National Stroke Network Work Plan 2024 – 2029

July 2024

Te Kāwanatanga o Aotearoa
New Zealand Government

Health New Zealand
Te Whatu Ora

Contents

Background & context

Context of Stroke in Aotearoa

In Aotearoa, stroke is the second common cause of death after ischaemic heart disease and one of the major causes of severe disability in adults[1]. Over 9,500 people experience strokes every year (one every 55 minutes). Strokes can affect people at any age, though the condition is most common in older people above 65 years[2].

However, that is not the case for Māori and Pacific people. Most Māori and Pacific people are of working age when they experience their stroke [3]and, furthermore, the incidence of stroke in people under age 65 is now increasing[4]. The estimates are that 50-80% of these stroke events can be prevented.

A report by New Zealand Institute of Economic Research (NZIER) released in 2020 estimated the current annual cost of stroke to Aotearoa at approximately $1.1 billion[2]. We now have clear evidence of unwarranted variation in service provision based on where people live, and inequities in care and outcomes based on ethnicity[1].

There is also an evidence base that informs us about the most effective ways of delivering care to those experiencing stroke[5]. This shows that if we do the right things, the burden born by our whānau, communities and society can be reduced in terms of both disability and cost.

[1]Health New Zealand |Te Whatu Ora. Aotearoa New Zealand. Health Status Report 2023. February 2024
[2] Ministry of Health. 2023. Annual Data Explorer 2022/23: New Zealand Health Survey [Data File]. URL: https://minhealthnz.shinyapps.io/nz-health-survey-2022-23-annual-data-explorer. Accessed: 25/06/24.
3 A reference could be added here to: NZIER. The Social and Economic Costs of Stroke in New Zealand – 2020 update. NZIER report to the Stroke Foundation of New Zealand. March 2020
[4] GBD 2019 Stroke Collaborators. Global, regional, and national burden of stroke and its risk factors, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Neurology. 2021; 20: 795–820
[5] Stroke Foundation. Clinical guidelines for stroke management 2017. [Internet] Melbourne: Stroke Foundation; 2017 Available from: www.informme.org.au/Guidelines/Clinical-Guidelines-for-Stroke-Management-2017.

National Stroke Network (NSN)

NSN Vision and key principles

The vision for the NSN

"All people living in Aotearoa at risk of stroke, and those that have suffered a stroke, will have access to an equitable, accessible, cohesive, and people-centered system that improves their health and wellbeing."

The NSN has identified a set of core principles that represent the network and helps define our priorities. These principles will help guide us through the development of the work required to achieve our vision.

- **Equity** – We are committed to recognising the needs of different communities. We will adapt stroke services and care approaches to best meet those needs, so that everyone in Aotearoa has the opportunity to prevent first or subsequent strokes and recover from stroke with the best possible outcomes.
- **Person and Whānau-centred care** – People experiencing stroke and their whānau are at the centre of what we do. What is important to them will drive and shape the care and support that they receive now and into the future.
- **Clinical Excellence –** Our services will be informed by recognised New Zealand and international best practice. It will incorporate the knowledge and experiences of those living with stroke within our communities. Ensuring we provide clinical excellence with skill and compassion.
- **Te Tiriti led –** The services we provide and the way that we work will be guided by the principles and articles of Te Tiriti o Waitangi.
- **Nationally and regionally organised** – Services will be consistent and coordinated throughout the motu and be delivered by competent regional and national structures.

NSN background and history

The National Stroke Network (NSN) was previously formed in 2011 as a joint initiative between the Ministry of Health and the Stroke Foundation New Zealand. This was to facilitate implementation of the 2010 New Zealand Clinical Guidelines for Stroke Management.

Regional stroke clinical networks were established as an important mechanism for achieving implementation.

The NSN was refreshed in 2023 in line with the establishment of National Clinical Networks. New membership was formed (appendix 1), including the creation of a co-leadership structure. This new NSN is now responsible for developing a National Stroke Model of Care and Workplan detailing key initiatives that will improve the outcomes of those at risk and have experienced stroke.

NSN Objectives

The following NSN objectives are:

- Develop the models of care and service standards in stroke prevention and care in Aotearoa. With the central goal of eliminating inequity and unwarranted variation in stroke incidence, care and outcomes.
- Collaborate with regional stroke networks and key stakeholders to agree to a consistent implementation of care across Aotearoa.
- Identify and support key programmes of work that require national planning and implementation.
- Support and lead national workforce development initiatives in stroke care.
- Develop and maintain processes to monitor population needs, progress in system changes and service delivery, and outcomes after stroke.
- Maintain networks across the sector to support productive relationships with consumers and their whānau, and health professionals working with people experiencing stroke.

NSN programme

Scope of Stroke programme

The Stroke Network will look to shape the delivery of better care through the patient journey. A programme of work has been developed to identify the key areas of focus in relation to stroke.

The key elements below represent those areas of focus that the programme will deliver against over the next 5 years.

Workstream	Description
Whānau & Consumer Engagement	There is an opportunity to develop stroke services through the patient continuum to be more person and whānau centred and understanding of the diversity of people who experience stroke. Consumers and Whānau tell us that their most challenging experiences are often after experiencing a stroke and when they leave hospital[6]. This also includes trying to integrate back into their communities. Collaborating with consumers and their whānau is a key factor to help determine how we improve current stroke services.
Stroke Prevention and awareness	50-80% of all stroke events can be prevented by a combination of changes and interventions. Māori and Pacific people experience their strokes on average 15 years younger than other ethnicities[7]. This stark statistic can be addressed only through prevention. Prevention strategies for stroke have a substantial overlap with heart disease, kidney disease and diabetes**.** While there are aspects of prevention more specific for stroke, much of the strategic work needs to be coordinated between Networks. There is clear evidence that outcomes for stroke are improved if those experiencing stroke signs and symptoms seek urgent care and attention. Annual targeted community awareness campaigns have shown effect at improving understanding of features of stroke and likelihood to call emergency services[8]. International evidence is that campaigns work best in short bursts but with regular repetition.
Hyperacute (a national service delivery programme)	Minimising the injury to the brain is one of the most important aspects of care in the first 24 hours after stroke.

[6] Thompson S., et al. Patient, carer and health worker perspectives of stroke care in New Zealand: a mixed methods survey, Disability and Rehabilitation, (2023) 45:18, 2957-2963. DOI: 10.1080/09638288.2022.2117862

[7] Reference: Feigin VL, Krishnamurthi RV, Barker-Collo S, McPherson KM, Barber PA, Parag V, et al. (2015) 30-Year Trends in Stroke Rates and Outcome in Auckland, New Zealand (1981-2012): A Multi-Ethnic Population-Based Series of Studies. PLoS ONE 10(8): e0134609. doi:10.1371/journal.pone.0134609

[8] Gordon G, Bell R, Ranta Annemarei. Impact of the national public 'FAST' campaigns. New Zealand Medical Journal. 2019. 132 ;1507.

	Treatments include thrombolysis (clot busting drugs) and mechanical thrombectomy (clot removal). The earlier the treatment, the better the outcomes. Up to 30% of people with acute ischaemic stroke (AIS) are eligible for these treatments. Currently, 17.5% of people with AIS receive these treatments with a fourfold variation dependent on where they live. In 2022, the Ministry of Health published a service improvement plan which identified the actions required to ensure consistent care across the motu.[9]
Acute	The most effective intervention for the population experiencing stroke is to be cared for during the acute phase in dedicated units staffed by health professionals with expertise in stroke care. Evidence is strong[10] and shows that the ideal in-patient care model is no more costly than care in general hospital beds. Access to such care depending on where people live vary from not available at all in some districts to almost certain to receive it in others[11].
Rehabilitation and Recovery	Rehabilitation is a vital component of recovery from stroke. It is provided both in the hospital setting and in the community. Access to hospital-based rehabilitation varies fourfold across the motu. There is no overall variation by ethnicity, however younger adults (<65yrs) are less likely to receive hospital-based rehabilitation that older people. Timely community-based rehabilitation and early supported discharge have been shown to improve outcomes from stroke, reduce hospital length of stay and reduce carer burden. There is no increase in overall cost. For several districts, this will require technology support such as regional telerehabilitation networks. As consumers and whānau tell us, their most challenging experiences after stroke are when they leave hospital and return to the community. Consumer empowerment is a key ingredient for successful transition back to the community. Consumer based programmes such as Take Charge After Stroke (TaCAS) have been shown to have a strong effect on outcomes[12].

[9] Ministry of Health. 2020. Stroke Clot Retrieval: A National Service. Improvement Programme Action Plan. Wellington: Ministry of Health.

[10] Langhorne P, Ramachandra S. Organised inpatient (stroke unit) care for stroke: network meta-analysis. Cochrane Database of Systematic Reviews 2020, Issue 4. Art. No.: CD000197. DOI: 10.1002/14651858.CD000197.pub4. Stroke Foundation. Clinical guidelines for stroke management 2017. [Internet] Melbourne: Stroke Foundation; 2017 Available from: www.informme.org.au/Guidelines/Clinical-Guidelines-for-Stroke-Management-2017.

[11] Thompson S. New Zealand hospital stroke service provision. NZMJ. 2020.133:1526)

[12] Fu V. et al. Taking Charge after Stroke:A randomized controlled trial of a person-centered, self-directed rehabilitation intervention. International Journal of Stroke 2020, Vol. 15(9) 954–964.

Workforce	The health workforce providing expert care for those with stroke in Aotearoa is modest in size and variably represented across the motu. Peer interaction and learning opportunities are limited but currently well supported. There is opportunity to; attract a workforce that is representative of the people who suffer stroke (e.g. Māori & Pacific), to improve access to specific skills through recruitment and use of technology, and to increase those skills through targeted development and education.
Data and Digital	This Network has been at the forefront of national indicator work for a number of years. While this must continue, there is a growing availability of information about our consumers and services. The information needs to be aggregated and analysed to understand the needs of our population, to help inform actions for improvement, and to understand effectiveness of care.

Core clinical workstreams

The Stroke Network has defined areas of focus seen as priorities based on potential impact and importance for improving services for people experiencing stroke. Workstreams will develop work programmes to support the key priorities of the NSN. The core clinical workstreams are:

- **Prevention**
- **Hyperacute**
- **Acute**
- **Rehab & Recovery**

The table below details the core problem or opportunity being addressed including the potential key measures and outcomes of each focus area/workstream. There will be further updates to each workstream as the national Stroke Model of Care for Aotearoa is developed.

Focus	Problem/Opportunity	High Level Actions	Short Term Outcomes	Long Term Outcomes
Prevention	Stroke is a leading and preventable cause of death and disability in New Zealand. Māori and Pacific people have higher chances of having strokes and are more likely to have strokes at a younger age (on average 10 - 15 years earlier). 50-80% of strokes are preventable. There is an opportunity to empower people through knowledge of the risks and triggers of stroke, allowing for better prevention of stroke for people across Aotearoa. This workstream will be part of a larger cardiovascular prevention programme in conjunction with	• Develop an overarching cardiovascular disease prevention strategy in conjunction with other networks and stakeholders • Develop a stroke prevention work plan • Support and advocacy for national policies to reduce population risks, address socio-economic and commercial determinants of health and institutional racism. • Implement ongoing, targeted community-based education programmes	• Reduction in prevalence of stroke risk factors • Reduction in inequitable exposure to stroke risk factors • Increased community awareness of stroke, its causes, how to recognise it and respond.	• People living in Aotearoa New Zealand have fewer strokes • Elimination of the inequitable stroke burden in Aotearoa New Zealand

	other networks (cardiac, diabetes, renal)			
Hyperacute	Timely hyperacute stroke treatments can significantly improve patient outcomes. There is a fourfold variation in access to these time-critical treatments by geographical location in Aotearoa. The Hyperacute Stroke Strategy (HASS) defines much of the work in this space. It is now part of a Clinical Services Programme (CSP) planning process.	• Support the Neuroservices CSP to deliver a coordinated National Hyperacute Stroke Service. • Develop close links with HSS leadership group • Monitor HSS implementation • Maintain input into planning and delivery process for hyperacute stroke	• Increased timely access and reduced inequities in access to best practice, culturally appropriate hyperacute stroke care	• Elimination of the inequitable stroke burden in Aotearoa New Zealand • People in Aotearoa New Zealand who experience stroke achieve the best possible recovery and live well in their community.
Acute	Acute stroke unit (ASU) care is considered to be the most important overall intervention for the population with acute stroke. 40% of people presenting with acute stroke do not get looked after by acute stroke units (ASU) in a timely way (within 24 hours of presentation to hospital). 12 of 28 acute stroke hospitals do not have ASUs of any type. Those that do often do not provide all the main elements of ASU care (multidisciplinary stroke leadership and clinical input, MDT processes, education programmes). No ASU services in Aotearoa have undergone certification processes.	• Develop a coordinated network of acute stroke units in Aotearoa • Develop and implement a certification process for ASUs in Aotearoa	• Elimination of variation in access to ASU across Aotearoa • All ASUs successfully certified by 2029 • All ASUs achieve nationally identified targets for ASU access by 2027	• Elimination of the inequitable stroke burden in Aotearoa • People in Aotearoa who experience stroke achieve the best possible recovery and live well in their community.

Rehabilitation and Recovery	In-patient and community-based stroke rehabilitation are key elements of quality care for people experiencing stroke. There is inconsistent access to appropriate rehabilitation for people across the motu. Major cities have better access to community-based rehabilitation compared to rural areas. Access and timeliness of access to rehabilitation varies by age and ethnicity. Consumer empowerment programmes (eg TaCAS) are not routinely available for people living in the community with the effects of stroke.	• Develop prioritised Rehabilitation and Recovery plan. • Support roll out of the psychosocial tool kit. • Support district development of recognised community rehabilitation and early supported discharge programmes. • Support adoption of technology to ensure sustainable access to services for all people with stroke who need it. • Equitably roll out the TaCAS programme across the motu. • Collaborate with networks and agencies to strengthen development of a nationally consistent, equitable approach for Return-to-Work (RTW) and Return to Drive (RTD) services	• Reduction in inequities in access to best practice rehabilitation care. • Improvement in patient and whānau experience of care in their journey from hospital to community • Increased, equitable, timely access to consumer empowerment programmes, psychosocial care, RTD and RTW programmes.	• Elimination of the inequitable stroke burden in Aotearoa. • People in Aotearoa who experience stroke achieve the best possible recovery and live well in their community.

Supporting workstreams

The enabling workstreams will support the delivery of the core workstreams identified above. The identified enablers are key to the way the work is developed, delivered, and sustained for stroke services.

- **Whānau & Consumer engagement**
- **Workforce**

- **Data and digital**

The table below details the core problem, or the opportunity being addressed including the key measures and outcomes of each focus/workstream.

Workstream	Problem/opportunity	Objectives	Outcomes
Whānau Māori & Consumer Engagement	Increasing the consumer and whānau voice at all levels to ensure we deliver on our priorities. The NSN has had strong consumer input from a small number of people at a strategic level, and wider engagement through delivery of specific projects. There is an opportunity to expand the group at a strategic level to support continued improvements in whānau and person-centred care.	• Improve and prioritise whānau and consumer involvement in the development of stroke services	• The NSN has a partnership with people with stroke and their whānau in developing models of care and work plans for stroke services • Hauora Māori perspectives are heard from multiple avenues, recognising the diversity of Māori whānau and hapū
Workforce	The workforce supply for specific stroke services is low impacting on the availability and expected care for Stroke. This includes low accessibility and entry to the specific education required to grow the capability and capacity. There is an opportunity to increase the capability and capacity coming into the stroke workforce, with the inclusion of Māori and Pacific people.	• Increase intake in the stroke workforce and pathways. • Improve educational pathways in the stroke workforce. • Increase number of people with specific stroke skills.	• A coordinated approach to ensure a flexible workforce can deliver expertise to where it is needed • Specific high vulnerability areas and skills are identified and planned for • A coordinated education programme for stroke supports the requirements of ongoing training needs
Data and Digital	Data for stroke is currently set in various systems and platforms with no single source of the truth.	• Improve quality and integration of stroke data.	• Stroke data plan is completed. • Reliable data is available to understand: ○ population needs

	There are also data quality issues due to inaccuracies and not having the data in a consumable format to access. There is an opportunity to integrate data for stroke to help provide better understanding of the specific improvements required for Stroke services.	• Improve access to stroke Data • Improve data driven insights • Data is simple to understand and use	○ Service delivery and variation ○ Outcomes • Data is presented in an understandable format

Schedule and phasing

This section details the key milestones for the initiatives identified for the Stroke programme. The Network workplan will be delivered in a phased approach to allow for early action and the ability to plan appropriately for larger initiatives. The phases are broken up into the following manner.

- **Phase 1** – Phase 1 contains initiatives that deliver quick wins from existing resources over 1-2 years.
- **Phase 2** – Phase 2 contains initiatives that require moderate planning and may require further resourcing and funding to deliver over 3- 4 years. These initiatives will be articulated within working group work plans.
- **Phase 3** – Phase 3 contains initiatives that require funding to deliver over 4-5 years. These initiatives will require further planning.

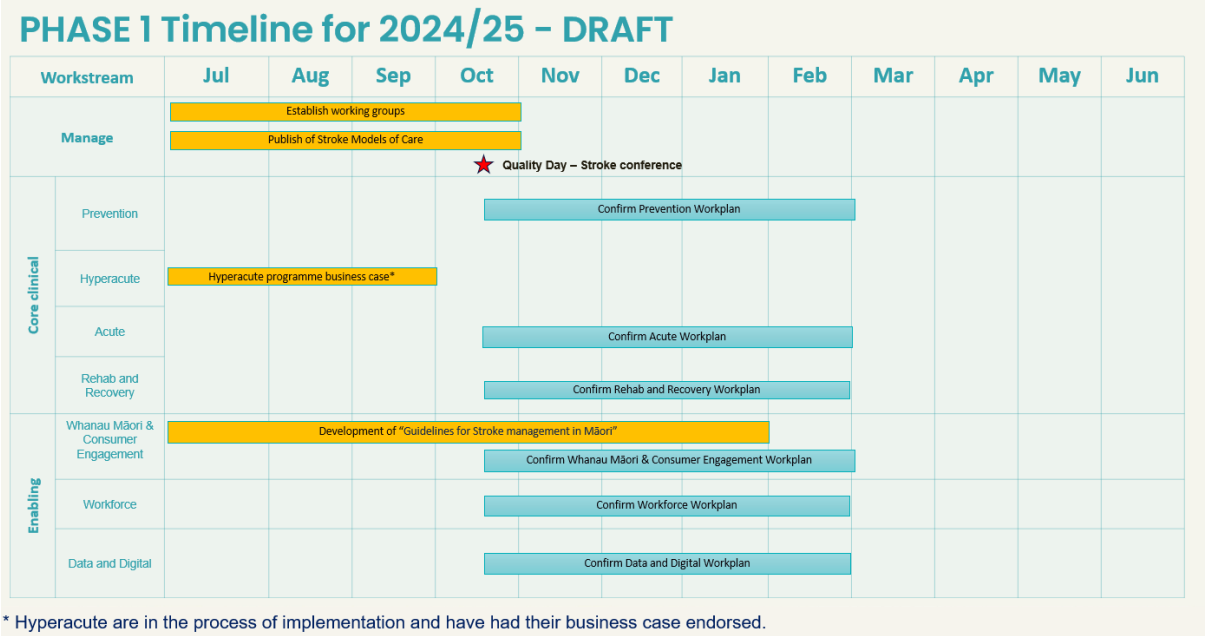
Phase 2 and Phase 3 deliverables will be further fleshed out as part of the individual workplans from the working groups (as part of Phase 1 key milestones).

Phase 1 Key Milestones and priorities

Phase 1 represents key milestones within the 2024 to 2026 period subject to workplan being approved. The listed deliverables will be able to use existing resourcing or require minimum funding to support delivery.

The timeline below represents the key milestones in which work is expected to be delivered.

Figure 3: Phase 1 timeline



* Hyperacute are in the process of implementation and have had their business case endorsed.

Table below has further detail regarding key actions and priorities for Phase 1 of the Stroke network programme. Details include how the specific initiatives contribute to achieving equity and reducing variation.

Deliverable	Due date	Description
Establishment working groups	Nov 2024	Chair and membership confirmed and working groups meeting.
Publish Stroke - Model of Care	Nov 2024	The development of Stroke – Models of Care will broadly define the way Stroke health services are delivered at a strategic and national level. It will provide the conceptualization and operationalization of how strokes services will or could be delivered. The working groups will further build upon the initial Strategy within the individual workplans. Which may include management of services and processes. Supported by the identification of roles and responsibilities through the pathways of care. Inclusion of also the key initiatives that will support the aim towards improvement of Stroke Models of Care.
Publish Māori Stroke guidelines	Feb 2025	Health NZ – Te Whatu Ora have contracted Te Ohu Rata O Aotearoa – Māori Medical Practitioners Association t/a Te ORA to develop a 'Guidelines for Stroke Management in Māori' Chapter in the Australian and New Zealand clinical Guidelines for Stroke Management. The methodology for the creation of clinical guidelines will be focused on optimising outcomes for Māori. Guidelines for stroke management in Māori will also be included in the 'Australian and New Zealand Clinical Guidelines for Stroke Management'. This includes an approach to support and guide the implementation.
Organise Quality Day – Conference	October 2024	One and half day affordable conference designed to be accessible to a variety of people in health, showcasing work specific to stroke. This includes panel discussions, workshops, and speeches from well-known and respected experts in the stroke services. This provides educational opportunities designed to further connect and grow those that deliver stroke services or have been impacted by stroke. It offers an opportunity for visibility of the NSN.
Working group plans for phase 2 confirmed and commissioned	Mar 2025	The core working groups will develop plans aligned to NSN key objectives and identify the contributing initiatives that will help deliver and improve stroke services. Each plan will be supported by the strategic group.

Refresh of the acute standards and development of certification process	April 2025	Access to organised ASU care following a stroke is a key factor in improving outcomes, however there is significant variation across the country. A certification process is required to improve ASU care across Aotearoa.
Comprehensive approach to cardiovascular disease prevention	TBC	Working alongside other key National Clinical Networks (cardiology, renal, diabetes) to influence collaborative prevention strategy in Aotearoa

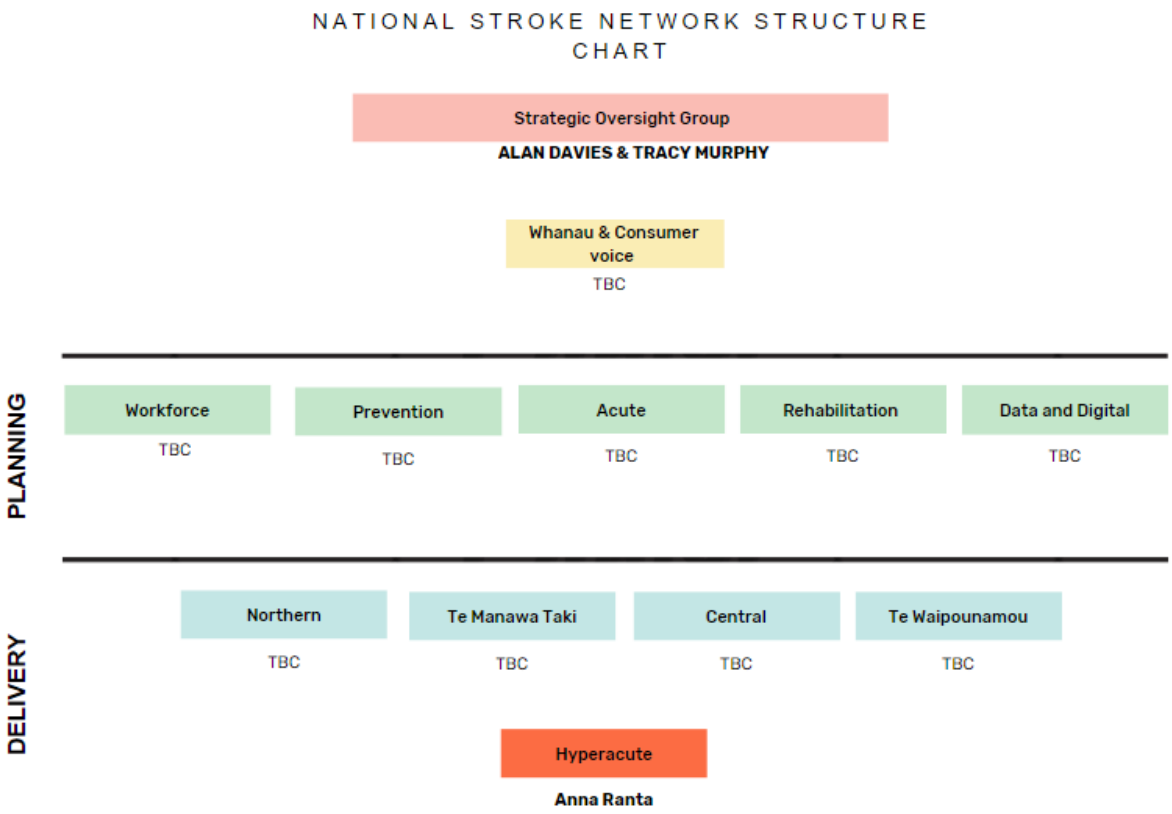
The network also identified further initiatives that may be required (see ***Appendix 2: Workstream initiatives***). This will be confirmed as part of the development of individual Working Group plans for phase 2.

Governance & working groups.

The NSN proposes the following governance and working group structures in place to ensure the programme is effectively managed, monitored and delivered. This includes communication, reporting lines and the escalation of risks and issues that may impact the delivery of the programme.

The table and diagram provide a high-level summary of the governance structure, responsibilities and proposed reporting lines associated.

Figure 3: Stroke Network Structure



*Working groups (Planning) still in the process of assigning chair and membership.

Table below provides further detail of the roles and proposed membership of each group.

Role/Groups	High level overview	Membership
National Stroke Network Oversight Group	The National Stroke Oversight Group oversees the stroke programme. Which includes setting the overall objectives and supports the implementation of Stroke Network programme. The role of the oversight group is set out in the full terms of reference. To summaries, the oversight group is accountable for: • Monitoring actions set out for the working groups. • Endorsing key planning documents and decisions. • Providing strategic direction and contribution to risk and issue management.	• Alan Davis and Tracy Murphy (Co-leads) • Regional representation • Consumer representation • Network management team.
Whānau & Consumer group	There is a strong and established whānau and consumer voice rōpū who are contracted by the Stroke Foundation NZ. We are currently exploring work alongside this group. It is proposed this group would endorse or provide feedback to the respective work from the Working groups.	• Chair • Māori representation • Pacific representation • User representation • Disabilities – Communication impairments.
Working Group/s	Each workstream has its own working group and governance function. The working groups are responsible for the **planning** of the of the initiatives specified. The working groups are: • Prevention • Acute • Rehabilitation • Workforce • Data The working groups will be assigned chairs who will be accountable for the planning and outputs from initiatives specified.	• Chair (Member from the Strategic working groups) • Regional representation • Consumer representation
Regional groups	The regions will be responsible for the **delivery** of the plan developed by the working groups.	District Stroke Leads (Clinical and Operational)

	Regions will hold the resourcing available to deliver on initiatives and will report back to the working groups.	
Hyperacute	Hyperacute has its own functioning group in which they can monitor and make key decisions in relation to direction and delivery. This is due to the Hyperacute Programme business case being developed already and several of its initiatives already in implementation or planning. They will have a dotted line back to the National oversight group, in which they will report on the status of the programme. This includes any potential risks or issues they may impact on the other workstreams for Stroke.	Chair (Anna Ranta & Stefan Brew)

Resourcing

It is expected that there will be further project management capability required to support the working groups as activity increases. Initial support will be required through planning phases. Current project management support is provided through the Network Manager, Programme Manager, Programme coordinator at the network level.

There is a risk there will be insufficient resourcing at the working group level to support implementation of workplans for individual workstreams. While there is passion and a drive to improve stroke services, NSN members have identified high workloads and competing clinical priorities limiting the time they have available. Co-leads and workstream leads will work together to establish resources required to support detailed planning and delivery of the work.

It is expected there will be a mix of internal and external resources as part of the implementation for programme and its relevant working group plans. This will be finalised once individual work plans for the working groups are completed and approved.

Table below details the current commitment of resources towards the Stroke Network. In total **1.6 FTE** is allocated currently for the work associated to Stroke Network.

Role	Name	FTE
Co – Leads	Alan Davis Tracy Murphy	0.2 0.2
Programme Manager	Adam Simpson	0.3

Network Manager	Monira Sos	0.5
Programme Coordinator	Lilly Peterson	0.2
	TOTAL FTE	**1.6**

Key Stakeholders

To support the delivery of the programme, many key stakeholders and partners will need to be engaged throughout the development and implementation of the initiatives. This section details the key stakeholders and how we interact with them in relation to the Stroke programme.

Group	Internal/External	Description	Person/s
Clinical Medical Unit	Internal	Engage with leadership to for further feedback on direction and approval of overall plan	Richard Sullivan Mary Cleary Lyons
Commissioning	Internal	Engage with Commissioning to ensure alignment to other possible work being developed in the stroke area. This includes Living well, Local voice areas and collaborating with them regarding the patient pathways.	TBC
Hauora Māori	Internal	Engage with Hauora Māori to get input or assurance the work developed is in line with the key priorities in relation to Māori health.	Daniel Gotz
Service Improvement & Innovation	Internal	Engage with SI&I to ensure alignment to other possible work being developed in the stroke area. Engage with SI&I for potentially resources to implement and deliver parts of the stroke programme.	Delwyn Armstrong
Data & Digital	Internal	Engage with data and digital to ensure overall Data & Digital Workstream is aligned with overall plans from the Te Whatu Ora – D&D unit. Possible resourcing required to deliver Digital and Data workstream for the stroke programme.	TBC

Hospitals and Specialist Services	Internal	Support the release of Staff for various initiatives developed from the Stroke Network. This includes implementing and monitoring change initiatives s agreed from the stroke network.	RD/GDO
Pacific Health Senate	Internal	Engage with Pacific Health Senate to get input or assurance the work develop is in line of the priorities.	TBC
Workforce	Internal	Engage with Workforce unit to further understand national approach and how we feed into the overall workforce strategy for Te Whatu Ora.	TBC
Te Ohu Rata O Aotearoa | Māori Medical Practitioners (Te ORA)	External	Engage and partner with Te ORA for the development of Stroke Māori Guidelines.	Kasey Tawhara (Chair of Te ORA board)
Stroke Foundation	External	Engage and partner with Stroke foundation to utilize User and consumer group.	Jo Lambert (CEO)

Risk, Issues and dependencies

This section details the network risks, issues and key dependencies. Identification at this stage will allow for proactive measures to mitigate or eliminate them before they escalate into larger issues. Actions will be prioritised based on the potential impact and likelihood of occurrence of these risks and issues. They will also assign to the right owner dependent on the severity of the risk or issue.

Network Risks and issues

The below table details the top three risks to the network. It is expected that we will manage the risks appropriately including mitigations and controls.

Risk/Issue	Description	Likelihood	Impact	Impact rating
Risk - Resourcing	There is a risk that the network receives insufficient resources to support the planning and delivery of work.	**Medium**	Resource shortfall could lead to compromised or decrease scope. Could also increase timelines due to limited resources to be able to deliver.	**High**
Risk - Funding	There is a risk that the Network may not secure the necessary funding or experience delays in funding approval.	**Medium**	Insufficient or delayed funding will lead to the inability to procure essential resources, interrupt ongoing work and the potential scaling back of proposed work.	**High**
Risk- Regional structure and development	There is a risk that there is uncertainty regarding regional structure and approaches which may impact the way network delivers work.	**Medium**	The uncertainty could lead to decreased morale and productivity. This also includes disruptions in workflows and confusion about roles and responsibilities.	**High**
Ongoing support from Hauora Māori directorate	Lack of capacity and financial restraints effect the level of support that the Hauora Māori directorate can provide.	**Medium**	Strengthening of relationships with Hauora Māori.	**Medium**

Network Dependencies

There are key relationships with other networks and specific activities that the programme will need to engage with.

The table below lists other networks and initiatives we will need to engage or collaborate with regarding further development and implementation of the programme.

Dependencies	Description
Cardiac Network	Development of prevention strategies and ensure consistency regarding actions required.
Renal Network	Development of prevention strategies and ensure consistency regarding actions required
Diabetes Network	Development of prevention strategies and ensure consistency regarding actions required
Radiology Network	Stakeholder in the improvement/development of the Hyperacute pathway

Appendices

Appendix 1: National Stroke Network Members

Representation	Name	Role
National	Alan Davis	Co-lead/Chair executive
National	Tracy Murphy (Ngāpuhi)	Co-lead/Chair executive
Northern	Felicity Bright	Academic/SLT
Northern	Geoff Green	Stroke Physician
Northern	Vanessa Trotman	Allied Health Lead
Central	Alicia Tyson	Clinical Nurse Specialist
Central	Anna Ranta	Stroke Physician/Academic
Central	Stephanie Thompson	Allied Health Lead
Central	Jessica Keepa (Ngāti Porou)	GP/Clinical Lead Living Well
Southern	John fink	Stroke Physician
National	Jonathan Armstrong	ABI Manager
National	Jo Lambert	National Stroke Foundation CE
National	Jon Bagnall	Australia and New Zealand Stroke Organisation Advanced physiotherapy practitioner
National	Kylie Head	Consumer
National	Te Aniwa Reedy (Ngāti Porou)	Consumer/Te ORA
National	Oka Sanerivi	Physio/Academic
National	Amanda Van Elwijk	Clinical Nurse Manager

Appendix 2: Workstream initiatives

The initiatives represent the current and future work required to contribute to the expected outcomes. Each workstream has a set of initiatives identified as part of the plan.

The table below represents the initiatives associated with each workstream proposed that were defined from the NSN workshop on the

Workstream	Initiatives/Deliverables
Prevention	• Develop prevention plan to effect policy. • Provide advice on policy settings. • Development of Cardiovascular Risk Strategy (working with other networks such as Cardiac, Diabetes and Renal) (Phase 1) • Contribute to cardiovascular risk assessment. • Cardiovascular risk assessment • Development of marketing and communications approach - Awareness approach and plan
Hyperacute	• Hyper acute stroke – Programme Business case • Establish National service plan and establish Clinical service plan • Stroke Clot retrieval model & tele stroke Day 1 post thrombolysis assessment

Acute	• Develop current state assessment of workforce and standards at each region.
	• Becoming accreditors
	• Standardize and providing service improvement.
	• Creating pathways for Acute and into possible rehabilitation?
	• Update the standards and expectations to include cultural perspectives including:
	  ○ Iwi and consumer input
	  ○ For NZ context
	• Delivering certification programme focused on the following.
	  ○ Protocol
	  ○ Processes
	  ○ Delivery
	  ○ Comms – HealthCert Quality (under SI&I)
	  ○ Accreditation data

Rehabilitation	• Review and audit current Stroke rehabilitation landscape. • Audit current landscape. • Review and refresh rehabilitation specification & Guidelines. • Development of feasibility and further evaluation and planning of the Tele rehabilitation for a national Telerehabilitation roll out. • Develop Investigate process for rehabilitation rehab accreditation.
Workforce	• Providing a view of the current landscape of what's available in terms stroke educational materials. Providing educational options – real time and delay education. Scoping pieces of work. (jenny) • Supporting Te Whatu Ora overall workplans • Capacity – make of the workforce identify cultural groups we are work – cultural safety of the workforce.

	• Creating opportunities
	• Workforce plan
	• Uplift workforce plan
	• Leadership workforce – diversity.
	• Pathways to build workforce:
	  ○ Tuakana–teina mentoring
	  ○ Internship
	  ○ Certification of leadership warning
	  ○ Proactively identifying potential leaders.

Data & Digital	• Feasibility of new platforms –
	  ○ Telemonitoring and rehabilitation platforms
	  ○ MISTAR
	  ○ Potential apps
	• Developed Rehabilitation data plan including:
	  ○ Collection
	  ○ Monitoring
	  ○ Insights
	• Integration of data and systems into a national view.

Whanau & Consumer engagement	• Stroke management for Māori guidelines • Work with other stakeholders to develop a partnership model for consumer engagement