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Stroke Association

Saving Brains: Thrombectomy in Northern Ireland

July 2022

"We were very lucky that Kim fell within the treatment window for thrombectomy. It absolutely frightened the life out of us when we discovered that it wasn't available 24/7. If Kim hadn't received the procedure, the outcome would have been incredibly different". (Basil, husband of stroke survivor Kim)

Introduction

The majority of strokes are caused by a blood clot blocking an artery in the brain, depriving it of blood supply. Thrombectomy is a game-changing treatment where a doctor manually removes the clot, immediately allowing blood to flow freely again.

Thrombectomy changes the course of recovery from stroke in an instant, significantly reducing the chance of disabilities like paralysis, blindness and communication difficulties.[i] It is also extremely cost-effective. Research shows that on average one extra patient receiving thrombectomy would save the NHS £47,000 over five years.[ii]

However, thrombectomy currently isn't available for everyone who needs it in Northern Ireland – which is around 10% of all stroke patients. Less than half of patients who need thrombectomy here actually get it. Despite the brilliant efforts of stroke doctors, nurses, paramedics and their teams to expand thrombectomy services to more patients, provision is still not available 24/7 due to a lack of staff, funding and resources.

Yet 24/7 access to thrombectomy is essential to reducing disability after stroke. With the right resources and support, we can ensure that every patient who needs it can access this transformative treatment, regardless of where they live or at what time of the day or night they have their stroke.

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Policy context

Thrombectomy is available at the Royal Victoria Hospital in Belfast. The service has expanded over the past two years and is now accessible seven days a week. However, we still do not have a 24/7 service which could greatly increase the number of patients who are able to access and benefit from this life-changing procedure.

The Reshaping Stroke Care Action Plan published by the Health Minister in June 2022 makes a welcome commitment to continue to expand the thrombectomy service in Northern Ireland, moving to a 24/7 service by the end of 2024. The Department have also set themselves ambitious targets of 8% of eligible patients receiving thrombectomy by March 2024, increasing to 10% by March 2026. The Stroke Association welcome these ambitious targets and actions and look forward to seeing progress with this.

Thrombectomy rates in Northern Ireland – 2020/21

Nation	Number of thrombectomies	Total number of stroke patients	% receiving thrombectomy
Northern Ireland	**107**	**2639**	**4%**
England	1621	75101	2%
Wales	33	4476	1%
Republic of Ireland*	392[iii]	4746 *(ischaemic strokes only)*	8%

**Republic of Ireland records its thrombectomy rate as number of thrombectomies / number of ischaemic stroke patients only (rather than all stroke patients like in NI, England and Wales) so it is difficult to draw direct comparisons.*

Northern Ireland has a higher thrombectomy rate than in England and Wales with 4% of all stroke patients currently accessing the procedure. However, given that around 10% of all stroke patients could benefit from thrombectomy, it's estimated

that around 157 potentially eligible patients could have missed out on receiving the procedure here in 2020/21.[iv]

There is also unacceptable geographical variation in Northern Ireland at a time when reducing health inequalities is a key priority for the government and health services. Patients who require thrombectomy are either admitted directly to the Royal in Belfast or are referred from other stroke units for the procedure and then return to their local stroke unit for recovery and rehabilitation. The table below shows the number of transfers from stroke units in Northern Ireland to the thrombectomy centre in the Royal in 2020/21. It's clear that the further away you live from the Royal Victoria Hospital, the less likely you are to receive a thrombectomy.

Stroke Unit	Number of thrombectomy transfers to RVH[v]
Ulster Hospital	17
Craigavon Area Hospital	15
Antrim Area Hospital	7
Altnagelvin Hospital	4
Causeway Hospital	4
South West Acute Hospital	2
Daisy Hill Hospital	2
Total number of transfers to RVH	**51**
Directly admitted to RVH	**56**

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How can we improve thrombectomy rates in Northern Ireland: Challenges and opportunities

The barriers to improving thrombectomy rates and creating a 24/7 service are complex. However, with investment and action, stroke services can make the changes that are needed to increase patient access to thrombectomy.

Multi-year investment

Thrombectomy is an extremely cost-effective procedure. Evidence shows that implementing a full thrombectomy service 'including devices, staff salaries and set up costs' across the UK would cost around £400 million, yet would save £1.3 billion over five years.[vi] This is because thrombectomy leads to a 'significant reduction in disability and long-term costs to healthcare systems'. [vii]

While New Decade, New Approach transformation funding is being used to fund thrombectomy services here this year, it is only sufficient to sustain services at their current levels (as it was allocated non-recurrently in 2021/22).[viii] This significantly limits the ability to further expand the service.

As part of the Reshaping Stroke Care Action Plan, the Belfast Trust are currently working on a business case that will identify the funding and workforce requirements that would enable a move to a 24/7 service in Northern Ireland. However, there is a lack of clarity and certainty around where any required funding would come from.

Recommendation: Given the wealth of evidence for the cost-effectiveness of thrombectomy as well as its life-changing impact for patients, we believe that it is an investment worth making, even in these times of financial pressures. **The Department of Health must prioritise multi-year investment in thrombectomy to enable expansion to a sustainable 24/7 service.**

"I owe my life to the team at the Royal Victoria Hospital who, when contacted out of hours, made the decision to come to work and save my life. I am, and forever will be, grateful for their good will" (Clodagh, Stroke survivor)

Workforce shortages

The stroke workforce is dedicated, passionate and committed to delivering the best possible treatment and care to patients. Yet workforce shortages, recruitment and retention issues and underfunding are placing extreme pressure on hard-working staff. This results in a huge personal cost to those working to deliver thrombectomy, including working extra-long shifts and being on call very frequently.

Thrombectomy is a complex and specialised procedure. In Northern Ireland, there are currently only three specialists (or Interventional Neuro-radiologists / INRs) who are trained to provide it. Some stroke consultants we have spoken to suggest that we would at least need to double this number to be able to provide a sustainable 24/7 service. However, work that is currently being taken forward by the Belfast Trust will help to identify the exact workforce requirements for a 24/7 service.

This work must not only consider the INRs who can perform the procedure but also the wider team of specialist staff involved, from paramedics to nurses, stroke physicians, support staff, anaesthetists and radiographers. For example, one stroke consultant that we spoke to highlighted a challenge with out-of-hours access to specialist radiologists who can read and interpret brain scans to determine eligibility for thrombectomy. The commitment in the Reshaping Stroke Care Action Plan to expand the use of Artificial Intelligence software to help with scan interpretation may go some way to addressing this issue. However, any thrombectomy workforce plan must not only consider the numbers required to provide a 24/7 service but also the skills and knowledge needs of that workforce.

Recommendation: Workforce shortages are preventing centres from expanding to sustainable 24/7 thrombectomy services. Stroke patients deserve to receive safe and high-quality care, and our stroke workforce deserve fully-staffed services that alleviate undue pressures and support their wellbeing. **The Reshaping**

Stroke Care Action Plan contains actions around a stroke workforce review and plan. We want to see these actions urgently implemented and for the future workforce plan to be accompanied with significant investment that allows for the recruitment, retention and training of not only those professionals involved in delivering thrombectomy, but across the whole stroke pathway.

Ambulance pressures

Thrombectomy is a very time-sensitive procedure and is usually only performed up to six hours after stroke symptoms begin. In a small number of cases, the procedure may be performed up to 24 hours post symptom-onset if brain imaging shows that the patient would still benefit. However, the quicker the procedure is undertaken, the more brain tissue the doctor can save. This is because for every minute a stroke is left untreated, 1.9 million brain cells die.

However, increased demand for ambulance services coupled with delayed turnaround times at emergency departments has put significant pressure on ambulance service resources and resulted in lengthy response times for some patients. The mean target response time of 18 minutes for Category 2 calls (of which stroke falls into) was not achieved in any month during 2021/22, with mean Category 2 response times ranging from 23 minutes 59 seconds to 46 minutes 30 seconds in this period.[ix] The median time from symptom onset to arrival at hospital for stroke patients is currently three hours and 46 minutes.[x] Some stroke consultants that we have spoken to have also expressed concern at delays in inter-hospital transfers for thrombectomy.

We know the ambulance service in Northern Ireland are under extreme pressure. Yet delays in the emergency response to stroke patients is potentially causing some to miss out on life-changing thrombectomy. These pressures could also partly explain why there are fewer thrombectomy transfers from stroke units that are further away from the Royal Victoria Hospital.

Recommendation: A well-functioning ambulance service is essential to an efficient and high-performing thrombectomy service. **Any plans to invest in and**

expand the thrombectomy service in Northern Ireland must consider the key role played by the ambulance service. Implementing and investing in the new Clinical Response Model for the ambulance service must also be a system priority to enable the service to respond to wider system pressures and cope with current and future demand.

Establishing hyperacute stroke care

The full benefits of a highly specialised service like thrombectomy can only truly be achieved within efficient and properly organised 24/7 acute stroke services. Evidence shows that reorganising how stroke care is delivered and creating large Hyper Acute Stroke Units (HASUs) with the equipment and experts to treat patients all day, every day can save lives, improve recoveries and result in greater cost effectiveness for health services.[xi] [xii] However, despite a lengthy consultation on the issue in 2019, the Health Minister has yet to make a decision on the future model of hyperacute stroke care for Northern Ireland, with more research required to inform his decision.

HASUs are set up for rapid diagnosis and stroke treatment. Research from a rural area in Northumbria shows that stroke patients are receiving care faster following reconfiguration of the stroke services there, especially in relation to receiving brain scans and the clot-busting drug thrombolysis.[xiii] Establishing 24/7 HASUs will therefore help speed up access to thrombectomy for those who need it, regardless of where or when they have their stroke.

It's vital that we therefore reconfigure stroke services and establish HASUs in Northern Ireland as soon as possible so that all patients who need thrombectomy can be quickly assessed and transported to the Royal Victoria Hospital for the procedure.

However, it's also important to highlight that thrombectomy is only suitable for around 10% of patients. Access to well organised stroke care remains the key factor in patients having a good outcome. The best way to therefore improve outcomes for all stroke patients is through the establishment of 24/7 specialist HASUs.

Recommendation: 24/7 specialist hyperacute stroke care will not only benefit patients who need thrombectomy, but will help improve outcomes for all stroke patients. **The Department of Health must urgently progress the actions related to hyperacute stroke care in the Reshaping Stroke Care Action Plan and establish and invest in HASUs as soon as possible.**

Cross-border provision

Thrombectomy services are currently available 24/7 in some sites in the Republic of Ireland, such as Beaumont Hospital in Dublin. A number of responses to the 2019 Reshaping Stroke Care consultation suggested that the Department of Health should explore the potential of cross-border provision of thrombectomy for appropriate patients while a 24/7 service was established in Northern Ireland.[xiv] However, no updates or information was provided on this in the recent Reshaping Stroke Care Action Plan published by the Department.

Recommendation: Given that it will likely be another two years before we see a 24/7 thrombectomy service in Northern Ireland, **the Department of Health should clarify whether they have any plans for cross-border thrombectomy provision in the interim and in which cases this might be suitable.**

"Thrombectomy is a life-changing procedure which I was fortunate enough to access when I had my stroke five years ago. Everyone who is eligible should have that same opportunity." (Kim, Stroke Survivor)

This report is part of a series of reports and briefings across the UK. Information on thrombectomy in England, Scotland and Wales can be found on our website.

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Act FAST

Stroke strikes every five minutes in the UK. It can happen to anyone, of any age, at any time. It's vital to know how to spot the signs of a stroke in yourself or someone else.

Stroke is a medical emergency. The FAST test can help you recognise the most common signs.

- **Facial weakness:** Can the person smile? Has their mouth or eye drooped?
- **Arm weakness:** Can the person raise both arms?
- **Speech problems:** Can the person speak clearly and understand what you say?
- **Time to call 999:** if you see any of these signs.

Time is of the essence for a stroke response. Delays calling 999 could lead to some patients who need a thrombectomy falling outside of the time window for treatment. Timely access to acute stroke treatments, such as thrombectomy, is vital to make sure you have the best possible chance of better outcomes.

Acting FAST will give the person having a stroke the best chance of survival and recovery. **Always call 999 straight away.**

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[i] Oxford Academic Health Science Network, Mechanical thrombectomy for ischaemic stroke: an implementation guide for the UK. Available: https://www.oxfordahsn.org/wp-content/uploads/2022/02/Mechanical-Thrombectomy-for-Ischaemic-Stroke-February-2022.pdf

[ii] Stroke Association. (2018). *Current, future and avoidable costs of stroke in the UK*. Available at: https://www.stroke.org.uk/sites/default/files/costs_of_stroke_in_the_uk_economic_case_interventions_that_work.pdf

[iii] HSE. (2020). *National Thrombectomy Service: Annual Report 2020.*

[iv] Based on 10% of 2639 stroke patients (264) - 107 (completed procedures) = 157.

[v] SSNAP Annual Thrombectomy Dashboard 2020-21: https://datastudio.google.com/reporting/b63f5bb0-f4ad-4d89-bf13-e667016b0f82/page/h3bpB

[vi] Wolfe, C et al. (2020). *King's College London, Stroke pathway – Evidence Base Commissioning – An Evidence Review.* Available at: https://kclpure.kcl.ac.uk/portal/en/publications/stroke-pathway--evidence-base-commissioning--an-evidence-review(813067c2-1cc2-4cd1-9eaf-93eb0d72dd40).html

[vii] Wolfe, C et al. (2020). *King's College London, Stroke pathway – Evidence Base Commissioning – An Evidence Review.* Available at: https://kclpure.kcl.ac.uk/portal/en/publications/stroke-pathway--evidence-base-commissioning--an-evidence-review(813067c2-1cc2-4cd1-9eaf-93eb0d72dd40).html

[viii] DoH. (2022). *Draft Budget 2022-25 Equality Impact Assessment.*

[ix] Department of Health. (2022). *Northern Ireland Hospital Statistics: Emergency Care, 2021/22.*

[x] SSNAP Clinical Audit Country Results Portfolio: Oct – Dec 2021

[xi] Davie, C. et al. (2013). *London's Hyperacute Stroke Units Improve Outcomes & Lower Costs.* Hansard Business Review. Available at: https://hbr.org/2013/11/londons-hyperacute-stroke-units-improve-outcomes-and-lower-costs

[xii] Elameer, M. et al. (2018). 'The impact of acute stroke service centralisation: a time series evaluation'. *Future Healthcare Journal, 5(3),* pp. 181-7.
[xiii] Elameer, M. et al. (2018). 'The impact of acute stroke service centralisation: a time series evaluation'. *Future Healthcare Journal, 5,* pp. 1-7.
[xiv] DoH. (2022). *Reshaping Stroke Care: Consultation Analysis.*