Report of: Leeds Long Term Conditions Population Board

Report title: Leeds Stroke Priorities

Leeds Stroke Priorities

Working together to deliver the best outcomes for people who have experienced or are at risk of a stroke.

Content

Introduction

1.1 Purpose

This document describes our priorities/ambitions to improve Stroke Services in Leeds. In short, it explains what we want to do, why we want to do it, how we will do it, and how we will measure our progress.

1.2 How to use this document

This document can be viewed online or can be printed off. There are hyperlinks to other information which appear in green text and are underlined. Several terms are explained within the document to help with understanding. If you have any feedback on this document, please contact wyicb-leeds.comms@nhs.net

1.3 Foreword

This document aims to describe our Leeds response and priorities to people of all ages – regardless of background and circumstances, whether they are at risk of stroke, are a stroke survivor themselves, or caring for someone who has experienced a stroke.

This document also extends to all staff and volunteers who work across stroke services in Leeds, including healthcare professionals working in community settings, primary and secondary care, the third sector and our partners in public health and social care. Our identified priorities are aligned with the Leeds Health and Well Being Strategy, with its vision that Leeds will be a healthy and caring city for all ages, where people who are the poorest improve their health the fastest.

Co-production has been at the heart of this work. Our aim has been to create an ambition for people and carers, focusing on the whole person, not just their condition. We recognise that people experiencing a stroke face many things in everyday life that impact on their health and wellbeing (physical, emotional, and mental) and we want our ambition for stroke services to reflect this.
In this document, we will put forward our comprehensive vision for stroke service improvement for future years.

We want to build on what we do well in Leeds, focussing on the care that we currently provide, and addressing any gaps that we identify. We also want to improve the support to people who self-manage, helping them to use our existing resources better and creating new resources. Most importantly, we want people to notice and feel that our stroke service across the city is different and better. Therefore, we depend on the support from people who have experienced a stroke and colleagues working across our stroke service to continue to inform how and what we do in future years.

This document is a living piece of work and will be reviewed each year. What we hope to achieve is ambitious, both in the scale of change proposed, and in the intended outcomes for people and their families in Leeds.
We know that implementing our priorities/ambition will take time and require a great deal of work and investment, however we are committed to delivering better outcomes for the people of Leeds.

1.4 Acronyms and Abbreviations used within this document

AF	Atrial Fibrillation
AI	Artificial Intelligence
ASU	Acute Stroke Unit
BAT	Brain Attack Team
BMI	Body Mass Index
CAH	Chapel Allerton Hospital
CCSP	Collaborative Care and Support Planning
CSRT	Community Stroke Rehabilitation Team
CVD	Cardiovascular Disease
CYP	Children and Young People
DiaST	Diabetes Support Team
ESD	Early Supported Discharge
EQIA	Equality and Quality Impact Assessment
FAST	Face, Arms, Speech, Time
GIRFT	Getting It Right First Time
GP	General Practitioner
HASU	Hyper Acute Stroke Unit
HES	Hospital Episodes Statistics
HI	Health Inequality
ICB	Integrated Care Board
ICS	Integrated Care System
IMD	Index of Multiple Deprivation
ISDN	Integrated Stroke Delivery Network
LCC	Leeds City Council
LCH	Leeds Community Healthcare
LGI	Leeds General Infirmary
LTHT	Leeds Teaching Hospitals Trust
LYPFT	Leeds and York Partnership NHS Foundation Trust
MECC	Making Every Contact Count
MDT	Multi-Disciplinary Team
MSOA	Middle Layer Super Output Area
NHS	National Health Service
NHSE	NHS England
NMS	New Medicines Service
NOSIP	National Optimal Stroke Imaging Pathway
NICE	National Institute of Clinical Excellence
PEARS	Promoting Effective and Rapid Stroke Care
PFO	Patent Foramen Ovale

PCN	Primary Care Network
PHE	Public Health England
QOF	Quality and Outcomes Framework
SRU	Stroke Rehabilitation Unit
SSNAP	Sentinel Stroke National Audit Programme
TIA	Transient Ischaemic Attack
VAL	Voluntary Action Leeds
VRG	Virtual Reference Group
WY	West Yorkshire

1.5 Our Ambition

We will work with:

- Everyone involved with, or affected by stroke
- Staff across the city

We will strive to:

- Ensure that everyone gets the best possible care, no matter who they are, or where they live in Leeds
- Make the best use of our resources
- Be open to new ways of working

In doing so we will create an offer which improves prevention and supports people at risk of stroke and provides the best possible care and recovery to those who have had a stroke.

1.6 Principles

We will work together with everyone involved with and affected by stroke, including staff, patients, and carers, to continuously improve services
We will focus on improving prevention and supporting people at risk of stroke in their local communities
We will work with patients and their carers to develop personal recovery support which works for them
We will share learning and use best practice
All staff across the pathway involved in a person's stroke journey are important in delivering the best possible services; we will provide them with opportunities to develop their skills, working together to deliver the best possible services
We will work differently across the system and adopt appropriate new technology and new ways of working wherever possible
We will make sure that we get best value for people living in Leeds within the available resources (staff and money) so that we can commit to delivering the principles and priorities highlighted for stroke within this document
We will make the best use of our resources to enable us to keep improving in the years ahead

What is a Stroke?

The brain needs a constant supply of blood rich in oxygen and nutrients to work. If the supply is interrupted, even for a short time, brain cells can begin to die. When brain cells die, brain function is lost. Dependent upon the area of brain affected, the function of that area can be lost. For example, you may lose the ability to move an arm, a leg, or to speak. This is what we refer to when we say ‘stroke’.

In this section, we will briefly explore the different types of stroke. We will also touch upon the causes of a stroke, symptoms of a stroke, and treatments for stroke. This is intended for a non-clinical audience and is intended to provide a basic understanding of stroke. Further, more detailed, reading can be accessed via the links provided.

2.1 Types of strokes

The different types of stoke are multi-faceted and complex. However, strokes can broadly be classified into two main categories, both of which are sometimes referred to as ‘brain attacks’:

- An ischaemic stroke happens when a blockage cuts off the blood supply to the brain. The blockage can be caused by a blood clot forming in an artery leading to the brain, or within one of the small vessels deep inside the brain. Around 85% of strokes are caused by blockages, also known as ‘ischaemic’ stroke.
- A haemorrhagic stroke is caused by a bleeding in the brain. This happens when a blood vessel ruptures (or bursts). This means less blood gets to the surrounding brain cells, causing them to die.

2.2 Causes of Stroke

A stroke can happen to anyone, but there are some things that can increase your risk of having a stroke. As we get older, our arteries naturally become narrower and harder. They are also more likely to become clogged with fatty material, which can lead to an ischaemic stroke. However, it is a common misconception that strokes only happen to older people. In fact, one in four strokes in the UK happen to people of a working age (The Stroke Association – Risk Factors). This is because the way that we live has a big impact on our risk of stroke.

Conditions such as high blood pressure, diabetes and high cholesterol make your arteries more likely to get clogged up. Lack of exercise and an unhealthy diet can lead to these conditions and can contribute to an increased likelihood of having a stroke.

Smoking also dramatically increases the likelihood of stroke, with research suggesting that if you smoke 20 cigarettes a day, you are six times more likely to have a stroke compared to a non-smoker (The Stroke Association – Smoking and the risk of stroke).

Other lifestyle factors which can lead to stroke are drug and alcohol misuse. Regularly drinking large amounts of alcohol can lead to high blood pressure, diabetes, being overweight and atrial fibrillation (otherwise known as AF, which is a type of irregular heartbeat).

Excessive drug and alcohol consumption also lead to liver damage, which can stop the liver from making substances that help your blood to clot. This can increase your risk of having a stroke caused by bleeding in your brain (The Stroke Association – Alcohol and stroke). Strokes caused by drug abuse often occur in younger populations. However, there are other reasons why someone may have a stroke, and not all are attributed to lifestyle factors. Some babies are born with a patent foramen ovale (PFO) which is a hole in the heart. Having a PFO can be a risk for stroke if a blood clot forms in the heart and passes from one side of the heart to the other and up to the brain (The Stroke Association – PFO closure).

2.3 Symptoms of Stroke

Stroke is a serious medical emergency and urgent treatment is essential. The sooner a person receives treatment for a stroke, the less damage is likely to happen. Early treatment not only saves lives but results in a greater chance of a better recovery, as well as a likely reduction in permanent disability from stroke (NHS.UK). In the UK the 'Act FAST' campaign is one of the most widely recognised methods of identifying a stroke.

The campaign identifies the three main symptoms of Stroke. FAST stands for:

- Face – has their face fallen on one side? Can they smile?
- Arms – can they raise both their arms and keep them there?
- Speech – is their speech slurred?
- Time – time to call 999

Other variations of FAST exist, for example the Yorkshire Ambulance Service use FASTO, the 'O' accounting for any sudden onset of symptoms not covered by the standard FAST test. These symptoms could include sudden paralysis of one side of the body (being unable to move), dizziness, confusion, and difficulty swallowing. They could include a loss of comprehension, for example difficulty understanding what others are saying. Symptoms can vary, and although the FAST test is a useful way to identify stroke, it is by no means a fool proof method (NHS UK – Stroke symptoms).

You might sometimes hear people refer to having suffered a 'mini stroke'. This is formally referred to as a Transient Ischaemic Attack (TIA). A TIA has the same origins as that of an ischemic stroke; the blood supply to part of your brain is interrupted. However, in a transient ischemic attack, unlike a stroke, symptoms are brief, usually lasting minutes or seconds. Anything longer brain cells can start to be damaged. Having a TIA increases your likelihood of having a stroke in the future.

2.4 Treatment of Acute Stroke

In the acute phase of an Ischaemic stroke there are two types of treatment. Thrombolysis is a drug injected into a vein. This aids in the breaking down of a clot that may be causing the blockage. The time frame for this treatment is 4.5 hour from onset of symptoms, however the quicker you deliver this treatment, the more brain cells you can save. However, depending on the size of the blockage and where it is, this may have limitations and in Leeds, we are now able to offer another treatment called Thrombectomy.

Thrombectomy is a new treatment. During thrombectomy a small wire is inserted into an artery and is navigated into the brain, to the area of the blockage, and is physically removed using several specially designed devices. You can find out more about thrombectomy on the Stroke Association's website. You can read about the role of Leeds Teaching Hospitals in pioneering this service on their website.

There are, however, treatments for stroke other than thrombolysis and thrombectomy. Leeds is a Hyper Acute Research Centre and as such is involved in trials to assess the effectiveness of new treatments. These trails often focus on extending the time frame in which treatments can be offered. With the help of technology, staff at Leeds Teaching Hospitals can now assess the brain to determine the extent of brain cell death, and which brain cells remain that can be saved. This technology is now allowing clinicians to offer extended treatment windows for both Thrombolysis and Thrombectomy.

2.5 Rehabilitation

The injury to the brain caused by a stroke can lead to long lasting problems. Some people may recover quickly, however many may need long-term support to recover. The process of recovering from a stroke is called rehabilitation. The amount of rehabilitation needed will depend on the symptoms and severity of stroke (NHS UK – Stroke recovery).

Rehabilitation in Leeds starts in hospital and continues at home supporting self-management. If you need physical rehabilitation after stroke, a physiotherapist will assess the extent of physical disability and together create a treatment plan. This may involve exercises to improve, balance, muscle strength and overcome any walking difficulties. An occupational therapist may also help with re-learning everyday activities to enable you to lead a full and independent life and may help with independence including any equipment or adaptations to help you live more independently in your own home, plans for returning to work or help with returning to leisure activities and hobbies (vocational rehabilitation).

Communication problems are very common after a stroke. Around one-third of stroke survivors have problems with speaking, reading, writing, and understanding what other people say to them. A speech and language therapist will be able to make an assessment and facilitate therapy to help with any swallowing and communication needs. Dieticians may also be involved in the rehabilitation journey in addressing any nutritional needs and psychologists with respect to cognition and mood.

If you have problems with your vision after a stroke, you'll be referred to an eye specialist called an orthoptist, who can assess your vision and suggest possible treatments.

There are many other types of rehabilitation after stroke which can be found on the NHS website.

Rehabilitation is a hard to define term. In this document, when we refer to ‘rehabilitation’ we refer to multiple points along a journey, with the acknowledgement that these will be different for every stroke survivor.

National and Regional Stroke Context

Nationally, there are around 100,000 strokes every year in the UK. There also around 1.3 million stroke survivors living in the UK. The Stroke Association estimate that, in the UK, a stroke strikes every five minutes.

In this section, we will contextualise our work on stroke both nationally and regionally. Stroke does not just affect people in Leeds, and it is important to situate our work within a wider context, showing how we will maintain these links and work together to improve outcomes for those affected by stroke.

3.1 The NHS Long Term Plan

The NHS Long Term Plan is a document which sets the priorities and ambitions of the NHS until the end of the decade.

The NHS Long Term Plan (2019) identified stroke as a national clinical priority and aims to improve stroke care along the pathway, including prevention, early diagnosis, management from the onset of stroke, urgent and acute care, rehabilitation, and life after stroke.

The Long-Term plan aims to prevent up to 150,000 strokes over the next 10 years (NHS England), and has identified the below ambitions for stroke.

In the below table, we outline how our work and priorities in Leeds directly correlates to the Long-Term Plan ambitions.

Long Term Plan Ambition	Leeds Stroke Priorities Response
Every ICS to have initiated an Integrated Stroke Delivery Network (ISDN)	Leeds is part of the West Yorkshire ISDN (more information about this is provided in section 3.2)
Deliver a ten times increase in proportion of patients receiving thrombectomy after a stroke	Our workstream on thrombectomy is a key priority work area, working with the West Yorkshire ISDN (see section 6.5)
Treat patients with Atrial Fibrillation to prevent over 1,000 strokes	Our workstream on Cardiovascular Disease (CVD) Prevention includes Atrial Fibrillation (more information about this is provided in section 6.2)
Implement increased post-hospital stroke rehabilitation models nationally	Our recent ward move from the Leeds General Infirmary to Chapel Allerton

	Hospital demonstrates commitment to improving stroke rehabilitation services (please see section 4.1) together with our cross pathway working group which is working to implement elements of the ICSS model including an integrated Early Support Discharge (ESD) offer
Achieve the best performance in Europe for delivering thrombolysis by 2025	Emerging priority for years two to five years
National support for the scaling of technology to assist the expansion of life-changing treatments	We recognise that technology is an enabler in the achievement of our vision and are committed to exploring technology encouraged nationally and via the West Yorkshire ISDN
Develop a primary care CVDPREVENT audit	Our workstream on CVD Prevention includes CVDPREVENT (more information about this is provided in section 6.2)
Reduce the gap in amenable deaths between the most and least deprived areas	A focus on health inequalities is a priority across the Leeds Health and Care system (please see section 3.4).
Increase the number of people receiving physical health checks to an additional 110,000 people per year	Our workstream on CVD Prevention includes health check recovery/expansion (more information about this is provided in section 6.2)

The National Stroke Programme ran by NHS England helps to realise the above ambitions. You can find out more about The National Stroke Programme on NHS England's website.

3.2 The West Yorkshire and Harrogate Integrated Stroke Delivery Network

In the Long-Term plan, NHS England committed to create Integrated Stroke Delivery Networks (ISDNs) across England. The ISDNs were designed to bring together health and care services across the entire stroke pathway, from prevention to rehabilitation. The overarching aim of an ISDN is to improve the quality of stroke care for better clinical

outcomes, patient experience and patient safety. The ISDN does this by bringing key stakeholders together to facilitate a collaborative approach to improving the entire stroke pathway and ensure a patient-centred, evidence-based approach to delivering transformational change. Leeds sits within the remit of the West Yorkshire and Harrogate (WY&H) ISDN. Work occurring at the Leeds local level intersects with, and feeds into the priorities of the ISDN in several ways.

Current ISDN priorities include:

- Striving to improve thrombolysis rates and access to thrombectomy services across West Yorkshire and Harrogate, working with neighbouring ISDNs to establish a mutual aid agreement to support this ambition.
- Identifying priorities for stroke specific health inequalities (HI) to agree a programme of work, tailored to local place, using the HI framework, Core20Plus5, and the HI dashboard, in collaboration with HI Lead(s).
- Implementation of the Getting It Right First Time (GIRFT) recommendations, development of the National Optimal Stroke Imaging Pathway (NOSIP) and working to agree a regionally approved Artificial Intelligence (AI) solution.
- Active engagement in preventative work to develop a strategy that spans across primary, secondary, and tertiary services, linking with existing and emerging regional long-term condition boards.
- Working with stroke survivors and carers to understand their experiences of care services and to gain insight of where improvements are required.
- Development of an educational strategy and a stroke workforce strategy covering the West Yorkshire and Harrogate ISDN, and regionally in collaboration with neighbouring ISDNs.

3.3 The NHS West Yorkshire Integrated Care Board and the West Yorkshire Health and Care Partnership

The NHS West Yorkshire Integrated Care Board (ICB) is the statutory organisation that sits within the integrated care system (ICS), the West Yorkshire Health and Care Partnership, which supports 2.4 million people, living in urban and rural areas. The Partnership is made up of the NHS, councils, voluntary community social enterprise organisations, Healthwatch, hospices and communities. Its function is to help prevent ill health and improve people's care, to join up services, and tackle health inequalities.

The Partnership follows the principle of subsidiarity, meaning it performs only those tasks that cannot be performed at a more local level, and leading to the majority of work occurring at place level. The five local places (Bradford District and Craven, Calderdale, Kirklees, Leeds, and Wakefield District) are the bedrock of better health and care across West Yorkshire. Working together, these areas can enhance their unique strengths and draw upon trusted strong relationships across a wider area. As an ICS, the Partnership has four key purposes:

- Improving health outcomes for all people using information, data and insight
- Enhancing productivity and value for money
- Tackling inequalities in outcomes, experience, and access
- Help support broader social and economic development.

The West Yorkshire and Harrogate ISDN is a part of the wider ICS structure, positioned within the newly established Long-Term Conditions and Personalisation function of the Clinical and Professional Directorate. This function supports the delivery of the Long-Term Conditions Programme, with a focus on diabetes, stroke, palliative and end of life care, personalised care, and unpaid carers.

Whilst this document focuses on Leeds, Leeds does work closely with the other places in West Yorkshire and Harrogate, via the ISDN and the Long-Term Conditions Population Board in Leeds.

Within Leeds and across the Partnership there is a focus on addressing health inequalities and improving and imbedding personalised care.

3.4 Health Inequalities

Health inequalities are avoidable, unfair and systematic differences in health between different groups of people. These inequalities are understood and analysed across four, often inter-related, factors: socio-economic factors such as income; geographic factors such as the area where people live; specific characteristics such as ethnicity, disability or sexual orientation; and excluded groups, for example, people experiencing homelessness,(https://www.kingsfund.org.uk/publications/what-are-health-inequalities).

Leeds stroke services (section 4) together with the WY&H ISDN will strive to review and understand the key health inequalities relating to stroke and their impact and will work to design a bespoke set of interventions to target those with higher risk of stroke and where health inequalities exist within the city of Leeds. Some high-level examples of health inequalities relating to stroke are included within section 5.

3.5 Personalised Care

Personalised care is based on ‘what matters’ to people and their individual strengths and needs. Personalised care represents a new relationship between people, professionals and the health and care system. It provides a positive shift in power and decision making that enables people to have a voice, to be heard and be connected to each other and their communities. The comprehensive model of personalised care includes six key components:

1. Shared decision making
2. Personalised care and support planning
3. Enabling choice, including legal rights to choice
4. Social prescribing and community-based support

5. Supported self-management
6. Personal health budgets and integrated personal budgets

Personalised care improves people's health and wellbeing, joins up care in local communities, reduces pressure on stretched NHS services and helps the health and care system to be more efficient. Additionally, personalised care helps people with multiple physical and mental health conditions make decisions about managing their health, so they can live the life they want to live, based on what matters to them, as well as the evidence-based, good quality information from the health and care professionals who support them. Finally, personalised care recognises that, for many people, their needs arise from circumstances beyond the purely medical, and will support them to connect to the care and support options available in their communities.

Evidence has shown that to realise the full benefits from personalised care, these components and programmes should be delivered together and in full, alongside key enablers which embed the necessary culture change – including strong system leadership, co-production and workforce engagement across the health and care system and in partnership with the voluntary and community sector (NHS England, 2019).

3.6 National Stroke Organisation

There exist a multitude of organisations doing valuable work on stroke nationally. It is not possible to directly mention all these organisations below, therefore only those which have been cited, or are relevant to this document are mentioned. This does not, however, mean that other national organisations will be excluded from our work in Leeds.

The injury to the brain caused by a stroke can lead to widespread and long-lasting problems including physical, mental and emotional problems. For the person who has experienced stroke, and especially their family and loved ones, this can cause huge challenges as relationships shift to manage the symptoms of the stroke and care for the individual. These changes can put enormous strain on relationships and having opportunities to share and discuss these experiences with others who have been in a similar situation can be therapeutic and supportive:

"Quality peer support is a powerful intervention for individuals affected by stroke. Peer support groups enable stroke survivors and carers to connect with others in their local community with shared experiences and access knowledge and information to understand how to manage their condition. People find being with others who share their experience, and can validate it, reassuring, supportive, helpful and encouraging. Peer support groups create safe and non-judgemental spaces to make sense of and adjust to life after stroke."

Stroke Association Peer Support: Nesta

"We know connecting with others affected by stroke is often the most important thing in helping to rebuild life after stroke, groups across the country provide this vital support to stroke survivors and carers."

Keeping Connected: Stroke Association

In the third sector, The Stroke Association, Different Strokes, Age UK, and many more, provide valuable life after stroke support and resources to those affected by stroke, and to the public. The Stroke Association provide a National Stroke Helpline which is a key source of support for people affected by stroke. Different Strokes specifically helps younger stroke survivors reclaim their lives. Age UK provides online advice on Stroke and managing associated comorbidities.

As previously mentioned, Public Health England (PHE) supported by The Stroke Association, are responsible for the advertisement of the Act FAST campaign. This includes TV, Video on Demand, radio and social media activity. Radio adverts are available in English, Hindi, and Punjabi across the whole of the UK.

SSNAP is another national Stroke programme with specific significance for this document. The Sentinel Stroke National Audit Programme (SSNAP) is a major national healthcare quality improvement programme based at King’s College London. SSNAP measures the quality of stroke care in the NHS and is the single source of stroke data in the UK. The overall aim of SSNAP is to provide timely information to clinicians, commissioners, patients, and the public on how well stroke care is being delivered.

Stroke Services in Leeds

In the previous sections of this document, context has been set on the following areas: what is a stroke, national stroke work, and regional stroke work. In this section we will explore stroke providers in Leeds and situate stroke within the context of the city.

4.1 Leeds Teaching Hospital (LTHT)

Leeds Teaching Hospitals specialise in the early diagnosis, treatment and rehabilitation of people who have had a stroke. Leeds Teaching Hospitals is one of the biggest NHS trusts in the country, offering a range of both general and specialist hospital services.

LTHT serves the Leeds metropolitan area providing stroke care. In addition, LTHT receives approximately 70% of the acute stroke patients from the Harrogate catchment population following closure of the Harrogate Hyper Acute Stroke Unit (HASU) facility in 2019. As a regional specialist neuroscience centre, LTHT also provides mechanical thrombectomy services and neurosurgical support to the West Yorkshire and Harrogate population of approximately 2.8 million people.

Stroke Services at LTHT are based within the Leeds General Infirmary (LGI) and Chapel Allerton Hospital (CAH). An overview of the services provided at each site is provided below.

4.2 Leeds General Infirmary (LGI)

Urgent and emergency treatment in Leeds is provided on an acute stroke ward (L21) in the Leeds General Infirmary. LTHT has a 24 / 7 stroke specialist nurse cover (Brain Attack Team) for emergency admission. This team aims to meet patients in the Emergency Departments (ED, formerly Accident and Emergency, A&E)). The rapid assessment and intervention by this team is time critical in terms of outcomes for patients with stroke and has significantly reduced the time from recognition of symptoms, leading to life saving, and life altering, treatments being provided.

When patients are stabilised, they are transferred to the Hyper Acute Stroke Unit (HASU) or the Acute Stroke Unit (ASU) for assessment. Some are suitable for early rehabilitation by our specialist nursing and therapy teams.

The HASU and the ASU have a combined 33 beds. After a stay in either the HASU or the ASU patients at LTHT may then be transferred to a specialist Stroke Rehabilitation Unit (SRU) at Chapel Allerton Hospital in Leeds.

4.3 Stroke Rehabilitation Unit at Chapel Allerton Hospital (CAH)

The SRU at CAH is led by stroke rehabilitation consultants alongside an expert therapy team who specialise in providing longer-term rehabilitation. The team includes dietitians, doctors, nurses, occupational therapists, physiotherapists, clinical neuropsychologists and speech and language therapists.

This is a new ward, which opened in November 2021. This ward (C6) has 22 beds with en-suite bathrooms and four-bed bays. There are also three rehabilitation rooms. The new ward also benefits from a 'minimal care flat' fitted with a kitchen, bathroom and bedroom which can be used by patients to practice living independently.

4.4 Leeds Community Healthcare (LCH)

Leeds Community Healthcare provide a Community Stroke Rehabilitation Service. This a seven-day service, delivering early-stage stroke specialist rehabilitation in the community for up to 12 weeks. The team aims to maximise rehabilitation potential and improve quality of life for people following a stroke. This team also offers support to stroke carers.

This service is based in the community delivering rehabilitation in patient's homes and care and residential homes. People who have had a stroke can be visited in their home by a physiotherapist, an occupational therapist, a speech and language therapist, a dietitian, psychologist, rehabilitation assistant and therapy assistant practitioners or a nurse depending on their individual needs. These professionals will help people who have suffered from Stroke to achieve their personal rehabilitation goals. This service offers twelve weeks of input. Around 50% of stroke patients in Leeds are discharged into this service from LTHT.

Leeds Community Healthcare also provide a Community Neurological Rehabilitation service, which aims to provide rehabilitation in community settings (home, leisure, community facilities, workplace, education facilities, etc). Some stroke patients from LTHT will enter this service if they have longer term rehabilitation needs (beyond twelve weeks).

Community dietetics delivered by LCH may also be offered to patients who have not accessed dietetics within the community stroke team or need longer term dietetic support. Community dietetics cover lipid management, cardio protective advice, under-nutrition / unintentional weight loss or irritable bowel syndrome, etc linked to their stroke. Lipid levels / cardio-protection for people who are living with type 2 diabetes are considered by dietitians or members of our Community Diabetes Multi-Disciplinary Team (MDT).

4.5 The Stroke Association

As per section 3.6, the Stroke Association is a national third sector organisation which supports people to rebuild their life after stroke. The Leeds Stroke Recovery Service (SRS) will work with you to identify your personal support needs and priorities. A co-ordinator will contact stroke survivors and offer a six-month stroke review either by telephone call and / or home visit to assess any additional needs and provide them with self-management support. The SRS can offer opportunities support in rebuilding confidence / independence and help in rebuilding life after stroke.

This service is delivered in direct liaison with Leeds Community Healthcare who provide clinical oversight, therefore can refer any concerns or suspected deterioration back into Leeds Community Healthcare. The Stroke Association also capture key observations and themes from patients in relation to how stroke care in Leeds may be enhanced to avoid the reoccurrence of a stroke, feeding into a framework of continuous improvement.

Leeds Stroke Data and what this can tell us

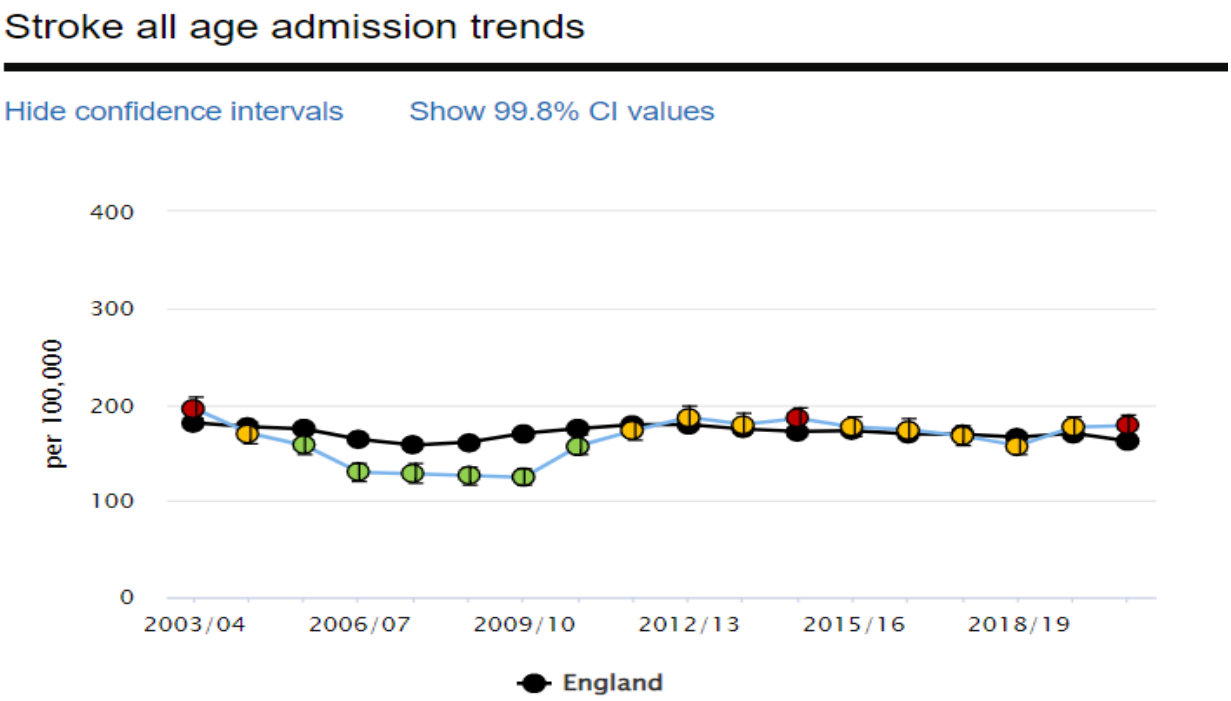
In this section we will explore high-level data regarding stroke in the city of Leeds, having provided an understanding of local service provision in the previous section.

5.1 Incidence of Stroke

LTHT as our main provider of acute stroke care in Leeds, will assess in the region of 4,500 – 4,750 people at risk of / with a stroke via its Brain Attack Team (BAT) upon an emergency admission into LTHT (1,188 on average each quarter). This number includes out of Leeds area patients who may be transported to LTHT via ambulance and people living within the Harrogate catchment, following the closure of the Harrogate Hyper Acute Stroke Unit (HASU) facility in 2019.

Based on 2021 / 2022 LTHT SSNAP data, 1403 people were diagnosed and admitted with an end diagnosis of stroke. Diagnosis of strokes are recorded by LTHT and are also recorded within the patients GP record and HES data (Hospital Episodes Statistics), based on admission and diagnosis. The below data in **Figure 1** summarises confirmed stroke diagnosis and admissions, year on year for people in Leeds, with a registered Leeds GP practice.

Figure 1: Stroke all age admission trends



The graph highlights that Leeds is experiencing a higher rate of stroke/admission, when compared with the national average.

Table to show figures from NHS Leeds CCG

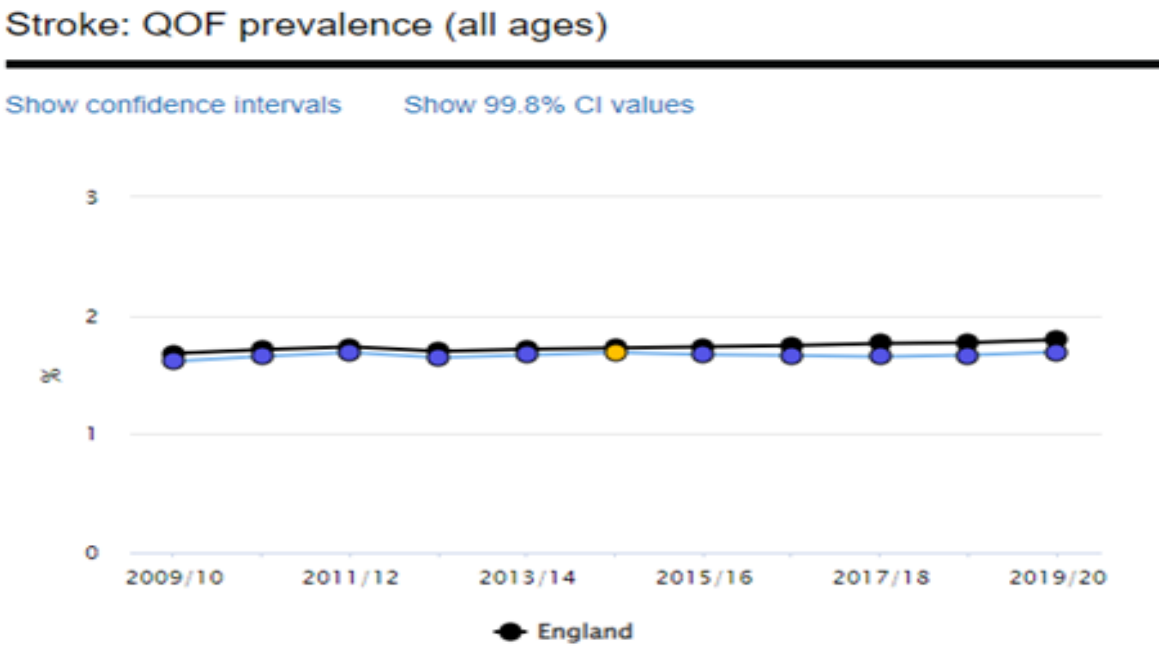
Period	Count	Value	95% Lower CI	95% Upper CI	England
2003 / 04	1,120	195.6	184.2	207.5	180.7
2004 / 05	965	170.1	159.5	181.3	176.9
2005 / 06	905	157.5	147.3	168.2	174.6
2006 / 07	750	129.5	120.3	139.1	163.9
2007 / 08	745	128.1	119.0	137.7	157.7
2008 / 09	740	126.2	117.2	135.7	160.8
2009 / 10	735	124.4	115.5	133.8	170.0
2010 / 11	935	157.0	147.0	167.5	175.1
2011 / 12	1,030	172.9	162.5	183.9	179.0
2012 / 13	1,125	186.4	175.6	197.8	179.1
2013 / 14	1,085	179.4	168.8	190.5	174.3
2014 / 15	1,145	185.4	174.8	196.5	171.9
2015 / 16	1,095	176.4	166.0	187.2	172.8
2016 / 17	1,085	173.7	163.4	184.4	169.2
2017 / 18	1,060	167.0	157.0	177.4	169.1
2018 / 19	1,005	157.2	147.6	167.3	166.0
2019 / 20	1,140	176.5	166.3	187.1	170.2
2020 / 21	1,160	178.0	167.8	188.6	161.8

Source: Calculated by Public Health England from data from NHS Digital – Hospital Episode Statistics (HES) and Office for National Statistics (ONS) – Mid-year population estimates.

5.2 Prevalence of Stroke

Stroke prevalence (patients registered to a Leeds GP, with a record of stroke in their record is summarised below in **Figure 2**), rolling, year on year. Approximately 1.7% of the Leeds GP registered practice population have a diagnosis of stroke / TIA recorded on their GP record. The prevalence of stroke in Leeds appears relatively stable and is lower than the England average.

Figure 2: Stroke prevalence in Leeds



Prevalence of stroke data in Leeds

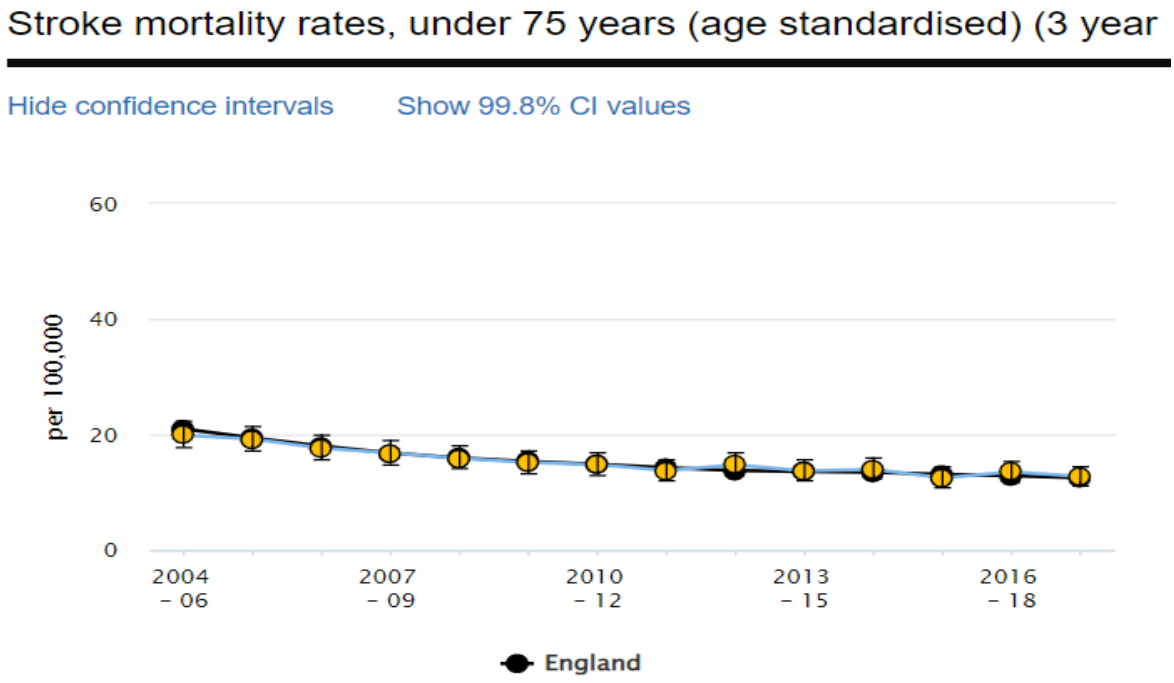
Period	Count	Value	95% Lower CI	95% Upper CI	England
2009 / 10	11,969	1.6%	1.6%	1.6%	1.7%
2010 / 11	12,360	1.7%	1.6%	1.7%	1.7%
2011 / 12	12,762	1.7%	1.7%	1.7%	1.7%
2012 / 13	12,603	1.6%	1.6%	1.7%	1.7%
2013 / 14	12,952	1.7%	1.6%	1.7%	1.7%
2014 / 15	13,307	1.7%	1.7%	1.7%	1.7%
2015 / 16	13,547	1.7%	1.6%	1.7%	1.7%
2016 / 17	13,833	1.7%	1.6%	1.7%	1.7%
2017 / 18	14,557	1.7%	1.6%	1.7%	1.8%
2018 / 19	14,822	1.7%	1.6%	1.7%	1.8%
2019 / 20	15,167	1.7%	1.7%	1.7%	1.8%

Source: Quality and Outcomes Framework (QOF) NHS Digital

5.3 Stroke Mortality

Stroke mortality for our Leeds population, under 75 is explored below in Figure 3.

Figure 3: Stroke Mortality, Under 75 Years



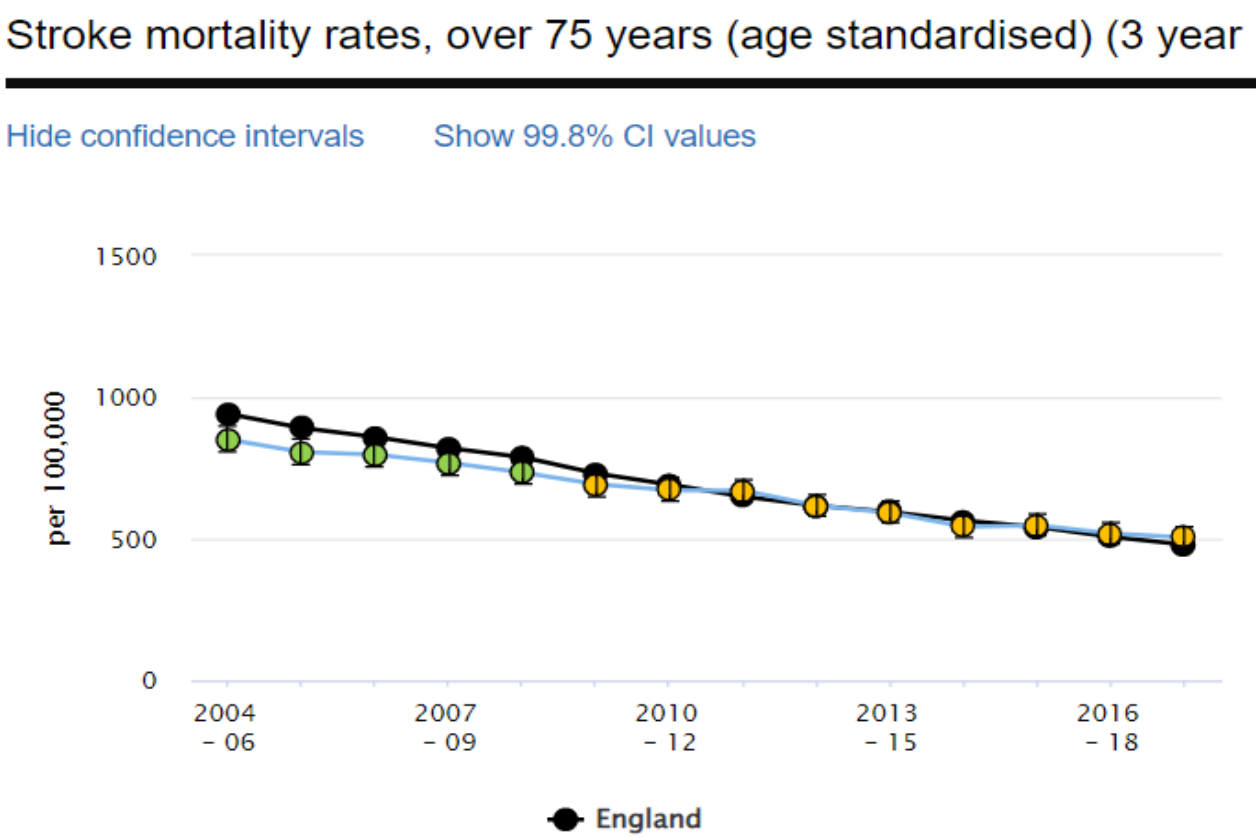
Stats for stroke mortality of people under 75 in Leeds

Period	Count	Value	95% Lower CI	95% Upper CI	England
2004-06	305	19.9	17.7	22.2	21.0
2005-07	298	19.2	17.1	21.5	19.4
2006-08	276	17.6	15.6	19.9	18.0
2007-09	265	16.8	14.8	18.9	16.8
2008-10	252	15.9	14.0	18.0	16.0
2009-11	243	15.2	13.3	17.2	15.3
2010-12	237	14.8	13.0	16.8	14.8
2011-13	223	13.8	12.0	15.7	14.2
2012-14	240	14.7	12.9	16.7	13.8
2013-15	228	13.7	12.0	15.6	13.6
2014-16	234	13.9	12.2	15.9	13.4
2015-17	215	12.5	10.9	14.3	13.1
2016-18	236	13.5	11.8	15.3	12.8
2017-19	226	12.7	11.1	14.5	12.5

Source: Office for National Statistics (ONS) – Mortality statistics

There were 226 deaths due to stroke / TIA during the three year period 2017-19 in the under 75s age group (premature death), as illustrated in **Figure 3**. The Leeds rate is similar to the England average. The number of premature deaths due to stroke / TIA in Leeds has reduced since baseline but the downward trend appears to be levelling off over recent years.

Figure 4: Stroke Mortality, Over 75



Stroke mortality rates for people over the age of 75 in Leeds

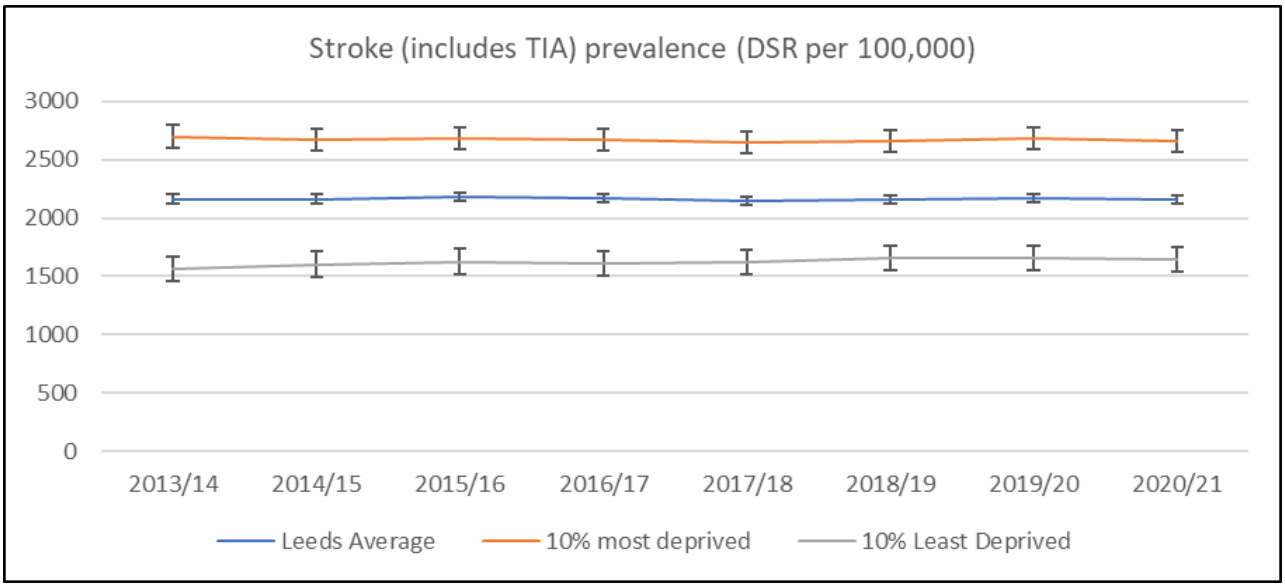
Period	Count	Value	95% Lower CI	95% Upper CI	England
2004-06	1,303	849.8	804.0	897.5	941.2
2005-07	1,250	806.2	761.9	852.4	890.7
2006-08	1,233	797.1	752.9	843.1	858.6
2007-09	1,189	768.4	725.0	813.7	819.7
2008-10	1,135	733.6	691.1	777.9	787.5
2009-11	1,083	692.0	651.1	734.8	730.0
2010-12	1,059	670.6	630.6	712.5	690.3
2011-13	1,067	670.0	630.1	711.8	647.9
2012-14	997	617.1	579.2	656.9	616.4
2013-15	967	591.1	554.3	629.8	594.7
2014-16	896	541.9	506.8	578.8	563.8
2015-17	903	546.8	511.5	584.0	540.6
2016-18	861	518.8	484.5	554.9	506.3
2017-19	846	504.7	471.0	540.2	479.4

Source: Office for National Statistics (ONS) – Mortality statistics

There were 846 deaths due to stroke / TIA during the three year period 2017-19 in the over 75s age group (**Figure 4**). The Leeds rate is similar to the England average. The number of deaths due to stroke / TIA is has reduced in Leeds since the baseline year but this downward trend appears to be levelling off over recent years.

5.4 Stroke Data with a Health Inequalities Lens

Figure 5: Stroke prevalence in 10% most deprived, 10% least deprived and average



When stroke prevalence in Leeds is explored, by GP practice registration and Index of Multiple Deprivation (IMD), there is statistically signfiicant higher rates of stroke in the 10% most deprived GP practice areas of Leeds when compared to both the Leeds average and 10% least deprived. Further exploration of this is required, with a focus on prevention and awareness within our most deprived areas of Leeds. We must also consider the impacts of the current cost of living crisis.

5.5 SSNAP data – Current performance

As outlined in section 3.4, the Sentinel Stroke National Audit Programme (SSNAP) is a major national healthcare quality improvement programme based at King's College London. SSNAP measures the quality of stroke care in the NHS and is the single source of stroke data in the UK. Acute stroke providers across the country report into the Audit including LTHT.

In the financial year of 2021 / 2022, LTHT scored an overall result level of 'C', and score of 65 (average across four quarters). Levels range from A – E. Indicators that reduce LTHTs score to a C include:

- E ratings for the stroke unit
- D ratings for discharge processes (including 6-month follow-up assessment)

A & B ratings are achieved in scanning, specialist assessments and access to physiotherapy, occupational therapy and speech and language therapy.

5.6 SSNAP data – risk profiling

SSNAP data submitted by LTHT, profiles people admitted and diagnosed with stroke by age, sex and risk profile. Some highlights of the casemix in 2021 / 2022 are summarised below:

- 54% Male / 46% Female
- The median age of people experiencing a stroke is 74
- 22% of people experiencing a stroke are aged less than 60

Of the casemix diagnosed with a stroke in 2021 / 2022:

- 74% had one or more co-morbidity before stroke
- 60% diagnosed with hypertension before stroke
- 20% diagnosed with AF before stroke
- 20% diagnossed with diabetes before stroke
- 24% have experienced stroke / TIA before

These risk factors are explored and discussed in more detail in our identified priority relating to CVD prevention in section 6.2.

Immediate Priorities and how we are working to achieve these

With an understanding of local data, service provision, and national priorities, we consider our immediate priorities in Leeds that all partners are currently working to deliver:

6.1 Patient and public involvement and stroke awareness

An initial insight review of what we already know about people's experiences of stroke in Leeds was undertaken in November 2021. The review found there to be a lack of information available on how patients and their families and carers experience stroke services in Leeds. In addition, incomplete data in relation to patient demographics, means that it is unclear how different communities, and specifically those most at risk of experiencing health inequalities, are being impacted by stroke.

In order to begin building a picture of what is working well, and what is not, for people experiencing stroke and their families and carers, and what matters most to them about the treatment and support they receive, a comprehensive public engagement is being developed. The findings of the engagement will provide a foundation to gain a better understanding of people's (including staff) experiences in Leeds, and the opportunity to highlight any gaps or particular areas to prioritise. This engagment aims to be the beginning of the ongoing and consistent collection of patient and public feedback, helping to shape continuous service improvement.

Work on the public engagement will include:

- Completion of an Equality Impact Assessment (EIA)
- Completion and implementation of an involvement plan for public engagement
- Ensuring relevant existing organisations, groups and networks are involved and helping to inform the approach to public engagement
- Delivery of the public engagement, and production of a report based on the findings of the engagement highlighting main themes and any gaps or priorities.

Equality Impact Assessments (EIAs) are undertaken where new policies, strategies or services are being developed, or where there are plans to develop or change existing ones. The process of completing an EIA aims to ensure that such activities promote equality, challenge discrimination and are genuinely accessible to everyone.
EIAs focus on quality and equality issues, and offer a proactive approach to achieving fair and appropriate outcomes for patients, staff and local communities. They help us to consider the actual or likely effect of a change or a development on people who are identified under "protected characteristics" in the Equality Act (2010). These are:

- Age
- Disability
- Gender reassignment
- Marriage and civil partnership
- Pregnancy and maternity

- Race
- Religion and belief
- Sex
- Sexual orientation

An initial virtual reference group (VRG) was set up towards the end of 2021 to inform this work and document. Local third sector and peer-led support groups, networks, organisations and volunteers were invited to take part, and did, through the VRG. To date this group has shaped the ambition and principles outlined in section 1.

In preparation for the wider public engagement work, the role of the VRG will be reviewed to consider how it can best add value to what is currently in place across Leeds. Established support and peer-led groups and networks across the city, and staff delivering the services, are the ones hearing from people who have had a stroke, and their families and carers. It is important we begin with them as we develop effective ways for people and patients to be involved. The VRG is also committed to supporting FAST Campaign promotion (Stroke Awareness) and exploring opportunities to cascade messaging and adapt locally.

6.2 Stroke Prevention in Leeds

A key priority in Leeds, is our collaborative work on avoiding the occurrence of stroke by focusing efforts on our cardiovascular disease (CVD) prevention programme of work. As identified in section 5.6, a significant percentage of people experiencing stroke live with a long-term condition / risk factor which can be a contributing cause of stroke (section 2.2). In Leeds, we are experiencing a slightly higher rate of stroke / admission, when compared with the national average, and we need to focus our attention on reducing this rate via prevention.

In Leeds we have established a CVD Steering Group, and several workstreams all designed to increase the prevention of CVD and stroke. The steering group and workstreams include representation from all partners in Leeds, including LTHT, LCH, LYPFT, Primary Care, etc. Further governance arrangements are detailed in section 8. CVD Prevention workstreams and their priorities are summarised below:

Anti-coagulation and Thrombosis

In Leeds, we are working hard to implement NHS England's Detect, Protect and Perfect programme which is designed to prevent atrial fibrillation (AF) related strokes.
Every year in Leeds about 280 (SSNAP 2021-2022) people get admitted to hospital with a stroke due to AF. More than two thirds of these people, despite being known to have AF before their stroke, are not receiving anticoagulation of any sort.

Stroke caused by AF tends to be severe and is associated with significant mortality and morbidity. Detecting AF through opportunistic pulse checks is essential, with significant education underway with primary care on the importance of AF detection in Leeds. In April 2022, all GP practices were provided with training via Target education sessions.

Once AF is detected, we are prioritising protect and perfect models of delivery in Leeds. We are currently piloting AF MDTs to support primary care in ensuring patients are adequately anti-coagulated through the provision of education, expert knowledge and advice and guidance. Our priority is to evaluate the MDT approach and expand / provide permanently in Leeds to support medicines optimisation of anticoagulation.

It is expected that by increasing our detection of AF (detect), increasing prescribing of anticoagulation (protect) and focusing on improving the quality of prescribing and monitoring of anticoagulation (perfect) we will reduce the number of AF related deaths, strokes and major bleeds.

Hypertension

High blood pressure is a major risk factor for stroke. High blood pressure adds to heart's workload and damages arteries and organs over time. Compared to people whose blood pressure is normal, people with high blood pressure are more likely to have a stroke. 20% of people experiencing a stroke in Leeds have a diagnosis of hypertension.

We are working to identify and diagnose hypertension earlier in Leeds, through:

- The roll-out of Blood Pressure Monitoring@Home schemes (2,800 blood pressure monitors issued in 2021 / 2022 alone in Leeds), to support people in diagnosis and self-management at home.
- Providing opportunistic blood pressure testing/case finding opportunities by working with local employers, local communities and the third sector to target communities who may not usually present or engage within primary care settings.
- Working with our partners to work in a more joined up way and avoid any duplication of workstreams. This includes supporting and promoting the Community Pharmacy Hypertension Service (Community Pharmacy Hypertension Service) delivered by West Yorkshire Community Pharmacy. In Quarter 1 of 2022 / 2023, 7078 blood pressure checks were carried out in West Yorkshire. As a relatively new service it is expected that these numbers will increase, with targeted work also underway in areas where hypertension detection needs to be improved; for example, Burmantoffs.

We are working to improve hypertension treatment, and ensure that people once diagnosed with hypertension, are treated to target (are on the correct medication and reviewed regularly).

Cholesterol and lipid Management

High cholesterol is when there is too much of a fatty substance called cholesterol in the blood. It's mainly caused by eating fatty food, not exercising enough, being overweight, smoking and drinking alcohol. It can also run in families (familial hypercholesterolaemia).

Too much cholesterol can block blood vessels causing heart problems or a stroke.
In Leeds we are working with two PCNs (Cross Gates and West Leeds) to deliver and pilot an MDT and tiered model to the medicines optimisation of lipids to treat cholesterol as below:

- Support tier 1 (practice-based care) to deliver gold standard lipid optimisation for oral therapies, including addressing the initial needs of someone with statin intolerance. Ensuring access to lesser-known lipid therapies such as Bempedoic acid.
- Support tier 2 (PCN level care) to be able to review ongoing care for people with statin intolerance and to initiate, where appropriate the injectable therapy Inclisiran
- Support tier 3 (integrated care) to develop an 'advice and guidance' service

Our priority is to evaluate the MDT approach and expand/provide permanently in Leeds to support medicines optimisation of cholesterol. We also have a priority to increase access to familial hypercholesterolaemia screening in Leeds; for those with a family history to 25% by 2024 in line with NHS Long Term Plan targets.

Diabetes

Diabetes means you have too much sugar in your blood. This can increase the risk of a stroke, because having too much sugar in your blood damages the blood vessels. 20% of people who experienced a stroke in Leeds in 2021 / 2022 have a diagnosis of diabetes.

In Leeds, we are working hard to prevent diabetes (Type 2). Our 92 GP practices in Leeds actively promote and identify people at risk of type 2 diabetes (pre-diabetes) and refer into the National Diabetes Prevention Programme (over 200 referrals made each month). We are also piloting two innovative type 2 diabetes remission models in Leeds, focused on weight loss through low calorie diets to return blood sugar levels to a healthy level, removing the need for diabetes medication. These offers went live in May 2022, and we look forward to understanding the results.

Whilst working to prevent / place into remission type 2 diabetes, we are also working to optimise diabetes care in the city, in line with the Leeds Diabetes Strategy Leeds Diabetes Strategy 2019-2024 (leedsccg.nhs.uk). We are investing in Diabetes Support Teams (DiaST) at PCN and GP practice level to ensure that people living with diabetes (Type 1 and 2) are medically optimised and treated to target, including hypertension to reduce further complications that might arise as a result of their diabetes, i.e. stroke.

NHS Health Checks

The CVD Steering Group is also working closely with the Leeds City Council's Long Term Conditions team, who is responsible for the NHS health check offer in Leeds. Health checks are designed to help prevent diabetes, heart disease, kidney disease, stroke and dementia by encouraging and promoting a healthy diet, exercise, avoidance of drugs and alcohol, etc, as part of an overall approach to stroke prevention, and not solely reliant on prescribed medication. Our Long-Term Conditions Population Board (see governance) are also able to influence these wider prevention activities/strategies across the city.

As above, we have a number of significant work programmes underway to prevent stroke long-term in the city. All these work programmes are also challenged with focusing on health inequalities and how we develop these programmes with multiple stakeholders including the third sector and community pharmacy. It should be noted that we must increase awareness and utilisation of for example, the New Medicines Service (NMS) and NHS Discharge Medicines Service provided by West Yorkshire Community Pharmacy. These services facilitate the medicines management of people with risk factors relating to stroke: anticoagulants, medication for hypercholesterolemia, etc.

All the above projects also contribute to direct delivery of West Yorkshires, Healthy Hearts programme. Please see further details available at: West Yorkshire Harrogate Healthy Hearts (westyorkshireandharrogatehealthyhearts.co.uk)

6.3 Improved six-month review offer to improve patient care and SSNAP performance

One of the national stroke service ambitions is that all stroke survivors are appropriately offered a comprehensive holistic and person-centred six-month post-stroke review and that this is documented on SSNAP (in line with the 2019 / 2020 Commissioning for Quality and Innovation (CQUIN): Six-month reviews for stroke survivors). Data from six-month reviews should then be used to inform local needs mapping, workforce and service improvement planning (NHSE 2021).

In Leeds, the Community Stroke Rehabilitation Team (CSRT) had been offering a six-month review service in conjunction with the Stroke Association to all stroke survivors referred to their service for stroke rehabilitation, which equates to approximately 50% of stroke survivors in Leeds. We need to increase the number of stroke survivors accessing this offer. This service offered a home visit (pre-pandemic) and telephone review since 2020. The aim of 6-month reviews, is to identify any immediate risks and address, and reduce the risk of future strokes (secondary prevention). In Leeds, in 2021 / 2022, over 20% of people experiencing a stroke in Leeds, had previously had a stroke or TIA. These can and should be prevented.

Our aim within Leeds, is that over next five years we increase the number of people offered a six-month review from 50% to 100%. To achieve this the following stepped approach has been agreed:

1. Continuation of stroke association offer whilst undertaking an evaluation of the model / previous models (delivery in-house)
2. Scoping work to map demand for six-month review offer (patients currently not offered reviews; i.e. TIA patients and patients not referred into LCH rehabilitation
3. Process mapping of potential referral pathway routes for all patients including those currently not captured to inform standard operating procedure
4. Costing and development of business case for new model together with confirmation of agreed sourcing strategy
5. Evaluation and flow of review themes to inform local needs mapping, workforce and service improvement planning longer-term (patient feedback essential).

6.4 Addressing Stroke Outliers

A key measure within SSNAP which reduces the SSNAP score of LTHT to a C overall is the score currently being achieved for Stroke Unit overall. The stroke unit level includes a % score for the following indicators:

- Percentage of patients directly admitted to a stroke unit within four hours of clock start.
- Median time between clock start and arrival on stroke unit
- Percentage of patients who spent at least 90% of their stay on stroke unit

The stroke unit measure typically scored an E throughout 2021 / 2022.

A significant challenge impacting this score, is patient flow through LTHT currently. The challenges of COVID-19, and managing changing demand across the hospital, has resulted in some stroke patients being managed outside of the dedicated stroke bed base on non-stroke wards. This is always after their acute and hyperacute phase, during the rehabilitation phase of their treatment, and will occur whilst patients await a bed for stroke rehabilitation. Pre-pandemic measures to support these patients with appropriate input of therapies included the development of a peripatetic team to review and support therapy teams on non-stroke wards.

During the pandemic, with the associated ward changes in response to changing COVID-19 inpatient demand, the omicron COVID variant in early 2022 and the continued system flow crisis across the country, outlier stroke numbers have always fluctuated between c.15 to 30 patients. Over recent months these have rarely dropped below 30 and have peaked recently at 48 patients.

There is no simple solution to this problem due to the highly complex nature of stroke care and the multiagency nature of managing this condition from index event to recovery. A long-term solution has not yet been agreed but LTHT are exploring plans to co-locate a number of neuroscience wards together at the LGI, on a single floor allowing for a focussed support offer to stroke patients across a wider, but more geographically condensed bed base. This will improve therapy, medical and specialist nursing support to the stroke population in hospital and support reducing the overall length of stay for these patients. It will also allow closer and more effective links to the community-based services and social care services to improve collaborations and in-reach.

6.5 Improving Thrombectomy and Thrombolysis Access

A key priority of LTHT is to continue to improve access to thrombectomy. Approximately 80 patients within the region have been treated in the last year with Mechanical Thrombectomy (MT), on a Monday to Friday, 8am – 4pm basis. We aim to continue to increase this number in Leeds and regionally and are working towards a service delivery model that will provide 24 hours a day, seven days a week cover. The Integrated Stroke Delivery Networks (ISDN) and our West Yorkshire ISDN have coordinated and completed work across Thrombolysis and Thrombectomy services, working with neighbouring ISDNs in Humber Coast and Vale, North East and North Cumbia and South Yorkshire and Bassetlaw to support a quality review into thrombectomy delivery.

The Quality Reviews are a collaboration between Getting It Right First Time (GIRFT), the National Stroke Programme at NHSE, The Sentinel Stroke National Audit Programme (SSNAP), Specialised Commissioning and the Promoting Effective and Rapid Stroke Care (PEARS) research programme. Leeds has actively contributed to these so that a sustainable system plan can be agreed, including the development of an educational strategy and a stroke workforce strategy covering the West Yorkshire and Harrogate ISDN, and regionally in collaboration with neighbouring ISDNs.

6.6 Recovering from / Living with Covid

The stroke teams continue to recover and manage patient need within the constraints of the continuing pandemic. Engagement with the workforce has been undertaken to inform internal ‘covid strategies. Themes / reflections from engagement work include:

- Hospital discharges are more complex with additional risks, however joint working, and collaboration between LCH and LTHT has improved, with increased communication between teams. Digital solutions for strengthening this communication are to be explored as part of our priorities.
- As a result of complex discharges, there is a recognition of reduced patient confidence / independence, and our system work is essential in addressing this.
- There is growing need and a recognition that offers of mental health support need to be provided to patients, and onward referrals made sooner. Peer support offers

require development and will form a key priority. LCH are working to ensure that patients with lower risk presentation have alternative offers of support including referral directly to the Stroke Association, including ‘After Stroke’ education groups for patients who benefit from support with self-management.

Future priorities and outcomes

7.1 Future Priorities

We have a number of immediate priorities that we are currently working to deliver currently as outlined in section 6.

There are however a number of other emerging priorities that we have agreed to take forward. These priorities will have a significant impact on patients and carers and have been identified following a system mapping exercise completed in the summer of 2022 – where a number of current 'pinch points' / must-dos in the Leeds Stroke Pathway was identified by clinicians and operational / management team members.

Following a poll with staff across the stroke system, immediate future priorities that we plan to take forward in addition to those in section 6 are:

1. Early Supported Discharge (ESD) - consider for implementation in Leeds in line with guidance published in February 2022; stroke-integrated-community-service-february-2022.pdf (england.nhs.uk)

2. Increase access to social work across the pathway

3. Increase access to psychology support while in hospital and community

4. Develop communication methods or IT interoperability

5. Increase awareness / support and provision of secondary stroke prevention (with a focus on health inequalities)

Project plans and timescales for each priority are currently being progressed, with progress to be tracked via the outputs and outcomes as documented in section 7.2 and monitored via the governance route as detailed in section 8.

7.2 Outcomes

The following logic models in Figures 6-8, outline the short, medium and long-term outcomes that we aim to achieve, through implementation of the priorities that we are currently working on.

Our long-term outcomes align with the outcomes of our Leeds Long Term Conditions Population Board where this programme of work aligns.

Figure 6: Stroke outcomes and logic model; I'm as healthy and as well as I can be with my long-term conditions

Logic Model for Stroke Outcomes: Working together to deliver the best outcomes for people at risk of or suffering from a stroke

Leeds Health & Care Partnership

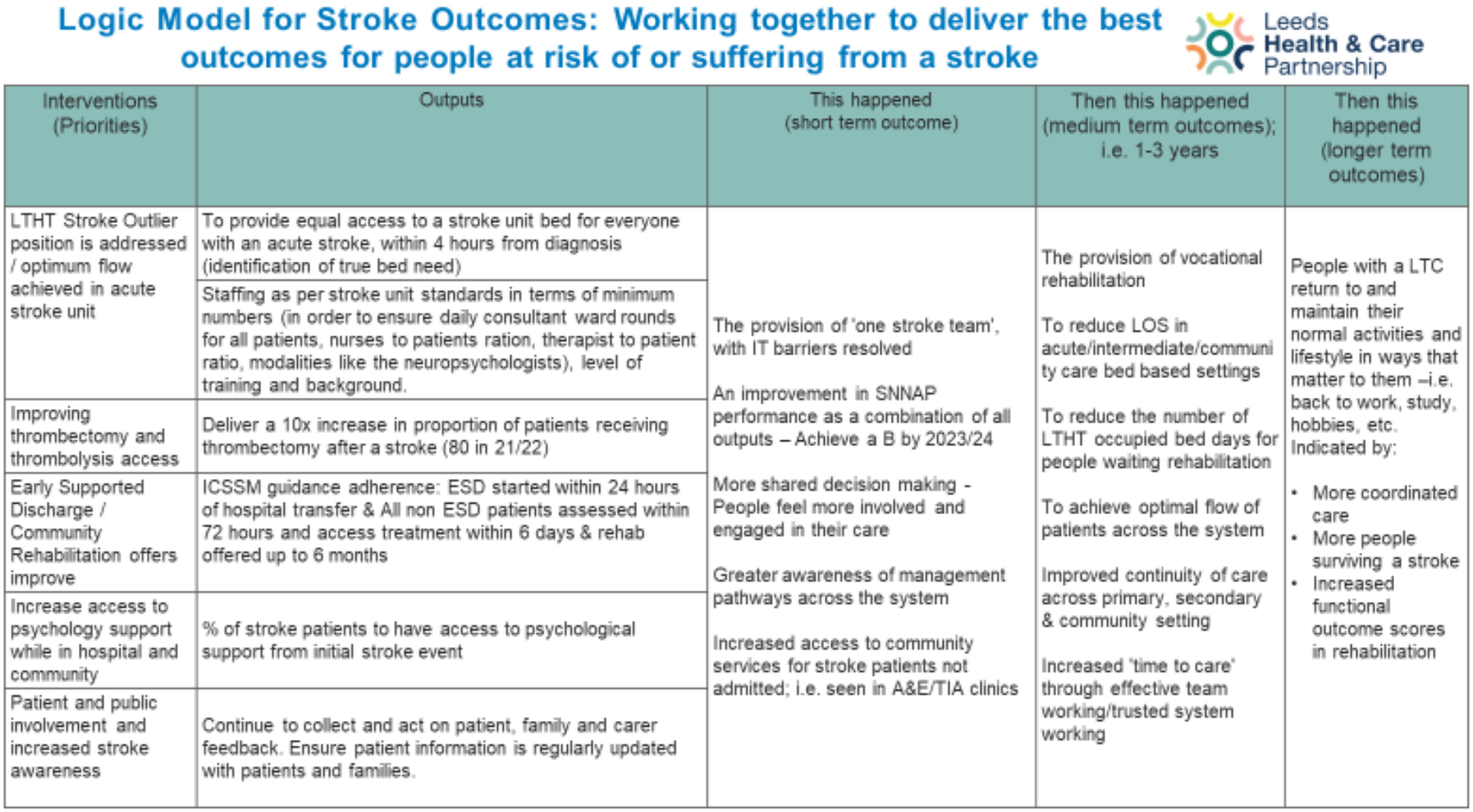
Interventions (Priorities)	Outputs	This happened (short term outcome)	Then this happened (medium term outcomes); i.e. 1-3 years	Then this happened (longer term outcomes)
Stroke Prevention (with a focus on health inequalities)	90% of people with AF who are known to be at high risk of a stroke to be adequately anticoagulated by 2029 (linked to CVD System Strategy) – Exclusions need to be considered; i.e. frailty	Increased understanding/opportunities relating to primary and secondary stroke prevention Earlier identification of patients at risk of stroke Increased use of data / baselines agreed for each output Increased understanding of variation due to health inequality	Increased support with adherence and persistence of medication and lifestyle modification, and where this is delivered across the stroke pathway is clear	I'm as healthy and as well as I can be with my Long Term Condition(s) –Stroke recognised as a long term chronic condition. Indicated by: • A reduction in the number of strokes • A reduction in stroke severity • A reduction in Years of Life Lost (YLL) • A reduction in inequality gap between least and most deprived with stroke incidence • A reduction in level of stroke disability – Modified Rankin Scale (mRS) indicator
	80% of the total number of people diagnosed with hypertension are treated to target as per NICE guidelines by 2029 (linked to CVD System Strategy)			
	Reduce the % of the population with 3 risk factors or more. This includes smoking cessation, healthy weight, physical activity			
Secondary Stroke Prevention (with a focus on health inequalities)	Demographic and socio-economic breakdown of those that don't access stroke prevention / stroke occurs			
	Secondary prevention: an increase in people placed on treatment post stroke; i.e. treatment for their hypertension, AF. Measured via SSNAP.			
Patient and public involvement and increased stroke awareness	Undertake annual Equality Impact Assessments. Work with local communities (and the leaders / influencers) to understand potential barriers / solutions			

The above image is detailed in the following table:

Interventions (priorities)	Outputs	Short term (how this happened)	Then this happened (medium term ie 1 to 3 years)	Then this happened (long term outcome)
Stroke Prevention (with a focus on health inequalities)	• 90% of people with AF who are known to be at high risk of a stroke to be adequately anticoagulated by 2029 (linked to CVD System Strategy) – Exclusions need to be considered, i.e., frailty • 80% of the total number of people diagnosed with hypertension are treated to target as per NICE guidelines by 2029 (linked to CVD System Strategy) • Reduce the percentage of the population with three risk factors or more. This includes smoking cessation, healthy weight, physical activity	• Increased understanding / opportunities relating to primary and secondary stroke prevention • Earlier identification of patients at risk of stroke • Increased use of data / baselines agreed for each output • Increased understanding of variation due to health inequality	• Increased support with adherence and persistence of medication and lifestyle modification, and where this is delivered across the stroke pathway is clear	I'm as healthy and as well as I can be with my Long-Term Condition(s) –Stroke recognised as a long-term chronic condition. Indicated by: • A reduction in the number of strokes • A reduction in stroke severity • A reduction in Years of Life Lost (YLL) • A reduction in inequality gap between least and most deprived with stroke incidence • A reduction in level of stroke disability – Modified Rankin Scale (mRS) indicator
Secondary Stroke Prevention (with a	• Demographic and socio-economic breakdown of	• As above	• As above	• As above

Interventions (priorities)	Outputs	Short term (how this happened)	Then this happened (medium term ie 1 to 3 years)	Then this happened (long term outcome)
focus on health inequalities)	those that don't access stroke prevention / stroke occurs • Secondary prevention: an increase in people placed on treatment post stroke; i.e. treatment for their hypertension, AF. Measured via SSNAP.			
Patient and public involvement and increased stroke awareness	• Undertake annual Equality Impact Assessments. Work with local communities (and the leaders / influencers) to understand potential barriers / solutions	• As above	• As above	• As above

Figure 7: Stroke outcomes and logic model; People with a LTC return to and maintain their normal activities and lifestyles in ways that matter to them



Logic Model for Stroke Outcomes: Working together to deliver the best outcomes for people at risk of or suffering from a stroke

Leeds Health & Care Partnership

Interventions (Priorities)	Outputs	This happened (short term outcome)	Then this happened (medium term outcomes); i.e. 1-3 years	Then this happened (longer term outcomes)
LTHT Stroke Outlier position is addressed / optimum flow achieved in acute stroke unit	To provide equal access to a stroke unit bed for everyone with an acute stroke, within 4 hours from diagnosis (identification of true bed need)	The provision of 'one stroke team', with IT barriers resolved An improvement in SNNAP performance as a combination of all outputs – Achieve a B by 2023/24 More shared decision making - People feel more involved and engaged in their care Greater awareness of management pathways across the system Increased access to community services for stroke patients not admitted; i.e. seen in A&E/TIA clinics	The provision of vocational rehabilitation To reduce LOS in acute/intermediate/community care bed based settings To reduce the number of LTHT occupied bed days for people waiting rehabilitation To achieve optimal flow of patients across the system Improved continuity of care across primary, secondary & community setting Increased 'time to care' through effective team working/trusted system working	People with a LTC return to and maintain their normal activities and lifestyle in ways that matter to them –i.e. back to work, study, hobbies, etc. Indicated by: • More coordinated care • More people surviving a stroke • Increased functional outcome scores in rehabilitation
	Staffing as per stroke unit standards in terms of minimum numbers (in order to ensure daily consultant ward rounds for all patients, nurses to patients ration, therapist to patient ratio, modalities like the neuropsychologists), level of training and background.			
Improving thrombectomy and thrombolysis access	Deliver a 10x increase in proportion of patients receiving thrombectomy after a stroke (80 in 21/22)			
Early Supported Discharge / Community Rehabilitation offers improve	ICSSM guidance adherence: ESD started within 24 hours of hospital transfer & All non ESD patients assessed within 72 hours and access treatment within 6 days & rehab offered up to 6 months			
Increase access to psychology support while in hospital and community	% of stroke patients to have access to psychological support from initial stroke event			
Patient and public involvement and increased stroke awareness	Continue to collect and act on patient, family and carer feedback. Ensure patient information is regularly updated with patients and families.			

The above image is detailed in the following table:

Interventions (priorities)	Outputs	Short term (how this happened)	Then this happened (medium term ie 1 to 3 years)	Then this happened (long term outcome)
LTHT Stroke Outlier position is addressed / optimum flow achieved in acute stroke unit	• To provide equal access to a stroke unit bed for everyone with an acute stroke, within four hours from diagnosis (identification of true bed need) • Staffing as per stroke unit standards in terms of minimum numbers (in order to ensure daily consultant ward rounds for all patients, nurses to patients ration, therapist to patient ratio, modalities like the neuropsychologists), level of training and background.	• The provision of 'one stroke team', with IT barriers resolved • An improvement in SNNAP performance as a combination of all outputs – Achieve a B by 2023 / 2024 • More shared decision making - People feel more involved and engaged in their care • Greater awareness of management pathways across the system • Increased access to community services for stroke patients not admitted, i.e. seen in A&E / TIA clinic	• The provision of vocational rehabilitation • To reduce LOS in acute / intermediate / community care bed based settings • To reduce the number of LTHT occupied bed days for people waiting rehabilitation • To achieve optimal flow of patients across the system • Improved continuity of care across primary, secondary & community setting • Increased 'time to care' through effective team working / trusted system working	People with a LTC return to and maintain their normal activities and lifestyle in ways that matter to them – i.e., back to work, study, hobbies, etc. Indicated by: • More coordinated care • More people surviving a stroke • Increased functional outcome scores in rehabilitation
Improving thrombectomy and thrombolysis access	• Deliver a ten times increase in proportion of patients receiving thrombectomy after a stroke (80 in 2021 / 2022)	• As above	• As above	• As above

Interventions (priorities)	Outputs	Short term (how this happened)	Then this happened (medium term ie 1 to 3 years)	Then this happened (long term outcome)
Early Supported Discharge (ESD) / Community Rehabilitation offers improve	• ICSSM guidance adherence: ESD started within 24 hours of hospital transfer & all non ESD patients assessed within 72 hours and access treatment within six days & rehab offered up to six months	• As above	• As above	• As above
Patient and public involvement and increased stroke awareness	• Continue to collect and act on patient, family and carer feedback. Ensure patient information is regularly updated with patients and families.	• As above	• As above	• As above

Figure 8: Stroke outcomes and logic model; People with a LTC take an active role in managing their condition

Logic Model for Stroke Outcomes: Working together to deliver the best outcomes for people at risk of or suffering from a stroke

Leeds Health & Care Partnership

Interventions (Priorities)	Outputs	This happened (short term outcome)	Then this happened (medium term outcomes); i.e. 1-3 years	Then this happened (longer term outcomes)
Provision of 6 month follow-ups for all stroke patients	100% of stroke survivors being offered a 6 month follow-up	Greater awareness of management pathways across the system Improved information for patients, carers and families. People feel more involved and engaged in their care People have timely access to equipment/adaptations enabling single handed care, community participation to reduce carer burden and improve participation in activities of daily living to ensure 'Home First' is achievable – people should receive rehabilitation at home Opportunities for identification of secondary prevention	To reduce LOS in acute/rehabilitation bed based settings Reduction in days of work missed Reduction in breakdown in relationships	People with a LTC take an active role in managing their condition – Reduced social burden through optimised management and improved patient ability to manage their own condition. Indicated by: • Medicines adherence • Reduced carer burden • Reduce expenditure to patient/family/carer and unpaid carer
Actions for recovery from and living with covid	Increased use of digital rehab options including online groups, UL rehab, communication and cognitive rehab, and considering the role for AI in rehab			
Improve IT interoperability / communication methods	Provision of information and links to peer support groups / networks, and info on mental wellbeing / counselling support			
Increase access to social work across the pathway	Patient is discharged home with social care support combined with ICSS input, to enable safe management and rehabilitation at home (Home First)			
Improved access to equipment	Improved turnaround of major adaptations / equipment requests / specialist seating via an equipment pool			
Patient and public involvement and increased stroke awareness	Continue to collect and act on patient, family and carer feedback. Ensure patient information is regularly updated with patients and families.			

The above image is detailed in the following table:

Interventions (priorities)	Outputs	Short term (how this happened)	Then this happened (medium term ie 1 to 3 years)	Then this happened (long term outcome)
Provision of six-month follow-ups for all stroke patients	• 100% of stroke survivors being offered a six-month follow-up	• Greater awareness of management pathways across the system • Improved information for patients, carers, and families. • People feel more involved and engaged in their care • People have timely access to equipment / adaptations enabling single handed care, community participation to reduce carer burden and improve participation in activities of daily living to ensure 'Home First' is achievable – people should receive rehabilitation at home • Opportunities for identification of secondary prevention	• To reduce LOS in acute / rehabilitation bed based settings • Reduction in days of work missed • Reduction in breakdown in relationships	People with a LTC take an active role in managing their condition – Reduced social burden through optimised management and improved patient ability to manage their own condition. Indicated by: • Medicines adherence • Reduced carer burden • Reduce expenditure to patient / family / carer and unpaid carer
Actions for recovery from and living with covid	• Increased use of digital rehab options including online groups, UL rehab, communication, and	• As above	• As above	• As above

Interventions (priorities)	Outputs	Short term (how this happened)	Then this happened (medium term ie 1 to 3 years)	Then this happened (long term outcome)
	cognitive rehab, and considering the role for AI in rehab			
Improve IT interoperability / communication methods	• Provision of information and links to peer support groups / networks, and info on mental wellbeing / counselling support	• As above	• As above	• As above
Increase access to social work across the pathway	• Patient is discharged home with social care support combined with ICSS input, to enable safe management and rehabilitation at home (Home First)	• As above	• As above	• As above
Improved access to equipment	• Improved turnaround of major adaptations / equipment requests / specialist seating via an equipment pool	• As above	• As above	• As above
Patient and public involvement and increased stroke awareness	• Continue to collect and act on patient, family, and carer feedback. Ensure patient information is regularly updated with patients and families.	• As above	• As above	• As above

We will track progress of our outcomes by tracking the measurable outputs outlined in a dashboard.

These outcomes can and will be achieved by working together to deliver the best outcomes for people at risk of or experiencing a stroke.

Arrangements for delivery

8.1 Governance

Delivery of our current and immediate priorities are being progressed via task and finish groups as required which report into the stroke vision task group. The stroke vision task group includes city wide stakeholder representation from LTHT, LCH, Leeds ICB, West Yorkshire and Harrogate ISDN, Leeds City Council (Public Health), Yorkshire Ambulance Service and primary care. Membership includes a mixture of communications and engagement staff, clinicians (medical, therapists and nurses) and managers. It is recognised that membership needs to be strengthened to include social care and the third sector.

The stroke vision task group is responsible for delivering this vision and priorities with the deliverables / business cases, etc. being developed and tested with the citywide neurology steering group which in turn reports and seeks approval / investments from the Leeds Long Term Conditions Population Board.

The stroke vision task group will also report to the WY&H ISDN and work in tandem with the virtual reference group for wider engagement. This arrangement is outlined below: