[HOSPITAL / HEALTH AUTHORITY NAME]

ACUTE FOCAL NEUROLOGICAL DEFICIT, SUSPECTED STROKE, AND TIA PATHWAY

Protocol 18: Rapid Recognition, Reperfusion Screening, Neurovascular Imaging, Complication Prevention, Transfer, and Safe Disposition

DRAFT FOR EMERGENCY MEDICINE, INTERNAL MEDICINE, NEUROLOGY / STROKE, RADIOLOGY, ANAESTHESIA, CRITICAL CARE, NEUROSURGERY, PAEDIATRICS, OBSTETRICS, PHARMACY, LABORATORY, NURSING, EMS, TRANSFER, REHABILITATION, AND CLINICAL-GOVERNANCE REVIEW

IMMEDIATE SAFETY RULE: Treat every new focal neurological deficit as a time-critical stroke until proven otherwise. Record the exact last-known-well time, check glucose, activate the stroke pathway, obtain urgent brain and vascular imaging, and screen simultaneously for intravenous thrombolysis and endovascular thrombectomy. Do not allow registration, routine laboratory testing, diagnostic uncertainty, temporary improvement, low NIHSS, or transfer arrangements to create avoidable delay.

STATUS: This is a draft clinical-governance document. Exact thrombolytic agents and doses, blood-pressure medicines, contraindication checklists, imaging protocols, stroke-team availability, telestroke arrangements, thrombectomy pathways, anticoagulant reversal regimens, paediatric and pregnancy pathways, transfer destinations, and monitoring frequencies must be approved locally before implementation. Where local resources differ, staff must follow the safest available pathway and escalate early.

Document control	Details
Document owner	Emergency Department / Medical Services Directorate / Nursing Services / Clinical Governance
Clinical leads	Emergency Medicine; Internal Medicine; Neurology / Stroke; Radiology; Anaesthesia / Critical Care
Supporting departments	Neurosurgery; Paediatrics; Obstetrics; Pharmacy; Laboratory; Rehabilitation; EMS; Patient Transport / Transfer Coordination
Applies to	All clinical and support staff involved in triage, recognition, assessment, stabilization, imaging, treatment, monitoring, transfer, admission, discharge, and follow-up of patients with suspected stroke or TIA
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Approved by	[Hospital / Health Authority approval body]
Related protocols	Protocols 1-17; airway and ventilation; sepsis; seizure/status epilepticus; head injury; acute headache/meningitis; anticoagulant reversal; major haemorrhage; procedural sedation; transfer; capacity/refusal; paediatric and obstetric emergencies

1. Purpose

To provide a standardized, time-sensitive, equitable, and auditable emergency-department pathway for adults and children with sudden or newly recognized focal neurological deficits, suspected acute stroke, transient ischaemic attack (TIA), or stroke-like deterioration. The pathway begins at first clinical contact and continues through stabilization, diagnostic imaging, reperfusion decision-making, complication prevention, consultation, transfer, admission, discharge, and handover of continuing responsibility.

The protocol aims to reduce avoidable disability and death caused by delayed recognition, imprecise onset history, missed posterior-circulation or low-NIHSS disabling stroke, failure to screen for thrombectomy, inappropriate blood-pressure reduction, delayed reversal of anticoagulation, premature labelling as a mimic, unsafe oral intake, delayed transfer, and inadequate TIA follow-up.

2. Scope

This protocol applies to patients presenting from the community, arriving by EMS, walking into the department, deteriorating while already in the emergency department or hospital, or being referred from another facility. It includes ischaemic stroke, intracerebral haemorrhage, posterior-circulation stroke, large-vessel occlusion, wake-up or unknown-onset stroke, TIA, minor or non-disabling stroke, and common stroke mimics.

It supplements, but does not replace, advanced airway, cardiac arrest, seizure/status epilepticus, trauma, acute severe headache, meningitis/encephalitis, toxicology, hypertensive emergency, diabetic emergency, intracranial haemorrhage, obstetric, paediatric, and transfer protocols. Once imaging or clinical findings identify a more specific emergency, the relevant pathway shall be activated without abandoning the stroke timeline or ownership of care.

3. Core policy statements

- Every patient with sudden facial weakness, limb weakness or numbness, speech or language disturbance, visual loss or diplopia, neglect, gaze deviation, severe new imbalance or ataxia, dysphagia, unexplained reduced consciousness, or another abrupt focal neurological change shall be treated as suspected stroke until assessed otherwise.
- The exact last-known-well time and the time symptoms were first discovered shall be recorded separately. Terms such as "this morning," "after lunch," or "a few hours ago" are insufficient for reperfusion decisions.
- Triage shall precede registration. Stroke-pathway activation, bedside glucose, ABC assessment, and imaging preparation shall occur in parallel rather than sequentially.
- A validated stroke screen may support recognition, but a negative FAST or low NIHSS does not exclude posterior-circulation stroke, disabling aphasia, isolated visual loss, severe gait ataxia, or other clinically important stroke.
- A trained clinician shall document a focused neurological examination and NIHSS as early as feasible. Reperfusion decisions shall consider whether the deficit is disabling for that person, not the numerical score alone.
- All patients with potentially disabling acute ischaemic stroke who may be within an approved treatment window shall be screened immediately for intravenous thrombolysis and endovascular thrombectomy, with stroke expertise obtained on-site or by telestroke when available.
- Either alteplase or tenecteplase may be used within the locally approved 4.5-hour intravenous-thrombolysis pathway. Treatment shall not be delayed for multimodal imaging when standard eligibility is established and no advanced imaging is required.
- Selected patients with unknown onset or 4.5-9 hours from onset may be eligible for imaging-selected thrombolysis. Selected patients with anterior-circulation large-vessel occlusion, larger ischaemic cores, or basilar-artery occlusion may be eligible for thrombectomy up to 24 hours. Urgent specialist review and vascular imaging are therefore required even when the conventional early window has passed.
- Patients with clearly non-disabling ischaemic deficits generally require antiplatelet-based treatment rather than thrombolysis; the disabling versus non-disabling determination must be made by a clinician with stroke expertise and documented.
- Brain haemorrhage shall be excluded before antiplatelet treatment for ongoing acute stroke. After intravenous thrombolysis, antiplatelet and anticoagulant therapy shall normally be withheld for 24 hours and until repeat imaging excludes treatment-related haemorrhage.
- Blood pressure shall not be lowered reflexively. Management depends on stroke type, reperfusion eligibility, comorbid hypertensive emergency, and specialist direction. Hypotension and hypovolaemia shall be corrected promptly.
- No food, drink, or oral medication shall be given until a trained professional completes and documents an approved swallow screen, except where a medicine is specifically authorized by a stroke clinician using an alternative safe route.
- TIA is a medical emergency. Symptoms that have resolved do not remove the risk of early stroke. Suspected TIA requires immediate antithrombotic consideration, specialist assessment within 24 hours, and a completed or explicitly owned diagnostic and prevention plan. ABCD2 shall not be used to delay assessment.
- Age, pregnancy, premorbid disability, dementia, communication difference, anticoagulant use, or delayed presentation shall not be used as automatic reasons to withhold imaging, consultation, or reperfusion screening.
- A transfer request is not a treatment endpoint. The referring team retains responsibility for stabilization, monitoring, communication, documentation, and escalation until care is formally accepted and physically handed over.
- Every decision not to provide thrombolysis, thrombectomy, anticoagulant reversal, neurosurgical referral, admission, or urgent TIA review shall include a documented clinical reason and the name or role of the accountable decision-maker.

4. Definitions

Term	Operational definition
Acute stroke	A sudden neurological deficit caused by cerebral, retinal, or spinal-cord infarction or haemorrhage, requiring immediate differentiation and time-critical treatment.
Transient ischaemic attack (TIA)	A transient episode of focal neurological dysfunction caused by focal brain, spinal-cord, or retinal ischaemia without evidence of acute infarction. In the ED, resolved symptoms are managed as suspected TIA or minor stroke until investigation clarifies the diagnosis.
Last known well (LKW)	The last exact time the patient was observed at their usual neurological baseline. For wake-up stroke, this is usually the time last seen normal before sleep, not the time of awakening.

Term	Operational definition
Symptom discovery time	The time the neurological deficit was first noticed. This may differ substantially from LKW and must be recorded separately.
Disabling deficit	A deficit that would prevent the patient from performing basic activities, communicating, walking safely, seeing adequately, working, caring for dependants, or returning to their meaningful baseline if unchanged. The judgment is individualized.
Non-disabling stroke	A mild deficit judged unlikely to interfere materially with usual activities or meaningful function, after expert assessment. A low NIHSS does not automatically mean non-disabling.
Large-vessel occlusion (LVO)	Occlusion of a major intracranial artery potentially amenable to endovascular thrombectomy, including relevant anterior-circulation vessels and the basilar artery.
Intravenous thrombolysis (IVT)	Administration of an approved thrombolytic medicine, typically alteplase or tenecteplase, to eligible patients with acute ischaemic stroke.
Endovascular thrombectomy (EVT)	Catheter-based mechanical removal or treatment of an intracranial arterial thrombus at an appropriately capable stroke centre.
NIHSS	National Institutes of Health Stroke Scale, completed by trained staff to quantify neurological impairment. It does not replace clinical judgment about disability, posterior-circulation signs, or deterioration.
Stroke mimic	A non-stroke condition producing stroke-like symptoms, such as hypoglycaemia, seizure, migraine, functional neurological disorder, intoxication, infection, tumour, or peripheral vestibular disease.
Door-in-door-out time	Time from arrival at the first hospital to departure for a higher-level stroke centre. It is a key measure of transfer-system performance.

5. Roles and accountability

Role	Minimum accountability
Triage / receiving nurse	Recognize stroke signs; record arrival and LKW information; assign immediate or very urgent acuity; activate stroke alert; begin glucose, observations, NPO status, and imaging preparation; identify anticoagulants and major bleeding risk.
ED nurse	Establish monitoring and IV access; obtain authorized samples without delaying imaging; document serial neurological observations; prepare thrombolytic medicine using independent double-checks; perform post-treatment monitoring; maintain aspiration, falls, pressure, and transfer safety.
ED clinician / team leader	Lead parallel stabilization and diagnosis; confirm LKW; determine disabling symptoms; perform NIHSS or equivalent assessment; order imaging; obtain stroke expertise; make and document treatment, reversal, admission, transfer, and TIA-disposition decisions.
Stroke neurologist / telestroke clinician	Support diagnosis, imaging interpretation, reperfusion eligibility, antithrombotic decisions, BP targets, posterior-circulation assessment, paediatric or pregnancy decisions, and destination planning.
Radiology / CT team	Prioritize stroke imaging; perform non-contrast CT and vascular imaging using the approved pathway; communicate haemorrhage, LVO, large core, dissection, mass effect, or other critical findings directly and immediately.
Pharmacy	Maintain thrombolytic and reversal readiness; support weight-based dosing, compatibility, preparation, antidote access, medication history, and safety review without creating treatment delay.
Anaesthesia / critical care	Support airway protection, ventilation, haemodynamic stabilization, severe agitation management, post-thrombolysis deterioration, transfer of unstable patients, and critical-care admission.

Role	Minimum accountability
Neurosurgery / neurointervention	Advise on thrombectomy, haemorrhage, hydrocephalus, mass effect, decompression, vascular lesions, and destination or transfer requirements.
Laboratory	Prioritize critical stroke specimens and communicate results directly. Routine results shall not delay thrombolysis unless a specific abnormality is reasonably suspected or required by the approved checklist.
Transfer coordinator / EMS	Prioritize time-critical transport; document acceptance, destination, transport capability, departure target, delays, and clinical handover; escalate barriers immediately.
All team members	Use closed-loop communication, speak up about delay or safety risk, preserve dignity and equitable access, and identify the next accountable clinician and reassessment time.

6. Pathway activation and triage

Activate the stroke pathway for any acute or newly recognized focal neurological deficit, even when symptoms are improving, intermittent, mild, atypical, or discovered late. In-hospital deterioration shall trigger the same response as a new community presentation.

Category	Operational criteria
RED / immediate resuscitation and stroke alert	Compromised airway or breathing; shock; GCS below 13 or rapidly declining; ongoing seizure; severe hypoglycaemia; suspected intracranial haemorrhage with deterioration; signs of raised intracranial pressure; severe agitation preventing essential care; or any otherwise unstable patient.
RED / immediate hyperacute stroke pathway	Potentially disabling focal deficit with LKW within 24 hours or unknown onset; suspected LVO or basilar occlusion; wake-up stroke; fluctuating or worsening deficit; anticoagulant-associated acute deficit; or candidate for IVT / EVT.
YELLOW / urgent TIA or minor-stroke pathway	Resolved focal deficit or stable non-disabling symptoms without immediate reperfusion indication, after clinician review confirms physiological stability. Specialist assessment and prevention planning remain urgent.
GREEN / routine care	Not appropriate for an unresolved new focal neurological deficit. A lower-acuity pathway may be used only after a clinician identifies a credible non-vascular diagnosis and documents why stroke and TIA are not suspected.

DO NOT MISS: Posterior-circulation stroke may present with dizziness, diplopia, dysarthria, dysphagia, severe gait or limb ataxia, vomiting, visual disturbance, crossed findings, or reduced consciousness without obvious facial droop or arm weakness. A normal early CT or low NIHSS does not exclude it.

7. The first 10 minutes

Target	Required action
0-2 minutes	Triage immediately; note exact arrival time; check responsiveness, airway, breathing, circulation, oxygen saturation, and obvious trauma; activate stroke alert; keep NPO.
0-5 minutes	Measure bedside glucose; obtain LKW and discovery time from patient, witness, EMS, phone records, care facility, or prior documentation; attach ECG and cycling BP; identify anticoagulant use; weigh or obtain reliable recent weight if thrombolysis may be used.
0-10 minutes	ED clinician and stroke-capable nurse assess; focused neurological examination and NIHSS begin; two IV lines when feasible; urgent CT/CTA ordered; essential samples drawn without delaying imaging; stroke specialist / telestroke contacted.

Target	Required action
By 20 minutes where achievable	Begin non-contrast CT and vascular imaging. Avoid unnecessary chest imaging, urinary catheterization, or nonessential procedures before reperfusion decisions.
By 45-60 minutes at latest	Complete and document IVT decision and administer treatment to eligible patients. Centres should work toward a median door-to-needle time of 30 minutes or less and avoid exceeding 60 minutes.
Continuous	Reassess airway, breathing, BP, glucose response, neurological deficit, headache, vomiting, seizure activity, and level of consciousness. Record causes of delay in real time.

8. Recognition and focused neurological assessment

8.1 Recognition screen

- Ask about sudden face droop, unilateral arm or leg weakness or numbness, speech difficulty, word-finding problems, inability to understand, visual loss, double vision, severe imbalance, limb incoordination, dysphagia, or abrupt severe headache.
- Use FAST or another approved prehospital/triage tool, but extend the screen to balance and eye/visual symptoms where posterior-circulation stroke is possible.
- Ask the patient to perform a task meaningful to baseline function. A pianist with isolated hand weakness, a driver with hemianopia, or a teacher with mild aphasia may have a disabling deficit despite a low score.
- Do not dismiss symptoms because the patient is young, pregnant, intoxicated, anxious, has migraine, has had a seizure, or has a prior functional neurological diagnosis.

8.2 Minimum neurological examination

- Level of consciousness and ability to follow commands.
- Speech clarity, naming, comprehension, repetition, reading where appropriate, and neglect.
- Pupils, visual fields, gaze position and movements, facial symmetry, and swallowing or secretion control.
- Arm and leg power, drift, tone, sensation, coordination, and symmetry.
- Gait and truncal stability only when safe; inability to sit or stand unsupported is a major posterior-circulation warning sign.
- NIHSS by trained staff, documented with the time and examiner. Repeat after treatment, deterioration, or transfer, and do not use the score alone to exclude treatment.

8.3 Time and baseline

- Record LKW, symptom discovery, arrival, stroke-alert activation, clinician assessment, imaging start, imaging result, specialist contact, treatment decision, thrombolytic bolus, transfer request, acceptance, and departure times.
- Clarify baseline cognition, speech, mobility, vision, independence, prior stroke deficits, and modified Rankin or equivalent functional status when feasible.
- For fluctuating or stepwise symptoms, record each change and the earliest time the patient was last definitely normal.
- For an in-hospital event, identify the last documented neurological baseline and activate the same hyperacute pathway without waiting for the primary team.

9. Immediate stabilization: ABCDE without delaying reperfusion assessment

9.1 Airway and breathing

- Position, suction, and use airway adjuncts as needed. Protect the cervical spine when trauma is possible.
- Give oxygen for hypoxaemia and titrate to the locally approved target; routine oxygen is not required when saturation is adequate.
- Seek early anaesthesia / critical-care support for reduced consciousness, bulbar weakness, recurrent vomiting, aspiration, severe hypoventilation, rapidly progressive posterior-circulation symptoms, or anticipated long transfer.
- Avoid hypotension, excessive ventilation, and unnecessary deep sedation. Document the neurological examination before and after intubation when feasible.

9.2 Circulation and blood pressure

- Treat shock, arrhythmia, active bleeding, and severe dehydration. Use isotonic fluid where clinically indicated and avoid hypotonic fluid.
- Do not lower BP simply because it is elevated. Confirm measurements with an appropriate cuff and repeat when the patient is calmer or pain is treated.
- For standard IVT eligibility, reduce BP to 185/110 mmHg or lower before treatment and maintain below 180/105 mmHg for the first 24 hours, using the approved stroke regimen.
- In ischaemic stroke not receiving reperfusion, avoid routine acute BP reduction unless there is another hypertensive emergency or BP is extremely high and a stroke specialist recommends cautious lowering.
- After IVT, intensive systolic BP lowering below 140 mmHg is not recommended. Avoid rapid overshoot and BP variability.
- For intracerebral haemorrhage, initiate the locally approved haemorrhagic-stroke BP pathway with smooth, sustained control and urgent specialist input.

9.3 Disability, glucose, temperature, and exposure

- Treat hypoglycaemia immediately and recheck. Persistent focal deficits after correction still require stroke imaging.
- Avoid intensive glucose lowering to 80-130 mg/dL. Treat clinically important hyperglycaemia using the approved protocol while preventing hypoglycaemia.
- Identify and treat fever and its cause. Routine induced hypothermia is not part of standard acute ischaemic-stroke care.
- Look for trauma, rash, medication patches, injection marks, pregnancy, postpartum status, bleeding, and signs of infection or poisoning.

10. Focused history and collateral information

Domain	Key questions
Timing	Exact LKW; discovery time; sudden or gradual; maximum deficit at onset; fluctuation; wake-up stroke; recent similar episodes; treatment before arrival.
Deficit and disability	Weakness, numbness, language, speech, vision, balance, coordination, swallowing, headache, seizure, loss of consciousness; what activities would be impossible if the deficit persisted?
Bleeding and anticoagulation	Warfarin; direct oral anticoagulant name, dose, and last ingestion; heparin; antiplatelets; recent bleeding; thrombocytopenia; liver disease; recent surgery, trauma, delivery, or invasive procedure.
Vascular history	Prior stroke/TIA, atrial fibrillation, hypertension, diabetes, dyslipidaemia, smoking, carotid disease, myocardial infarction, heart failure, endocarditis, thrombophilia, dissection risk, sickle cell disease.
Mimic clues	Hypoglycaemia; seizure; migraine aura; infection; intoxication; medication change; functional symptoms; severe electrolyte disturbance; tumour; recent trauma.
Special context	Pregnancy/postpartum; paediatric age; cancer; immunocompromise; renal failure; premorbid disability or dementia; goals of care; allergies; weight.
Social and systems context	Witness contact; language and communication needs; decision-maker; home supervision; transport and follow-up capacity; distance and route to thrombectomy centre.

11. Stroke mimics and diagnostic uncertainty

Common mimics must be considered, but the possibility of a mimic shall not be used to postpone imaging or specialist consultation when acute stroke remains plausible. Some mimics coexist with stroke, and seizure at onset does not automatically exclude ischaemia.

Possible mimic	Clues and immediate action
Hypoglycaemia / metabolic disturbance	Check glucose immediately; correct abnormalities; continue stroke pathway if focal findings persist, recur, or remain unexplained.
Seizure / postictal Todd paresis	Seek witnessed seizure, eye deviation, tongue injury, incontinence, or known epilepsy; treat ongoing seizure; image urgently; consider EEG when recovery is incomplete or non-convulsive status is possible.
Migraine with aura	Positive spreading sensory/visual symptoms, sequential evolution, prior stereotyped episodes, and headache may support migraine, but first or atypical episodes require stroke assessment.
Peripheral vestibular disorder	Isolated dizziness is often benign, but new severe gait/truncal ataxia, central eye signs, focal deficits, headache, or vascular risk require posterior-circulation imaging and expertise.
Functional neurological disorder	Positive functional signs may support the diagnosis, but it is a diagnosis of inclusion in the hyperacute setting and must not be based on psychiatric history alone.
Intoxication / medication effect	Check ventilation, glucose, toxidrome, trauma, and co-ingestion. Intoxication does not explain a new unilateral deficit until stroke is excluded.

Possible mimic	Clues and immediate action
Infection / encephalitis / tumour	Fever, headache, altered behaviour, seizure, immunocompromise, progressive course, or mass effect may redirect the pathway after urgent imaging.

12. Investigations

12.1 Immediate bedside tests

- Bedside glucose before thrombolysis, without delaying CT.
- Continuous or frequent pulse oximetry and BP; cardiac monitoring for significant stroke or arrhythmia risk.
- 12-lead ECG as soon as practical, but not before reperfusion if it would cause delay.
- Pregnancy test when relevant and when the result may affect imaging or treatment, but emergency imaging shall not be withheld while awaiting it.
- Weight measured rapidly or obtained from a reliable recent source for weight-based thrombolysis. Avoid unverified visual estimates where a scale is available.

12.2 Laboratory tests

Obtain tests in parallel with imaging. In a patient without suspected coagulopathy or anticoagulant exposure, routine laboratory results should not delay IVT. Local thrombolysis checklists shall specify when treatment must await a result.

Test	Purpose / comments
Full blood count and platelets	Anaemia, thrombocytopenia, infection; platelet result may be required when low count is suspected.
Electrolytes, renal function, glucose	Mimics, contrast planning, medication dosing, metabolic complications. Do not delay necessary CTA solely while awaiting creatinine when the benefit of urgent vascular imaging is judged greater.
PT/INR, aPTT	Essential when warfarin, heparin, liver disease, bleeding tendency, or uncertain anticoagulation is possible.
DOAC-specific testing where available	Drug-specific levels or calibrated anti-Xa / thrombin assays may support expert decisions. Standard PT/aPTT may not reliably exclude clinically relevant DOAC effect.
Troponin	Baseline cardiac injury assessment where indicated; must not delay reperfusion.
Group and screen / crossmatch	Haemorrhage, anticipated surgery, severe anaemia, or reversal pathway.
Toxicology, infection, pregnancy, sickle-cell, or other tests	Only according to clinical context and without delaying time-critical treatment.

13. Brain and vascular imaging

13.1 Standard hyperacute imaging

- Perform immediate non-contrast CT of the brain for suspected acute stroke when reperfusion is possible, the patient is anticoagulated, consciousness is reduced, symptoms are progressive or fluctuating, severe headache or meningism is present, or haemorrhage/structural pathology is possible.
- Obtain CTA from aortic arch through intracranial circulation, or the locally approved head-and-neck protocol, when LVO, basilar occlusion, dissection, or thrombectomy eligibility is possible.
- Do not delay standard-window IVT for CT perfusion or MRI when non-contrast CT has excluded haemorrhage and no advanced imaging is required by the approved pathway.
- Use CT perfusion or MRI mismatch imaging for selected late-window, wake-up, or unknown-onset cases according to specialist advice and local capability.
- A normal early non-contrast CT does not exclude acute ischaemic stroke. Clinical findings and vascular imaging remain decisive.

13.2 Imaging communication

- The requesting clinician shall state LKW, deficit, NIHSS, anticoagulants, renal status if known, and whether IVT / EVT is being considered.
- Radiology shall directly communicate intracranial haemorrhage, LVO, basilar occlusion, dissection, major established infarction, mass effect, hydrocephalus, or an alternative critical diagnosis.
- Images shall be electronically transferred to the receiving stroke centre as early as possible; image transfer must not wait for transport departure.

- When local interpretation is uncertain, obtain urgent radiology or stroke-specialist review rather than waiting for a formal report.

14. Intravenous thrombolysis

14.1 Eligibility principles

- Screen every patient with a potentially disabling ischaemic deficit and LKW within 4.5 hours for immediate IVT, regardless of age or NIHSS alone.
- Selected patients 4.5-9 hours from onset or with unknown onset may be eligible based on diffusion-FLAIR or perfusion mismatch and specialist review.
- Do not withhold IVT solely because EVT is planned. If eligible for both, start IVT while transfer or angiography preparation proceeds; do not wait to see whether IVT works.
- Use an approved comprehensive eligibility and exclusion checklist. An abbreviated memory-based checklist is unsafe.
- Clarify whether the deficit is disabling. Isolated sensory symptoms may be non-disabling, whereas aphasia, hemianopia, severe hand weakness, or inability to walk safely may be disabling despite a low NIHSS.
- Emergency consent procedures apply. Provide a concise explanation of expected benefit, bleeding risk, alternatives, and urgency without allowing prolonged consent processes to create harmful delay.

14.2 Locally approved adult regimens

Medicine	Common acute-ischaemic-stroke regimen - local approval required
Tenecteplase	0.25 mg/kg IV as a single bolus, maximum 25 mg. Use a stroke-specific dosing chart and independent double-check. Do not use myocardial-infarction dosing.
Alteplase	**0.9 mg/kg IV, maximum 90 mg:** 10% as initial bolus and the remainder infused over 60 minutes. Verify weight, pump programming, total dose, and bolus-to-infusion transition.

MEDICATION SAFETY: Thrombolytic selection, eligibility, dose, preparation, independent double-check, BP target, and post-treatment monitoring must follow one locally approved stroke protocol. Tenecteplase stroke dosing is not the same as dosing for myocardial infarction.

14.3 Before administration

[ ] Identity, weight, LKW, discovery time, disabling deficit, NIHSS, and baseline function confirmed.

[ ] Non-contrast CT excludes haemorrhage; required vascular / advanced imaging reviewed.

[ ] BP at or below the approved threshold and a maintenance plan is ready.

[ ] Anticoagulant, bleeding, recent procedure, surgery, trauma, pregnancy/postpartum, and prior intracranial pathology history reviewed using the full checklist.

[ ] Relevant laboratory results reviewed when required; no unaddressed contraindication.

[ ] Two clinicians independently verify medicine, concentration, calculated dose, maximum dose, and route.

[ ] Airway, monitoring, repeat CT, haemorrhage management, and transfer / stroke-unit destination are available.

[ ] Decision, discussion, decision-maker, and reason for any delay documented.

15. Endovascular thrombectomy and transfer

- Screen for LVO using clinical findings and CTA; do not rely on an LVO screening score as the sole exclusion method.
- EVT is standard care for eligible LVO and may be appropriate after IVT or when IVT is contraindicated.
- Urgently discuss patients with relevant anterior-circulation LVO and LKW up to 24 hours, including selected larger-core infarctions, with an EVT-capable centre.
- Urgently discuss basilar-artery occlusion presenting within 24 hours, particularly with NIHSS 10 or greater, reduced consciousness, severe brainstem signs, or deterioration.
- Do not delay transfer for completion of nonessential tests, routine bed allocation, or a trial of clinical response to IVT.
- Continue BP, airway, glucose, temperature, neurological, and bleeding monitoring during transfer preparation. Send images, reports, medication record, thrombolytic times, anticoagulant history, and contact details ahead of the patient.
- Use the fastest safe transport mode and escalate immediately if acceptance, aircraft, ambulance, weather, or bed barriers threaten treatment eligibility.

Transfer milestone	Required documentation
Decision to seek EVT review	Time, clinician, imaging finding, NIHSS, LKW, and current stability.
Receiving contact	Centre, specialist name/role, time contacted, advice, acceptance status, and destination.
Image transfer	Time images sent, confirmation received, and method used.

Transfer milestone	Required documentation
Transport activation	Time requested, transport capability, escort, equipment, expected departure, and contingency.
Departure	Actual departure time, last neurological status, BP, airway, medications, IVT details, and person receiving handover.
Delay	Cause, escalation actions, senior staff informed, and mitigation undertaken.

16. Acute antithrombotic therapy

- Do not use aspirin as a substitute for IVT or EVT in an otherwise eligible patient.
- After brain imaging excludes haemorrhage, start antiplatelet treatment promptly in acute ischaemic stroke when IVT has not been given and no contraindication exists.
- For high-risk TIA or minor non-cardioembolic, non-disabling stroke, use the locally approved short-term dual-antiplatelet pathway after haemorrhage is excluded and bleeding risk is assessed. Document the intended duration and transition to single therapy.
- For patients treated with IVT, withhold antiplatelet and anticoagulant therapy for the first 24 hours unless a stroke specialist identifies an exceptional indication; obtain repeat imaging before initiation.
- Do not routinely start urgent full-dose anticoagulation to treat acute ischaemic stroke. Timing for atrial-fibrillation-related anticoagulation is individualized according to infarct size, haemorrhage risk, imaging, and specialist advice.
- Do not add agents such as argatroban or eptifibatide to IVT to improve reperfusion outcomes outside an approved research or specialist protocol.

17. Intracerebral haemorrhage or other bleeding identified on imaging

- Stop any thrombolytic infusion immediately if haemorrhage is suspected or identified.
- Obtain urgent neurology / neurosurgery / critical-care input and activate the approved intracranial-haemorrhage pathway.
- Identify all antiplatelet and anticoagulant medicines, dose and last administration; initiate the locally approved reversal regimen without avoidable delay when indicated.
- Use smooth, sustained BP control according to the haemorrhage protocol; avoid precipitous hypotension and wide variability.
- Repeat imaging urgently for neurological deterioration, expanding headache, vomiting, rising BP with declining consciousness, or new pupil changes.
- Manage airway, intracranial-pressure threats, hydrocephalus, seizures, temperature, glucose, and transfer to neurosurgical capability as required.
- Do not use a severity score as the sole basis for early limitation of treatment. Align care with informed goals, prognosis over time, and specialist assessment.

18. Post-thrombolysis and post-reperfusion monitoring

Period	Minimum monitoring and precautions
During and immediately after IVT	Frequent neurological assessment and BP according to the approved protocol, commonly every 15 minutes during treatment and for the first 2 hours. Observe IV sites, gums, urine, stool, headache, vomiting, angioedema, and acute deterioration.
2-8 hours	Continue frequent BP and neurological checks, commonly every 30 minutes for 6 hours, with continuous cardiac and oxygen monitoring where indicated.
8-24 hours	At least hourly neurological and BP observations unless a higher level is required. Maintain NPO until swallow screen, minimize invasive procedures, and avoid intramuscular injections.
At 24 hours	Repeat brain imaging before antiplatelet or anticoagulant treatment, or earlier if deterioration occurs. Confirm disposition to a stroke-capable monitored setting.
After EVT	Follow the receiving centre / neurointerventional BP, access-site, neurological, airway, and imaging plan. Avoid hypotension and detect reperfusion haemorrhage early.

18.1 Emergency response to deterioration after IVT

- Stop alteplase infusion if still running; maintain ABC support and call senior stroke, critical-care, radiology, laboratory, blood bank, and neurosurgical teams.
- Obtain immediate non-contrast CT and urgent full blood count, coagulation studies, fibrinogen, and group/crossmatch according to local policy.

- Activate the locally approved thrombolysis-associated haemorrhage reversal pathway. Do not wait for all results when life-threatening bleeding is clinically evident and protocol criteria are met.
- For orolingual angioedema, stop the infusion, assess the airway early, discontinue contributing medicines as directed, and use the approved emergency treatment regimen.
- Document exact onset of deterioration, last normal examination, BP, treatment times, calls, imaging, reversal, and response.

19. Swallowing, positioning, and early complication prevention

- Keep the patient NPO until an approved swallow screen is passed and documented by trained staff.
- If the screen is failed or cannot be completed, use alternative routes for essential medication and obtain speech-and-language / swallowing assessment as early as possible.
- Position according to airway, aspiration, haemodynamic, and neurological needs; avoid routine prolonged flat positioning when it compromises breathing or secretion management.
- Prevent aspiration, pressure injury, venous thromboembolism, falls, urinary retention, constipation, delirium, and shoulder injury using the approved stroke-unit bundle.
- Avoid routine urinary catheterization. Use intermittent or alternative strategies unless retention, critical monitoring, skin protection, or another clear indication exists.
- Begin rehabilitation assessment once medically stable; do not mobilize an unstable patient or initiate high-intensity very early mobilization without stroke-team direction.

20. TIA and resolved focal symptoms

20.1 Immediate approach

- Treat resolved symptoms as a vascular emergency until a credible alternative diagnosis is established.
- Record a precise symptom description, duration, LKW, witness account, vascular territory, recurrence, and whether any deficit persists on careful examination.
- Check glucose and perform ECG. Obtain brain and vascular imaging according to the approved local TIA pathway, particularly when haemorrhage, infarction, carotid stenosis, dissection, or another diagnosis is possible.
- Start aspirin immediately unless contraindicated when suspected TIA is the working diagnosis and intracranial bleeding is not clinically suspected; local policy may require imaging first in selected presentations.
- Do not use ABCD2 or another score to postpone referral. Arrange stroke-specialist assessment and investigation within 24 hours of symptom onset.
- Assess for atrial fibrillation, symptomatic carotid disease, crescendo TIA, recurrent events, anticoagulation needs, endocarditis, and inability to complete urgent outpatient work-up.

20.2 Admission or transfer is required when

- Symptoms are ongoing, recurrent, fluctuating, or not confidently resolved.
- There is a high-risk mechanism requiring immediate intervention, including symptomatic severe carotid stenosis, arterial dissection, intracranial stenosis with recurrent symptoms, atrial fibrillation without a safe plan, or suspected cardioembolism / endocarditis.
- Brain imaging shows acute infarction, haemorrhage, mass, or another serious diagnosis.
- The patient cannot receive specialist review and necessary imaging within 24 hours as an outpatient.
- There is unsafe mobility, dysphagia, cognitive impairment, unreliable supervision, inability to obtain medicines, or another barrier to a safe prevention plan.

20.3 Discharge after suspected TIA

Discharge is permissible only when the patient is clinically stable, no persistent deficit exists, an accountable specialist pathway is secured within 24 hours, antithrombotic and other immediate prevention measures are addressed, necessary imaging and cardiac evaluation are completed or explicitly assigned, and the patient and family understand recurrence signs and the need to call emergency services immediately.

21. Special populations

21.1 Posterior-circulation and basilar-artery stroke

- Escalate new severe gait or truncal ataxia, diplopia, dysarthria, dysphagia, gaze abnormality, crossed sensory/motor findings, quadriparesis, or reduced consciousness even when FAST is negative.
- Obtain urgent CTA or MRA. Do not rely on a normal non-contrast CT or low NIHSS to exclude basilar occlusion.
- Discuss thrombectomy urgently for eligible basilar occlusion within 24 hours, especially with NIHSS 10 or greater or clinical deterioration.

21.2 Pregnancy and postpartum

- Pregnancy shall not delay necessary CT or CTA. Use shielding and contrast according to local radiology policy; the maternal neurological emergency takes priority.
- Obtain urgent stroke, obstetric, anaesthesia, and radiology input. Consider cerebral venous thrombosis, pre-eclampsia/eclampsia, arterial dissection, reversible cerebral vasoconstriction syndrome, and haemorrhage.
- IVT and EVT may be considered for disabling stroke after individualized expert risk-benefit assessment; pregnancy is not an automatic exclusion.

21.3 Children and adolescents

- Recognize that paediatric stroke may present with focal weakness, speech change, seizure, headache, ataxia, altered consciousness, or irritability and is frequently delayed or misdiagnosed.
- Activate paediatric, stroke, neuroradiology, anaesthesia, and transfer expertise early. Use age-appropriate examination, weight, dosing, and consent procedures.
- The 2026 acute-ischaemic-stroke guideline supports consideration of reperfusion and endovascular intervention in selected children; decisions require experienced paediatric stroke specialists and appropriate centres.

21.4 Anticoagulated patients

- Document exact medicine, dose, indication, last intake, renal function, adherence, and available drug-specific testing.
- Do not assume a normal PT/INR or aPTT excludes clinically relevant direct oral anticoagulant effect.
- Anticoagulation may preclude routine IVT but is not itself a contraindication to EVT. Obtain urgent stroke and haematology / thrombosis advice when reversal-assisted IVT is being considered at a capable centre.
- If haemorrhage is found, activate immediate anticoagulant reversal according to the approved regimen.

21.5 Premorbid disability, dementia, frailty, and communication difference

- Determine the patient's actual baseline and goals rather than assuming poor quality of life.
- Do not exclude IVT or EVT solely because the patient was not fully independent; treatment may be reasonable after individualized benefit-risk assessment.
- Use interpreters, communication aids, family/caregiver information, and supported decision-making. Aphasia must not be mistaken for incapacity or confusion.

21.6 Sickle cell disease

- Treat new focal deficit as stroke and obtain urgent imaging and haematology / paediatric expertise.
- Activate the locally approved sickle-cell stroke pathway, including urgent transfusion planning when indicated. Do not delay neurovascular assessment while arranging blood products.

22. Monitoring and reassessment

Monitoring intensity shall reflect instability, reperfusion treatment, haemorrhage risk, diagnostic uncertainty, and transfer duration. Every intervention must be followed by documented response and a named next review time.

Trigger	Immediate response
Worsening NIHSS or new deficit	Repeat ABC, glucose, BP, focused examination; call senior stroke clinician; urgent repeat imaging; assess LVO progression, haemorrhage, seizure, oedema, or new vascular event.
Reduced consciousness, vomiting, pupil change, severe headache	Airway-skilled review; urgent CT; consider haemorrhage, posterior-circulation deterioration, hydrocephalus, oedema, seizure, or herniation.
BP outside target	Confirm reading and cuff; identify pain, agitation, retention, missed medicine, hypotension, or bleeding; treat using the pathway specific to IVT, EVT, ischaemic stroke, or ICH.
Bleeding after IVT	Stop infusion if running; haemorrhage response, labs, imaging, reversal, and specialist escalation.
Fever, hypoxia, hyperglycaemia, aspiration	Treat promptly; search for infection and complications; increase monitoring and reconsider destination.
Recurrent resolved symptoms / TIA	Reclassify as active high-risk event; repeat exam and imaging; admit or transfer for urgent stroke review.

23. Consultation, escalation, and transfer

- Contact stroke expertise immediately for possible IVT, EVT, uncertain diagnosis with disabling deficit, posterior-circulation signs, paediatric stroke, pregnancy, anticoagulant complexity, or deterioration.
- Contact anaesthesia / critical care for airway risk, ventilation failure, severe BP instability, reduced consciousness, refractory seizure, major aspiration, or need for organ support.
- Contact neurosurgery for ICH with mass effect, hydrocephalus, cerebellar haemorrhage, large infarction with malignant oedema, subarachnoid haemorrhage, vascular lesion, or other operative concern.
- Contact haematology / thrombosis and pharmacy for complex anticoagulant testing, reversal, or haemostatic treatment.
- Escalate system delays to the senior ED physician, hospital executive / bed manager, radiology lead, transport lead, and receiving centre according to the local time-critical transfer plan.
- Use one clinician as the named communication lead so that advice, acceptance, treatment changes, and delays are recorded consistently.

24. Disposition

Destination	Minimum criteria
Stroke unit / monitored ward	Confirmed or strongly suspected stroke requiring admission; stable airway and circulation; monitoring plan; swallow status; antithrombotic / BP plan; rehabilitation and secondary-prevention referrals.
Critical care	Airway or ventilatory support; reduced consciousness; severe haemodynamic instability; large stroke with oedema risk; major ICH; post-reperfusion complication; refractory seizure; or another organ-support need.
Transfer to EVT / neurosurgical centre	Accepted destination; images transferred; ongoing stabilization; capable transport and escort; full medication and timing handover; clear contingency for deterioration.
Discharge after TIA / minor event	No ongoing deficit; stable physiology; urgent specialist review within 24 hours secured; prevention treatment initiated; investigations complete or owned; safe supervision and transport; written recurrence instructions.
Palliative / comfort-focused care	Only after diagnosis, prognosis, prior wishes, goals, and reversible treatment options are considered with senior and specialist input. Continue dignity, symptom control, communication, and family support.

UNSAFE DISCHARGE: Do not discharge a patient with persistent or recurrent deficit, uncertain LKW with unresolved diagnosis, unsafe gait or swallowing, uncontrolled BP requiring acute management, incomplete urgent imaging, unassigned abnormal or pending results, inadequate supervision, or no guaranteed specialist follow-up.

25. Documentation and handover

The record must permit a reviewer to reconstruct the neurological timeline, treatment opportunity, decisions, response, and ownership of every next action.

- Arrival, LKW, discovery, stroke-alert, assessment, imaging, specialist contact, treatment, transfer request, acceptance, and departure times.
- Witness / collateral source and exact words used to establish LKW.
- Baseline function, current disabling features, NIHSS components / total, posterior-circulation signs, and serial changes.
- Glucose, BP, oxygenation, temperature, weight, anticoagulant / antiplatelet history, and relevant contraindication review.
- Imaging findings and direct communication of critical results.
- IVT / EVT decision, medicine and dose, checks, consent process, reason not treated, and responsible specialist.
- Post-treatment monitoring, deterioration, bleeding, angioedema, reversal, and repeat imaging.
- Swallow status, aspiration precautions, mobility/falls risk, pressure care, and NPO instructions.
- Destination, accepting clinician, transport plan, pending results, medications due, and who owns follow-up.

26. Quality indicators and audit

Indicator	Suggested measure
Recognition	Proportion of suspected strokes triaged before registration and stroke alert activated promptly.
Timing quality	Percentage with exact LKW and discovery time documented; median door-to-clinician, door-to-imaging, and door-to-needle times.
Imaging	Percentage of potential reperfusion candidates receiving non-contrast CT and CTA within the locally approved target.
IVT	Proportion of eligible patients treated; door-to-needle within 60 minutes; median 30 minutes or less; documented reason when not treated.
EVT transfer	Time from LVO identification to receiving-centre contact, image transfer, acceptance, transport request, and departure; door-in-door-out time.
Safety	Symptomatic intracranial haemorrhage after IVT / EVT; medication errors; BP-target breaches; aspiration before swallow screen; unplanned deterioration.

Indicator	Suggested measure
TIA	Proportion receiving appropriate immediate antithrombotic treatment and specialist assessment within 24 hours; unplanned return stroke within 7 and 30 days.
Equity	Treatment and delay measures stratified where feasible by age, sex, disability, pregnancy, language, residence, arrival mode, and time of day.
Handover	Completeness of timing, imaging, medication, swallow, pending-result, and ownership documentation.

27. Training and implementation

1. Approve a single stroke activation criterion, 24-hour contact tree, CT/CTA protocol, thrombolysis checklist, thrombolytic dosing chart, BP regimen, haemorrhage reversal pathway, and EVT transfer algorithm.
2. Maintain a ready stroke pack containing NIHSS access, eligibility checklist, dosing charts, labels, transfer form, and patient information.
3. Train triage, nursing, medical, radiology, pharmacy, laboratory, EMS, and transfer staff in parallel workflow rather than sequential processing.
4. Run regular simulations for wake-up stroke, low-NIHSS disabling aphasia, posterior-circulation stroke, anticoagulated ICH, IVT angioedema, post-IVT deterioration, paediatric stroke, and delayed aircraft or ambulance transfer.
5. Establish reliable telestroke and image-transfer capability, with downtime alternatives and named technical support.
6. Review every missed reperfusion opportunity, door-to-needle delay above target, door-in-door-out delay, medication error, aspiration event, or unsafe TIA discharge using a systems-repair approach.
7. Audit at 30, 60, and 90 days after implementation, then at an approved interval. Revise the protocol after major guideline, formulary, imaging, staffing, transport, or referral-network change.

ANNEX A. One-page acute stroke workflow

Step	Action
1. Recognize	Sudden focal deficit or posterior-circulation warning sign -> activate stroke alert immediately.
2. Stabilize in parallel	ABCDE, glucose, oxygen only if needed, ECG/BP monitoring, NPO, IV access, anticoagulant history.
3. Establish time	Record exact LKW and discovery time separately; obtain witness / collateral details.
4. Examine	Focused neurological examination, disabling deficit assessment, NIHSS, baseline function.
5. Image	Immediate non-contrast CT plus CTA when LVO / EVT is possible; advanced imaging for selected late or unknown onset.
6. Decide IVT	Disabling ischaemic stroke within approved window -> full checklist, BP target, alteplase or tenecteplase without avoidable delay.
7. Decide EVT	LVO / basilar occlusion -> immediate EVT-centre consultation and transfer; IVT first if eligible, without delaying EVT.
8. If haemorrhage	Reversal, smooth BP control, neurology / neurosurgery / critical care, repeat imaging and transfer as required.
9. Prevent complications	Swallow screen before oral intake, serial neuro/BP checks, aspiration/falls/pressure prevention, glucose and fever control.
10. Disposition	Stroke unit / critical care / EVT-neurosurgical transfer. TIA discharge only with review within 24 hours and complete prevention ownership.

ANNEX B. Stroke danger-sign card

ACTIVATE STROKE ALERT for sudden: Face weakness; arm or leg weakness/numbness; speech or language change; visual loss/diplopia; gaze deviation; neglect; severe new imbalance or ataxia; dysphagia; unexplained reduced consciousness; or focal deficit after seizure. Posterior signs may occur without FAST positivity.

IMMEDIATE ESCALATION: Airway compromise; GCS below 13 or falling; recurrent vomiting; severe headache; seizure; anticoagulant use; BP instability; pupillary change; quadriparesis; inability to sit or stand; basilar-artery signs; or clinical deterioration.

ANNEX C. First-10-minute checklist

[ ] Arrival time recorded; triage before registration.
[ ] Stroke alert activated and team leader assigned.
[ ] Airway, breathing, circulation, oxygen saturation, temperature, and trauma assessed.
[ ] Bedside glucose checked and treated if abnormal.
[ ] Exact LKW and symptom-discovery time recorded separately.
[ ] Witness / family / EMS contact retained for collateral history.
[ ] NPO order applied; swallow screen deferred until appropriate.
[ ] BP and cardiac monitoring attached; 12-lead ECG planned without delaying imaging.
[ ] Anticoagulant and antiplatelet names, last doses, bleeding history, and recent procedures identified.
[ ] Focused neurological examination and NIHSS started; disabling deficit documented.
[ ] Two IV lines and essential bloods obtained when feasible without delaying CT.
[ ] Non-contrast CT and CTA ordered; radiology and stroke specialist / telestroke notified.
[ ] Weight measured or reliable recent weight confirmed if IVT possible.
[ ] Next reassessment time and recorder assigned.

ANNEX D. Acute stroke time-tracking sheet

Milestone	Time / person
Symptom onset if witnessed	_____

Milestone	Time / person
Last known well	_____
Symptoms discovered	_____
EMS / referral call	_____
Hospital arrival / triage	_____
Stroke alert	_____
ED clinician	_____
Glucose result	_____
Stroke specialist / telestroke contact	_____
CT start	_____
CTA / advanced imaging start	_____
Imaging interpretation	_____
IVT decision	_____
Thrombolytic bolus	_____
EVT centre contacted / accepted	_____
Transport requested / departed	_____
Cause of any delay	_____

ANNEX E. Minimum neurological and baseline dataset

[ ] Level of consciousness and command following.
[ ] Speech, language, naming, comprehension, repetition, dysarthria.
[ ] Pupils, gaze, visual fields, neglect.
[ ] Face, arm, and leg motor findings with side and severity.
[ ] Sensation, coordination, truncal stability, and gait when safe.
[ ] NIHSS total and time; examiner identified.
[ ] Deficit judged disabling or non-disabling, with specific functional reason.
[ ] Baseline speech, cognition, vision, mobility, independence, and prior deficits.
[ ] Serial change after glucose correction, BP treatment, IVT, EVT, seizure, or deterioration.

ANNEX F. Imaging request and communication bundle

[ ] Exact LKW and discovery time.
[ ] Current neurological deficit, side, NIHSS, and posterior-circulation signs.
[ ] IVT and EVT being considered: yes / no / uncertain.
[ ] Anticoagulant, antiplatelet, bleeding tendency, recent surgery or trauma.
[ ] Renal function if known; do not create avoidable CTA delay.
[ ] Pregnancy / postpartum status where relevant.
[ ] Request: non-contrast CT; CTA head/neck; perfusion or MRI if specialist-directed.
[ ] Critical-result callback number and named clinician.
[ ] Image transfer destination and confirmation of receipt.

ANNEX G. Reperfusion eligibility prompts - not a substitute for the full checklist

Domain	Prompts
Clinical	Disabling deficit? NIHSS? LKW? baseline function? rapid improvement but residual disability? seizure at onset? mimic still plausible?

Domain	Prompts
Imaging	Haemorrhage excluded? infarct size / core? LVO or basilar occlusion? dissection? mass? advanced-imaging mismatch?
Blood pressure	At or below treatment threshold? safe maintenance plan available? no refractory hypertension?
Haemostasis	Platelets / INR / aPTT if required; warfarin, heparin, DOAC name and last dose; recent bleeding; known coagulopathy.
Recent events	Intracranial surgery or haemorrhage; major surgery or trauma; arterial puncture; GI/GU bleed; childbirth; procedure; head injury.
Special circumstances	Pregnancy, child, premorbid disability, dementia, cancer, endocarditis, aortic dissection, severe hypoglycaemia, goals of care.
System readiness	Approved medicine and dose; independent check; monitoring; repeat imaging; haemorrhage reversal; stroke-unit / transfer destination.

ANNEX H. Intravenous thrombolysis administration checklist

[ ] Full approved eligibility checklist completed and signed / electronically confirmed.

[ ] Stroke specialist decision documented, including disabling deficit.

[ ] Weight and dose independently calculated by two clinicians.

[ ] Medicine, concentration, total dose, bolus, infusion if applicable, and maximum dose independently verified.

[ ] BP at target and approved infusion / bolus medicines ready.

[ ] Baseline neurological observations and NIHSS documented.

[ ] Post-IVT observation chart started and repeat CT pathway available.

[ ] No unnecessary urinary catheter, arterial puncture, NG tube, or IM injection planned immediately after treatment.

[ ] EVT transfer proceeding simultaneously when indicated.

[ ] Patient/family explanation given using emergency consent process; no avoidable delay.

[ ] Bolus and infusion start/finish times documented separately.

[ ] Reason for any delay or non-treatment recorded.

ANNEX I. Post-IVT deterioration checklist

[ ] Recognize: new headache, vomiting, hypertension, reduced consciousness, new deficit, seizure, external bleeding, hypotension, or angioedema.

[ ] Stop alteplase infusion if running; call stroke, senior ED, critical care, CT, laboratory, blood bank, and neurosurgery as indicated.

[ ] ABCDE, glucose, BP, NIHSS / GCS, pupils, and bleeding sites reassessed.

[ ] Immediate non-contrast CT obtained.

[ ] CBC, PT/INR, aPTT, fibrinogen, group/crossmatch and locally required tests sent.

[ ] Approved reversal / haemostatic pathway activated when indicated.

[ ] Airway plan established for orolingual angioedema or reduced consciousness.

[ ] All times, calls, treatments, response, and handover documented.

ANNEX J. EVT transfer checklist

[ ] LVO / basilar occlusion and imaging reviewed with receiving centre.

[ ] LKW, discovery time, NIHSS, baseline, and current neurological trend communicated.

[ ] IVT eligibility and administration details communicated; do not delay EVT to assess response.

[ ] Images sent and receipt confirmed.

[ ] Acceptance, destination, clinician, and callback number documented.

[ ] Airway and transport risk assessed; escort and equipment matched to risk.

[ ] BP, oxygen, glucose, seizure, bleeding, and access-site plan communicated.

[ ] Medication record, anticoagulant history, laboratory results, allergies, weight, and consent information sent.

[ ] Transport requested and departure target set; barriers escalated immediately.

[ ] Last exam and observations documented at departure; direct clinical handover completed.

ANNEX K. TIA / non-disabling stroke checklist

[ ] Symptoms and duration described precisely; no persistent disabling deficit.
[ ] Glucose and ECG completed; AF and cardiac symptoms assessed.
[ ] Brain and vascular imaging completed or urgently assigned according to pathway.
[ ] Haemorrhage and major alternative diagnosis reasonably excluded.
[ ] Aspirin or approved antiplatelet started unless contraindicated.
[ ] Short-term DAPT considered for eligible high-risk TIA / minor non-cardioembolic stroke after bleeding-risk review.
[ ] Carotid stenosis, dissection, crescendo TIA, recurrent symptoms, endocarditis, and anticoagulation needs assessed.
[ ] Specialist stroke assessment guaranteed within 24 hours; ABCD2 not used to delay.
[ ] Medication supply, written instructions, transport, supervision, and emergency-return plan confirmed.
[ ] Named clinician/service owns pending results and prevention plan.

ANNEX L. Swallow and complication-prevention prompts

[ ] NPO until approved swallow screen passed and recorded.
[ ] Alternative route for essential medication if swallow unsafe.
[ ] Aspiration precautions and suction available.
[ ] Falls and mobility risk assessed; assisted transfer only until safe.
[ ] Pressure-area plan, turning, heel protection, and shoulder support as needed.
[ ] Temperature and glucose monitored; fever and infection treated.
[ ] VTE prevention assessed after haemorrhage and reperfusion plan clarified.
[ ] Urinary retention / constipation assessed; avoid routine catheterization.
[ ] Communication, vision, hearing, cognition, and delirium needs addressed.
[ ] Rehabilitation and stroke-unit referrals initiated when stable.

ANNEX M. Pregnancy and paediatric stroke prompts

Population	Safety prompts
Pregnancy / postpartum	Do not delay CT/CTA; involve stroke, obstetrics, anaesthesia and radiology; assess eclampsia, CVT, dissection, RCVS and haemorrhage; consider IVT/EVT individually; plan fetal assessment after maternal stabilization.
Child / adolescent	Use age-appropriate exam and weight; consider seizure, infection, sickle cell, congenital heart disease and arteriopathy; involve paediatric stroke centre early; consider reperfusion only with experienced specialist and receiving-centre support.

ANNEX N. Transfer and handover minimum dataset

Category	Required information
Identity and contacts	Patient identifiers, family / decision-maker, witness, referring and receiving clinicians, callback numbers.
Timeline	LKW, discovery, arrival, alert, CT/CTA, specialist decision, IVT bolus/infusion, deterioration, acceptance, departure.
Clinical state	Baseline, disabling deficit, NIHSS, GCS, pupils, posterior signs, airway, BP, oxygen, glucose, temperature, seizures.
Imaging	CT/CTA/perfusion/MRI findings, critical report, images sent and received.
Medicines	Thrombolytic and exact dose/times; BP medicines; antithrombotics; anticoagulant and last dose; reversal; allergies.
Safety	Swallow/NPO, aspiration, falls, pressure, bleeding, IV access, airway risk, pregnancy, paediatric needs.
Outstanding actions	Pending results, repeat imaging, next neuro/BP check, medication due, transport contingency, named owner.

ANNEX O. Discharge checklist for TIA or minor event

[ ] No persistent or recurrent focal deficit and patient remains physiologically stable.
[ ] Diagnosis and uncertainty explained in understandable language.
[ ] Stroke specialist assessment within 24 hours confirmed with date, time, location, and contact.
[ ] Antiplatelet / anticoagulation plan, duration, contraindications, and first dose addressed.
[ ] Brain/vascular imaging, ECG monitoring, laboratory, and echocardiography plan completed or assigned.
[ ] Medication reconciliation and immediate risk-factor management addressed.
[ ] Patient and family can identify stroke recurrence and will call emergency services rather than self-drive.
[ ] Safe mobility, swallow, cognition, transport, supervision, medicine access, and communication confirmed.
[ ] Pending results have a named accountable clinician and contact process.
[ ] Written discharge summary sent to specialist and primary-care team.

ANNEX P. Audit tool

Case review item	Yes / No / N/A / notes
Exact LKW and discovery time documented	
Stroke alert and clinician response within target	
Glucose checked before reperfusion decision	
NIHSS and disabling deficit documented	
CT/CTA performed within target	
IVT eligibility checklist completed	
Door-to-needle within 60 min or delay explained	
LVO screened and EVT centre contacted promptly	
Door-in-door-out delay identified and escalated	
Post-IVT monitoring and 24-hour imaging complete	
Swallow screen before oral intake	
TIA specialist review within 24 hours secured	
Disposition, pending results, and ownership clear	
Equity or communication barrier identified and addressed	

ANNEX Q. Local configuration checklist

[ ] Named 24-hour stroke / telestroke contact and backup.
[ ] CT and CTA protocol with radiographer/radiologist activation criteria and downtime plan.
[ ] Approved IVT eligibility checklist and exclusion criteria.
[ ] Approved tenecteplase / alteplase choice, dosing chart, storage, preparation, and double-check process.
[ ] Approved pre- and post-IVT BP medicines and targets.
[ ] Post-IVT observation chart, repeat imaging, haemorrhage reversal, and angioedema pathway.
[ ] EVT eligibility discussion pathway, receiving centres, image-transfer process, and transport escalation.
[ ] Anticoagulant identification, drug-specific testing, and reversal formulary.
[ ] TIA imaging, DAPT, carotid, cardiac-monitoring, specialist-review, and discharge pathway.
[ ] Paediatric, pregnancy/postpartum, sickle-cell, and posterior-circulation pathways.
[ ] Swallow-screen tool and trained staff availability.
[ ] Audit definitions and named governance lead.

ANNEX R. References and source tools

1. American Heart Association / American Stroke Association. 2026 Guideline for the Early Management of Patients With Acute Ischemic Stroke. Professional Heart Daily, 2026.

2. American Heart Association / American Stroke Association. Top Take-Home Messages for the Emergency Physician: 2026 Acute Ischemic Stroke Guideline, 2026.
3. National Institute for Health and Care Excellence. Stroke and transient ischaemic attack in over 16s: diagnosis and initial management. NICE guideline NG128; updated 2022, amended for thrombolysis recommendations in 2025, reviewed March 2026.
4. Heart and Stroke Foundation of Canada. Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition, 2022; Endovascular Thrombectomy Interim Update, 2025.
5. Heart and Stroke Foundation of Canada. Triage and Initial Diagnostic Evaluation of Transient Ischemic Attack and Non-Disabling Stroke; Acute Antithrombotic Therapy; current online recommendations accessed June 2026.
6. Amin HP, Madsen TE, Bravata DM, et al. Diagnosis, Workup, Risk Reduction of Transient Ischemic Attack in the Emergency Department Setting: A Scientific Statement From the American Heart Association. Stroke. 2023.
7. Greenberg SM, Ziai WC, Cordonnier C, et al. 2022 Guideline for the Management of Patients With Spontaneous Intracerebral Hemorrhage: A Guideline From the American Heart Association/American Stroke Association. Stroke. 2022.
8. World Health Organization and International Committee of the Red Cross. Basic Emergency Care: Approach to the Acutely Ill and Injured. WHO, 2018.
9. Local source tools to attach before approval: stroke activation algorithm; NIHSS access; IVT checklist and dosing chart; BP protocol; post-IVT observation chart; haemorrhage reversal algorithm; CTA/perfusion protocol; EVT transfer form; swallow screen; TIA discharge and follow-up form.