1.4	0.0	0.5		1.9
Sub Total < 72 hours			51.9	0.0	17.6	0.0	69.5
>72 hours stroke							
WTE Nurses (Ratio 65:30) per bed	1.35		18.0	0.0	20.5	0.0	38.6
WTE Physiotherapist	1.18		3.2	0.0	3.6	0.0	6.7
WTE OT	1.13		3.0	0.0	3.4	0.0	6.5
WTE Speech Therapist	0.56		1.5	0.0	1.7	0.0	3.2
WTE Clinical Psychologist	0.28		0.7	0.0	0.9	0.0	1.6
WTE Dietician	0.21		0.6	0.0	0.6	0.0	1.2
Therapy Assistants	0.5		1.3	0.0	1.5	0.0	2.9
Sub Total > 72 hours			28.3	0.0	32.3	0.0	60.6
Rehab							
WTE Nurses (Ratio ??:?) per bed	1.35		27.9	0.0	0.0	30.8	58.6
WTE Physiotherapist	1.18		4.9	0.0	0.0	5.4	10.3
WTE OT	1.13		4.7	0.0	0.0	5.2	9.8
WTE Speech Therapist	0.56		2.3	0.0	0.0	2.6	4.9
WTE Clinical Psychologist	0.28		1.2	0.0	0.0	1.3	2.4
WTE Dietician	0.21		0.9	0.0	0.0	1.0	1.8
Therapy Assistants	0.5		2.1	0.0	0.0	2.3	4.3
Sub Total Rehab			43.8	0.0	0.0	48.4	92.2
Grand Total			124.0	0.0	49.9	48.4	222.3

Workforce requirements	Band	Current Funding	RCP Staffing	Gap	Midpoint Pay per WTE	Current Funding (£)	RCP Staffing (£)	Variance (£)
Consultants	Cons	10	****	17.1	-7.1	130,000	2,223,000	-923,000
Consultant Nurses (new)	B8A	1.0	*	1.0	0.0	58,225	58,225	0
Stroke Nurses	B7	22.3		22.3	0.0	48,526	1,082,140	0
Band 7 Nurses	B7	3.4	**	3.4	0.0	48,526	164,990	0
Qualified Nurses	B5	70.8		108.1	-37.3	32,446	2,297,197	-1,211,662
UnQualified Nurses	B3	60.9		45.3	15.6	22,952	1,038,913	358,864
Consultant Therapists (new)	B8A				0.0	58,225	0	0
WTE Physiotherapist	B7	16.3		20.9	-4.6	48,526	790,981	-225,552
WTE OT	B7	15.1		20.0	-4.9	48,526	732,750	-235,674
WTE Speech Therapist	B7	6.9		9.9	-3.0	48,526	334,833	-146,825
WTE Clinical Psychologist	B8A	0.1	***	2.2	-2.1	58,225	5,822	-122,272
WTE Dietician	B7	4.3		3.8	0.5	48,526	208,664	22,401
Therapy Assistants	B3	15.1		9.1	6.0	22,952	346,575	136,817
Total Staffing		226.2		263.2	-37.0	8,719,953	11,066,856	-2,346,903

B3 Aintree and Southport and Ormskirk consolidate HASU –Royal HASU

	Aintree				Royal				Southport			
	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total
Agreed Activity	897	148	301	1,346	624	92	90	806				
Repatriate	350		-	350					350		-	-
Post >72 hours	547	148	301	996	624	92	90	806	350		-	350
Expected length of stay												
< 72 hours	3	2.4	3		3	3	3		0		0	
> 72 hours	3	0	3		3	0.75	2.8		0		3	
Rehab	12.4				12				13.6			
Bed days												
< 72 hours	2,691	355	903	3,949	1,872	276	270	2,418	-		-	-
> 72 hours	1,641	-	903	2,544	1,872	69	252	2,193	-		-	-
Rehab	6,783				7,488				4,760			
Beds required												
90% occupancy												
< 72 hours	8.2	1.1	2.7	12.0	5.7	0.8	0.8	7.4	0.0		0.0	0.0
> 72 hours	5.0	0.0	2.7	7.7	5.7	0.2	0.8	6.7	0.0		0.0	0.0
Rehab	20.6			20.6	22.8			22.8	14.5			14.5
Total Beds	33.8	1.1	5.5	40.4	34.2	1.1	1.6	36.8	14.5		0.0	14.5

Bed Numbers	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	12.0	7.4	0.0		19.4
> 72 hours	7.7	6.7	0.0		14.4
Rehab	20.6		14.5	22.8	57.9
Total	40.4	14.0	14.5	22.8	91.7

Staffing Levels	Staff Type	TBA		Staff Numbers					Total
		Minimum	NMSS	Aintree	Royal	Southport	Broadgreen		
				Aintree	Royal	Southport	Broadgreen		
<72 hours stroke		Per 5 beds							
WTE Nurses (Ratio 80:20) per bed	2.9	2.52	34.9	21.3	0.0			56.2	
WTE Physiotherapist	1.02		2.5	1.5	0.0			4.0	
WTE OT	0.95		2.3	1.4	0.0			3.7	
WTE Speech Therapist	0.48		1.2	0.7	0.0			1.9	
WTE Clinical Psychologist	0.28		0.7	0.4	0.0			1.1	
WTE Dietician	0.21		0.5	0.3	0.0			0.8	
Therapy Assistant	0.5		1.2	0.7	0.0			1.9	
Sub Total <72 hours			43.1	26.4	0.0	0.0		69.5	
>72 hours stroke									
WTE Nurses (Ratio 65:30) per bed	1.35		10.5	9.0	0.0	0.0		19.5	
WTE Physiotherapist	1.18		1.8	1.6	0.0	0.0		3.4	
WTE OT	1.13		1.8	1.5	0.0	0.0		3.3	
WTE Speech Therapist	0.56		0.9	0.7	0.0	0.0		1.6	
WTE Clinical Psychologist	0.28		0.4	0.4	0.0	0.0		0.8	
WTE Dietician	0.21		0.3	0.3	0.0	0.0		0.6	
Therapy Assistant	0.5		0.8	0.7	0.0	0.0		1.4	
Sub Total >72 hours			16.4	14.2	0.0	0.0		30.6	
Rehab									
WTE Nurses (Ratio 7:?) per bed	1.35		27.9	0.0	19.6	30.8		78.2	
WTE Physiotherapist	1.18		4.9	0.0	3.4	5.4		13.7	
WTE OT	1.13		4.7	0.0	3.3	5.2		13.1	
WTE Speech Therapist	0.56		2.3	0.0	1.6	2.6		6.5	
WTE Clinical Psychologist	0.28		1.2	0.0	0.8	1.3		3.2	
WTE Dietician	0.21		0.9	0.0	0.6	1.0		2.4	
Therapy Assistant	0.5		2.1	0.0	1.4	2.3		5.8	
Sub Total Rehab			43.8	0.0	30.7	48.4		122.9	
Grand Total			103.4	40.6	30.7	48.4		223.1	

Workforce requirements	Band	Current Funding	RCP Staffing	Gap	Midpoint Pay per WTE	Current Funding (£)	RCP Staffing (£)	Variance (£)	
Consultants	Cons	10	****	17.1	-7.1	130,000	1,300,000	2,223,000	-923,000
Consultant Nurses (new)	B8A	1.0	*	1.0	0.0	58,225	58,225	58,225	0
Stroke Nurses	B7	22.3		22.3	0.0	48,526	1,082,140	1,082,140	0
Band 7 Nurses	B7	3.4	**	3.4	0.0	48,526	164,990	164,990	0
Qualified Nurses	B5	70.8		108.5	-37.7	32,446	2,297,197	3,519,029	-1,221,832
UnQualified Nurses	B3	60.9		45.4	15.5	22,952	1,397,776	1,042,674	355,102
Consultant Therapists (new)	B8A				0.0	58,225	0	0	0
WTE Physiotherapist	B7	16.3		21.0	-4.7	48,526	790,981	1,020,475	-229,494
WTE OT	B7	15.1		20.0	-4.9	48,526	732,750	972,197	-239,448
WTE Speech Therapist	B7	6.9		10.0	-3.1	48,526	334,833	483,528	-148,696
WTE Clinical Psychologist	B8A	0.1	***	2.0	-1.9	58,225	5,822	116,449	-110,627
WTE Dietician	B7	4.3		3.9	0.4	48,526	208,664	186,966	21,697
Therapy Assistants	B3	15.1		9.2	5.9	22,952	346,575	210,550	136,025
Total Staffing		226.2		263.7	-37.5		8,719,953	11,080,225	-2,360,272

E4/1 Aintree CSC only one other rehab unit @ S&O or Royal

	Aintree				Royal				Southport			
	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total
Agreed Activity	1,521.0	240.0	391.0	2,152.0	-	-	-	-	-	-	-	-
Repatriate	624.0	-	-	624.0	624.0	-	-	624.0	-	-	-	-
Post >72 hours	897.0	240.0	391.0	1,528.0	624.0	-	-	624.0	-	-	-	-
Expected length of stay												
< 72 hours	3	2.4	3		0	0	0		0	0	0	
> 72 hours	3	0	3		0	0	3		0	0	0	
Rehab	12.4				12				0			
Bed days												
< 72 hours	4,563	576	1,173	6,312	-	-	-	-	-	-	-	-
> 72 hours	4,563	-	1,173	5,736	-	-	-	-	-	-	-	-
Rehab	11,123				7,488							
Beds required	90% occupancy											
< 72 hours	13.9	1.8	3.6	19.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
> 72 hours	13.9	0.0	3.6	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rehab	33.9			33.9	22.8			22.8				
Total Beds	61.6	1.8	7.1	70.5	22.8	0.0	0.0	22.8	0.0	0.0	0.0	0.0

	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	19.2	0.0	0.0		19.2
> 72 hours	17.5	0.0	0.0		17.5
Rehab	33.9			22.8	56.7
Total	70.5	0.0	0.0	22.8	93.3

Beds go up due to Los at Aintree

Staffing Levels	Staff Numbers					
	TBA	Staff Numbers				
	Minimum	Aintree	Royal	Southport	Broadgreen	Total
<72 hours stroke	Per 5 beds					
WTE Nurses (Ratio 80:20) per bed	2.9	55.7	0.0	0.0		55.7
WTE Physiotherapist	1.02	3.9	0.0	0.0		3.9
WTE OT	0.95	3.7	0.0	0.0		3.7
WTE Speech Therapist	0.48	1.8	0.0	0.0		1.8
WTE Clinical Psychologist	0.28	1.1	0.0	0.0		1.1
WTE Dietician	0.21	0.8	0.0	0.0		0.8
Therapy Assistant	0.5	1.9	0.0	0.0		1.9
Sub Total < 72 hours		68.9	0.0	0.0	0.0	68.9
>72 hours stroke						
WTE Nurses (Ratio 65:30) per bed	1.35	23.6	0.0	0.0	0.0	23.6
WTE Physiotherapist	1.18	4.1	0.0	0.0	0.0	4.1
WTE OT	1.13	3.9	0.0	0.0	0.0	3.9
WTE Speech Therapist	0.56	2.0	0.0	0.0	0.0	2.0
WTE Clinical Psychologist	0.28	1.0	0.0	0.0	0.0	1.0
WTE Dietician	0.21	0.7	0.0	0.0	0.0	0.7
Therapy Assistant	0.5	1.7	0.0	0.0	0.0	1.7
Sub Total > 72 hours		37.1	0.0	0.0	0.0	37.1
Rehab						
WTE Nurses (Ratio ??:?) per bed	1.35	45.7	0.0	0.0	30.8	76.5
WTE Physiotherapist	1.18	8.0	0.0	0.0	5.4	13.4
WTE OT	1.13	7.7	0.0	0.0	5.2	12.8
WTE Speech Therapist	0.56	3.8	0.0	0.0	2.6	6.3
WTE Clinical Psychologist	0.28	1.9	0.0	0.0	1.3	3.2
WTE Dietician	0.21	1.4	0.0	0.0	1.0	2.4
Therapy Assistant	0.5	3.4	0.0	0.0	2.3	5.7
Sub Total Rehab		71.6	0.0	0.0	48.4	120.2
Grand Total		177.6	0.0	0.0	48.4	226.2

Workforce requirements	Band	Current Funding	RCP Staffing	Gap	Midpoint Pay per WTE	Current Funding (£)	RCP Staffing (£)	Variance (£)
Consultants	Cons	10 ****	14.3	-4.3	130,000	1,300,000	1,859,000	-559,000
Consultant Nurses (new)	B8A	1.0 *	1.0	0.0	58,225	58,225	58,225	0
Stroke Nurses	B7	20.3	15.3	5.0	48,526	985,087	742,455	242,632
Band 7 Nurses	B7	3.4 **	3.0	0.4	48,526	164,990	145,579	19,411
Qualified Nurses	B5	70.8	109.6	-38.8	32,446	2,297,197	3,556,563	-1,259,366
UnQualified Nurses	B3	60.6	46.2	14.4	22,952	1,390,891	1,059,552	331,339
Consultant Therapists (new)	B8A			0.0	58,225	0	0	0
WTE Physiotherapist	B7	16.2	21.4	-5.2	48,526	786,129	1,038,997	-252,868
WTE OT	B7	14.9	20.4	-5.5	48,526	723,044	989,978	-266,933
WTE Speech Therapist	B7	7.1	10.1	-3.0	48,526	344,538	492,325	-147,787
WTE Clinical Psychologist	B8A	1.2 ***	2.2	-1.0	58,225	69,869	128,094	-58,225
WTE Dietician	B7	4.1	3.9	0.2	48,526	198,959	190,216	8,742
Therapy Assistants	B3	15.8	9.3	6.5	22,952	362,641	214,210	148,431
Total Staffing		225.4	256.8	-31.4		8,681,570	10,475,154	-1,793,624

C3 Comprehensive Stroke Unit on Aintree site – rehab on S & O and Royal site

	Aintree				Royal				Southport				Grand Total
	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total	Stroke	TIA	Other	Total	
Agreed Activity	1521	240	391	2,152	-	-	-	-	-	-	-	-	2,152
Repatriate	-974			974	624			624	350			350	
Post >72 hours	547	240	391	1,178	624			624	350			350	2,152
Expected length of stay													
< 72 hours	3	2.4	3		0	0	0		0		0		
> 72 hours	3	0	3		0	0	0		0		0		
Rehab	12.4				12				13.6				
Bed days													
< 72 hours	4,563	576	1,173	6,312	-	-	-	-	-	-	-	-	-
> 72 hours	3,513	-	1,173	4,686	-	-	-	-	-	-	-	-	-
Rehab	6,783				7,488				4,760				
Beds required													
90% occupancy													
< 72 hours	13.9	1.8	3.6	19.2	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
> 72 hours	10.7	0.0	3.6	14.3	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Rehab	20.6			20.6	22.8			22.8	14.5			14.5	
Total Beds	45.2	1.8	7.1	54.1	22.8	0.0	0.0	22.8	14.5		0.0	14.5	

Bed Numbers	Aintree	Royal	Southport	Broadgreen	Total
< 72 hours	19.2	0.0	0.0		19.2
> 72 hours	14.3	0.0	0.0		14.3
Rehab	20.6		14.5	22.8	57.9
Total	54.1	0.0	14.5	22.8	91.4

1 bed for Tertiary
3 days creates too many beds at aintree

Staffing Levels	Staff Numbers						
	TBA		Staff Numbers				
	Minimum	NMSS	Aintree	Royal	Southport	Broadgreen	Total
<72 hours stroke	Per 5 beds		Aintree	Royal	Southport	Broadgreen	Total
WTE Nurses (Ratio 80:20) per bed	2.9	2.52	55.7	0.0	0.0		55.7
WTE Physiotherapist	1.02		3.9	0.0	0.0		3.9
WTE OT	0.95		3.7	0.0	0.0		3.7
WTE Speech Therapist	0.48		1.8	0.0	0.0		1.8
WTE Clinical Psychologist	0.28		1.1	0.0	0.0		1.1
WTE Dietician	0.21		0.8	0.0	0.0		0.8
Therapy assistants	0.5		1.9	0.0	0.0		1.9
Sub Total < 72 hours			68.9	0.0	0.0	0.0	68.9
>72 hours stroke							
WTE Nurses (Ratio 65:30) per bed	1.35		19.3	0.0	0.0	0.0	19.3
WTE Physiotherapist	1.18		3.4	0.0	0.0	0.0	3.4
WTE OT	1.13		3.2	0.0	0.0	0.0	3.2
WTE Speech Therapist	0.56		1.6	0.0	0.0	0.0	1.6
WTE Clinical Psychologist	0.28		0.8	0.0	0.0	0.0	0.8
WTE Dietician	0.21		0.6	0.0	0.0	0.0	0.6
Therapy Assistant	0.5		1.4	0.0	0.0	0.0	1.4
Sub Total > 72 hours			30.3	0.0	0.0	0.0	30.3
Rehab							
WTE Nurses (Ratio ??:?) per bed	1.35		27.9	0.0	19.6	30.8	78.2
WTE Physiotherapist	1.18		4.9	0.0	3.4	5.4	13.7
WTE OT	1.13		4.7	0.0	3.3	5.2	13.1
WTE Speech Therapist	0.56		2.3	0.0	1.6	2.6	6.5
WTE Clinical Psychologist	0.28		1.2	0.0	0.8	1.3	3.2
WTE Dietician	0.21		0.9	0.0	0.6	1.0	2.4
Therapy Assistants	0.5		2.1	0.0	1.4	2.3	5.8
Sub Total Rehab			43.8	0.0	30.7	48.4	122.9
Grand Total			143.0	0.0	30.7	48.4	222.1

RCP Standards

Workforce requirements	Band	Current Funding	RCP Staffing	Gap	Midpoint Pay per WTI	Current Funding (£)	RCP Staffing (£)	Variance (£)
Consultants	Cons	10	14.0	-4.0	130,000	1,300,000	1,820,000	-520,000
Consultant Nurses	B8A	1.0	1.0	0.0	58,225	58,225	58,225	0
Stroke Nurses	B7	22.3	17.3	5.0	48,526	1,082,140	839,508	242,632
Band 7 Nurses	B7	3.4	3.0	0.4	48,526	164,990	145,579	19,411
Qualified Nurses	B5	70.8	107.9	-37.1	32,446	2,297,197	3,501,960	-1,204,763
UnQualified Nurses	B3	60.9	45.3	15.6	22,952	1,397,776	1,038,754	359,022
Consultant Therapists (new)	B8A			0.0	58,225	0	0	0
WTE Physiotherapist	B7	16.3	21.0	-4.7	48,526	790,981	1,017,034	-226,052
WTE OT	B7	15.1	20.0	-4.9	48,526	732,750	968,945	-236,196
WTE Speech Therapist	B7	6.9	9.9	-3.0	48,526	334,833	481,902	-147,069
WTE Clinical Psychologist	B8A	0.1	3.3	-3.2	58,225	5,822	192,141	-186,319
WTE Dietician	B7	4.3	3.8	0.5	48,526	208,664	186,308	22,356
Therapy Assistants	B3	15.1	9.1	6.0	22,952	346,575	209,808	136,767
Total Staffing		226.2	255.6	-29.4		8,719,953	10,460,163	-1,740,210

14.15 Appendix 15 North Mersey Stroke Board Terms of Reference

North Mersey Stroke Board

Terms of Reference

Document Control	
Title	North Mersey Stroke Board
Purpose / Target Audience	To document the Terms of Reference of the North Mersey Stroke Board
Governance Route / Approved By	Committee in Common (Liverpool, Knowsley, South Sefton, Southport & Formby CCG's)
Author	Karl McCluskey, Director of Strategy & Outcomes South Sefton & Southport and Formby CCG.
Date Created	6.7.19
Date Approved	July 2019
Version	V0.7
Date Last Amended	05.01.21
Review Date	August 2021

Document History			
Date	Version	Author(s)	Description of Amendments
3.4.19	V0.1	Karl McCluskey, Director of Strategy & Outcomes	Creation of initial draft
6.7.19	V0.2	Karl McCluskey, Director of Strategy & Outcomes	Amended to reflect CIC Proposal
15.7.19	V0.3	Karl McCluskey, Director of Strategy & Outcomes	Amended following NM Stroke Board Meeting and feedback on 11 th July 2019
22.7.19	V0.4	Sylvia Jerabek, PA to Karl McCluskey	Membership changes – addition of Cheshire and Merseyside at 2.2 and 4.3
	V0.5	Sylvia Jerabek, PA to Karl McCluskey	Membership changes
27.9.19	V0.6	Sylvia Jerabek, PA to Karl McCluskey	NM Board Change request - Amendment re addition of box for NHSE Spec /Com in the chart at 5.3 page four
05.01.21	V.07	Julie Byrne, PA to Carole Hill	Updated membership

1. Purpose of the Terms of Reference

- 1.1 This document describes the Terms of Reference of the North Mersey Stroke Board for the footprint served by Liverpool CCG, Knowsley CCG, South Sefton CCG and Southport & Formby CCG.
- 1.2 This document describes the purpose, responsibilities, membership, authority and governance role of the Board in relation to the review of Stroke Services across North Mersey.
- 1.3 The Terms of Reference will be kept under review as the Stroke programme of work develops and progresses.

2. Purpose of the North Mersey Stroke Board

- 2.1 The North Mersey healthcare system and its partners, in collaboration between the local health and care organisations has prioritised a review of Stroke services and the needs of the local population and to redesign how Stroke Care (End to End) will be delivered.

The Stroke Programme aims to develop a strategic case for change for stroke services to ensure the sustainable delivery of those services, by developing clinically led models of care within the context of the wider system. And informed by national best practice and guidelines.

The Stroke Board has been established to: -

- Have overall oversight of the Stroke Programme and portfolio of projects.
- Be assured of the delivery of the outputs from the portfolio of projects
- Assure the outputs of the programme are delivered
- Address any programme risks and issues.
- Ensure that the programme is progressed to PCBC and public consultation.

- 2.2 The Stroke Board and its members will: -

- Act as ambassadors for the Stroke Programme, including representing at clinical and public events, to the media and to relevant bodies as required.
- Provide programme oversight for the work of the Stroke Programme and contribute to the development of a strategic case for change and supporting business case.
- Provide non-partisan leadership to the programme, ensuring the programme develops robust proposals for system-wide models of end-to-end care and for making recommendations to the Joint Committee and Committee in Common, CCG Governing Bodies and respective Trust Boards.
- Manage the interdependencies and resolve any conflicts between portfolios of projects.
- Ensure that the needs of patients and communities are understood.
- Seek external clinical and professional advice where specialist or independent review is required.
- Provide leadership and oversight of the emerging and final proposals for service changes.

- Ensure alignment with related programmes across the Cheshire and Merseyside Health System.
- Disseminate developments in the Stroke Programme to the Cheshire & Merseyside Healthcare Partnership so that these can be shared.

3. Responsibilities

- 3.1 Lead the development of implementable plans for a sustainable (clinical, finance, workforce) stroke service across North Mersey.
- 3.2 Establish the required governance to enable decision-making in a manner that follows the necessary Commissioning and NHS England approval routes.
- 3.3 Review and endorse the outputs developed and produced by the Project Team and Clinical Reference Group
- 3.4 Review the plans for the programme and direct and inform the content of these plans as appropriate.
- 3.5 Manage conflicts and interdependencies between programme workstreams in order to create a cohesive plan for services currently provided to the population of North Mersey.
- 3.6 Prioritise and recommend options for the future configuration of services.
- 3.7 Ensure the outputs are focused upon “place-based” population needs for access to appropriate services rather than organisational needs.

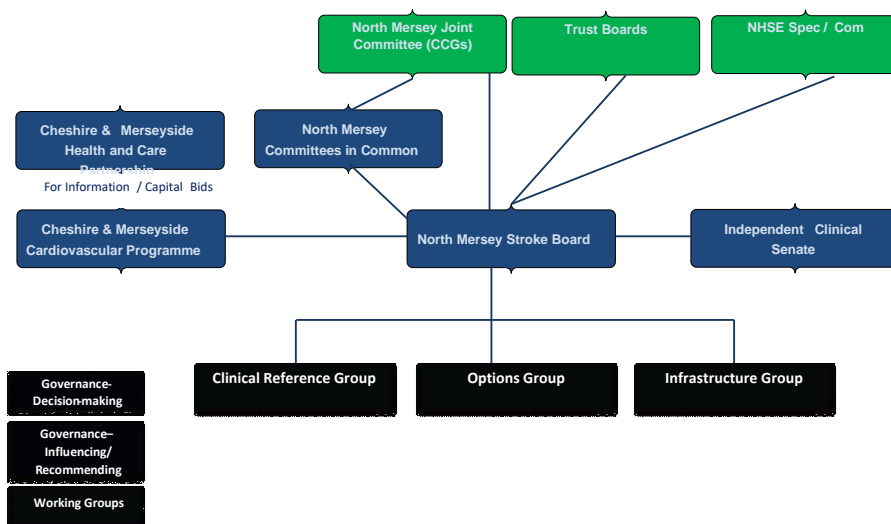
4. Portfolio of Projects

- 4.1 The Stroke Board will provide oversight of the programme projects that are tasked with the design and delivery of the programme priorities:
 - **Hyperacute Services:**
 - Clinically led model of care
 - Formalised network agreements with partner organisations
 - Agreement of financial frameworks, engagement and if required, consultation processes
 - **End to End Services**
 - Joint commissioning view of future of community provision e.g., ESD and standardisation of services to be commissioned.
 - Integration of acute and community provision model of care agreed irrespective of organisational structures.
 - **New models of care**
 - Clinically led models of care to address the Case for Change
- 4.2 The Stroke Board will regularly review the membership, structure and plans of the workstream sub-groups to ensure that they remain relevant to the objectives of the Programme, making changes as required.
- 4.3 The Stroke Board will function to align, co-ordinate and unify the Stroke work of the Cheshire and Merseyside Health and Care Partnership. Proposals and recommendations will also reflect, and be based upon, the plans emerging from the wider Cheshire & Merseyside Acute Sustainability Programme and any other co-dependent programmes.

5. Governance

- 5.1. The Board is accountable to the North Mersey Joint CCG Committee and Committee in Common, CCG Governing Bodies and respective Trust Boards.
- 5.2. The Board will report on a monthly basis to the Joint Committee and Committee in Common through the SRO.
- 5.3. The Governance structure within which the Stroke Board will operate is set out below.

STROKE GOVERNANCE STRUCTURE



- 5.4. A risk register will be maintained by the Board.

6. Co-dependencies

- 6.1 The Programme and the workstream sub-groups will need to design, model, test and assure proposals for service reconfiguration that take into consideration the impact of and on a number of other transformation programmes as appropriate.

7. Accountability and Authority

- 7.1. The Board is authorised to instigate any activity within its Terms of Reference.
- 7.2. Members of the Board are required to participate as representatives of health, care and wellbeing services for the populations of North Mersey.

- 7.3. Members of the Board will act as ambassadors of the Programme within their own organisations enabling support for any approvals required and ensuring barriers to change are effectively mitigated.

8. Membership of the North Mersey Stroke Board

- 8.1. This is a strategically important function. Senior representatives will be sought as members of the Board and adequate representation from the required specialties and professions will be sought.
- 8.2. The Board reserves the authority to amend the membership of the Group if required, to ensure that it can discharge its responsibilities adequately.
- 8.3. Members of the Board are required to attend at least 9 meetings per annum and in the event of a member not being able to attend a meeting, feedback on key agenda items will be provided by the member prior to the meeting.
- 8.4. The Board is proposed to comprise the following members: -

Name	Organisation
Carole Hill (Chair)	Director of Strategy, Communications and Integration, Liverpool CCG
Jan Ledward (SRO)	Stroke SRO C&M HCP, Liverpool CCG
Nik Sharma	Clinical Lead Strategic, NWCSCN & Divisional Medical Director, LUHFT
Patricia O Keefe	Integrated Stroke Delivery Network Programme Manager, Northwest Coast Clinical Network, NHSIE
Billie Dodd	Deputy Director of Commissioning & Delivery, Southport & Formby CCG, Sefton CCG
Mark Carmichael	Assistant Director of Operations for Urgent Care, Southport & Ormskirk NHS Trust
Ian Jones	Director of Finance and Information, LUHFT
John Collins	Consultant Paramedic, NWAS
Jennifer Gardner	Associate Director, Stroke Association (Northwest)
Jan Ross	Director of Operations and Strategy, WCNN
Beth Weston	Chief Operating Officer, Aintree University Hospital
Patrick McDonald	Clinical Lead, Clinical Reference Group, Southport & Ormskirk NHS Trust
Stephen Astles	Head of Commissioning - Knowsley CCG
Joanne Furlong	Service Redesign Manager, West Lancashire CCG
Helen Murphy	Assistant Director of Integration, LUHFT
Neil Holland	Deputy Chief Operating Officer, LUHFT
Roz Jones	Acute Transformation Lead, Specialised Commissioning
Paula Guest	Head of Planning and Delivery, Liverpool CCG
Shaun Curran	Director of Operations, Specialist Medicine, LUHFT
Nina Russell	Director of Strategy, Southport and Ormskirk NHS Trust

- 8.5. The attendance of additional Clinical and Local Authority representatives will be requested as and when required.

9. Quorum

- 9.1. The Board will not be a decision-making forum. It will make recommendations to Joint Committee and Committee in Common, CCG Governing Bodies and respective Trust Boards.
- 9.2. The Board shall be considered quorate when one representative or deputy is present from each organisation.

10. Meetings

- 10.1. It is expected that the Programme Board will meet monthly initially.
- 10.2. The meetings will be run by the Chair. In the event of the Chair's absence the meeting shall be chaired by the Vice Chair.
- 10.3. The Chair may at any time convene extraordinary meetings to consider business that requires urgent attention or when required to manage significant risks.
- 10.4. Representatives from other organisations may be invited to attend meetings to speak on specific matters.
- 10.5. Access to meetings may be granted to other professional colleagues with the permission of the Chair.

11. Agendas and Minutes

- 11.1. Supporting papers for agenda items are required to be with the meeting Administrator 5 working days prior to the meeting for agreement and consultation with the Chair.
- 11.2. The agenda and supporting papers will be circulated 3 working days prior to the meeting to all members of the Delivery Group.
- 11.3. Minutes of the meetings will be taken by administration support and distributed to the members of the Board within 7 working days after the meeting.

12. Declarations of Interests

- 12.1. Individuals contracted to work with or appointed to the Programme or workstream sub-groups will comply with the necessary standard of business conduct and policy including the requirements for declaring conflicts of interest.
- 12.2. "Declaration of Interests" will be a standing item on all agendas and any declarations will be recorded within the minutes of that meeting.

13. Confidentiality and Information Governance

- 13.1. All papers for the North Mersey Stroke Board Group should be considered as confidential.
- 13.2. Members of the Board may be asked to sign a confidentiality agreement.

14.16 Appendix 16 Clinical Reference Group Terms of Reference

North Mersey Stroke Review – Clinical Reference Group

Terms of Reference

Document Control	
Title	North Mersey Stroke Review – Clinical Reference Group
Purpose / Target Audience	To document the Terms of Reference of the North Mersey Stroke Review Clinical Reference Group
Governance Route / Approved By	North Mersey Stroke Board
Author	Jeff Johnston, Associate Director Merger Team
Date Create	13.7.19
Date Approved	
Version	V0.2
Date Last Amended	23.2.21
Review Date	23.8.21

Document History			
Date	Version	Author(s)	Description of Amendments
16.4.19	V0.1	Jeff Johnston, Associate Director Merger Team	Creation of initial draft
25.7.19	V0.2	Jeff Johnston, Associate Director Merger Team	Amended after feedback from informal meeting CRG
23.2.21	V0.3	Trish O’Keefe Programme Lead C&M ISDN	Amended membership Amended purpose of group

1. Purpose of the Terms of Reference

- 1.1 This document describes the purpose, responsibilities, membership, authority and governance role of the Clinical Reference Group in relation to the review of Stroke Services across North Mersey.
- 1.2 The Terms of Reference will be kept under review as the Stroke programme of work develops and progresses.

2. Purpose of the North Mersey Stroke Clinical Reference Group

- 2.1 The North Mersey healthcare system and its partners, in collaboration between the local health and care organisations has prioritised a review of Stroke services and the needs of the local population and to redesign how stroke Care will be delivered.

The Stroke Programme aims to develop a strategic case for change for stroke services to ensure the sustainable delivery of those services, by developing clinically led models of care within the context of the wider system. And informed by national best practice and guidelines.

The Clinical Reference Group will provide the clinical expertise to the Programme team to enable the production of a Pre-Consultation Business Case for Acute Stroke Services, which will consider all possible options, using robust methodology which can provide sufficient assurance to Commissioners and NHSE.

Commissioners are required to follow the structured assurance process when conducting service reconfiguration, as set out in the NHSE document; *“Planning, assuring and delivering service change for patients: A good practice guide for commissioners on the NHS England assurance process for major service changes and reconfigurations”* 250. The CRG will follow this process in all of its work.

The North Mersey Stroke Clinical Reference Group will provide support to the programme of work by: -

- Reviewing the work completed to date in terms of the Outline Service Change Proposal;
- Establish a robust case for change
- Conduct a robust options appraisal process for the future delivery of Stroke services;
- Ensure that all stakeholders are engaged in the development of options and the PCBC;
- Make recommendations for the future delivery of these services; and
- Produce a pre-consultation business case.
- Review activity and provide oversight to the North Mersey Integrated Stroke Community CRG.

2.2 The North Mersey Stroke Clinical Reference Group and its members will: -

- Act as ambassadors for the Stroke Programme, including representing at clinical and public events, and to relevant bodies as required.
- Provide programme oversight for the work of the Stroke Programme and provide clinical expertise to the development of a strategic case for change and supporting business case.
- Provide non-partisan leadership to the programme, ensuring the programme develops robust proposals for system-wide models of end-to-end care and for making recommendations to the North Mersey Stroke Board.
- Seek external clinical and professional advice where specialist or independent review is required; clinical senate.

3. Responsibilities

3.1 Report into the North Mersey Stroke Board

3.2 Provide clinical expertise to the review of the outline service change proposal

3.3 Design and support workshops generated from the options group

- 3.4 Ensure the work stream work is completed to agreed timeframes.
- 3.5 Scrutinise the work and ensure the clinical component is robust.
- 3.6 Participate in the options development and appraisal process.
- 3.7 Ensure the outputs are focused upon “place-based” population needs for access to appropriate services rather than organisational needs.
- 3.8 Make recommendations to the North Mersey Board on the future delivery of stroke services

4. Governance

- 4.1 The Group is accountable to the North Mersey Stroke Board.
- 4.2 The Board will report to the North Mersey Stroke Board after each meeting.
- 4.3 The Governance structure within which the Group will operate is set out below.
- 4.4 A risk register will be maintained by the Group.

5. Co-dependencies

- 5.1 The Clinical Reference Group will need to design, model, test and assure proposals for service reconfiguration that take into consideration the impact of and on a number of other services and transformation programmes as appropriate.

6. Accountability and Authority

- 6.1 The Group is authorised to instigate any activity within its Terms of Reference.

7. Membership of the North Mersey Clinical Reference Group

- 7.1 This is an important function. Senior representatives will be sought as members of the Group and adequate representation from the required professions will be sought.
- 7.2 The Group reserves the authority to amend the membership of the Group if required, to ensure that it can discharge its responsibilities adequately.
- 7.3 Members of the Group are required to attend at **least 9 meetings** per annum and in the event of a member not being able to attend a meeting, feedback on key agenda items will be provided by the member prior to the meeting.
- 7.4 The Board is proposed to comprise the following members: -

Name	Organisation
Chair	Rotating Clinical Lead, North Mersey
Claire Cullen	Care Group Director, LUHFT
Fatima Hussain	Clinical Lead, LUHFT
Patrick McDonald	Clinical Lead, Southport and Ormskirk NHS Trust
Martin Wilson	Clinical Lead, Walton Centre NHS Trust
Patricia O'Keefe	Programme Lead, C&M ISDN
Paula Guest	Programme Manager, Liverpool CCG
Rachel Lucidarme	Lead Therapist, LUHFT
Steph Clay	Lead Therapist, LUHFT
Debbie Martin	Lead Nurse, LUHFT
Helen Murphy	Assistant Director of Integration, LUHFT
Alan Burke	Senior Project Manager, LUHFT
Nik Sharma	Clinical Lead C&M ISDN
Mark Griffiths	Clinical Psychologist, LHCH

8. Quorum

- 8.1 The Group will not be a decision-making forum. It will make recommendations to North Mersey Stroke Board.
- 8.2 The Group shall be considered quorate when one representative or deputy is present from each professional group.

9. Meetings

- 9.1 It is expected that the Group will meet once to agree the scope of work and leaders and then twice more to monitor progress and finalise information.
- 9.2 The meetings will be run by the Chair. In the event of the Chair's absence the meeting shall be chaired by the Vice Chair (alternate clinical lead).
- 9.3 The Chair may at any time convene extraordinary meetings to consider business that requires urgent attention or when required to manage significant risks.
- 9.4 Representatives from other organisations may be invited to attend meetings to speak on specific matters.
- 9.5 Access to meetings may be granted to other professional colleagues with the permission of the Chair.

10. Agendas and Minutes

- 10.1 Supporting papers for agenda items are required to be with the meeting Administrator 5 working days prior to the meeting for agreement and consultation with the Chair.
- 10.2 The agenda and supporting papers will be circulated 3 working days prior to the meeting to all members of the Clinical Reference Group.
- 10.3 Minutes of the meetings will be taken by administration support from ISDN and distributed to the members of the Board within 7 working days after the meeting.

11. Declarations of Interests

- 11.1 Individuals contracted to work with or appointed to the workstream sub-groups will comply with the necessary standard of business conduct and policy including the requirements for declaring conflicts of interest.
- 11.2 “Declaration of Interests” will be a standing item on all agendas and any declarations will be recorded within the minutes of that meeting.

12. Confidentiality and Information Governance

- 12.1 All papers for the Group should be considered as confidential.
- 12.2 Members of the Group may be asked to sign a confidentiality agreement.

14.17 Appendix 17 Long List of Options Appraisal

Scoring Table - Long List of options																					
Criteria	Options																				
	Current Configuration		Consolidate three units to two HASU's				Create CSC and 2 Rehab units				Create one CSC				Create one CSC and one Rehab						3 CSC's
	A1	A2	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	E1	E2	E3	E4	E5	E6	F1
Patient Outcomes & experience	-4	0	4	-3	1	-6	-1	-8	6	-2	-3	-4	-6	-8	-1	-4	0	3	-9	-9	2
Clinical Sustainability	-7	-0.5	-1	-5.5	0	-7	-2	-6	6	-6	-2	-3	-8	-9	4	1	1	4	-9	-9	-8
Alignment and Strategic fit	-12	-6.5	-3	-5	-1	-8	-2	-6	6	-7	-4	-5	-5	-6	0	-5	-1	4	-9	-9	-3
Deliverability	-8	-3	-5	-9	-3	-8	-4	-9	5	-7	-9	-9	-8	-9	1	-9	-5	0	-9	-9	-9
Execution and Risk	-9	-5.5	-1	-6	-1	-8	-4	-8	2	-5	-3	-4	-8	-9	0	-5	-1	4	-9	-9	2
Value for Money	-8	-2	-2	-5	2	-7	-3	-8	3	-6	-5	-5	-8	-9	3	-2	-2	3	-6	-6	-9
Grand Total	-48	-17.5	-8	-33.5	-2	-44	-16	-45	28	-33	-26	-30	-43	-50	7	-24	-8	18	-51	-51	-25
Ranked	7	6	5		4					1					3				2		

14.18 Appendix 18 Short list scoring for preferred option

North Mersey Stroke Short List Appraisal									
			A1	A2	B1	B3	C3	E4	E1
			Do Nothing	Do Nothing Enhancements	Merge Aintree/ Royal HASU's	Merge Aintree Southport HASU's	Merge all HASU's 3 rehabs	Merge all HASU's 2 rehab southport	Merge all HASU's 2 rehab Broadgreen
Patient Outcomes and Experience			-8	2	0.5	4	17	8	7
Clinical Sustainability			-13	-4	-3	0	16	11	8
Value for Money			-11	-11	0	0	16	-2	-2
Strategic Fit			-15	-12	-4	-3	18	11	11
Deliverability			1	-2	-9	-8	-1	-12	-12
Execution and Risk			-9	-6	1	2	15	7	7
Total			-55	-33	-14.5	-5	81	23	19
Ranking			7	6	5	4	1	2	3

14.19 RCP and North Mersey Staffing Standards

Staffing Standards - RCP and North Mersey Standard			
<72 hours stroke		Per 5 beds	
	RCP	NMS	
WTE Nurses per bed	2.9	2.52	*
WTE Physiotherapist	1.02	1.02	
WTE OT	0.95	0.95	
WTE Speech Therapist	0.48	0.48	
WTE Clinical Psychologist	0.28		***
WTE Dietician	0.21	0.21	
Therapy Assistants	0.5	0.5	
Sub Total < 72 hours			
>72 hours stroke			
WTE Nurses per bed	1.35	1.35	**
WTE Physiotherapist	1.18	1.18	
WTE OT	1.13	1.13	
WTE Speech Therapist	0.56	0.56	
WTE Clinical Psychologist	0.28		***
WTE Dietician	0.21	0.21	
Therapy Assistants	0.5	0.5	
Sub Total > 72 hours			
Notes			
Nurses per bed			
Therapist per 5 beds			
***Psychologists region wide assessment			
* RCP split Qualified to Un Qualified 80:20			
* NMSS split Qualified to Un Qualified 80:20			
**RCP split Qualified to Un Qualified 65:35			
** NMSS split Qualified to Un Qualified 47:53			

North Mersey Stroke Services: Clinical Senate Review

Written for:

Liverpool CCG

**(on behalf of Knowsley CCG, South Sefton
CCG, Southport & Formby CCG and West
Lancashire CCG)**

**by
North West Clinical Senate**

30th June 2021

Chairs' Foreword

Liverpool CCG (on behalf of Knowsley CCG, South Sefton CCG, Southport & Formby CCG and West Lancashire CCG) commissioned the NW Clinical Senate to undertake an independent clinical review, in line with the NHS England & Improvement stage 2 assurance process, of proposed models of care for the future delivery of stroke services in the North Mersey area.

From the paperwork received and the conversations held during the review visit, it is clear that an enormous amount of hard work has taken place, and is still taking place, to provide the best possible stroke services for the population of North Mersey.

I would like to thank the clinicians, providers and commissioners across the North Mersey area who contributed to this review. Their excellent joint working and passion to provide great patient care was clearly apparent.

I also offer sincere thanks to the review team who joined us from across England to provide their time and advice freely. Thank you to members of the NW Clinical Senate for their ongoing support and commitment to the provision of robust clinical advice.

The clinical advice and recommendations within this report are given in good faith and with the intention of supporting commissioners. This report sets out the methodology and findings of the review. It is presented with the offer of continued assistance should it be needed.



Jaydeep Sarma.

Dr Jaydeep Sarma
Review Panel Chair

Contents

Chairs' Foreword	1
1. Introduction	3
2. Background.....	5
3. Methodology	9
4. Discussion	10
5. Conclusions and Recommendations.....	18
Appendices.....	20
Appendix 1: Review Terms of Reference	21
Appendix 2 - Programme for visit on 26 th and 27 th April 2021	26

1. Introduction

- 1.1. The North Mersey Stroke Plan is part of the Cheshire & Merseyside (C&M) Health and Care Partnership (HCP) cardiovascular disease programme.
- 1.2. The current provision of both acute and recovery/support services across Liverpool, Knowsley and Sefton is subject to significant variation in pathways, clinical standards and health outcomes. Additionally, there are high levels of deprivation in North Mersey along with the associated poor health and health outcomes.
- 1.3. Consequently, seven short-listed options have been described which seek to address these variations and challenges for stroke services in the area.
- 1.4. The aim of this review was to undertake an independent clinical review of the proposed models of care for future delivery of stroke services across the North Mersey area, in line with the NHS England & Improvement stage 2 assurance process.
- 1.5. The Terms of Reference for the review include the following objectives:
 - 1.5.1. Do the options reflect relevant clinical guidelines and best practice?
 - 1.5.2. Will the plans improve patient outcomes?
 - 1.5.3. Are the options safe and sustainable in terms of the clinical capacity to implement them?
 - 1.5.4. Do the plans identify mechanisms to address organisational and cultural challenges?
 - 1.5.5. Has the workforce impact, including impact on education, recruitment, retention been considered in each of the options?
 - 1.5.6. Have the clinical staff that may be affected by the changes, been involved in their development?
 - 1.5.7. Is the proposed workforce adequate for the service needs of each option?
 - 1.5.8. Do the options deliver the current and future health and care needs of the target population?
 - 1.5.9. Do the options maintain access to services for the population? (e.g. have equality impact assessment, waiting times and travel times for patients and their families been considered?)
 - 1.5.10. Have innovations and improvements that would improve quality and outcomes been considered?
 - 1.5.11. Are there unintended consequences/interdependencies of the options that need to be taken into account? (E.g adult social care, medically unexplained, primary care)
 - 1.5.12. Have the risks and consequences of sustaining the options been identified? Are there mitigating actions and monitoring arrangements for risks? Have organisational mechanisms to manage such risks been considered / put in place?
 - 1.5.13. Does the risk register identify key programme risks and have robust mitigation plans?

- 1.5.14. Have patients and carers been involved meaningfully in the design of options?
- 1.5.15. To what extent have the views and experiences of patients and carers been included in the options?
- 1.5.16. Are the plans for IT and interoperability robust, realistic and able to deliver the requirements of the options?
- 1.5.17. Have clinical research issues are considered?
- 1.5.18. Have the implications for other clinical and support services of any reconfiguration been identified (through the inter-relationships and co-dependencies between services)?

1.6. A copy of the full Terms of Reference is included as Appendix 1.

1.7. The Clinical Senate Review Team members were:

NAME	JOB TITLE	ORGANISATION
Dr Jaydeep Sarma	Consultant Interventional Cardiologist and Review Panel Chair	Manchester University NHS FT
Dr Asem Ali	Consultant Geriatric Physician	North Lincolnshire & Goole NHS FT
Dr Mary Backhouse	GP Partner	Tyntesfield Medical Group, North Somerset
Dr Anuj Bahl	Consultant Neurosurgeon	Hull University Teaching Hospitals NHS Trust
Rubeka Begum	Head of Stroke Support	Head of Stroke Support NW, Stroke Association
Fay Hartley	Community Pharmacist	Greater Manchester
Terence Kelly ¹	Stroke Nurse Consultant	Manchester University Hospitals NHS FT
Dr Jatt Khaira	Consultant Stroke Physician	University Hospitals Birmingham
Dr Pnt Laloe	Consultant Anaesthetist	Calderdale & Huddersfield NHS FT
Julie McCabe ²	Deputy Director for Nursing & Quality	NHSE/I Midlands
Professor Graham Venables	Honorary Emeritus Professor of Vascular Neurology / Clinical Director	Yorkshire & Humber Clinical Networks

1.8.1 Managerial and business support to the panel was provided by Caroline Baines (Senior Senate Manager), Pamela Bailey (Senate Manager) and Sarah Ogden (Business Support) from the NW Clinical Senate management support team.

¹ Not present at the review meetings. Undertook retrospective review of paperwork and review recordings.

² Not present at the review meetings. Undertook review of paperwork prior to review meetings.

2. Background

2.1 The North Mersey Stroke Plan is part of the Cheshire & Merseyside (C&M) Health and Care Partnership (HCP) cardiovascular disease programme.

2.2 North Mersey covers Liverpool, Knowsley and Sefton. It is largely made up of inner cities and towns and is one of the most deprived areas in the country with four in ten residents living in the 10% most disadvantaged areas. The population of approximately 988,000 people experience poorer health outcomes and experiences as associated with higher levels of deprivation. There are an additional 112,000 people served by these stroke services who live in the West Lancashire area, which is relatively affluent and characterised by small towns and rural areas.

2.3 There are four Clinical Commissioning Groups (CCGs) in North Mersey:

- NHS Knowsley CCG (KCCG)
- NHS Liverpool CCG (LCCG)
- NHS Southport & Formby CCG (SFCCG)
- NHS South Sefton CCG (SSCCG)

These CCGs have a long history of collaboration, with the majority of services they commission provided by the same NHS Trusts.

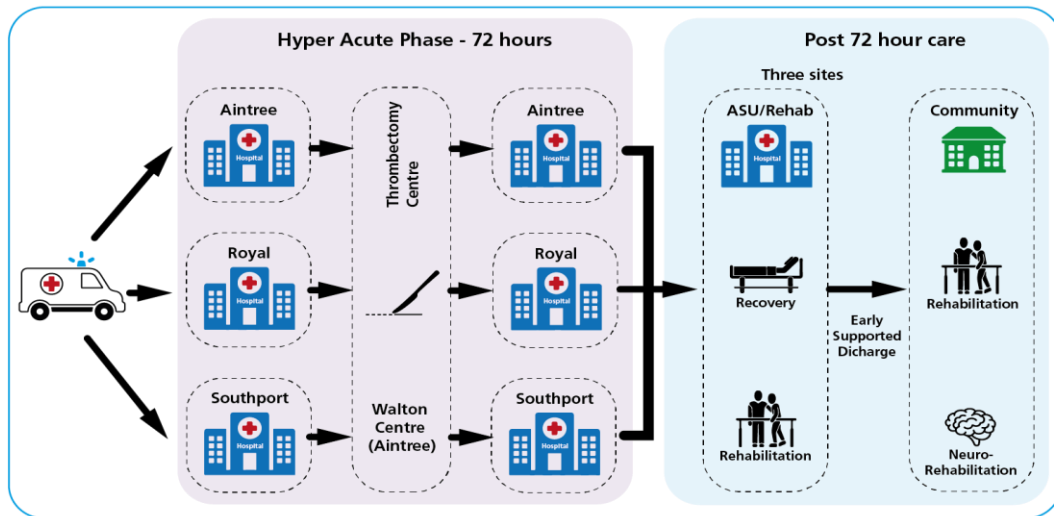
2.4 The current providers of inpatient stroke services in North Mersey are:

- Liverpool University Hospitals NHS Foundation Trust located at:
 - Aintree Hospital site - Hyper Acute Stroke Unit (HASU) and Acute Stroke Unit (ASU)
 - Broadgreen Hospital - Rehabilitation
 - Royal Liverpool hospital site - HASU and ASU
- Southport and Ormskirk Hospital Trust located at:
 - Southport & Formby District and General Hospital - HASU and ASU
- The Walton Centre NHS Foundation Trust - Regional thrombectomy service

2.5 The current service configuration is shown in Figure 1:

Figure 1: Current Service Configuration

Current North Mersey Stroke Services Configuration



2.6 The current provision of both acute and rehabilitation/support services across Liverpool, Knowsley and Sefton is subject to significant variation in pathways, clinical standards and health outcomes. Performance for both thrombolysis and thrombectomy are considerably behind national targets. This proposal seeks to address these variations to ensure that, in the future, the whole North Mersey population has access to a gold standard, integrated, whole pathway service.

2.7 In response to these challenges and following appraisal of a long list of 21 options, a short list of seven options have been modelled in detail and evaluated using comprehensive criteria and scoring of the impact of each option on health outcomes, patient experience, deliverability, strategic alignment, clinical standards, clinical sustainability and value for money. The short-listed options are:

- **Option A1: Current Configuration of Services**
This is the “do nothing” option with all services continuing to operate unchanged.
- **Option A2: Current Configuration of services with enhancements**
Current services remain largely unchanged but with the following enhancements:
 - Increase HASU beds at Aintree by three to a total of seven
 - Create a dedicated stroke unit at the Royal with seven HASU and seven ASU beds that are protected
 - Create two extra HASU beds and reduce two ASU beds at S&O

- Create two extra beds at Broadgreen
 - Invest in staffing to provide care and rehabilitation to the new bed base
 - Create a North Mersey Stroke Services Network that manages all risks on all sites
- **Option B1: Consolidate Aintree and Royal (at Aintree) to create a CSC at Aintree and maintain S&O**
 This option merges the Royal and Aintree HASU units onto the Aintree site and S&O remains as a HASU. Acute hospital stroke services would operate at Aintree, Broadgreen and Southport. The beds from the Royal would transfer to Aintree requiring an additional 7 HASU and 7 ASU on site. The current stroke unit would be unable to accommodate this number of beds and this would require the development of a 15 bedded HASU. The beds at S&O would be unchanged.
 - **Option B3: Consolidate Aintree and S&O (at Aintree) to create a CSC at Aintree and maintain the Royal**
 This option merges the Royal and S&O HASU units onto the Aintree site and the Royal remains as a HASU. Acute hospital stroke services would operate at Aintree, Broadgreen and Southport. The beds from S&O would transfer to Aintree requiring an additional 5 HASU on site. The current stroke unit would be unable to accommodate this number of beds and this would require the development of a 12 bedded HASU. The beds at the Royal would be unchanged.
 - **Option C3: One CSC at Aintree plus two acute rehabilitation sites**
 This option would see all three HASU's coming together to create a CSC at Aintree with a total of 19 beds plus an Acute stroke ward with 35 beds. Acute stroke wards would also be located at Broadgreen (23 beds) and Southport (15 beds). This option provides a centralised CSC to provide direct access to specialist urgent care and acute /rehabilitation close to home for patients.
 - **Option E1: One CSC at Aintree and one rehabilitation site at Broadgreen**
 This option would merge all three HASU's into one CSC and have an ASU at Aintree and Broadgreen. This provides a centralised CSC to provide direct access to specialist urgent care and acute /rehabilitation closer to home for some patients but not all.
 - **Option E4: One CSC at Aintree and one at rehabilitation site at S&O**
 This option would merge all three HASU's into one CSC and have an ASU at Aintree and S&O. This provides a centralised CSC to provide direct

access to specialist urgent care and acute /rehabilitation closer to home for some patients but not all.

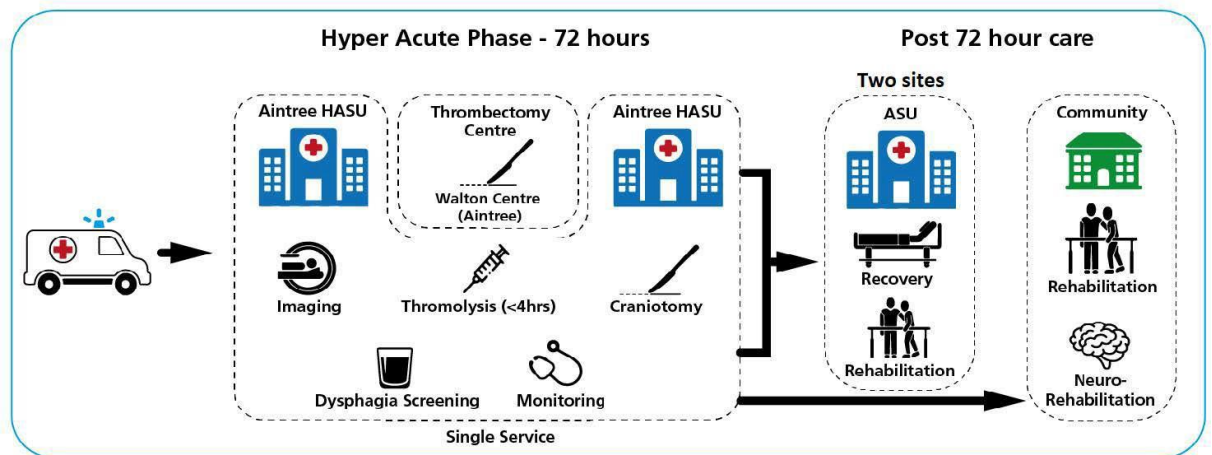
2.8 Based on the appraisal criteria and scoring system used, the preferred option is **Option C3** comprising:

- **CSC at Aintree (including HASU, ASU and stroke recovery)**
- **ASU and stroke recovery at Southport & Ormskirk**
- **Stroke recovery at Broadgreen**

2.9 Proposed service configuration is shown in Figure 2:

Figure 2: Proposed Service Configuration

Proposed North Mersey Stroke Services Configuration



2.10 An interim service change was made for a few months during the covid pandemic with all Aintree University Hospital stroke patients going to The Walton Centre. This interim arrangement helped to strengthen links between the two sites, provide excellent patient care and reinforced previous thinking regarding the preferred model.

2.11 As part of the assurance process, Liverpool CCG (on behalf of themselves and their fellow commissioners) asked the NW Clinical Senate to provide an independent expert clinical view on the short-list of options, in line with the objectives in paragraph 1.5.

3. Methodology

- 3.1 Numerous teleconferences, meetings and attendances at Senate Council took place between the Clinical Senate and the commissioners of the review during the period from January 2020 to April 2021 to develop, iterate and agree the Terms of Reference for the review (Appendix 1).
- 3.2 The review panel visit was originally scheduled for 20th and 21st April 2020, but a decision was made to postpone this on 16th March 2020 in light of increasing pressures and risks from the Covid-19 pandemic. A second date set of dates were provisionally planned for the end of March 2021, but these were again postponed due to the third peak of Covid-19 in the NW.
- 3.3 Provisional review information was provided by North Mersey colleagues on 1st March 2021. Panel members reviewed these independently, then shared provisional findings during a teleconference on 7th April 2020. Subsequently, a number of requests were made for additional information. The responses to these requests were provided prior to and during the review.
- 3.4 The review took place on 26th and 27th April 2021 (see Appendix 2 for full itinerary) via Microsoft Teams, due to ongoing Covid-19 concerns. The panel met with key staff to gain an in-depth understanding of the challenges faced. The panel then met with representatives from the commissioners at the end of the visit and fed back their initial thoughts.
- 3.5 A draft report was sent to commissioners for accuracy checks during the week beginning 24th May 2021 with feedback received by 11th June 2021. The final report was ratified remotely by the NW Clinical Senate Council and sent to the review commissioners on 30th June 2021.

4. Discussion

The sub-sections below contain summary findings, conclusions and recommendations in line with the review objectives. These are based on the panel's discussions and deliberations. They are not intended to capture the totality of the conversations. Recommendations are highlighted in bold and summarised in paragraphs 5.2 and 5.3.

Objective 1: Do the options reflect relevant clinical guidelines and best practice?

Yes. The plans are consistent with current best practice stroke guidelines and plan to maintain best Sentinel Stroke National Audit Programme (SSNAP) standard quality care.

The options reflect current NICE guidance and clearly consider national targets for mechanical thrombectomy. The preferred model would provide a balance between centralisation of specialist services in the hyper-acute period whilst supporting the move to provide care closer to home where possible during acute and recovery periods.

Objective 2: Will the plans improve patient outcomes?

The panel is confident that the preferred model (C3), E1 and E4 should improve patient outcomes, particularly in the hyperacute phase. The "A" and "B" options are not viable options, which is evidenced by the fragility of current services and low levels of thrombectomy.

Reducing time to treatment from onset of stroke and increasing admissions to >600 and <1500 annually will certainly improve outcomes and make a more efficient and effective unit.

The conversations focused largely on ischaemic strokes, with little mention for haemorrhagic strokes. However, the panel do believe these plans will also improve outcomes for haemorrhagic stroke as patients will get access to neurosurgical expertise quicker and the neurosurgeons will be able to review the patient in the Comprehensive Stroke Centre (CSC).

Improving outcomes starts with prevention and covers the entire pathway. Much of this will fall to the ISDN and partners to ensure there is a comprehensive strategy regarding prevention of stroke and life after stroke.

NWAS will be key players in transfers (onset to HASU and inter-trust transfers) so it is reassuring to see that they have been, and continue to be, part of the North Mersey Stroke Board and their discussions.

Objective 3: Are the options safe and sustainable in terms of the clinical capacity to implement them?

The “A” and “B” options are neither safe nor sustainable.

Other options are definitely safer than the current situation and the panel are confident that the hyper-acute aspects can be delivered. The panel wholeheartedly support the preferred option C3 despite the challenges that exist. However, there are significant concerns regarding:

- Plans for stroke recovery including discharge planning, an integrated community stroke service including ESD should be in place prior to reconfiguration to ensure smooth patient flows.
- The impact on the sub-specialties that remain at Southport (including TIA, follow-up clinics, Acute Stroke Unit [ASU] and stroke recovery centre)

The panel were also unsure as to what medical support there would be, and how this would be accessed at Broadgreen stroke recovery centre if patients become unwell.

Objective 4: Do the plans identify mechanisms to address organisational and cultural challenges?

The partner trusts and commissioning organisations have a longstanding history of successfully delivering services across organisational boundaries. The panel’s initial reservations about this were alleviated during conversations in the conclusion session. There does appear to be a power imbalance between trusts with Liverpool University Hospitals NHS Foundation Trust seeming to be a particularly dominant player. However, the panel are confident that these partners can deliver their plans successfully and there is clearly a joint commitment to this from all parties.

The panel therefore recommends that the relationship between The Walton Centre and Aintree Hospital, and their respective roles, are carefully defined with honest exploration of any outstanding cultural issues.

There was uncertainty about consultant contracts and the panel recommends that they are held by a single Trust to ensure equity of access to opportunities for consultant career progression.

There was no explicit mention of the clinical governance model, structure, oversight and arrangements in the documentation, though these were articulated well during the conversations. The panel would need to see these in writing before they can offer their clinical assurance.

Objective 5: Has the workforce impact, including impact on education, recruitment, retention been considered in each of the options?

More work is needed to look at the gaps and solutions in medical, nursing and therapy staffing and exploring, in particular, how the ASU in Southport will be staffed at both consultant and middle grade trainee level.

These plans give North Mersey the opportunity to create a highly desirable and innovative regional service with desirable roles across specialties and disciplines. Colleagues need to capitalise on this by working with Health Education England, local universities, nursing and medical schools. Whilst some of this work was apparent from conversations, it was lacking from the Pre-Consultation Business Case (PCBC).

It was mentioned in conversations that creation of a specialised centre will create “attractive” career and development opportunities, but there was little as to what this explicitly means and how it will be used to increase recruitment to the much-needed vacancies. There was mention of existing medical staff (e.g. registrars) being keen to continue their careers within the new model.

There appeared to little evidence as to the impact on trainees, their rotations and their workloads, with some medical trainees expressing concerns that F1 grades could end up losing clinical training opportunities and time due to the high patient turnover and need for excessive administration demands. **The panel recommends that consideration is given to what AHP/ACPs are going to be employed and what their roles will be, to ensure there is no conflict with junior doctors and their training opportunities.**

Objective 6: Have the clinical staff that may be affected by the changes, been involved in their development?

Senior colleagues from across all partner trusts and disciplines, including medicine, nursing, therapies and ambulance reported having been very much involved with the development and plans. They described feeling “heard” and as “equal partners”.

Normally a clinical senate review panel would have conversations “on the ground” in the affected wards and departments. Unfortunately, due to covid restrictions, this review was undertaken on Microsoft Teams which means the panel did not have that opportunity and therefore cannot comment on how involved these staff (likely more junior and bands 2-5) have been.

There were no clinical representatives in attendance from anaesthetics or neuro-critical care, so again the panel cannot comment on the involvement of these colleagues.

Objective 7: Is the proposed workforce adequate for the service needs of each option?

The panel have significant concerns about the ability to fully staff the preferred model, and **a detailed recruitment and retention plan is needed to evidence this and allow the trusts to monitor progress from the current position to the**

required one. This is particularly applicable to therapies, medical staffing for Southport ASU and 7-day rotas.

Objective 8: Do the options deliver the current and future health and care needs of the target population?

Stroke prevalence in the population of North Mersey is higher than the national average. This is likely to be down to a mixture of high levels of deprivation and a high proportion of older people, depending on the area.

To future-proof the service and avoid increasing demand in the future, the panel recommends that the service is supported by a comprehensive stroke prevention approach within the general population focussing on the most prevalent risk factors. The Integrated Stroke Delivery Network (ISDN), along with Public Health England and primary care colleagues, are key partners in ensuring successful delivery of this.

Objective 9: Do the options maintain access to services for the population? (e.g. have equality impact assessment, waiting times and travel times for patients and their families been considered?)

The viable options seek to balance the clinical benefits of a centralised service with the move to care closer to home for therapies and recovery. There has been consideration of travel times but not explicitly to wider issues such as availability of car parking. Despite the travel times and distances to the CSC at Aintree for some populations (particularly those in Southport), the panel are confident that the public will be accepting of this balance, particularly as the covid19 pandemic has changed ways within which families and patients engage with services.

Demographic analysis of data, such as ethnicity and deprivation, should be used to establish where TIA clinics, stroke recovery services and long-term support are best placed so that patients' time in the CSC is minimal and can be close to home as much as possible.

Objective 10: Have innovations and improvements that would improve quality and outcomes been considered?

The panel believes that the options that involve the establishment of a CSC and ASUs are improvements on the current situation that is much needed and will improve quality.

The use of telemedicine was discussed which would certainly be beneficial to improving quality and outcomes.

Providers have learnt a lot about remote consultations during the covid pandemic. This should be built upon and refined to save travel where possible.

Other innovations that should be considered include virtual stroke team, enhanced communications with paramedics by video phone to speed up home assessment and remote or computer aided recovery therapies.

Objective 11: Are there unintended consequences/interdependencies of the options that need to be taken into account? (E.g adult social care, medically unexplained, primary care)

The panel did not identify any unintended consequences of the options other than the issues already highlighted, re: staffing, trainees, etc.

The panel recommends that commissioners should ensure an Integrated Community Stroke Service Model with ESD is fully agreed and in place before the service is implemented to avoid any backlog in patient pathways due to delayed discharges.

The team should **clarify which of their patients will go to Broadgreen irrespective of where they come from. This would have an impact on their throughput and also patient family travel.**

Commissioners should **ensure they have considered all wider interdependencies including:**

- **Mental health**
- **Maternity services**
- **Neuro-critical care**
- **Radiology (for both acute and subsequent investigations)**
- **Palliative care**
- **Gastroenterology/endoscopy for nutrition feeding tubes**
- **Paediatrics and obstetrics (if not within scope it would be useful to explicitly state this)**
- **Cardiology (TOE and loop recorders)**
- **Primary care / GP**
- **Residential / nursing homes**
- **Social work and vocational re-entry for survivors with good early recovery**
- **Voluntary sector**

Objective 12: Have the risks and consequences of sustaining the options been identified? Are there mitigating actions and monitoring arrangements for risks? Have organisational mechanisms to manage such risks been considered / put in place?

Other than the issues already highlighted in this report, the panel recommends a **robust clinical governance system (including dealing with complaints, compliments, incidents & inquests) be agreed and implemented specifically for this service.**

Commissioners should **ensure that local politicians and other local leaders are fully and publicly supportive of the service**. It was apparent in discussions that some of these conversations have taken place, but it was not clear if all MPs are onboard. **The panel recommends that these conversations take place as soon as possible, if they have not already.**

Objective 13: Does the risk register identify key programme risks and have robust mitigation plans?

There is a risk management process in place.

The panel agree that risk number 170 regarding workforce is the highest one, although this does not detail attrition which is clearly as important as recruitment when it comes to fully staffing the service.

Objective 14: Have patients and carers been involved meaningfully in the design of options?

Objective 15: To what extent have the views and experiences of patients and carers been included in the options?

Stroke patients and carers have clearly been meaningfully involved in the development of plans, mainly through the Stroke Association. Patient and carer support from this group for the proposals is very high.

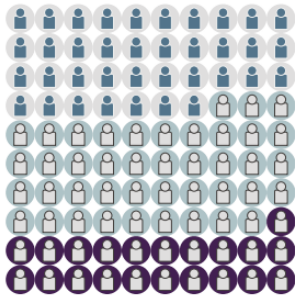
There is less evidence of involvement of other patient groups, the general public or high-risk groups, but the panel acknowledges that the public engagement process for this piece of work is yet to be undertaken. Interestingly, Liverpool CCG engaged with its public a few years ago on principles of centralised services and report that these were well received.

The panel recommends that the public consultation is very clear about the impact on the trade-off between a centralized CSC and improved patient outcomes. It is important to emphasise that the stroke unit is not closing (other than the Royal) but the portal of entry will change, and patients will get nearly all their treatment in the same way as they did before.

Infographics, such as patient pathways before and after the change and the NICE infographic regarding decompressive hemi-craniotomy (see below) may be useful communication tools.

Death and disability 1 year after the stroke in people under 60

Death and disability with decompressive hemicraniectomy



On average, for every 100 people who have decompressive hemicraniectomy, in the first year after their stroke:

- 37 people survive with moderate disability
- 42 people survive with severe disability
- 21 people die

Death and disability without decompressive hemicraniectomy



On average, for every 100 people who do not have decompressive hemicraniectomy, in the first year after their stroke:

- 25 people survive with moderate disability
- 12 people survive with severe disability
- 63 people die

Objective 16: Are the plans for IT and interoperability robust, realistic and able to deliver the requirements of the options?

The panel have significant concerns about the IT and digital abilities to deliver this service effectively. The picture is very disjointed.

The description from ward-based doctors in some trusts is alarming with five different systems being accessed (PACS [radiology], VitalPAC [patient observations monitoring system], Medway, Evolve and EMIS secondary care). The regional PACS does not cover scans at Preston but this should not be overly problematic as Preston is a CSC, so these patients should be treated there and then repatriated

Paper notes are photocopied and sent by ambulance with the patient for some transfers, with additional handovers done over the phone.

Clear discharge letters with instructions about anti-coagulants or anti-platelet drugs are vitally important: Deaths secondary to inadvertent continuation or discontinuation of these sorts of drugs are all too common or lead to acute readmissions. Effective communication with GP and community pharmacists is needed.

On the positive side:

- Colleagues recognise that IT is an issue and requires improvement
- The Royal Liverpool Hospital and Aintree University Hospital currently have different systems although discussions identified that this will be resolved

within a month of the time of review

- Colleagues in all trusts, including ambulance, reported that access to GP records had massively improved
- The PACS system generally works well
- Brainomix is live in the Royal, Southport and Aintree hospitals

The panel recommends that **a robust IT/digital plan is drawn up detailing the gaps in current provision and setting out when these will be addressed by and how.** This plan must ensure that the systems can talk to each other and that scans done at one site can be viewed at all other sites. The same applies to bloods and clinical letters. If this is not possible, there needs to be an easy pathway where each site can access the Summary Care Record easily where other sites may have uploaded this information.

Objective 17: Have clinical research issues been considered?

A CSC of this size and likely patient throughput offers a great opportunity for a range of research. The panel would have welcomed hearing more about clinical colleagues' explicit plans for research. Suggestions from the panel include links with the local stroke research network, NIHR portfolio studies and community care surveillance/intervention studies.

Objective 18: Do the options reflect relevant clinical guidelines and best practice? Have the implications for other clinical and support services of any reconfiguration been identified (through the inter-relationships and co-dependencies between services)?

See objectives 1 and 11.

5. Conclusions and Recommendations

5.1 The panel were impressed with the high-quality PCBC they received before the review, as well as the responses to their queries.

5.2 The panel are unable to offer their clinical assurance at this stage. Whilst they fully support the direction of travel and agree that the options C3, E1 and E4 will benefit patients and services, there is additional evidence / action required to enable them to confidently provide the clinical assurance required. These are:

- Written and agreed robust clinical governance arrangements including structure, models, oversight and arrangements for dealing with complaints, compliments, incidents & inquests be implemented specifically for this service
- A detailed recruitment and retention plan to evidence how the preferred model will be staffed this and allow the trusts to monitor progress from the current position to the required one (particularly with regards to therapies, Southport ASU and 7-day rotas)
- IT and digital plans
- Funding of an Integrated Community Stroke Service Model with ESD is fully agreed and evidenced across all CCGs with plans to ensure this in place before the service changes are implemented

5.3 Other emerging recommendations (but that do not preclude clinical assurance) are:

- The panel therefore recommends that the relationship between The Walton Centre and Aintree Hospital, and their respective roles, are carefully defined with honest exploration of any outstanding cultural issues.
- Consideration is given to what AHP/ACPs are going to be employed and what their roles will be, to ensure there is no conflict with junior doctors and their training opportunities
- Consider potential innovations such as virtual stroke team, enhanced communications with paramedics by video phone to speed up home assessment and remote or computer aided recovery therapies, as well as learning and enhancing those such as remote consultations and telemedicine
- Clarify which patients will go to Broadgreen irrespective of where they come from
- Further consideration of any impacts on wider services / interdependencies as detailed in the body of the report
- Gaining full support of local politicians and leaders for the preferred option as soon as possible
- The service is complemented by a comprehensive stroke prevention strategy

- Demographic analysis of data such as ethnicity and deprivation should be used to establish where TIA clinics, stroke recovery services and long-term support are best placed so that patients' time at the CSC is minimal and can be close to home as much as possible
- The public consultation is explicit about the impact on the trade-off between a centralised CSC and improved patient outcomes - use of communication tools such as those detailed may be useful

5.4 It is evident from the discussions that there has been a lot of thought, collaboration and hard work regarding these services and the proposals for the future. It is clearly apparent that clinical and executive colleagues are unanimously in support of the plans, working together cohesively and that they recognise the urgency of the current situation given the fragility of some of the services.

5.5 The panel would like to sincerely thank the review commissioners and colleagues from across the partner organisations and disciplines who attended the review. Their time, hard work, openness and honesty during discussions are very much appreciated. There is a clear commitment to providing great services for the populations they serve.

5.6 The clinical advice and recommendations within this report are given in good faith and with the intention of supporting colleagues. There is an ongoing offer of continued assistance should it be needed.

Appendices

Appendix 1: Review Terms of Reference

1. STAKEHOLDERS

Title: North Mersey Stroke Services

Sponsoring Commissioning Organisation: Liverpool CCG (on behalf of Knowsley CCG, South Sefton CCG, Southport & Formby CCG and West Lancashire CCG)

Lead Clinical Senate: NW Clinical Senates

Terms of reference agreed by:

- Dr Jaydeep Sarma (Review Panel Chair and Consultant Interventional Cardiologist, Manchester University Hospital NHS Foundation Trust)
- Prof Donal O'Donoghue (Former Chair, Greater Manchester, Lancs & South Cumbria Clinical Senate)
- Caroline Baines (Senior Senate Manager)
- Carole Hill (Director of Strategy, Communication and Integration)
- Dr Nik Sharma (Stroke Consultant)

Date: January 2021

Panel Chair: Dr Jaydeep Sarma

Clinical Senate Review Team Members:

NAME	JOB TITLE	ORGANISATION
Dr Jaydeep Sarma	Consultant Interventional Cardiologist and Review Panel Chair	Manchester University NHS FT
Dr Ali Asem	Consultant Geriatric Physician	North Lincolnshire & Goole NHS FT
Dr Mary Backhouse	GP Partner	Tyntesfield Medical Group, North Somerset
Dr Anuj Bahl	Consultant Neurosurgeon	Hull University Teaching Hospitals NHS Trust
Rubeka Begum	Head of Stroke Support	Head of Stroke Support NW, Stroke Association
Fay Hartley	Community Pharmacist	
Dr Jatt Khaira	Consultant Stroke Physician	University Hospitals Birmingham
Dr Pnt Laloe	Consultant Anaesthetist	Calderdale & Huddersfield NHS FT
Julie McCabe	Deputy Director for Nursing & Quality	NHSE/I Midlands
Dr Heshan Panditaratne	Consultant Radiologist	Calderdale & Huddersfield NHS FT
Professor Graham Venables	Honorary Emeritus Professor of Vascular Neurology, Clinical Director NHSE&I	Yorkshire & Humber Clinical Networks
Dr Asia Yousaf	Locum GP	Yorkshire & Humber

2. QUESTION & METHODOLOGY

Aim of Review:

To undertake an independent clinical review (in line with NHS England & Improvement's Stage 2 assurance process) for the future provision of hyper-acute and acute stroke care across the North Mersey area. This includes the clinical case for change, preferred model and decision-making processes.

Main objectives of the clinical review:

1. Do the options reflect relevant clinical guidelines and best practice?
2. Will the plans improve patient outcomes?
3. Are the options safe and sustainable in terms of the clinical capacity to implement them?
4. Do the plans identify mechanisms to address organisational and cultural challenges?
5. Has the workforce impact, including impact on education, recruitment, retention been considered in each of the options?
6. Have the clinical staff that may be affected by the changes, been involved in their development?
7. Is the proposed workforce adequate for the service needs of each option?
8. Do the options deliver the current and future health and care needs of the target population?
9. Do the options maintain access to services for the population? (e.g. have equality impact assessment, waiting times and travel times for patients and their families been considered?)
10. Have innovations and improvements that would improve quality and outcomes been considered?
11. Are there unintended consequences/interdependencies of the options that need to be taken into account? (E.g adult social care, medically unexplained, primary care)
12. Have the risks and consequences of sustaining the options been identified? Are there mitigating actions and monitoring arrangements for risks? Have organisational mechanisms to manage such risks been considered / put in place?
13. Does the risk register identify key programme risks and have robust mitigation plans?
14. Have patients and carers been involved meaningfully in the design of options?
15. To what extent have the views and experiences of patients and carers been included in the options?
16. Are the plans for IT and interoperability robust, realistic and able to deliver the requirements of the options?
17. Have clinical research issues are considered?
18. Have the implications for other clinical and support services of any reconfiguration been identified (through the inter-relationships and co-dependencies between services)?

Scope of the review:

In Scope:

- Hyper-acute and acute stroke services provided at the following hospital sites: Southport, Aintree, Royal Liverpool and Broadgreen
- Services delivered to the populations served by the following CCGs: Knowsley, Liverpool, South Sefton, Southport & Formby and West Lancashire.
- Services commissioned by NHS England & Improvement Specialised Commissioning

Out of Scope:

- Thrombectomy services, Early Supported Discharge and Community Rehabilitation are major enablers to improve stroke outcomes and form part of the PCBC. Whilst out of scope of the review, both parties agree that they are major interdependencies which must be considered in order to provide clinical assurance.

Outline methodology:

A formal review will be undertaken week commencing 22nd March 2021 to support the NHS England & Improvement Stage 2 assurance process. The methodology for this review will comprise a desktop review of paperwork, and conversations with key clinical and managerial colleagues via MS Teams.

Reporting arrangements:

The formal review panel will be led by Dr Jaydeep Sarma. The panel will agree the report and be accountable for the advice contained in the final report. The report will be given to the sponsoring commissioner and a process for the media handling of the report and subsequent publication of findings will be agreed within 3 months of delivery.

3. KEY PROCESS AND MILESTONES

Process	Timescale
Discussion at Clinical Senate Council	16/01/20 (complete)
Develop Review Terms of Reference (original)	31/01/20 (complete)
Refresh Terms of Reference	31/01/21 (complete)
Information for formal review submitted by Commissioner and distributed to review panel	01/03/21 (complete)
Review panel initial Meeting / WebEx / Teleconference and requests for clarification and/or further information from Commissioners	07/04/21 (complete)
Further information received from commissioner and distributed to review panel	16/04/21
Formal review panel	26&27/04/21
Panel submit initial findings	30/04/21
Produce highlight report for commissioners	29/04/21
1 st draft sent to panel for checks	17/05/21
Panel submit final edits for submission	01/06/21
Final draft sent to commissioners for accuracy checks	08/06/21
Feedback on accuracy of report from commissioners	15/06/21
Final draft report completed	21/06/21
Ratification of final report by Clinical Senate Council	09/07/21

Final report provided by Senate to commissioner	13/07/21
---	----------

4. REPORT HANDLING

A draft clinical senate report will be made to the sponsoring organisation for fact checking on 8th June 2021. Comments/corrections from Commissioners to be received by the senate by 15th June 2021. The final report will be submitted by the Clinical Senate to the sponsoring organisation by 13th July 2021 assuming it is ratified by the Clinical Senate Council.

5. COMMUNICATION AND MEDIA HANDLING

The Clinical Senate aims to be open and transparent in the work that it does. The Clinical Senate would request that the sponsoring commissioning organisation publish any clinical advice and recommendations made.

All media enquiries will be handled by the sponsoring organisation. The name of the Communication Lead at the Sponsoring Commissioner is Carole Hill (Director of Strategy, Communication and Integration).

The detailed arrangements for any publication and dissemination of the clinical senate assurance report and associated information will be decided by the sponsoring organisation.

6. RESOURCES

The clinical senate will provide administrative support to the review team, including setting up the meetings and other duties as appropriate.

The clinical review team will request any additional resources, including the commissioning of any further work, from the sponsoring organisation.

7. ACCOUNTABILITY AND GOVERNANCE

The clinical review team is part of the North Region Clinical Senates accountability and governance structure.

The Clinical Senate is a non-statutory advisory body and will submit the report to the sponsoring commissioning organisation.

The sponsoring commissioning organisation remains accountable for decision making but the review report may wish to draw attention to any risks that the sponsoring organisation may wish to fully consider and address before progressing their proposals.

8. FUNCTIONS, RESPONSIBILITIES & ROLES

The sponsoring organisation will:

1. Provide the clinical review panel relevant information, this may include: the case for change, options appraisal and relevant background and current information, identifying relevant best practice and guidance, service specifications.

Background information may include, among other things, relevant data and activity, internal and external reviews and audits, impact assessments, relevant workforce information and population projection, evidence of alignment with national, regional and local strategies and guidance (e.g. NHS Constitution and outcomes framework, Joint Strategic Needs Assessments, CCG two and five year plans and commissioning intentions). The sponsoring organisation will provide any other additional background information requested by the clinical review team.

2. Respond within the agreed timescale to the draft report on matter of factual inaccuracy.
3. Undertake not to attempt to unduly influence any members of the clinical review team during the review.
4. Submit the final report to NHS England for inclusion in its formal service change assurance process.

Clinical senate council and the sponsoring organisation will:

1. Agree the terms of reference for the clinical review, including scope, timelines, methodology and reporting arrangements.
2. Appoint a clinical review team, this may be formed by members of the senate, external experts, and / or others with relevant expertise. It will appoint a chair or lead member.
3. Advise on and endorse the terms of reference, timetable and methodology for the review.
4. Consider the review recommendations and report (and may wish to make further recommendations).
5. Provide suitable support to the team and
6. Submit the final report to the sponsoring organisation.

Clinical review team will:

1. Undertake its review in line with the methodology agreed in the terms of reference.
2. Follow the report template and provide the sponsoring organisation with a draft report to check for factual inaccuracies.
3. Submit the draft report to clinical senate council for comments and will consider any such comments and incorporate relevant amendments to the report. The team will subsequently submit final draft of the report to the Clinical Senate Council.
4. Publish lists of documents we are provided with, those which we request that are unavailable and those not provided to the review team.
5. Keep accurate notes of meetings.

Clinical review team members will undertake to:

1. Commit fully to the review and attend all briefings, meetings, interviews, panels, etc that are part of the review (as defined in methodology).
2. Contribute fully to the process and review report.
3. Ensure that the report accurately represents the consensus of opinion of the clinical review team.
4. Comply with a confidentiality agreement and not discuss the scope of the review nor the content of the draft or final report with anyone not immediately involved in it. Additionally, they will declare any potential conflicts, to the chair or lead member of the review panel.

Appendix 2 - Programme for visit on 26th and 27th April 2021

DAY 1:

Time	Item	Attendees
09:00 – 09:20	Review Panel meet for initial discussions prior to the start of the review	Review Panel <i>MS Teams – Joining Details</i>
09:20 – 09:25	Break	
09:25 – 11:10	Welcome & Introductory Sessions <ul style="list-style-type: none"> • Background Presentation • Group Discussion 	Programme Director/Clinical Directors/Team Representation <i>MS Teams – Joining Details</i>
11:10 – 11:40	Break	
11:40 – 12:25	Clinical Team Representation	Review Panel Clinical Team Representatives <i>MS Teams – Joining Details</i>
12:25 – 12:30	Break	
12:30 – 13:15	Exec Team Representation	Review Panel Exec Team Representatives <i>MS Teams – Joining Details</i>
13:15 – 14:15	Comfort Break/Lunch	
14:15 – 14:45	Discussion with Trainees	Trainees Review Panel <i>MS Teams – Joining Details</i>
14:45 – 14:50	Break	
14:50 – 16:35	Panel Deliberation and Discussion of Proposals <ul style="list-style-type: none"> • KLOE Discussion • Overarching Issues 	Review Panel <i>MS Teams – Joining Details</i>

DAY 2:

Time	Item	Attendees
14:30 – 15:30	Review Panel Discussion & Reflections	Review Panel <i>MS Teams – Joining Details</i>
15:30 – 15:45	Break	
15:45 – 16:30	Conclusions, Feedback and Next Steps: Panel to commissioners and other stakeholders as per commissioners' wishes	Review Panel Clinical Team Representatives Exec Team Representatives <i>MS Teams – Joining Details</i>
	CLOSE	

Review of Hyper-Acute Stroke Services

Patient and carer engagement – autumn 2019

Report Prepared for NHS Liverpool Clinical Commissioning Group
November 2019

CONTENTS

- 1. Introduction**
 - 2. Engagement Approach**
 - 3. Research Methodology**
 - 4. Main Findings**
 - 4.1. Introduction**
 - 4.2. Theme One: Personal Experience of the Quality of Care**
 - 4.3. Theme Two: Reaction to Bringing Local Stroke Services Together**
 - 4.4. Theme Three: Reaction to Bringing Local Stroke Services Together: Sub-theme – Transport/Distance**
 - 4.5. Theme Four: Post Stroke Support Services**
 - 4.6. Theme Five: Post Stroke Support Services: Sub-theme – Stroke Association**
 - 5. Summary**
 - 5.1 Thematic Analysis**
 - 5.2 Personal Experience of Quality of Care**
 - 5.3 Reaction to Bringing Local Services Together**
 - 5.4 Reaction to Bringing Local Services Together – Transport/Distance**
 - 5.5 Post Stroke Support Services**
 - 5.6 Post Stroke Support Services – Stroke Association**
 - 6. Conclusions**
- Appendix – Profile of Respondent**

1. Introduction

The NHS in Knowsley, Liverpool, South Sefton, Southport & Formby and West Lancashire is reviewing local hyper-acute stroke services – the hospital care provided immediately after someone has a stroke.

Currently, hospital stroke services in north Mersey are delivered at the Royal Liverpool Hospital (with rehabilitation services on the Broadgreen site), Aintree University Hospital, and Southport Hospital. The Walton Centre doesn't have a stroke unit, but it provides a type of treatment called thrombectomy – a special procedure suitable for some patients whose stroke has been caused by a blood clot. Local clinicians have developed a case for change which sets out the vision for a comprehensive stroke centre; bringing together teams providing hyper-acute services with those able to offer thrombectomy.

As part of the process to develop options for the future of services, two co-design workshops have taken place with teams from the Royal, Aintree and Southport hospitals, and the Walton Centre. A group of stroke survivors have also been involved in these workshops. A third workshop is planned for the end of November 2019.

Local NHS commissioners were keen to gather feedback from those who had experience of hospital stroke services, so that this can help inform options development and the production of a pre-consultation business case. The Stroke Association offered to support patient engagement using their existing network of groups covering Liverpool, Sefton and Knowsley.

2. Engagement Approach

The Stroke Association proposed five local groups of patients and carers who had used local hospital stroke services. Conversations took place during late October/early November 2019 with the following groups:

Merseyside Life After Stroke Group
Southport & Formby Peer Support
Knowsley Peer Support
Liverpool Stroke Café
South Sefton Life After Stroke Group

The Stroke Association does not have a regular peer support group in West Lancashire, so patients from this area who had previously had contact with the Stroke Association were invited to take part in a one-off feedback session.

The structure for these six engagement sessions was:

- Short presentation on the case for changing hyper-acute stroke services in north Mersey
- Facilitated discussions around a small number of key questions (set out below)
- *Do you think it's a good idea to bring local stroke services together in the way we have talked about, so that the most urgent stroke care is provided in a single location rather than in three different hospitals?*

- *How would you feel about having your urgent treatment at a hospital that might be further away from where you live, if it means you can get better care?*
- *What challenges/problems could bringing local hyper-acute stroke services together create for patients?*
- *Is there anything else we need to think about from a patient's perspective when developing potential options for hospital stroke services in Knowsley, Liverpool, Sefton and West Lancashire?*

NHS Liverpool CCG helped oversee planning of the process, assisted in facilitation of sessions, and compiled a report of the engagement.

3. Research Methodology

Conversations were held with groups of patients and carers at the six sessions detailed above. The engagement facilitator outlined the purpose of the meeting and the background to the proposed changes to hyper-acute stroke services – emphasising the importance of listening to patients and their carers about their experiences of local stroke services. This was followed by round table conversations with patients and carers led by a staff member of NHS Liverpool CCG; the number of individual table discussions depending on the overall size of the group. While the presentation given at the start of each session made clear that the review is looking at hospital stroke services, and this was the focus of the four questions outlined above, comments made by participants were not limited to hospital care. The questions therefore provided a starting point for conversations, rather than a rigid framework.

The conversations were recorded in the form of notes, and these form the basis of this analysis. The number of patients and carers involved is summarised in Table One:

Table One: Patients and Carers Involved

Stroke Association Groups	No of Groups	No of Patients	No of Carers/Volunteers
Merseyside Life After Stroke	7	39	7
Southport & Formby Peer Support	1	11	3
Knowsley Peer Support	1	9	2
Liverpool Stroke Café	3	9	3
South Sefton Life After Stroke	2	5	4
West Lancashire (Past Members)	1	7	3
Total	15	80	22

See Appendix 1 for respondent profile.

3.1 Thematic Analysis

The recorded conversations were analysed using 'thematic analysis'. The aim of thematic analysis is to identify themes or patterns in the data that are important to the objective of the project or identifying interesting side issues. This analysis moves away from simply summarising the responses to the four questions but looks for 'themes' that provide deeper insights and meanings about the experiences of stroke survivors and their carers.

4. FINDINGS

4.1 Introduction

Each of the comments recorded at the group sessions has been categorised into one of five thematic themes.

Comments were recorded by a number of different note takers, and are a combination of direct quotations from participants and summations of key thoughts/ideas voiced during discussions.

4.2 Theme One: Personal Experience of the Quality of Care

Positive	Negative/Concerns
<p>“Neuro was amazing care.”</p> <p>Survivor said, “I received brilliant care at Aintree Hospital” as she was seen, treated and discharged promptly. “I would be concerned if one location could achieve the same quality of treatment.”</p> <p>“Depression at the beginning is unreal. It’s good to be with a specialist that understands.”</p> <p>“Diagnosed very quickly – stroke spotted by paramedic and was thrombectomised quickly.”</p> <p>“When I had a stroke a response car came and did the initial assessment and called an ambulance. The diagnosis was fast and efficient. Request from response car had made significant impact on speed of ambulance.”</p> <p>“It took ambulance an hour to arrive but were quick to take him to Whiston, treating it as code Red. He received excellent care and was in bed after 72 hours and receiving visitors.”</p> <p>“After much delay by doctor and receptionists eventually arrived at Broadgreen stroke unit – care was brilliant.”</p> <p>“Broadgreen is a brilliant hospital. I feel secure there. Would the new location be just as good?”</p> <p>“Care was brilliant but 111 was not adequate in getting patients the help they need.”</p> <p>“Had no trouble getting physio and other care.”</p>	<p>“Had poor treatment at Southport”</p> <p>“Stroke Association – can’t praise them enough – invaluable – consultant very different.”</p> <p>“Somebody said there was no help at all after Southport hospital.”</p> <p>“Don’t believe I would have been sorted by hospital.”</p> <p>“Patient was in Whiston Hospital for two weeks. Care after that was OK – but his wife said they didn’t get him up enough.”</p> <p>“3 years ago, I had good aftercare, but the physio should have been for longer as I am starting to go backwards.”</p> <p>“I experienced delays in getting a stroke diagnosis – took four days – told there wasn’t enough staff to do a scan.”</p> <p>“Weekend experience – delays being seen.”</p> <p>“Physio can be hit and miss – they had lots of potential to improve but no physio – frustrating.”</p> <p>“Aftercare not good.”</p> <p>“Rehab at Venmore awful – all very old people.”</p> <p>“Physio at home was good but it was too short.”</p>

<p>“Husband had stroke in the morning – clot busting treatment didn’t work for him – but giving people the chance of it working is important.”</p> <p>“When my husband had a stroke – went straight to hospital, scanned straight away and in a ward within an hour.”</p> <p>“Had twice weekly physio visits for one year.”</p> <p>“Had physio and rehab in hospital, but not when they went home. Did a supermarket visit with rehab staff before she left hospital.”</p> <p>“Whiston is very good – wouldn’t want to change that.”</p>	<p>“Depending on personal circumstances you can feel very isolated when signed off from hospital care.”</p> <p>“Staff in hospitals poor. Was in hospital over a Bank Holiday weekend and was left in bed.”</p> <p>“Therapy needed for longer in Sefton.”</p> <p>“Rehabilitation – I was meant to receive 3 months physio but only received four visits.”</p> <p>“Waited 3 hours for an ambulance, meaning they weren’t able to get thrombolysis by the time they arrived.”</p> <p>“Therapy provision in Sefton inconsistent – was told you’re not a priority.”</p> <p>“People get discharged with social care from one agency – this can be changed to a cheaper service later. This has big impact on people with communication difficulties.”</p> <p>“Survivor said consistency of care is very important but doesn’t happen and concerned about lots of different carers coming into your home.”</p> <p>“There are not enough doctors who are trained at an adequate level.”</p> <p>“Son rang 111 when I was showing signs of a stroke, but time wasted giving them details – poor service that shouldn’t be used.”</p> <p>“Receptionists need to be better.”</p> <p>“Hospitals don’t adequately cater for stroke patients. Was diabetic and had heart problems. Staff should take into account other health problems.”</p> <p>“Speech therapy is not good enough – need more staff as speech therapy is very important.”</p> <p>“Had to transfer from one hospital to another – was not happy with this.”</p>
--	---

	<p>“Daughter had a stroke – ambulance service a disgrace – waited 3 hours for one to arrive.”</p> <p>“Paramedics thought my wife suffered a second stroke, but it was burst appendix – they need to be better trained.”</p> <p>“My friend had to wait at Aintree A & E for two and half hours.”</p> <p>“My daughter had a stroke six weeks after having a baby – family had to take care of baby – didn’t get enough support.”</p> <p>“Community care is hit and miss depending on where they will go.”</p> <p>“My wife’s mental health was impacted just as was mine. Took 14 weeks to sort out our care package.”</p> <p>“Felt that survivors were discharged too quickly – adequate care not in place.”</p> <p>“We didn’t get any aftercare after being discharged.”</p> <p>“We don’t get any community rehabilitation where we are – it’s considered optional.”</p> <p>“There was no support for my daughter and her age group.”</p> <p>“Had to go through MP to get help.”</p> <p>“Had really poor hospital treatment at Walton – had both a stroke and brain tumour.”</p> <p>“Lady being treated at ICU – treated for kidney issue when it was a stroke.”</p> <p>”Mother waited two hours for an ambulance.”</p> <p>“Mother sent home with a migraine – returned next day and was diagnosed with a stroke.”</p> <p>“Once you leave consultant care you can feel ‘left’ – feels like you get all or nothing.”</p> <p>“Once you get out of hospital you’re left to your own devices.”</p>
--	---

	<p>“No focus on carer – no one asks if you need support to?”</p> <p>“Feel isolated afterwards.”</p> <p>“Not all support is helpful.”</p> <p>“Your life as a carer has changed dramatically – not enough recognition of this.”</p> <p>“There was no urgency to get him to hospital.”</p> <p>“Gone to Southport by car – wife was found to have had a TIA and sent home. She had a second significant stroke a week later. Not given any warning a TIA can be precursor to a stroke.”</p> <p>“Went to Southport hospital unable to speak – staff thought she was drunk. Husband eventually drove her to hospital in Leicester.”</p> <p>“Services have to change for the benefit of everyone, including patients’ families.”</p> <p>“Doctors should also be trained in people skills.”</p>
--	---

4.3 Theme Two: Reaction to Bringing Local Stroke Services Together

Positive	Negative/Concerns
<p>“Good idea to have someone specialist, face to face.”</p> <p>“Excellent idea (had poor treatment at Southport)”</p> <p>“Patient happy with one comprehensive stroke centre.”</p> <p>“If operations were guaranteed to take place within 72 hours – everyone could benefit – because it needs to be done so quickly.”</p> <p>“Patient had a stroke 5 years ago, aged 33. Went to Neuro Centre at Aintree from A & E – she thinks reorganisation a good thing.”</p> <p>Patient, who had a mini-stroke and treated at the Royal said, “I’m OK with bringing stroke services together as long as it’s not too far.”</p> <p>“Excellence is more important than distance.”</p> <p>“It would give patients a better chance of recovery if there was a centralised service.”</p> <p>“Having one location is good, as all Stroke specialist will be in one hospital.”</p> <p>“It would be a good idea so long as patients were seen as quickly as possible.”</p> <p>“Makes sense if we can make it better.”</p> <p>“Sensible to make a centre of excellence.”</p> <p>“Single location might make it easier for patients – rather than multiple places for different things.”</p> <p>“Makes sense to have all procedures in same location.”</p> <p>“Need to end lottery based on where people are taken.”</p> <p>“Need to think about effect on partner and family. If services are centralised, then there would be more advice and help for family.”</p>	<p>“Aftercare equally important – other hospitals would need good speech therapist, physio etc.”</p> <p>“Everyone should have same access – no postcode lottery.”</p> <p>“Can see no reason for change.”</p> <p>“Aftercare in the new service should be as good as the Neuro Centre.”</p> <p>“Too big is not good. In Liverpool, no hospital is that far away – so distance is not an issue in Liverpool.”</p> <p>“Concerns about the quantity of people going to one location for the stroke care, which could lead to delays in being seen.”</p> <p>“Concerns about sufficient beds and medication at one location to accommodate more stroke sufferers.”</p> <p>“Concerns there would be fewer healthcare professionals looking after a larger group of patients.”</p> <p>“The new service would have to be 24 hours in order to ensure all sufferers have access to care at any given time.”</p> <p>“A concern that this new service will involve cuts to existing services.”</p> <p>“Will there be enough capacity? Still have people in corridors.”</p> <p>“People are told that funding has been cut so staff aren’t available.”</p> <p>“Centralisation of services will not work and would prefer all 3 hospitals to offer the treatment needed.”</p> <p>“Concerns about whether the one location would be able to cope with demand?”</p>

<p>“Where you receive your urgent care doesn’t matter.”</p> <p>“As long as we get the best possible care in the acute and community therapy.”</p> <p>“Don’t feel location of the centralised stroke unit would be problematic.”</p> <p>“It may work if internal infrastructures allow for the hospital to make the patient transfer to the urgent care centre.”</p> <p>“Support the principal of a well-staffed single stroke unit.”</p> <p>“Don’t care where it is so long as the best treatment and care is available.”</p> <p>“Rotation of specialists – would be good for them to gain experience.”</p> <p>“Stroke patients won’t care about where they receive care if they need it.”</p> <p>“If better care is guaranteed, it is fine.”</p> <p>“Good, if more specialist care would be available.”</p> <p>“People who are having strokes won’t care what happens at the time of stroke.”</p> <p>“Good idea if it meant patients didn’t need to be transported from hospital to hospital.”</p> <p>“Good idea but would like to be transferred closer to home after acute treatment.”</p> <p>“Good idea to have specialists in one place.”</p> <p>“Seems obvious about having centre at Aintree – having the Walton Centre and HASV next to each other.”</p> <p>“Carer favoured one location after wife went to one hospital then transferred to another.”</p> <p>“Going to go anywhere if you’re going to get care.”</p>	<p>“Treatment needs to be available in every hospital – as soon as you’re given the treatment, you are on the road to recovery.”</p> <p>“Wouldn’t it be better if there were adequate services across all regions.”</p> <p>“I would prefer to be local.”</p> <p>“Concerned about number of patients going to one location.”</p> <p>“Having family with you is extremely important – they must be able to visit.”</p> <p>“Isn’t it riskier having it all in one place – what if it ends up being closed down?”</p> <p>“If 500 patients go to one unit instead of 100 how will that location cope?”</p> <p>“Is there going to be enough space in one existing building?”</p> <p>“Would there be enough machines, equipment etc. at the one location to accommodate all patients?”</p> <p>“Biggest fear about closing down hospitals.”</p> <p>“Ambulance can wrongly diagnose you – so you end up in the wrong place.”</p> <p>“Concerned about overcrowding.”</p>
---	--

“Would prefer if it meant they didn’t have to wait to get to A & E”.

“Don’t mind as long as it’s specialist care.”

“Survivors agreed that it was better to be sent to specialist centre.”

“One location wouldn’t be a problem as they would move out of that location soon afterwards.”

“I think it would be better.”

“Creating more focus across hospitals could make a massive difference to patients.”

“If it saves your life you wouldn’t care where you went.”

“A centralised unit might make it easier to offer more support.”

“Excellent idea.”

“People need to understand that you are necessarily in hospital for a long time – the important thing is where you need to be to get the right treatment.”

“Families should be prepared to put up with inconvenience so that people can get the care they need.”

“Having a central place for stroke will allow staff to learn from each other and be together as a team.”

4.4 Theme Three: Reaction to Bringing Local Stroke Services Together (Sub Theme: Transport/Distance)

Positive	Negative/Concerns
<p>“Travel to Aintree from Southport not a problem.”</p> <p>“Patient doesn’t mind travelling if it helps.”</p> <p>“One survivor said people are used to travelling.”</p> <p>“Wouldn’t mind travelling further to get better care if it was within their means.”</p> <p>“Location of care is not as important as receiving the best care possible.”</p> <p>“OK with it as long as it was within 10-mile radius.”</p> <p>“OK with going further away for treatment if it meant better care.”</p> <p>“It would be better if it was centralised around Fazakerley (Aintree).”</p>	<p>“Would rather be back at Southport so family can come visit.”</p> <p>“Travel by family as well as ambulance needs to be considered.”</p> <p>Patient said, “it is not a good idea.” Treated at Walton. Nervous, poor sight and deaf. “Travel is an issue.”</p> <p>Patient, who had a mini-stroke and treated at the Royal said, “I’m OK with bringing stroke services together as long as it’s not too far.”</p> <p>“Only problem is if a family can visit. Ormskirk to Aintree would be a reasonable distance.”</p> <p>“Location is important as timing is key. Must get there in about half an hour.”</p> <p>“Just lengthens the time it takes to get to hospital.”</p> <p>“Difficult to drive after a stroke so having care close by is important.”</p> <p>“It would put more stress on the families of stroke sufferers if the location of the centralised service was further away from them.”</p> <p>“Suggestion there should still be some stroke services at various locations across Merseyside otherwise some would have to travel all the way to receive emergency medical treatment.”</p> <p>“It depended on how far, as different distances are manageable for different people.”</p> <p>“Would prefer to receive care at the closest hospital to them.”</p> <p>A survivor said, “the new location must be easy to get to, and that there are public transport links in place to facilitate this for everyone in Merseyside.”</p>

	<p>“Can we rely on ambulances to transport people to the stroke centre?”</p> <p>“Concern about the impact of travel time – too far to go in the ambulance.”</p> <p>“Mobility difficult for people after a stroke – can’t drive.”</p> <p>“Travel is an issue – more visitors if family are closer.”</p> <p>“Travel is an issue after stroke – can’t drive. Need more support to use public transport. Reliant on taxis.”</p> <p>“Privatisation of the paramedic services and cut backs mean patients will not be able to get themselves to urgent care centre if further away from home.”</p> <p>“Ambulance response times would need to be considered.”</p> <p>“Time delay in transferring patients.”</p> <p>“Wouldn’t be happy going all the way to Southport because of travel.”</p> <p>“Would patients be at risk of dying on the way to hospital.”</p> <p>“Parking would have to be considered.”</p> <p>“More concerned about our relatives and them travelling to visit us in hospital.”</p> <p>“Wouldn’t it be harder for ambulances to travel further distances.”</p> <p>“Must take into consideration families and their travelling and parking costs.”</p> <p>“Took issue with time it would take to get a patient to this location when they’ve had a stroke.”</p> <p>“There needs to be good transport links to this one location.”</p> <p>“No, not fair on family members to travel to.”</p>
--	--

	<p>“Longer transfer times for ambulances to travel.”</p> <p>“Considerations should be made for family members.”</p> <p>“I’d prefer closer to where I live so I can be visited by friends.”</p> <p>“It would be difficult getting visitors.”</p> <p>“Where would it be? Would it be feasible to take people further?”</p> <p>“Carer remembered huge costs of driving to hospital to visit husband – suggested there should be help with this.”</p> <p>“If you’re going to travel further to hospital then the symptoms of stroke need to be recognised straight away.”</p>
--	---

4.5 Theme Four: Post Stroke Support Services.

Positive	Negative/Concerns
<p>“Physio was amazing. Discharged before 6 months but they’re always there for you.”</p> <p>“Found it very useful to have an explanation why stroke causes low mood – information helps acceptance both for families and survivors.”</p> <p>“Peer support is really important – benefitted very much from the stroke club – which is no longer active.”</p>	<p>“Aftercare equally important – other hospitals would need good speech therapist, physio etc.”</p> <p>“Recovery can take years – some do pay.”</p> <p>“One couldn’t read or write. Needed support – felt dumped.”</p> <p>“Memory/emotional support hard for wife and family – don’t get a break.”</p> <p>“Impact on family (son and wife). I’m fine but it’s not fair on wife – she doesn’t understand.”</p> <p>“Aftercare is difficult – needs to be more consistent and the same for everyone. Now it is too patchy.”</p> <p>“Friends and families need to be better informed about what is happening to the individual receiving treatment for their stroke.”</p> <p>“Aftercare process was a little rushed and could be better explained for patients who are being discharged.”</p> <p>“Post stroke psychological support service – should be available in the form of outreach – including counselling.”</p> <p>“Felt there needs to be more support for family members who have given up their jobs to support a stroke survivor, who feel like they have to fight for everything.”</p> <p>“Financial burden on patients’ families.”</p> <p>“More concerned about our relatives and them travelling to visit us in hospital.”</p> <p>“Stroke survivor knew someone who didn’t know who to see after being discharged.”</p> <p>“Rehab is the key – ongoing and appropriate rehab.”</p> <p>“Early supported discharge – very short input. Had four sessions of physio and OT. Still struggle and felt more therapy would have</p>

	<p>helped transform him back into healthy young man.”</p> <p>“Two-month wait for mobility equipment.”</p> <p>“Need to address the discrepancy of care for those who have suffered major v minor stroke. Those with mild strokes are merely thrown out – aren’t given enough rehab.”</p> <p>“You need someone to talk to who knows stroke – general counselling isn’t always right.”</p> <p>“Had to wait long time for psychological support then three changes of therapist. Has meant she hasn’t been able to come off anti-depressants.”</p> <p>“It took 12 months to get physio. When the occupational therapist felt there wasn’t enough progress being made, they took her off their list and is now paying for weekly support.”</p>
--	---

4.6 Theme Five: Post Stroke Support Services (Sub Theme: Stroke Association)

Positive	Negative/Concerns
<p>“Stroke Association great afterwards. Helped with who to see – wouldn’t have made it without them.”</p>	<p>“Stroke Association volunteers could do more – go into hospitals, inspiring people that they can get better.”</p>
<p>“They came once a week to the house – can’t praise them enough. They were invaluable.”</p>	<p>“As a Stroke Association volunteer, my concern is the stress on emergency services, times and costs.”</p>
<p>“Stroke Association came in to help with speech.”</p>	<p>“People reported finding out about events/support groups via word of mouth – not much sign-posting.”</p>
<p>“Great feedback for Stroke Association – really value support.”</p>	
<p>“They look forward to this group and similar experiences like it.”</p>	
<p>“Support from Stroke Association stopped us from feeling abandoned.”</p>	
<p>“Very important for Stroke Association and other things to continue.”</p>	
<p>“People spoke about support from Stroke Association as being excellent.”</p>	
<p>“Only been able to see someone from the Stroke Association once, but she had really helped.”</p>	
<p>“Several people spoke very warmly about the Stroke Association representative.”</p>	

5. Main Findings

5.1 Thematic Analysis

A thematic analysis of the comments made by stroke patients and carers identified five key themes, namely:

- Personal experience of the quality of care
- Reaction to bringing local stroke services together
- Reaction to bringing local stroke services together – sub-theme: transport/distance
- Post stroke support services
- Post stroke support services – sub-theme: Stroke Association

5.2 Personal Experience of the Quality of Care

There are stroke patients who report 'excellent' and 'brilliant' care at Broadgreen, Aintree and Whiston hospitals. They would expect the proposed central facility to provide treatment and care equal to or better than the existing provision.

By contrast, there are stroke patients who report poor treatment, both during the early diagnostic stage of their stroke and during their stay in hospital. Their criticism focused on both the lack of trained staff and poor quality of staff at all levels.

The main criticism by stroke patients focused on the immediate aftercare following their discharge from hospital. Uncertainty about what help is available, accessing help, insufficient help and poor standards of aftercare were cited as deficiencies in aftercare provision.

5.3 Reaction to Bringing Local Stroke Services Together

There was 'strong' support for the concept of bringing local stroke services together in a single location. Both patients and carers could see the benefits of developing a 'centre of excellence' staffed by specialists and providing a comprehensive range of support services at one centralised location. If a well-resourced specialist stroke unit could be guaranteed this might override concerns particularly about access for both patients and families.

There was scepticism about the ability of the NHS to create a centralised stroke unit that could guarantee better service. This view was based on the personal experience of patients relating to the shortages of experienced staff and other shortcomings in service delivery.

Several stroke patients did disagree with the concept of centralisation, favouring instead the existing provision of the three providers of stroke services. They were concerned about the elimination of stroke services close to home and doubted the ability of a centralised unit to cope with the volume of demand, particularly at a time of financial constraints and staffing shortages. They favoured increased investment in existing provision.

5.4 Reaction to Bringing Local Stroke Services Together – Sub Theme – Transport/Distance

The main concern about bringing local stroke services together was the issue of 'distance' and the ability of emergency crews to get the patient to hospital in time. There were examples of patients waiting lengthy periods for an ambulance to arrive or family members experiencing difficulties in accessing appropriate guidance on what actions to take. Some

patients, and their carers, worried that should the proposed central facility mean longer travelling times this could have serious health implications.

There was also the issue of friends and family support. It was noted how crucial friends and family support was to the patient in the immediate aftermath of a stroke and any centralised location must have efficient public transport links and adequate car parking space.

5.5 Post Stroke Support Services

Aftercare was a key concern of most patients and carers. Current aftercare is criticised on several dimensions – inconsistent, inadequate for needs of some patients, poor standards of care, difficulty accessing help, financial and other pressures on the family and knowing what help is available.

People consistently reported a lack of physiotherapy/occupational therapy support, and some were paying for this privately. Others reported feelings of depression, anxiety and a sense of being isolated after their stroke. There were also reports of the lack of support for family members, some of whom faced considerable life changes – e.g. having to give up work and the associated loss of income following their loved one's stroke.

5.6 Post Stroke Support Services – Sub Theme – Stroke Association

The Stroke Association has provided valuable support services to some patients and their carers.

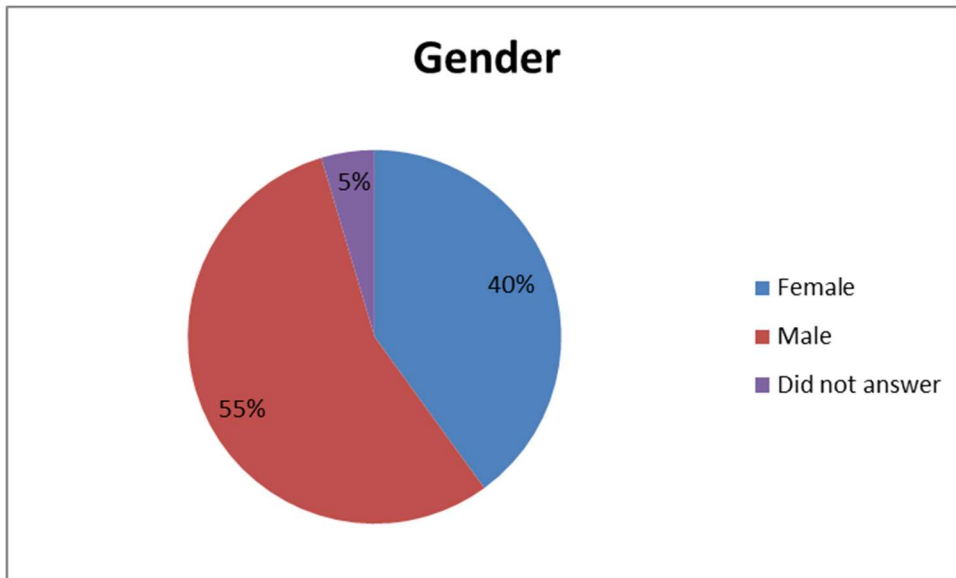
6. CONCLUSION

- I. A majority of both stroke patients and their carers were in favour of bringing stroke services together in one single location. They could see the benefit of developing a 'centre of excellence' staffed by specialists and providing a comprehensive range of support services at one centralised location.
- II. However, there was both concern and some scepticism from stroke survivors and their carers that such a centre could operate without substantial changes being made to the current structure relating to admissions and post stroke support services. Much of the criticism about the treatment of stroke patients was about getting to the hospital in the first place and what happened immediately after being discharged in terms of the quality, quantity and range of support services
- III. The families of stroke patients made the point that any centralised centre must have good communication/transport links and adequate car parking facilities.
- IV. Stroke patients and their families viewed the treatment of stroke survivors as a process that should move smoothly from one phase to the next. The current treatment of stroke patients does not achieve that objective for all patients. Whilst the engagement was originally designed to get specific feedback about the potential for centralising hospital stroke services, the conversations ranged over a much broader set of issues. Respondents wanted to talk about their experiences of stroke care and life after stroke, which highlighted opportunities for improvements across several areas. Some stroke patients experienced delays in getting to hospital once stroke symptoms were confirmed and others complained about the lack of aftercare and support after leaving hospital. These shortcomings can have long lasting impacts.
- V. The experience of stroke survivors and their families was not defined by their hospital care alone. The review should also consider how these wider issues impact on patient outcomes, including rehabilitation support, and how they plan to be addressed.
- VI. There are a minority of stroke patients who disagree with the concept of centralisation, favouring instead the existing provision of the three providers of stroke services. They were concerned about the elimination of stroke services close to home and doubted the ability of a centralised unit to cope with the volume of demand, particularly at a time of financial constraints and staffing shortages. They favoured increased investment in existing provision.

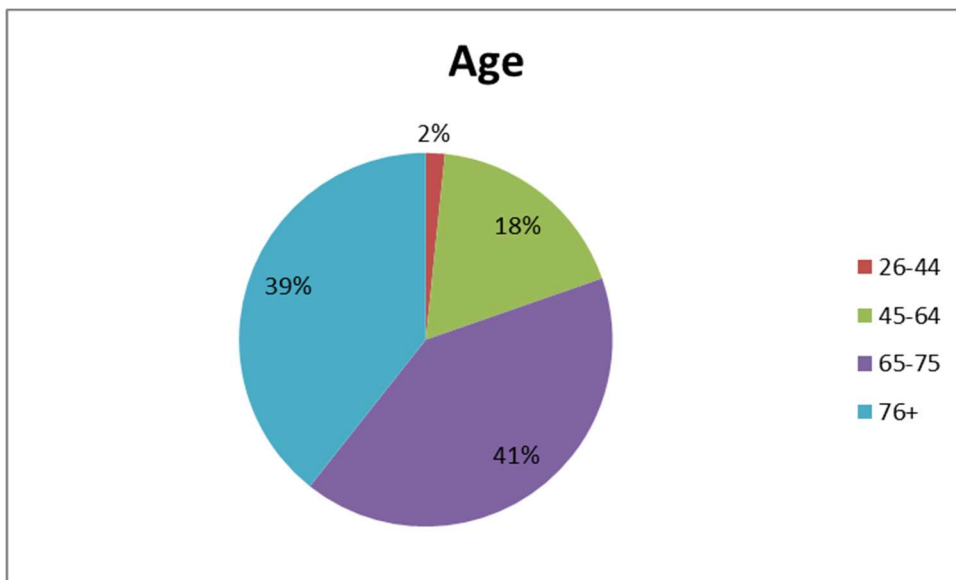
APPENDIX I. Profile of Respondents

People at the six sessions were asked to complete a short equalities monitoring form. The information collected is shown below.

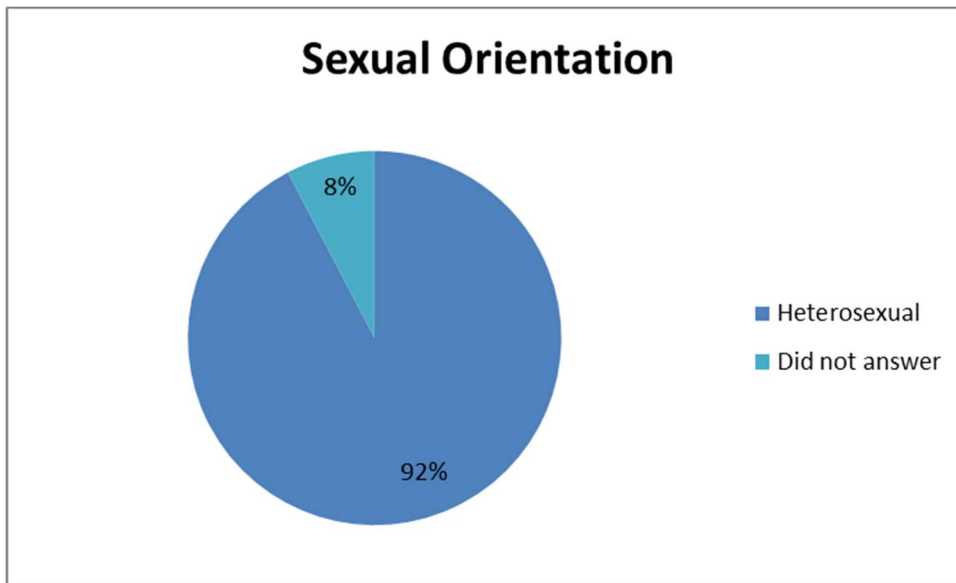
1. Gender (n = 65)



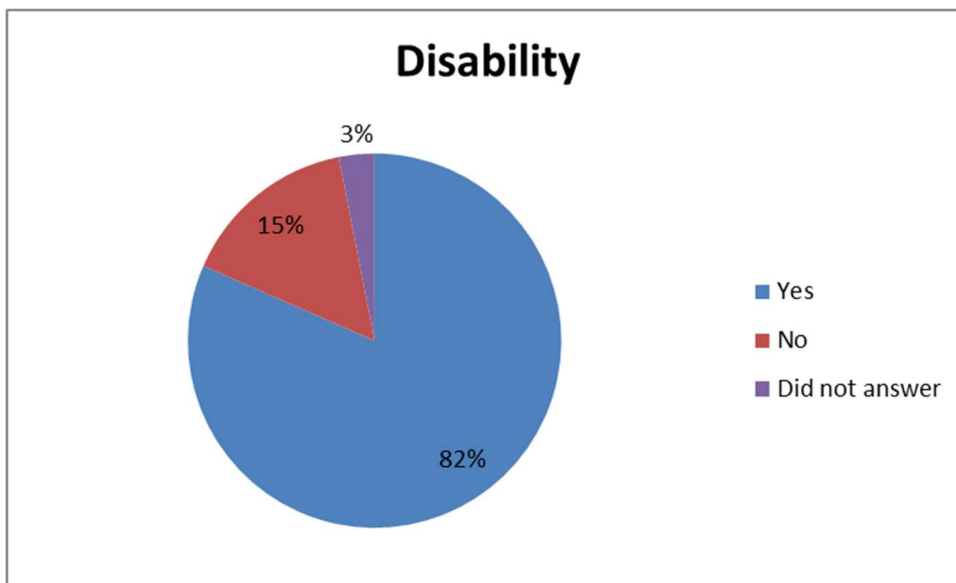
2. Age (n = 61)



3. Sexual Orientation (n = 65)

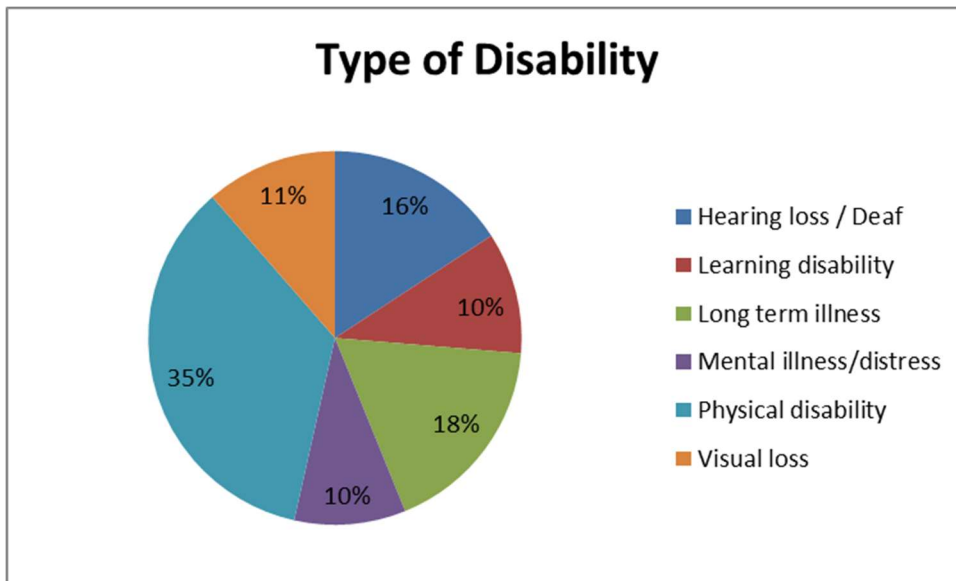


4. Disabled People (n = 65)

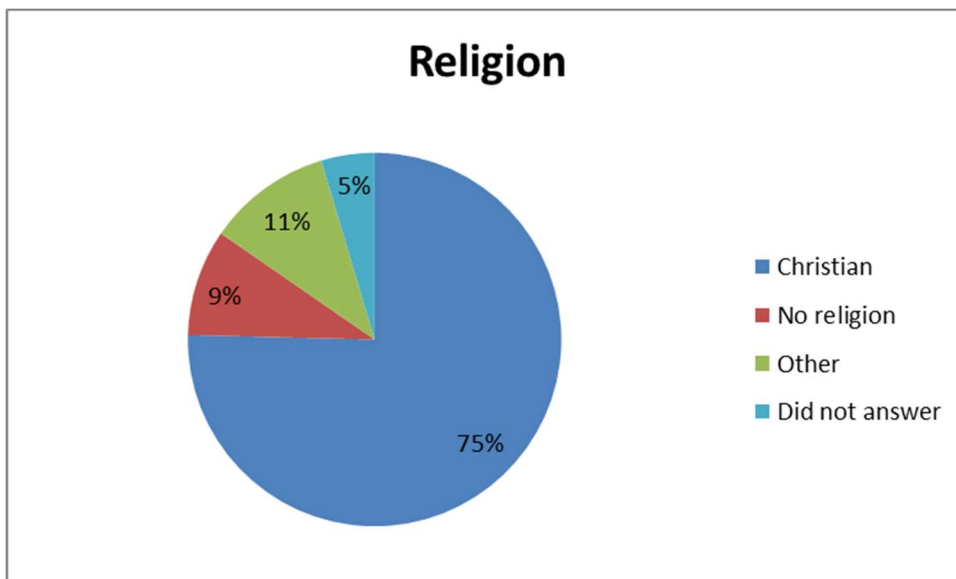


5. Nature of Disability (n = 114)

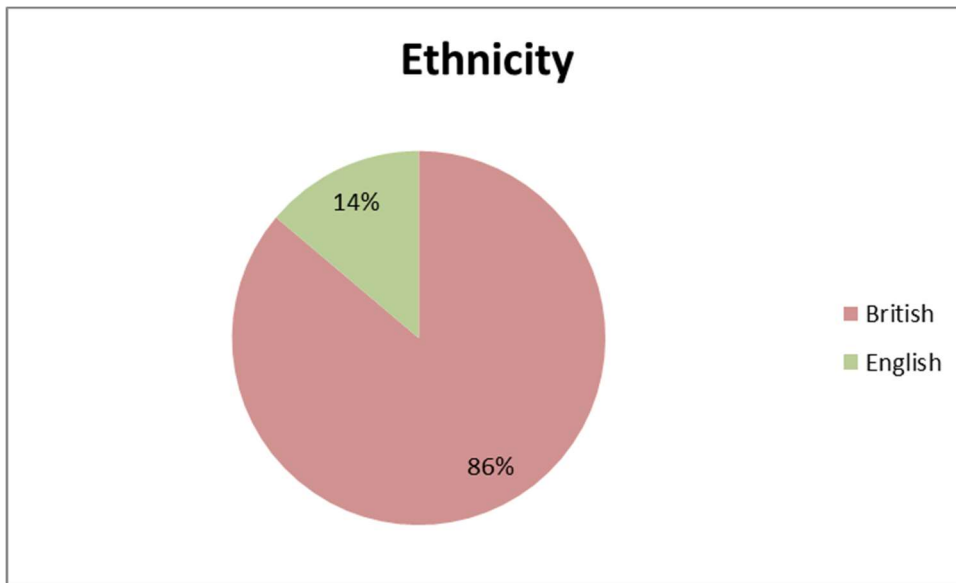
N.B. 53 people reported at least ONE specific disability. In total these 53 people reported 114 individual disabilities.)



6. Religion (n = 65)



7. Ethnicity (n = 65)



Review of north Mersey hyper-acute stroke services

Public consultation – communications and engagement plan

November 2021

Background

A stroke is a life-threatening condition that occurs when the blood supply to part of the brain is cut off by a blood clot or bleeding from a blood vessel. Strokes are a medical emergency and urgent treatment is essential. The sooner a person receives treatment for a stroke, the better the chance of recovery.

The term 'hyper-acute' covers the hospital care provided in the 72-hour period immediately after someone has a stroke. The NHS in Knowsley, Liverpool, South Sefton, Southport & Formby (collectively known as 'North Mersey') and West Lancashire began a review of these services locally during 2019.

Currently, hyper-acute stroke services in North Mersey are delivered at the Royal Liverpool Hospital, Aintree University Hospital, and Southport Hospital. The Walton Centre, on the Aintree site, provides a specialist clot-removing procedure called thrombectomy. Broadgreen Hospital provides stroke rehabilitation care.

Transforming stroke care is a priority in the NHS Long Term Plan¹, which points to strong evidence that hyper-acute interventions such as brain scanning, and treatments such as thrombolysis (using medication to breakdown blood clots formed in blood vessels), are best delivered as a centralised service.

The way that local stroke services are currently organised means that they can't always meet best practice guidelines for providing the very highest quality care, or make the most of the specialist stroke workforce. There is a shortage of stroke nurses, therapists and doctors, and our local expertise is currently spread across three different sites. This makes it very difficult to ensure that patients have access to the care that they need all of the time, especially during the critical period immediately after a stroke has taken place.

We want to give people the best chance of getting specialist treatments as soon as possible. This means making sure that stroke patients see specialist stroke staff who can make fast decisions about their treatment – and have access to the specialist scanning equipment needed to help make these decisions.

Local clinicians have developed a case for change which sets out the vision for a **Comprehensive Stroke Centre**, bringing together teams providing hyper-acute services alongside those able to offer thrombectomy. This would see an increase in the number of patients receiving high-quality specialist care, meeting seven-day standards for stroke care

¹ <https://www.longtermplan.nhs.uk/online-version/chapter-3-further-progress-on-care-quality-and-outcomes/better-care-for-major-health-conditions/stroke-care/>

which meet national clinical guidelines. Both thrombectomy and thrombolysis can significantly reduce the severity of disability caused by a stroke; bringing stroke services into a specialist centre would increase the use of these two treatments. This approach has already delivered significant benefits for patients in other parts of the country.

Progress to date

In 2019, to better understand how and where a Comprehensive Stroke Centre might be delivered for North Mersey, a series of workshops were held with people working in stroke services and other key stakeholders (including a group of stroke survivors), to help work through and refine potential solutions.

In the autumn of 2019, a piece of targeted engagement was held with stroke survivors and their families, as part of preparation for a pre-consultation business case (PCBC), which it was planned would inform a public consultation due to take place during summer 2020 (a report into this engagement is available here: <https://www.liverpoolccg.nhs.uk/stroke>). However, due to the Covid-19 pandemic, the review was paused and no further engagement with the public has yet taken place.

Work on the programme restarted in late 2020, and a clinical senate review² of the refreshed PCBC took place at the end of April 2021, paving the way for public consultation to begin once the necessary approvals have been completed.

Scope

The references to Clinical Commissioning Groups (CCGs) in this paper cover: NHS Knowsley CCG, NHS Liverpool CCG, NHS South Sefton CCG, NHS Southport & Formby CCG, and NHS West Lancashire CCG.

The references to trusts cover: Liverpool University Hospitals NHS Foundation Trust (LUHFT) (encompassing Aintree University Hospital, Broadgreen Hospital, and the Royal Liverpool University Hospital); Southport & Ormskirk Hospital NHS Trust (SOHT); and The Walton Centre NHS Foundation Trust (TWCFT). Some people in North Mersey and West Lancashire might also receive stroke care at other hospitals around the region, however only the trusts named are involved in these proposals – patients would still be taken to these hospitals if the changes went ahead.

There are a number of interdependencies within the stroke review, particularly in terms of the relationship between hospital stroke care and community rehabilitation services. During the patient engagement which took place in autumn 2019, many stroke survivors shared their experiences of getting support and after-care following discharge from hospital, and it

² A clinical senate is a panel of clinicians who work outside of the region, which reviews health service plans and proposals to produce an independent report. This will include feedback and recommendations.

was clear that this is an important issue for many people. Although the North Mersey Stroke Board is currently looking at this area of care as part of its wider remit, the public consultation detailed in this plan will only cover hyper-acute stroke services. This will be clearly set out in consultation materials.

The document is intended to be an overview of the consultation approach that will be taken across the five CCG areas; each CCG will be responsible for producing an individual plan (where this is required for local processes) covering any specific activity that will take place locally. This will also reference any specific requirements identified in the pre-consultation equality analysis.

This is a live document and will therefore continue to be updated ahead of the start of the consultation on 22 November 2021.

Proposal and public consultation

This plan sets out how the CCGs named above, in partnership with hospital trusts, will hold a public consultation about the future of hyper-acute stroke services in North Mersey. This consultation is due to start on 22 November 2021 and will run for 12-weeks, until 14 February 2022.

The consultation will present a preferred option for the creation of a single Comprehensive Stroke Centre on the Aintree University Hospital site, which would receive all patients believed to have had a stroke. This includes those who arrive following a 999 call for an ambulance, and also people who present in person at the accident & emergency departments of the Royal Liverpool and Southport Hospital with a suspected stroke (at which point they would be transferred to Aintree by ambulance). Where a stroke diagnosis is subsequently confirmed, the first 72-hours of care would then take place at the Comprehensive Stroke Centre at Aintree, located alongside the existing thrombectomy service provided by The Walton Centre (also on the Aintree site).

After the initial 72-hours of stroke care it is expected that up to half of patients could leave hospital with support from an early supported discharge team, to continue their recovery in their own homes. Those patients who weren't ready for discharge and who still needed specialist stroke care, would go to one of three acute stroke units – Aintree, Broadgreen, or Southport.

As part of this change, the Royal Liverpool Hospital and Southport Hospital would no longer provide hyper-acute stroke care. Southport would continue to provide acute stroke care, so that patients who would previously have been admitted to Southport could have their next stage of treatment closer to home. Under the proposals there would be no stroke unit offering acute care at the Royal, however Broadgreen hospital would continue to be used for stroke rehabilitation services. Aintree University Hospital would provide acute stroke care, as well as hyper-acute stroke care.

In the public consultation we will set out the clinical case for changing services, the process that has taken place to explore potential solutions and arrive at the preferred option, and

details of the potential impacts for patients. People will have the opportunity to share their views and provide any additional information that they feel should be considered in final decision-making.

Engagement objectives

1. Increase understanding among stroke survivors, their families and carers, and the public about the issues prompting the review of hyper-acute stroke services in North Mersey.
2. Share the potential solutions that have been considered in the review, and present the preferred option.
3. Clearly explain the expected impact(s) of the change for patients, both in terms of improvements in quality of care, and practical implications for things such as travel time.
4. Gather feedback on the preferred option and views about how the impact for patients and their families/carers would be felt.
5. Ensure that we specifically seek out responses from people who have used Liverpool University Hospitals (Aintree and Royal Liverpool sites) and Southport & Ormskirk Hospital hyper-acute stroke services in the past.
6. Understand whether there are differences in views among specific communities/groups and whether any adjustments/mitigations might be required as a result, in line with equalities duties.
7. Ensure that a range of routes are used to promote the consultation and allow people to share their views, recognising that people have different communication needs and preferences,

Timescales

All activity in this plan relates to the wider project and governance milestones (for example, the NHS England/Improvement assurance process, and local authority overview and scrutiny). Timescales will be set out in a separate project plan for CCG and trust communications and engagement teams, to ensure that activity is co-ordinated across the different organisations involved.

Methods of engagement

Given the uncertainty around face-to-face contact created by the Covid-19 pandemic, and the continued requirements for social distancing, the majority of this public consultation will be conducted using remote methods. Local case rates remain high – at the time of writing they were at an average weekly rate of between 285 and 376 per 100,000 for the four local authority areas involved in this piece of work.

In normal circumstances we would organise our own face-to-face opportunities (such as events) for engagement during public consultation, but because of the ongoing risk posed by Covid-19 it is felt that we can't do this both effectively and safely at present. However, we will consider opportunities to take part in face-to-face events organised by other groups on a case-by-case basis.

During the last 18 months, CCGs and trusts have carried out a number of pieces of patient engagement remotely, which has provided important experience for ensuring an inclusive approach. For example, last year NHS Liverpool CCG carried out public engagement exercises about both accessing services during the pandemic and language services, while LUHFT led a piece of targeted engagement around complex spinal services.

Although it is important to ensure that remote techniques don't exclude or disadvantage individuals who might be more comfortable with in-person methods of engagement, this approach does also present potential benefits. For example, those who might find it difficult to attend a physical event or focus group, whether because of accessibility concerns or another issue, are sometimes more easily able to take part when these sessions are held online.

Overall, we will aim to utilise a range of different techniques for the consultation and work closely with partners such as the Stroke Association, to help support a wide number of responses.

- **Survey:** A set of questions (appendix 1) has been designed to gather both qualitative and quantitative data about people's experiences. The survey will be made available online, with paper copies and alternative languages/formats made available on request (by emailing, texting or calling NHS Liverpool CCG). All communications about the consultation will encourage people to complete the survey if possible.
- **Phone line:** NHS Liverpool CCG's communications and engagement team will take feedback from members of the public over the phone, as required. In the first instance, people who call will also be asked to complete the survey – either online or printed – where possible. However, given that we will not be running face-to-face events for this engagement, we also want to ensure we capture the views of those who might not feel comfortable with this format. The same telephone number will be used to request alternative versions of the survey.

- Partnership with the Stroke Association:** The Stroke Association has previously provided access to its network of local support groups to facilitate direct discussions with stroke survivors and their families. These groups were utilised during the engagement that took place during autumn 2019, when a mixture of structured group and individual conversations were held during six sessions that took place across Knowsley, Liverpool, Sefton and West Lancashire. We will take a similar approach to promote the public consultation and gather views on the proposals. The Stroke Association currently oversees a range of volunteer-led and service-led groups of varying sizes, some of which meet face-to-face and some of which are virtual. We will aim to attend as many of these groups as possible during the consultation period. There is currently no Stroke Association group dedicated to West Lancashire, however people in this area do attend some Merseyside-wide sessions, and there are opportunities for them to join the virtual groups taking place.
- Contact with previous patients:** During the consultation, LUHFT and SOHT will write to patients who have used stroke services during the last two years (October 2019 – October 2021) to explain the proposals and give them an opportunity to share their views, either online or by requesting a paper copy of the survey. We will also use these letters to highlight opportunities to take part in virtual events (more details below). As well as reaching out direct to those who have had experience of local stroke services, we hope that this will also help to mitigate some of the potential limitations to the engagement created by limitations on face-to-face contact because of the pandemic.
- Contact with existing patients:** Teams who work with patients, such as speech and language therapists, will be briefed on the consultation so that they can encourage patients to share their views.
- Virtual events:** Given continued high levels of Covid-19 infection locally, and the likelihood of this remaining a challenge during autumn/winter, we will not be planning face-to-face events as part of this consultation. Instead, we will organise at least two virtual events on Microsoft Teams (one to take place in the evening and one during the day), which will be widely promoted as part of the communications around the consultation. The first sessions will be held during early December 2021. These events will start with an introductory, clinician-led briefing about the hyper-acute stroke review, the case for change and the proposals being put forward in the consultation, before pausing to give people an opportunity to complete the online survey. The second half of the event would be for those who felt that they had further views to contribute, or questions to ask, making it more of a focus group rather than a general information session. If these events have good attendance and attendees report finding them useful, we will explore the potential for holding more during late January/early February 2022.
- Utilising existing networks and groups:** In addition to working with the Stroke Association, we are mapping out other groups and networks which we can utilise to share information about the consultation and encourage people to take part. Where

groups hold online meetings, we will offer to attend to provide a presentation on the consultation.

Audiences and channels

The table below sets out some of the key stakeholders for the public consultation, and details how we ensure they are informed and engaged about the process.

Audience	Proposed channel/method of communication and engagement
Internal	
Governing bodies at Knowsley, Liverpool, Southport & Formby, South Sefton, and West Lancashire Clinical Commissioning Groups (CCGs)	<ul style="list-style-type: none"> • Papers shared with governing bodies about formation of Joint Committee of CCGs during late May/early June 2021 – completed • Each CCG communications team to share stakeholder briefing note (produced by NHS Liverpool CCG) ahead of consultation launch
Trust boards for Liverpool University Hospitals NHS Foundation Trust, Southport & Ormskirk Hospital NHS Trust, and The Walton Centre NHS Foundation Trust.	<ul style="list-style-type: none"> • Trust communications teams to share stakeholder briefing note ahead of consultation launch
Other trust boards in North Mersey	<ul style="list-style-type: none"> • Liverpool CCG to issue stakeholder briefing note ahead of consultation launch
Joint Committee of CCGs	<ul style="list-style-type: none"> • Joint committee to receive and approve consultation plan ahead of process getting underway (5 November 2021)
GP practices	<ul style="list-style-type: none"> • Each CCG to share toolkit copy on their own channels for communicating with GPs and practice staff (intranets, email bulletins, etc)
Staff involved in stroke services at LUHFT, SOHT and WCFT	<ul style="list-style-type: none"> • Each Trust to brief relevant staff (using single, consistent briefing) ahead of consultation getting underway

	<ul style="list-style-type: none"> Where relevant, staff to be provided with information/materials to allow them to promote the consultation to patients, to encourage people to take part
Wider trust workforce	<ul style="list-style-type: none"> Each trust to brief staff with copy from toolkit using their existing internal communications channels
CCG staff	<ul style="list-style-type: none"> Each CCG to brief staff with copy from toolkit using their existing internal communications channels
NHS England/Improvement (NHSE/I)	<ul style="list-style-type: none"> Updates have been provided through the NHSE/I assurance process Regional communications colleagues to be kept informed about consultation plans and materials
External	
Stroke survivors and their families/carers	<ul style="list-style-type: none"> Presentations at Stroke Association groups (whether face-to-face or virtual, depending on arrangements at time of consultation) Information to be shared direct with local patients using Stroke Association channels Direct letters to be sent to previous patients at LUHFT and SOHFT inviting them to share their views When possible and appropriate, current patients to be made aware of consultation during virtual clinics.
General public	<ul style="list-style-type: none"> Information (using copy from toolkit) on CCG/Trust websites, social media channels, and in email newsletters/briefings Each CCG to encourage GP practices to share information using their websites, newsletters, and with patient participation groups Information sharing through other local networks and organisations,

	<p>including Healthwatch, VCSEs and housing associations</p> <ul style="list-style-type: none"> • Press release issued to local/regional media – see below
Local authority scrutiny	<ul style="list-style-type: none"> • Consultation plan to be presented to joint Overview and Scrutiny Committee (OSC) for Knowsley, Liverpool, Sefton and West Lancashire ahead of process starting (11 November 2021)
Local authority executive teams and councillors	<ul style="list-style-type: none"> • Each CCG to share stakeholder briefing with its own local authority ahead of consultation launch
MPs	<ul style="list-style-type: none"> • Each CCG to share stakeholder briefing with its own MPs ahead of consultation launch
Steve Rotheram, Mayor of the Liverpool City Region	<ul style="list-style-type: none"> • Liverpool CCG to share stakeholder briefing ahead of consultation launch
Local voluntary, community and social enterprises (VCSEs)	<ul style="list-style-type: none"> • Each CCG to share stakeholder briefing with VCSEs ahead of consultation launch, in line with local briefing arrangements
Local Healthwatch organisations	<ul style="list-style-type: none"> • Joint briefing meeting for Healthwatch to be organised in advance of consultation launch • Healthwatch to be asked to share materials from consultation toolkit using their channels
The media	<ul style="list-style-type: none"> • Press release to be issued at start of consultation • Key clinicians offered up for interview

Assets and materials

Item	Details
------	---------

Main consultation booklet – available for download from websites or as a printable document (can also be requested in paper copy – or an alternative language/format – by telephone)	Most of the content from the booklet will be available online, however for maximum accessibility we will pull it together into a document which can either be printed at home, or requested via NHS Liverpool CCG.
Talking head videos	Short videos with key clinical spokespeople, explaining key issues and encouraging people to share their views, for use online and in patient areas where screens are available (including GP practice waiting rooms, where applicable).
Short slideshow overview video	High-impact content designed running through key issues.
Web-banners/graphics promoting consultation (to be produced in-house on request according to specific requirements)	Graphics that promote the consultation that can be used on CCG and trust websites.
Communications toolkit – pulling together web/newsletter copy, images, social media content, etc – to help partner organisations promote the consultation. Toolkit also to be shared with venues hosting roadshow visits.	Partner organisations – including local NHS Trusts, other public sector organisations such as local authorities and housing associations, and VCFSE organisations – can help support the consultation by sharing information on their internal and external communications channels. We will make this as easy as possible by compiling content into a toolkit.
Presentation for use at events/meetings	A PowerPoint presentation covering the key points of the consultation which can be used during online, including during local authority overview and scrutiny discussions, and as part of any group sessions for patients.

Governance and scrutiny

I. Project governance

The North Mersey Stroke Board was established to oversee the review of hyper-acute stroke services, which includes both clinical and non-clinical representatives from local CCGs and Trusts, as well as The Stroke Association. During the course of the review, the Board has received recommendations from the Clinical Reference Group (CRG) – a group of senior clinicians from each of the hospitals involved in the review – which have been informed by a series of stakeholder workshops about potential solutions for the future.

The North Mersey Stroke Board agreed the final proposal sent to the CCG Committees in Common (CIC). The CIC has agreed for the PCBC and public consultation plan to be presented to a joint committee of CCGs on 5 November 2022. The joint committee is made up of representatives from the governing bodies of each of the five CCGs, and has delegated decision-making powers in relation to the hyper-acute stroke review.

II. Consultation governance

This consultation plan has been shared with the North Mersey Stroke Board, before being shared with the CCG Committees in Common. It is now being presented to the CCG Joint Committee for final approval ahead of the consultation starting.

Where individual CCGs have local processes for engagement and involvement, these will take place alongside the wider governance process (for example, by organising extraordinary meetings where the timelines do not fit with existing dates).

III. Local authority scrutiny

CCGs must consult local authorities when considering any proposal for a substantial development or variation of the health service. The local authority may scrutinise such proposals and make reports and recommendations to the CCG, or referrals to the Secretary of State for Health.

This consultation plan will be presented to a joint Overview and Scrutiny Committee (OSC) for the relevant local authorities (Knowsley, Liverpool, Sefton and West Lancashire) for information and final input, once it has been approved by the joint CCG Committee. The public consultation will launch shortly after this step.

Once the consultation has concluded, and the consultation report is finalised, it will be presented back to the joint OSC to help inform the scrutiny process.

Responding to enquiries

A process will be put in place to ensure consistent responses to general questions and queries received during the public consultation (where appropriate these will be used to populate a website Q&A), as well as stakeholder enquiries (including MPs).

Analysis and reporting

This proposal would represent a significant change, reflected in the fact that a clinical senate was asked to carry out a review of the pre-consultation business case, and it is important

that the public consultation findings are robustly analysed to produce a final report. The public consultation report will be produced by an external organisation, as has been the case for other large-scale public consultations, such as orthopaedics and ear, nose & throat (ENT) in 2017.

Evaluation

Although the report referenced above will provide commentary on the overall number of responses, and the routes through which people heard about and took part in the exercise, we will also seek to evaluate throughout the 12-week consultation period. By monitoring which methods and channels are most effective – as well as where there might be gaps in our demographic reach – we will seek to maximise responses to the consultation while it is still live. For example, if the direct letter to previous patients generates good engagement with the consultation, we will explore the possibility of re-running this in early 2022 using the most recent data. Similarly, if the virtual events being planned for early December 2021 are well-received, we will schedule further dates.

Roles and responsibilities

NHS Liverpool CCG is leading public consultation activity by developing this plan and producing central resources such as the consultation survey, working in close partnership with the other CCGs whose patients use North Mersey stroke services, and the trusts involved.

NHS Liverpool CCG will develop a specific plan for engaging with its own population, based on internal requirements and processes, taking the pre-consultation equality analysis into account and any requirements identified for specific groups. This plan will reflect the aims and activity set out in this overarching plan, and will be shared with other CCGs for them to adapt and adopt for their own area, as required. Each CCG will be responsible for delivering against its own local processes and requirements (for example, presenting to engagement groups).

NHS Liverpool CCG is developing core materials and content (such as text for patient leaflets, website articles and stakeholder briefings), but each CCG will be responsible for using this to engage with their own population. There will be a single, co-ordinated consultation process, with delivery at a local CCG level.

NHS Liverpool CCG will host a single questionnaire using the SmartSurvey system. Respondents will be asked to indicate which CCG area they live in, so that the data can be separated out during analysis (although it will be used to develop a single report).

Staff engagement

Staff engagement has been a key strand running throughout the review. Although the public consultation itself will be aimed at the local population, it will be important to ensure that staff are fully briefed and understand the process. Individual Trusts (Liverpool University Hospitals, Southport & Ormskirk Hospitals, and The Walton Centre) will be responsible for communicating with their staff about the consultation, as well as continuing to engage with them about the wider review programme.

ENDS

DRAFT

Appendix 1 - Draft survey questions

Public consultation – survey questions

Intro and privacy statement

1. Please tell us your postcode

(We will only use this information to help us analyse our consultation responses – we will not contact you or pass this on to third parties)

2. Please choose which area you live in from the drop-down list:

- Knowsley
- Liverpool
- Southport & Formby
- South Sefton
- West Lancashire
- None of the above

3. Please tell us about your interest in stroke services. (Tick as many as apply)

I have used/am using stroke services at Aintree University Hospital

I have used/am using stroke services at Broadgreen Hospital

I have used/am using stroke services at the Royal Liverpool University Hospital

I have used/am using stroke services at Southport Hospital

Someone close to me is using/has used stroke services at Aintree University Hospital

Someone close to me is using/has used stroke services at Broadgreen Hospital

Someone close to me is using/has used stroke services at the Royal Liverpool University Hospital

Someone close to me is using/has used stroke services at Southport Hospital

I work in/for the NHS – please choose from drop-down list (if you work for Liverpool University Hospitals, please choose your main site from Aintree, Broadgreen, and the Royal)

- A. Aintree University Hospital
- B. Broadgreen Hospital
- C, Royal Liverpool University Hospital
- D. Southport Hospital
- E. The Walton Centre
- D. A clinical commissioning group (CCG)
- E A GP practice

I work with people who use stroke services (but I don't work in/for the NHS)

I haven't used or had experience of local stroke services

Other – please state

4. Do you think that the proposal to bring staff from different hospitals together to create a Comprehensive Stroke Centre at Aintree University Hospital is the best plan for improving the care people receive in the first 72 hours after having a stroke? (Choose one)

- Yes
- No
- Partly
- I'm not sure

5. Do you think this proposal could be improved? If yes, please explain how.

- Yes
- No
- Partly
- I'm not sure

6. (For those who answer no, partly or not sure to question 4), do you think there is a better potential solution which we haven't already considered?

- Yes
- No
- I'm not sure

- If yes, please say what this is and why it should be considered

7. Is there any information you feel we did not consider in arriving at proposals? If yes, please explain.

- Yes

- No

8. The proposed changes would mean that some people would be treated at a hospital that was further away from the one they might be treated at now. How would you feel about this?

- I would be ok with this if it meant people were getting the best care

- I wouldn't be ok with this

- I'm not sure

9. Is there anything about this proposal which you feel could have a negative effect on you, or would put you at a disadvantage compared with other people? If yes, please explain.

- Yes

- No

- Partly

10. Please use this box to share any new or additional information you think we should consider before making a final decision about the future of local hyper-acute stroke services.

11. Where did you hear about this public consultation?

- I received a letter from the hospital where I (or the person I care for) received stroke care

- I was sent an email about it

- Social media (Facebook, Twitter, etc)

- NHS website (for example, a CCG or hospital trust website)

- Through the Stroke Association

- Other (please state)

12. If you are interested in taking part in an online focus group to share more information about your views, please put your email address here....

(For paper copies only: You can also share your views with us over the phone by calling (0151) 247 6409.)

Demographic questions

DRAFT