

Telestroke Quality Framework

Introduction

Telestroke is a hub-and-spoke service model where more expert stroke centres ('hubs') support more general stroke services ('spokes') in making hyper-acute stroke reperfusion decisions. Telestroke usually refers to the use of videoconferencing (VC) equipment but can also use telephones depending on local resource availability and/or service preferences. Telestroke has been demonstrated to improve access to reperfusion therapies and, where VC is used, also to shorten door to treatment time. Both have been linked to better patient outcomes. Per the AHA/ASA guidelines the use of Telestroke is the next best alternative to staffing all emergency departments with on-site 24/7 stroke experts.

This document outlines a quality assurance framework aimed at ensuring optimal Telestroke service provision to achieve the best patient outcomes in hyper-acute stroke care.

General Telestroke Service Provider Features

- Readily available to provide 'spoke' hospitals with timely stroke reperfusion advice by a qualified clinician
- Make sound decisions as to reperfusion treatment eligibility
- Ability to interpret relevant radiological images with radiology back-up as required
- Provide support in ascertaining patient/family wishes and consenting process
- Guide local team drug selection, dosing, and administration of thrombolytic and other relevant medications such as blood pressure lowering drugs
- Make a sound decision as to whether to refer a patient for INR discussion around stroke clot retrieval

Quality Framework

A two-tiered system: (1) Basic and (2) Advanced Telestroke Services depending on local resource availability and service preferences.

(1) Criteria for Basic Telestroke Services

- Identified clinical lead
- Consistent and timely access to a stroke expert by telephone or videoconferencing to assist with reperfusion decisions
- If service availability less than 24/7 but needs to be specified and agreed
- All treated patients are captured in a central stroke register
- Clear verbal communication of treatment decision/advice to local team is provided by hub clinicians for spoke hospital documentation
- Regular morbidity & mortality meetings are held where spoke hospital teams are invited to attend and can raise cases for discussion with the hub team. This includes raising cases where treatment was not offered (at least annual)

- Regular audit meetings are held to discuss agreed metrics triggering in depth audit where targets are not achieved (e.g., 12% reperfusion target) (at least annual)
- Stroke experts undergo annual individual SMO credentialing at their primary hospital site, including applicable cultural competence (not reperfusion specific)
- Contractual or memorandum of understanding (MoU) agreement between hub and spoke sites are in place to cover off any medicolegal issues.

(2) Criteria for Advanced Telestroke services

An Advanced Telestroke service addresses all the criteria for a basic service, plus:

- **Video conferencing** is the primary mode for assessments (instead of telephone only) to be able to visually examine the patient and speak to the local team, patient, and whānau
- The service is **available 24/7** unless there is a clear rationale for limited service hours that does not impact on overall service quality
- **All cases are logged** in a central database for audit purposes, including those consulted on but who then did not undergo reperfusion therapy
- Central case log also includes **duration of consultation** to monitor resource requirements
- In addition to clear verbal communication of treatment plans a **written report** is generated by hub consultant and sent to spoke team within an agreed time frame (usually within a few hours of the consultation)
- Regular **morbidity & mortality meetings focussed on stroke reperfusion** cases involving **both the hub and spoke teams**; frequency depends on service volumes but monthly is suggested (minimum quarterly).
- Network-wide service improvement initiatives facilitated by regular **network strategic meetings** (minimum quarterly).
- All involved stroke experts undergo individual **credentialing in reperfusion therapy** decision making and annual review as part of their routine hub hospital annual credentialing; regular education on reperfusion is an expectation. Credentialing status is communicated annually to spoke hospitals.
- **Regionally shared/consistent clinical guidelines** are used by Telestroke network hub and spoke hospitals
- Regular provision and participation in **simulation training**; at least annual per spoke site – involving all key team members on a rotating basis.

With input from the SCR consumer panel the SCR leadership group recommends that all sites in the telestroke network are working towards the provision of an advanced telestroke services framework and to achieve this an impact assessment will be required to determine resources needed to support this as we acknowledge additional resources will be required.

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Appendix: Format of New Zealand Telestroke services in 2022

	Hub/Spokes	Hours of operation	Clinical Lead	Reporting	M&M/QA meetings	Shared Guideline	Audit	
Northern region	Telestroke	Auckland - Northland	Out-of-hours only	Alan Davis	No	Weekly neuroradiology – spoke clinicians may attend 2 monthly case review	Yes	None done yet
	Bypass	Auckland - Northshore, Waitakere, Counties	Out-of-hours only	Dean Kilfoyle Alan Barber	All	Biannual	Yes	6 monthly
Midland region	Telestroke	Hamilton - Thames, Lakes	24/7 (Thames) Out-of-hours (Lakes)	Daniel Oh Denise Moraw	Thrombolysed thrombectomy	Every Monday 2 monthly for Lakes	No	Monthly for Waikato Hospital
	No Telestroke	Bay of Plenty	NA	NA	NA	NA	NA	NA
Central region	Telestroke	Wellington - Taranaki, MidCentral, Hake's Bay, Whanganui, Wairarapa, Nelson/Marlborough, Tairāwhiti	24/7	Anna Ranta Alicia Tyson	All – even if not thrombolysed	Monthly involving hub and spoke clinicians	Yes	3 monthly at CCDHB and regionally
	No Telestroke or Bypass	Hutt – Telestroke & bypass TBC	NA	NA	NA	NA	NA	NA
South Island	Telestroke	Christchurch - West Coast, S. Canterbury, Southern	24/7 – Dunstan, Oamaru, Queenstown, West Coast Out-of-hour Timaru, Dunedin, Invercargill	Teddy Wu	Capture data No report sent to referring hospital	Only at CDHB Quarterly No regional meetings	Yes	3 monthly at CDHB
	Bypass	None						