Aide-Mémoire

Health New Zealand
Te Whatu Ora

Further information about hyper-acute stroke initiatives

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To:	Hon Simeon Brown, Minister of Health		
From:	Richard Sullivan, Executive National Director - Clinical		
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Contact for further discussion (if required)

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Purpose

1. Following your meeting with Stroke Aotearoa New Zealand (Stroke Aotearoa) on 17 July, you requested information on the project investigating the use of an Artificial Intelligence (AI) tool to support rapid triage of potential stroke patients in acute care settings.

Background

Stroke Care in Aotearoa

2. Stroke is the second leading cause of death and disability in Aotearoa, and significant inequities remain in access to timely treatment across different regions and communities. Only 17.9% of patients with acute ischaemic stroke receive prompt care, with rural and Māori communities disproportionately affected.

3. 8,000 New Zealanders experience a stroke each year. The annual cost of stroke care to the New Zealand health system is estimated at $1.1 billion (2020), encompassing hospital treatment, rehabilitation, aged residential care, and lost productivity.

4. The first 24 hours following a stroke are critical, as early intervention can significantly reduce brain damage and improve recovery outcomes. Treatment is highly time-sensitive. This is compounded by workforce shortages and long travel time to care, as medication is restricted to major centres such as Auckland, Wellington and Christchurch.

5. Currently, only 11 of New Zealand's 29 acute stroke hospitals, serving just 27% of stroke patients, have access to automated imaging interpretation tools. The remaining hospitals rely on outsourced international reporting, which can take 1–2 hours and may lack the precision required for urgent stroke treatment. Accurate and timely imaging is essential for determining whether stroke patients at district hospitals require urgent transfer to regional centres for advanced treatment.

Discussion

Overview of automated imaging interpretation tool

6. An automated imaging interpretation tool called MIStar®, developed by Apollo technologies, is used in Wellington and Te Waipounamu, and was previously used in Auckland.

7. This tool enables rapid, precise visualisation of the brain, helping clinicians identify salvageable brain tissue, which is particularly valuable in emergency care where timely treatment decisions are critical. By doing so, it extends the treatment windows for:

    a) Thrombolysis (clot-busting medication): from 4.5 hours to up to 9 hours;

    b) Stroke Clot Retrieval (SCR): from 6 hours to up to 24 hours.

8. While earlier treatment remains ideal, this extension means patients who arrive late or live further from major centres can still receive life-saving care. It also ensures that only the most appropriate patients are transferred to SCR centres.

9. Automated imaging also helps improve patient outcomes by reducing the severity of disability and the need for long-term rehabilitation and support services. This leads to significant downstream cost savings for the health and disability system, while improving

quality of life for patients and their whānau.

10. Currently, MIStar® is approved only for research purposes. Its use is set to expire in Canterbury District in September 2025 and in Capital Coast District in November 2025.

Following further research, the National Clinical Stroke Network will prepare a refreshed business case.

11. In 2024, the National Clinical Stroke Network (NSN) completed an indicative business case proposing the use of MIStar® for a two-year period, while procuring a long-term vendor. This business case was endorsed by the NSN in April 2025.

12. In May 2025, Apollo Medical Technologies advised the National Stroke Network (NSN) that MIStar® was suitable only for research purposes and not for operational deployment. This prompted a shift in procurement strategy and a reassessment of potential vendors for the automated imaging tool and its implementation. As a result, the previously-endorsed business case became obsolete.

13. Otago University and Capital, Coast & Hutt Valley Districts have since received funding from the Health Research Council of New Zealand (HRC) to conduct further research into an automated imaging tool, Strokeviewer by Nicolab, across a limited number of hospitals in New Zealand.

14. To support this research, the NSN has proposed a partnership. The NSN will use the outcomes of the research to inform the procurement and planning of an automated imaging tool for potential national implementation.

15. NSN will be seeking endorsement of the refreshed approach with clinical and digital governance (September 2025) and will look to further understand the costs and digital infrastructure required.

16. The research is expected to conclude between mid to late 2026 and will incorporate data collected from selected districts where the AI imaging tool has been deployed (districts yet to be confirmed). A refreshed business case will be developed alongside the research, drawing on its findings, to support a proposal for national implementation.

Automated imaging tools to triage stroke patients can benefit our clinical workforce, support timely treatment, reduce barriers to care, and release cost savings in the health system

17. An automated imaging tool such as MIStar may have the following benefits for our health system:

    a) **Shortened stays in Emergency Departments (EDs)** as an automated imaging tool interprets scans within seconds, far quicker than the current 30–60 minute delays, enabling ED teams to initiate treatment or transfer planning much earlier. Additionally, early activation of stroke pathways and real-time coordination with telestroke neurologists enable patients to progress quickly to the next stage of care or be discharged sooner, easing ED congestion.

    b) **Shortened wait times for elective treatment** as accelerating diagnosis and treatment through automated imaging space is freed up for elective services.

    c) **Extending clinical capability in rural and smaller hospitals** by enabling generalist and junior clinicians to confidently initiate stroke workflows without

waiting for on-site specialists.

d) **Reducing pressure on specialist services** by enabling real-time analysis of scans to support timely decision-making for appropriate stroke treatment. This approach ensures more efficient use of limited radiology and neurology resources.

e) **Accelerated diagnosis** with the AI tool detecting signs of stroke within seconds, which is significantly faster than the 30–60 minutes in some hospitals. This rapid response initiates the "brain-saving clock" earlier, potentially improving patient outcomes.

f) **Earlier initiation of treatment** as rapid identification of ischaemic stroke enables faster administration of thrombolysis, supporting increased intervention rates and improving patient outcomes.

g) **Extending clinical capability in rural and smaller hospitals** by enabling generalist and junior clinicians to confidently initiate stroke workflows without waiting for on-site specialists.

h) **Reducing pressure on specialist services** through real-time scan analysis that supports timely stroke treatment decisions, enabling more efficient use of limited radiology and neurology resources.

18. These clinical benefits translate into substantial downstream cost savings for the health and disability system:

a) An estimated **short-term net saving of $5 million per year** for the health sector, driven by reduced stroke severity, resulting in shorter hospital stays and lower rehabilitation and recovery costs.

b) **Long-term annual savings of $15 million to $35 million**, achieved through reduced carer burden, higher return-to-work rates, and increased economic contribution from recovered patients.

Next steps