

Delays before patients reach stroke centres remain a major barrier to timely treatment in Malaysia, new report finds

Malaysia experts call for better public awareness of stroke symptoms, standardised hospital imaging protocols and expanded access to specialist care beyond major urban centres

KUALA LUMPUR, 2 September 2026 – Delays occurring before patients reach stroke centres remain a major barrier to timely treatment in Malaysia, according to a new report, *Strengthening Stroke System Readiness Across ASEAN*, unveiled today by Siemens Healthineers at Hospital Management Asia 2026 in Bangkok, Thailand.

The report draws on insights from seven leading experts across Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam, including Prof. Dr Khairul Azmi bin Abd Kadir, a senior consultant neurointerventional radiologist and endovascular neurosurgeon at Universiti Malaya Medical Centre. Experts identified several barriers to timely treatment in Malaysia: low public awareness of stroke symptoms and transportation barriers cause many patients to arrive at hospital outside the critical window, while inter-hospital transfer delays and specialist access concentrated in major urban centres further limit how quickly patients can reach the right level of care.

The World Health Organization's South-East Asia Region accounts for over 40% of global stroke mortality,¹ and carries nearly half of the developing world's total stroke burden, with severe long-term disability affecting roughly one-third of all stroke survivors². Stroke is Malaysia's third leading cause of death, with the

¹ Pandian JD, Padma Srivastava MV, Aaron S, et al. The burden, risk factors and unique etiologies of stroke in South-East Asia Region (SEAR). *Lancet Reg Health Southeast Asia*. 2023; 17:100290. [doi:10.1016/j.lansea.2023.100290](https://doi.org/10.1016/j.lansea.2023.100290)

² Ng JC, Churojana A, Pongpech S, et al. Current state of acute stroke care in Southeast Asian countries. *Interv Neuroradiol*. 2019; 25(3): 291-296. [doi:10.1177/1591019918811804](https://doi.org/10.1177/1591019918811804)

burden compounded by rising rates of diabetes, obesity and hyperlipidaemia³ alongside an ageing population⁴.

"Every healthcare system across Southeast Asia is at a different stage of its stroke care journey, yet many of the challenges are shared," said Fabrice Leguet, Managing Director ASEAN and Head of Enterprise Services Asia-Pacific & Japan, Siemens Healthineers.

"In Malaysia, that means ensuring patients recognise the signs of stroke and reach the right centre in time, no matter how far they live from a major city," said Ai Li Siow, Managing Director, Siemens Healthineers, Singapore, Malaysia, and Brunei. Improving outcomes depends on how effectively the entire stroke system works together, from recognising symptoms and activating emergency medical services to rapid diagnosis, treatment and rehabilitation."

Delays across the stroke pathway remain the greatest challenge

Malaysia has made real progress in stroke care over the past decade, establishing dedicated stroke units, national stroke pathways and expanding access to clot-dissolving treatment given via injection (intravenous thrombolysis) and, gradually, the physical removal of blood clots (thrombectomy). Stroke is increasingly recognised as a medical emergency, and hospitals have responded by building multidisciplinary teams and advanced neuroimaging capabilities to improve coordination across the stroke pathway.

Yet delayed patient presentation, driven by limited public awareness of stroke symptoms and transportation barriers, costs patients precious time before they reach a hospital. Access to advanced stroke services also remains concentrated in major urban areas, creating disparities for patients in peripheral and rural regions. Workforce shortages add further pressure to the system: Malaysia has just one neurologist for every 323,000 people⁵, most of them based in cities.

Inter-hospital transfer delays and inconsistent imaging protocols compound these challenges further, with many hospitals still routing stroke patients through the emergency department rather than directly for a computed tomography (CT).

³ Tan KS, Venketasubramanian N. Stroke Burden in Malaysia. *Cerebrovasc Dis Extra*. 2022; 12(2):58-62. doi:10.1159/000524271

⁴ Department of Statistics Malaysia. "Population Projection." Department of Statistics Malaysia, n.d. Accessed May 7, 2024. <https://www.dosm.gov.my/portal-main/release-content/population-projection-revised-malaysia-2010-2040>.

⁵ Tan KS, Venketasubramanian N. Stroke Burden in Malaysia. *Cerebrovasc Dis Extra*. 2022; 12(2):58-62. doi:10.1159/000524271

A national model with local innovation

Universiti Malaya Medical Centre, a major academic tertiary referral centre, provides round-the-clock access to mechanical thrombectomy and complex neurovascular interventions, supported by state-of-the-art biplane angiography technology. Beyond acute treatment, the centre's work extends to education, research and regional capacity building, helping to train specialists and share best practice with other institutions.

Experts pointed to the value of hub-and-spoke referral models — allowing regional hospitals to rapidly identify patients who need thrombectomy and transfer them efficiently to a capable centre — as a way to extend this kind of specialist capability beyond Malaysia's major cities.

AI can support faster, more coordinated stroke care

Artificial intelligence emerged as a tool that could help address several of these challenges at once. Experts highlighted its potential to support faster detection of the most severe strokes and automate hospital notifications so specialist teams are ready before a patient arrives. AI-enabled remote imaging support could also help hospitals facing workforce shortages or serving geographically dispersed populations without an on-site specialist. The experts stressed, however, that technology is most effective when integrated into well-designed clinical pathways and supported by trained professionals, robust referral networks and standardised care protocols.

Priorities for strengthening stroke readiness in Malaysia

Beyond expanding infrastructure, experts agreed that strengthening stroke readiness in Malaysia depends on faster recognition, clearer protocols and more consistent access to specialist care. Immediate priorities include:

1. Training EMS to identify stroke and activate hospital pathways before arrival
2. Enabling eligible patients to bypass the emergency department and go directly to CT
3. Defining clear imaging protocols across institutions
4. Developing hub-and-spoke referral models for faster specialist transfer
5. Auditing treatment times to drive quality improvement

“Stroke care depends on a chain of decisions and actions that begins before a patient reaches hospital. No single institution or technology can strengthen that chain alone,” said Siow. “From recognising the signs at home to reaching the right centre for treatment, closing the gaps in that chain is what will determine how many more lives can be saved in Malaysia.”

Read the full report [here](#).

Notes to editors: The ASEAN Stroke Response Insights Board brought together seven leading stroke experts from Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam to discuss stroke system readiness across Southeast Asia. Through a structured regional dialogue, participants shared country-specific experiences, identified common barriers across the stroke care pathway and developed practical recommendations to strengthen coordination, improve access and accelerate timely stroke care across the region.

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