

# New Zealand Out-of-Hospital Acute Stroke Destination Policy

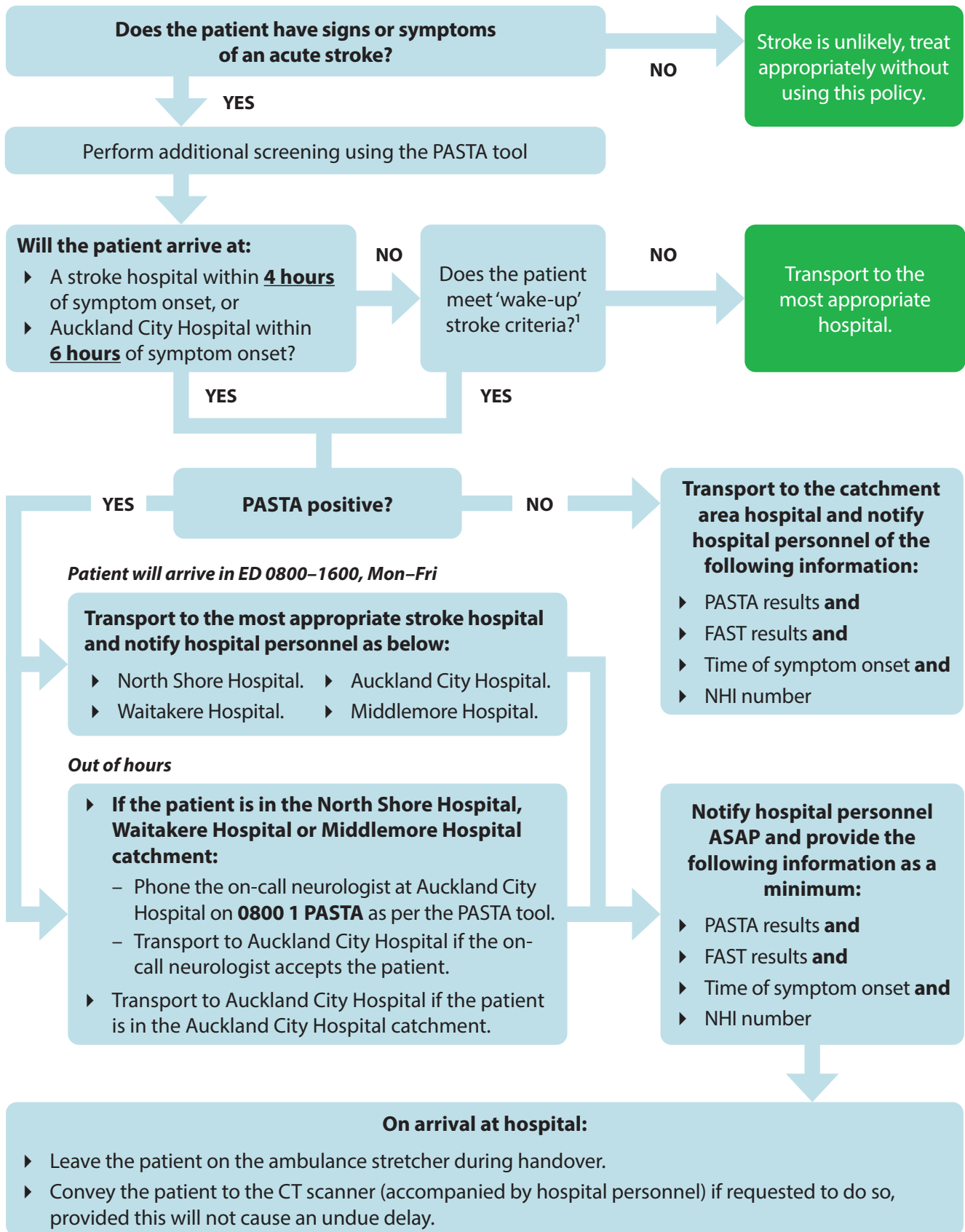
Northland and Auckland Areas

This policy is for the use of clinical personnel when determining the destination hospital for patients with an acute stroke in the out-of-hospital setting in the Northland and Auckland areas of New Zealand. It has been developed by the Northern Region Stroke Network in conjunction with the National Stroke Network and the Ambulance Sector.

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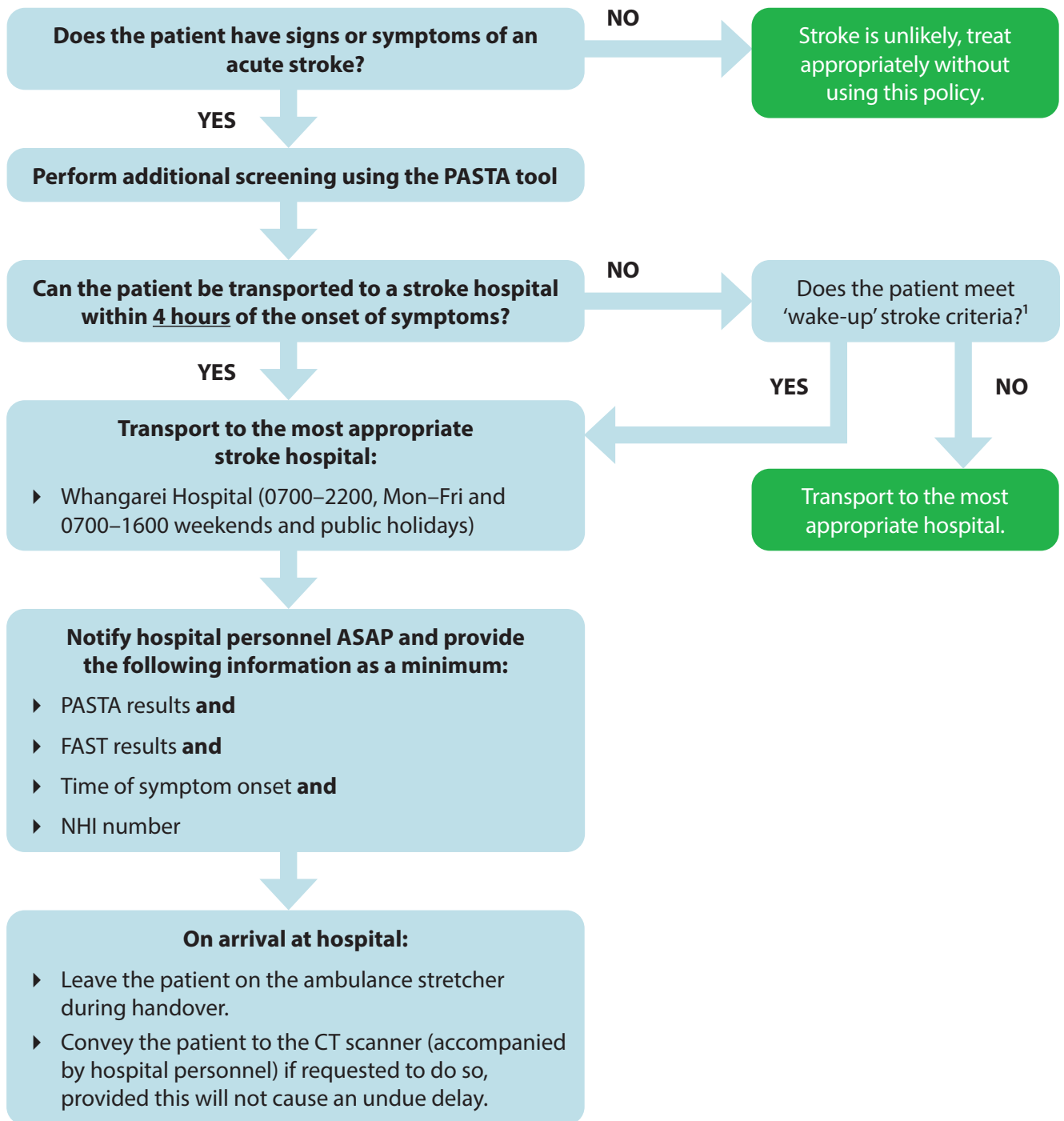


# Acute Stroke Destination Flowchart: Auckland Area



<sup>1</sup>Criteria for 'wake-up' stroke are: the patient has awoken with signs and symptoms of an acute stroke **and** was symptom free before going to sleep **and** is previously independent without severe comorbidities.

# Acute Stroke Destination Flowchart: Northland Area



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# Acute Stroke Destination Policy: Northland and Auckland Areas



## Additional information

### Introduction

- ▶ This policy is for the use of personnel in the out-of-hospital setting (for example ambulance personnel), when determining the transport destination for patients with an acute stroke and should be read in conjunction with the New Zealand Ambulance Sector Clinical Procedures and Guidelines (CPGs).
- ▶ The goal of this policy is to optimise outcomes for patients with acute ischaemic stroke by minimising the time to administration of fibrinolytic therapy if this is indicated.
- ▶ All patients with signs or symptoms of stroke who can reach a stroke hospital within four hours of the onset of symptoms may be eligible for fibrinolytic therapy and should be transported directly to a stroke hospital without delay whenever it is feasible and safe to do so.
- ▶ This policy does not apply to patients with trauma. Patients with acute trauma and signs or symptoms of an acute stroke should be treated using the New Zealand Major Trauma Policy.

### Stroke hospitals

- ▶ The term 'stroke hospital' is used to describe a hospital that has the appropriate facilities and personnel to assess patients with an acute stroke and provide fibrinolytic therapy.
- ▶ The role of receiving personnel in stroke hospitals is to rapidly assess patients for their suitability to receive fibrinolytic therapy and to initiate fibrinolytic therapy without delay when it is indicated.
- ▶ The following hospitals are designated as stroke hospitals:
  - <sup>1</sup>Whangarei Hospital (0700–2200, Monday to Friday and 0700–1600, weekends and public holidays).
  - <sup>2</sup>North Shore Hospital (0800–1600, Monday to Friday).
  - <sup>2</sup>Waitakere Hospital (0800–1600, Monday to Friday).
  - Auckland City Hospital.
  - <sup>2</sup>Middlemore Hospital (0800–1600, Monday to Friday).
- ▶ <sup>1</sup>Note: Whangarei Hospital only has personnel to provide fibrinolytic therapy if the patient arrives in the Emergency Department between the hours of 0700–2200, Monday to Friday and 0700–1600 weekends and public holidays. If the patient is going to arrive outside these hours, the patient should be transported to the most appropriate hospital in Northland.
- ▶ <sup>2</sup>Note: If the patient is in the North Shore Hospital, Waitakere Hospital or Middlemore Hospital catchment area and is going to arrive in the Emergency Department outside of 0800–1600, Monday to Friday or it is a public holiday:
  - Personnel must follow the instructions in the PASTA tool (see appendix one).
  - Personnel should phone **0800 1 PASTA (0800 172 782)** and ask to speak to the on call neurologist at Auckland City Hospital if the patient is 'PASTA positive' (the answer to all of the questions in the PASTA tool is 'yes' or 'uncertain'). The patient will only be transported to Auckland City Hospital if the patient is accepted by the on-call neurologist or if the on-call neurologist does not answer after two calls.
  - The patient should be transported to North Shore Hospital, Waitakere Hospital or Middlemore Hospital if the patient is 'PASTA negative' (the answer to any of the questions in the PASTA tool is 'no') or if the patient is not accepted by the on call neurologist at Auckland City Hospital.

## Determining the most appropriate stroke hospital

- ▶ A patient with an acute stroke who can be transported to a stroke hospital within four hours (six hours for Auckland City Hospital) of the onset of symptoms should usually be transported to the nearest stroke hospital. However, clinical judgement should be used and if a patient is located an approximately equal transport time between stroke hospitals, the patient should usually be transported to the hospital that is most appropriate for the DHB area they live in.
- ▶ A patient with signs or symptoms of an acute stroke who cannot be transported to a stroke hospital within four hours (six hours for Auckland City Hospital) of the onset of symptoms is unlikely to be eligible to receive fibrinolytic therapy and should be transported to the most appropriate hospital (which may not be a stroke hospital), taking into account:
  - The patient's anticipated clinical needs **and**
  - The location of the incident **and**
  - Where the patient lives.

## Patient assessment and treatment

- ▶ Ambulance personnel will use the Ambulance Sector CPGs.
- ▶ Assess the patient using the FAST test:
  - Face: ask the patient to smile and look for unilateral facial weakness.
  - Arm: ask the patient to raise both arms and close their eyes. Look for unilateral arm weakness or unilateral drift.
  - Speech: ask the patient to repeat a sentence and listen for slurring of words. Ask the patient to name several common objects and observe for difficulty naming objects.
  - Time: note the time of the onset of symptoms.
- ▶ All patients with signs or symptoms of an acute stroke will have additional screening performed using the PASTA tool (see appendix one).
- ▶ Hospital personnel must be notified by ambulance personnel as soon as possible and preferably before leaving the scene so that appropriate personnel can be notified of the patient's impending arrival. The following information should be provided as a minimum:
  - PASTA results **and**
  - FAST results **and**
  - Time of symptom onset **and**
  - NHI number (if known).

## Transport timeframes

- ▶ Four hours from the onset of symptoms has been chosen as the 'cut off' time for transport to a stroke hospital. This is because evidence suggests there is no benefit (and possibly harm) from administering fibrinolytic therapy after four and a half hours from the onset of symptoms.
- ▶ Utilising a four hour time window from the onset of symptoms to arrival in a stroke hospital allows an additional thirty minutes for hospital personnel to assess the patient and commence fibrinolytic therapy if indicated.
- ▶ A six hour time window from the onset of symptoms is utilised for patients being transported to Auckland City Hospital. This is because stroke clot retrieval (SCR) is available at Auckland City Hospital and the potential 'treatment window' for SCR from time of symptom onset is much longer than with fibrinolytic therapy, and is up to 24 hours in selected patients. Thus, if the patient is being transported to Auckland City Hospital, the time frame is six hours from onset of symptoms.

## 'Wake-up' stroke

- ▶ Select patients who have awoken with signs and symptoms of an acute stroke may also be candidates for reperfusion therapy following specialist assessment in hospital.
- ▶ The patient should be treated as having an acute stroke if all of the following criteria are met:
  - The patient has awoken with signs and symptoms of an acute stroke **and**
  - The patient was symptom free prior to going to sleep **and**
  - The patient is previously independent and without severe comorbidities.

## Transport modes

- ▶ Transport to hospital should usually be by road, as only a small number of patients will benefit from transport by helicopter. However, the possibility of transport by helicopter should be considered if:
  - The patient is independent and without severe comorbidities, **and**
  - The diagnosis is clear, **and**
  - The patient has severe weakness, **and**
  - The patient will clearly reach a designated stroke hospital within four hours of the onset of symptoms, **and**
  - Helicopter transport will clearly save more than 30 minutes compared with road transport.
- ▶ Severe comorbidities are chronic diseases that significantly limit a patient's life expectancy. Examples include severe COPD, severe heart failure, metastatic cancer with weight loss and living in an aged residential care facility.
- ▶ Personnel requiring advice on helicopter transport should phone personnel on the Clinical Desk within the Ambulance Communications Centre on **0800 111 HELP (0800 111 4357)**.

## On arrival at a stroke hospital

- ▶ On arrival at a stroke hospital, ambulance personnel should leave the patient on the ambulance stretcher during handover and convey the patient to the CT scanner (accompanied by hospital personnel) **if requested to do so**. If an undue delay occurs or is anticipated prior to conveying the patient to the CT scanner, the patient should be transferred to a hospital bed.
- ▶ Once the patient has been transferred to the CT scanner, the ambulance stretcher should be removed and ambulance personnel are not required to remain with the patient.
- ▶ Exact arrangements at each stroke hospital will vary depending on locally agreed processes between stroke hospital personnel and the ambulance service. The goal of conveying the patient to the CT scanner on the ambulance stretcher is to reduce the time to fibrinolytic therapy when indicated.

# Pre-hospital acute stroke triage and assessment (PASTA)


**St John**

Here for Life

## Introduction and instructions

- ▶ Use this tool to screen all patients with suspected acute stroke.

Is the patient aged 15 years or older?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Is the patient able to perform their activities of daily living without assistance?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Are all recordings of the patient's blood glucose level 4–17 mmol/L?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Are you confident the patient has not had a seizure?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Is the patient's best GCS motor score greater than or equal to five?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Is the total LAMS (see below) greater than or equal to three?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

## Los Angeles Motor Scale (LAMS)

<b>Facial weakness</b>	Absent (normal movement)	<b>0</b>
	Present	<b>1</b>
<b>Arm weakness</b>	Absent (normal movement)	<b>0</b>
	Drift	<b>1</b>
	Falls rapidly or no arm movement	<b>2</b>
<b>Grip strength</b>	Normal	<b>0</b>
	Weak	<b>1</b>
	No grip	<b>2</b>

### If answered 'YES' or 'UNSURE' to ALL criteria

- Transport to the most appropriate stroke hospital and inform hospital personnel ASAP (preferably before leaving the scene) that the patient is 'PASTA positive'.
- If the patient is in the North Shore Hospital, Waitakere Hospital or Middlemore Hospital catchment area and is going to arrive in ED outside of 0800–1600, Monday to Friday or it is a public holiday:
  - Phone **0800 1 PASTA (0800 172 782)** and ask to speak to the on call neurologist at Auckland City Hospital. Prior to phoning ensure that as much information as possible is available regarding the patient's comorbidities and level of functioning. Transport to Auckland City Hospital if the on call neurologist accepts the patient or cannot be contacted after two calls.
- If the patient is in the Northland Area and is going to arrive in ED at Whangarei Hospital outside of 0700–2200, Monday to Friday or 0700–1600, weekends and public holidays, the patient should be transported to the most appropriate hospital in Northland.

### If answered 'NO' to ANY criteria

- Transport to the catchment area hospital (Auckland) or most appropriate hospital (Northland) and inform hospital personnel that the patient is PASTA negative.

