

Hospital details

1. Is the hospital a teaching hospital? Yes No
2. Number of beds in the hospital? |_|_|_|_|_| beds
3. Location of the hospital: *(tick one answer)*
 Metropolitan / urban
 Semi-metropolitan / semi-urban
 Rural / countryside
4. Does the hospital have an intensive care unit? Yes No
5. Does the hospital maintain a stroke database? Yes No
6. Does the hospital have onsite specialist physicians responsible for stroke patients? Yes No
7. Does the hospital use telemedicine links to smaller hospitals? Yes No
8. Does the hospital have transfer protocols for acute stroke treatment or care with other hospitals? Yes No
9. Does the hospital have a dedicated, multidisciplinary stroke team? Yes No

Stroke pathways

10. Does the city have an emergency call service? *(e.g. 9-1-1, or 0-0-0, or 9-9-9)* Yes No
11. Are ambulance services organised for direct transfer to the hospital of suspected stroke patients? *(tick one answer)*
 Yes
 No
 No but, there is agreement to bypass the hospital for another stroke specific service
 Unsure
12. What proportion of stroke patients arrive at the hospital by ambulance? |_|_| %
13. What proportion of stroke patients arrive within 4 hours of the onset of symptoms? |_|_| %
14. Is the ED contacted / notified of an acute stroke patient by the ambulance service before arrival at the hospital? Yes No

Hospital organisation questionnaire

15. Do stroke patients have a fast track access to brain imaging from the ambulance to the radiology department? Yes No
16. Is there an acute "code stroke" pager system for potential thrombolysis patients? Yes No
17. Does the hospital manage complex strokes that require neurosurgical intervention? Yes No
18. Which team usually manages stroke patients at the hospital? *(tick one)*
 General medical team
 Stroke geriatric team
 General geriatric team
 Stroke neurology team
 General neurology team
 General practitioner/visiting medical officers
19. What proportions (%) of acute stroke patients are admitted to the following units or departments in the hospital? *(answer 0 to all that is not applicable)*
Short stay ward in emergency department |_|_|_| %
Intensive care unit |_|_|_| %
Specialised stroke care unit |_|_|_| %
Neurology ward |_|_|_| %
Neurosurgical ward |_|_|_| %
Geriatric ward |_|_|_| %
Geriatric rehabilitation ward |_|_|_| %
General medical ward |_|_|_| %
Other |_|_|_| %

Emergency Department (ED)

20. Number of beds in ED? |_|_|_|_|_| beds
 21. Average number of patients seen in ED per month? |_|_|_|_|_| patients
- Generally, what is the number of patients to one staff? *(answer 0 if not applicable)*
22. Number of patients to one nurse |_|_|
 23. Number of patients to one health assistant |_|_|

24. Select what best describes the ED at the hospital:

- Dedicated ED
- No dedicated ED but a designated "emergency area" in a small hospital

a. If dedicated ED, does it have: *(tick all that apply)*

- an intensive care unit?
- a high dependency or acute medical unit (AMU)?
- a separate resuscitation area?
- a short stay ward?

25. Are there current ED clinical pathway/checklist/protocols for ischaemic stroke patients for:

- Rapid triage and treatment for acute stroke?
- Early transfer to another hospital?

26. Do you have a clinical pathway/checklist for patients with acute intracerebral haemorrhage? Yes No

27. What proportion of stroke patients stay in the ED beyond 4 hours? | | | %

28. Are there medical staff from the stroke service (specialist, fellow or registrar) available in ED? Yes No

a. If YES:

- Availability on site 24/7
- Monday to Friday during working hours (8-5), on-call after hours
- Designated phone or telemedicine support only
- Other, please specify: _____

b. If NO stroke service available in ED, acute management advice primarily provided by:

- General Physician
- Emergency Medicine Specialist
- General Practitioner or Career Medical Officer
- Other, please specify: _____

29. What area in the ED are stroke patients mostly assessed? *(tick one)*

- General area
- Dedicated area for stroke patients
- Dedicated resuscitation area
- Short stay ward
- Other, please specify: _____

Imaging and investigation

Does the hospital have the following investigations for stroke patients:

30. Urgent CT scan on arrival at the hospital? Yes No
- If YES, what is the availability?
- 24 hours, 7 days of the week
- Working hours only (8-5)
- Working hours (8-5) and on – call after hours
31. MR Imaging Yes No
- If YES, what is the availability?
- a. On-site MRI within 24-48 hours of stroke presentation Yes No
- b. Off-site MRI within 24-48 hours of stroke presentation Yes No
32. Advanced imaging (CT perfusion or angiography) Yes No
- If YES, what is the availability?
- a. CTP on most patients Yes No
- b. CTA on most patients Yes No
33. Is tele-radiology used at the hospital for rapid imaging interpretation? Yes No
34. Carotid Doppler ultrasound? Yes No
- If YES, what is the availability?
- a. On-site within 48 hours of presentation? Yes No
- b. Off-site within 48 hours of presentation? Yes No
35. Is Transcranial Doppler routinely performed on stroke patients in the first 24 hours of admission? Yes No
36. Echocardiography (transthoracic and/or transesophageal)? Yes No
37. Holter monitor or 24hrs ECG for arrhythmia? Yes No
38. Is emergency laboratory testing available at all times? Yes No

Acute treatment for stroke

39. Do you offer intravenous thrombolysis (rt-PA) for appropriate stroke patients at the hospital? Yes No
- a. If YES, when is it available?
- Available 24 hours, 7 days per week
- Monday to Friday during working hours (8-5)
- Limited service
- b. Is there a standardised protocol for administering intravenous rt-PA? Yes No
- c. How many patients were thrombolysed in the past 12 months? | _ | _ | _ | patients
- d. What proportions (%) of ischaemic stroke patients receive rt-PA? | _ | _ | _ | %
- e. What is the recommended time window for administering intravenous rtPA in eligible ischemic stroke patients at your hospital?
- 3 hours
- 4.5 hours
- Other, please specify: _____
- f. Do you routinely collect door-to-needle (DTN) time? Yes No
- g. If YES, what is the current average DTN time for rt-PA? | _ | _ | _ | minutes
- h. Is intravenous thrombolysis performed using tele-medicine? Yes No
40. Are endovascular therapies available for stroke patients at the hospital? Yes No
- a. If YES, which ones: (tick all that apply)
- Intra-arterial thrombolysis and/or thrombectomy of acute ischaemic stroke
- Endovascular (ie coiling) for the treatment of intracranial aneurysms
- Endovascular treatment (ie stents) for carotid stenosis
41. Is endarterectomy for carotid stenosis available at the hospital? Yes No
- a. If NO, is there a transfer agreement with another hospital? Yes No
42. Is neurosurgery available onsite? Yes No
- a. If NO, is there a transfer agreement with another hospital? Yes No

43. What is current practice for positioning patients in the acute (<24 hours) phase of **ischaemic stroke**? (tick one)
- Lying flat: 0-5 degrees (allow head on 1 flat pillow but no elevation of head of bed)
- Sitting up: ≥ 30 degrees position
- No standard positioning
- Unsure
- Other, please specify: _____
44. What is current practice for positioning patients in the acute (<24 hours) phase of **intracerebral haemorrhage**? (tick one)
- Lying flat: 0-5 degrees position (allow head on flat pillow but no elevation of head of bed)
- Sitting up: ≥ 30 degrees position
- No standard positioning
- Unsure
- Other, please specify: _____
45. Are there specific clinical situations in which you would alter a patient's position? Yes No
- a. If yes, what is the current practice for positioning patients in the clinical situations below? (tick all that apply)
- Lying flat for revascularisation (iv or ia thrombolysis or clot retrieval)
- Sitting up ($\geq 30^\circ$) for large hemispheric infarction
- Sitting up ($\geq 30^\circ$) for mechanically ventilated patients
- Sitting up ($\geq 30^\circ$) for drowsy or comatose patients
- Sitting up ($\geq 30^\circ$) for patients with pneumonia
- Sitting up ($\geq 30^\circ$) for patients with dysphagia when they are not eating or drinking (inter meals period)
- Other, please specify: _____

To answer the following questions please refer to any existing policy in any department of the hospital where a stroke patient is likely to be admitted

46. Is there a policy indicating early (<24 hours) mobilisation stroke patients (including sitting up or out of bed)? Yes No
47. Is there a policy indicating that stroke patients with a nasogastric tube should be positioned sitting up in bed? Yes No

Stroke care and Stroke Care Unit

48. Does the hospital have a special pathway, ward or service organisation for the management of patients with acute stroke? Yes No

49. Is there a dedicated stroke ward/unit? (ie a discrete ward or section of ward caring exclusively for stroke patients) Yes No
50. If YES, complete (a) and (b) as it best describes the type of stroke ward/unit that is in the hospital:
- a. Acute stroke unit (ie accept patients acutely but aims for early discharge (usually within seven days))
- Rehabilitation stroke unit (ie accept patients after a delay, usually 7 or more days, with a focus on rehabilitation)
- Comprehensive stroke units (ie combined acute and rehabilitation, accept patients acutely but also provides early rehabilitation for up to several weeks if necessary)
- b. 'intensive' with continuous monitoring, high staffing levels and life support facilities
- 'semi-intensive' with continuous monitoring, high staffing but no life support facilities
- 'non-intensive' with none of the above.
51. Number of dedicated stroke beds in the hospital? | _ | _ | _ | _ | _ | _ | beds
52. Number of acute stroke patients admitted to the hospital annually? | _ | _ | _ | _ | _ | _ | patients
53. Number of acute stroke patients treated in the stroke care unit annually? | _ | _ | _ | _ | _ | _ | patients
54. Are there guidelines for acute treatment of stroke patients in the stroke care unit? Yes No
- Generally, what is the number of patients to one staff? (answer 0 if not applicable)
55. Number of patients to one nurse | _ | _ | _ |
56. Number of patients to one health assistant | _ | _ | _ |
57. Is a doctor stroke specialist available in the stroke care unit? (tick one)
- Availability 24 hours, 7 days per week
- Monday to Friday during working hours (8-5) and on-call after hours
- Monday to Friday during working hours (8-5)
- Limited availability
- Not available
58. Does the stroke unit team provide medical care or advice for patients not in the stroke care ward/unit? (i.e. for outpatients, 'in-reach' or 'mobile' service) Yes No

- How many of the following medical officers attend a typical ward round in the stroke ward/unit?
- | | weekdays | weekends |
|--|-----------|-----------|
| 59. Consultants | _ _ _ | _ _ _ |
| 60. Fellow/advanced trainees (senior training doctors) | _ _ _ | _ _ _ |
| 61. Registrars (mid-level training doctor) | _ _ _ | _ _ _ |
| 62. Junior medical officers (residents/interns) (junior doctors) | _ _ _ | _ _ _ |
63. What is the stroke specialist consultant review process of patients on the ward?
- 1 consultant sees all patients on a daily roster
- 1 consultant sees all patients on a weekly roster
- 1 consultant sees all patients on a 2-4 week roster
- Each consultant regularly sees their own patients
64. After hours, is there any special doctor rostered to be available to attend specifically to stroke patients who require admission to hospital? Yes No
- a. If YES, what is their level of expertise: (tick all that apply)
- Consultant
- Fellow/advanced trainee
- Registrar
- Junior medical officers (residents/interns)
65. Are there other health professionals involved in the management of stroke patients at the hospital? (tick all that apply)
- Advanced medical trainee
- Clinical psychology
- Neuropsychology
- Dietician
- General physician
- General practitioner
- Geriatrician
- Neurologist
- Clinical nurse consultant (CNC)
- Clinical nurse specialist (CNS)
- Stroke care coordinator
- Stroke specialist research nurse
- Stroke nurse educator
- Dysphagia specialist nurse
- Nurse practitioner
- Nursing unit manager (NUM)
- Occupational therapist
- Physiotherapist
- Rehabilitation physician
- Social worker
- Speech language pathologist
- Other: _____

66. Is there a protocol for referral to the following health professionals? (*tick all that apply*)
- Physiotherapist
 - Speech pathologist
 - Occupational therapist
 - Dietician
 - Psychologist
 - Psychiatrist
 - Social worker
67. Are there multidisciplinary stroke team meetings held at least weekly? Yes No
68. Who decide the position of stroke patients in routine care? (*tick one*)
- Stroke physician or stroke registrar
 - Emergency physician
 - Nurses
 - Health assistants
 - Other, please specify:

69. Are assessment scales routinely used for any of the following situations? (*tick all that apply*)
- Consciousness level
 - Motor impairment
 - Visual impairment
 - Sensory impairment
 - Cognitive impairment
 - Executive function
 - Activities of daily living
 - Mood
 - Incontinence
 - Pressure sore risk
 - Nutrition
70. Are there local protocols (including assessment/monitoring) for any of the following situations? (*tick all that apply*)
- Fever control
 - Reducing elevated blood glucose levels
 - Swallow dysfunction
71. When is a swallowing screen performed for stroke patients? (*tick one*)
- within 24 hours for all patients
 - within 24 hours for selected high risk patients
 - before feeding for all patients
 - before feeding for selected high risk patients
 - never performed

72. Is a formal swallowing assessment by a speech pathologist or speech and language therapist performed routinely? (*tick one*)
- on every stroke patient
 - on referral
 - on selected high risk patients
 - never performed

Discharge plans, rehabilitation and follow-up services

73. Is a discharge summary sent to the General Practitioner? Yes No
74. Do all stroke patients receive a routine outpatient clinic follow-up review? Yes No
75. Is there an Early Supported Discharge service with home-based rehabilitation and assessment? Yes No
76. Is there access to ongoing rehabilitation at the hospital or at another hospital? Yes No
77. Is there a home nursing service available for stroke patients? Yes No
78. Is there access to palliative care services? Yes No

Continuing education, research and quality improvement

79. Do nursing staff attend continuing education on stroke management? Yes No
80. In the last 2 years, has the stroke team been involved in quality improvement activities (e.g. quality assurance, local audit, developing strategies)?
- Yes
 - No
 - Unsure
81. How would you rate (on a scale '1-10') the support received from hospital management on quality improvement in stroke care? (*0 for none and 10 for exceptional support*) |_ | _|

Thank you for you time in completing the questionnaire.