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Stroke Services in New Zealand: should where you live determine the quality of stroke care you receive?

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Every day more than 20 people in New Zealand (NZ) will suffer a stroke and 90% of them will be admitted acutely to hospital expecting to receive the best possible care. Unfortunately, less than half will be alive and independent at one year.

Much of this death and disability could be avoided, as there is ample evidence that strokes can be prevented and outcomes for those with acute stroke significantly improved by appropriate management.[1] However, ensuring that all New Zealanders with stroke receive appropriate care remains a vexed issue that has occupied a number of editorials in this Journal in the last 10 years.[2–4]

The key message of the 2010 NZ Clinical Guidelines for Stroke Management is:

"…the two most important recommendations in this guideline have not changed since 2003, and the critical areas of stroke management where a change in practice would make an important difference to outcomes for people with stroke remain.

1. *All District Health Boards (DHBs) should provide organised stroke services.*
2. *All people admitted to hospital with stroke should expect to be managed in a stroke unit by a team of health practitioners with expertise in stroke and rehabilitation.*

Implementation of the evidence-based practice described in this guideline is critically dependent on provision of these services by DHBs."[1]

Back in the last millennium the Stroke Unit Trialist's collaboration first confirmed the benefit of stroke units and organized stroke services.[5] As anticipated people with an acute stroke did better if they were admitted to an area dedicated to their problems and cared for and rehabilitated by people with appropriate expertise and interest in stroke. Cardiologists have never needed to prove the benefit of their Coronary Care Units and every major hospital has one; it would be unthinkable not to! So why did the latest NZ stroke guidelines need to repeat an old message? What, if any, progress have we made with provision of stroke units and stroke services by DHBs in this millennium?

In 2002 a survey of all NZ hospitals admitting acute stroke patients identified that only four provided a stroke unit, and no major metropolitan hospital did so.[6] The accompanying editorial commented that these findings *"… reveal the continuing failure to implement best practice guidelines in New Zealand, despite the overwhelming evidence of the benefits"*[2] Subsequent editorials lamented the lack of progress but remained hopeful for future service improvements.[3,4]

In this issue of the *Journal*, Child et al publish the results of yet another audit of acute stroke services provided by DHBs.[7] This 2009 audit has several advantages over the earlier surveys and provides important new information.

First, it used an audit tool developed and trialled in Australia that was administered by trained auditors in a standardised way across all NZ DHBs, in conjunction with an audit of Australian hospitals. This provides for more reliable results, robust comparisons within NZ and with services provided across the Tasman, and a baseline for serial audits over time to better track changes in service delivery.

Second, this organisational audit was accompanied by a health records audit reviewing the actual care received by up to 40 consecutive acute stroke patients treated by each DHB in the last 6 months of 2008.[8] This patient care audit allows us to assess what stroke services were actually delivered to people with stroke as opposed to those reportedly available in a DHB, according to a survey. Each DHB has been provided with their individual audit results and comparisons against unidentified similar sized DHBs and Australian hospitals. It is unknown what, if any, actions DHBs have taken upon receipt of this information.

The audit results provide both good and bad news. In the seven years from 2002 to 2009 the number of stroke units in NZ DHBs doubled to eight but five large and medium sized DHBs still did not provide stroke units and there were only 83 dedicated stroke unit beds across the whole country. Given this, it was not surprising that on the audit day only 39% of stroke patients across NZ were being managed in a stroke unit compared with 51% in Australia. Neither country can be proud of their results as reportedly around 74% of stroke patients in the UK and more than 80% in Scandinavian countries could expect to receive care in a stroke unit.[1]

The Trans-Tasman difference was almost entirely due to inadequate service provision in many larger metropolitan NZ hospitals and this should be of major concern to people living within the boundaries of those unidentified DHBs. Of further concern, a third of stroke inpatients managed by DHBs that provided a stroke unit were not receiving their treatment within this stroke unit. This suggests that existing stroke units/services are inadequately resourced or organised as all people with stroke benefit from management within a stroke unit regardless of their age, sex, ethnicity, stroke severity or stroke type.[1]

The DHBs performed as well as Australian hospitals in terms of access to brain imaging, composition of multidisciplinary teams and assessment of rehabilitation needs despite the inadequate provision of stroke units. Half of the DHBs did not manage Transient Ischaemic Attacks (TIA) urgently as they failed to provide either an "admit all with TIA" policy or rapid access TIA clinics; representing a lost opportunity to prevent strokes.

All large and medium sized DHBs should provide an acute stroke thrombolysis service.[1] For every seven patients thrombolysed within three hours of acute stroke onset, one is saved from death or disability; a better result than achieved by thrombolysis for acute myocardial infarction, and the eligible time window is now up to 4.5 hours. While more than 80% of the New Zealand population is served by a DHB that says it provides an acute stroke thrombolysis service, it is disappointing that only 3% of acute stroke patients admitted to hospital in 2009 actually received this treatment. It is no consolation that Australia achieved a similarly poor result as numerous international studies have demonstrated that rates of up to 20% are a realistic target.[1]

This audit, like others over the last 10 years, has demonstrated further progress, albeit painfully slow progress, in implementing guideline recommendations for best practice in stroke services. Despite this, the quality of available stroke care still depends on where you live and lags far behind that delivered to people with ischaemic heart disease.

The reasons for the ongoing neglect of this important, feared, expensive and disabling condition are not explored in these audits but, to quote an earlier editorial, are likely to include both health professional and health management attitudes to stroke.[3] The small pool of clinicians with expertise in stroke who can provide leadership, facilitate education and promote evidence-based practice is growing steadily but without clear direction to DHBs from the Ministry mandating provision of stroke units and organized stroke services in all but the smallest hospitals, these clinicians will struggle to further develop local stroke services.

How many more New Zealanders will suffer unnecessarily while we wait? Would change occur faster if each DHB's audit results were identified publicly, as we do with the current health targets?

Competing interests: Audits referred to in this editorial were co-ordinated by the Stroke Foundation of New Zealand (SFNZ) under contract from the Ministry of Health and I am Vice President of the National Council of the SFNZ and an honorary medical advisor to the Central Region of SFNZ.

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