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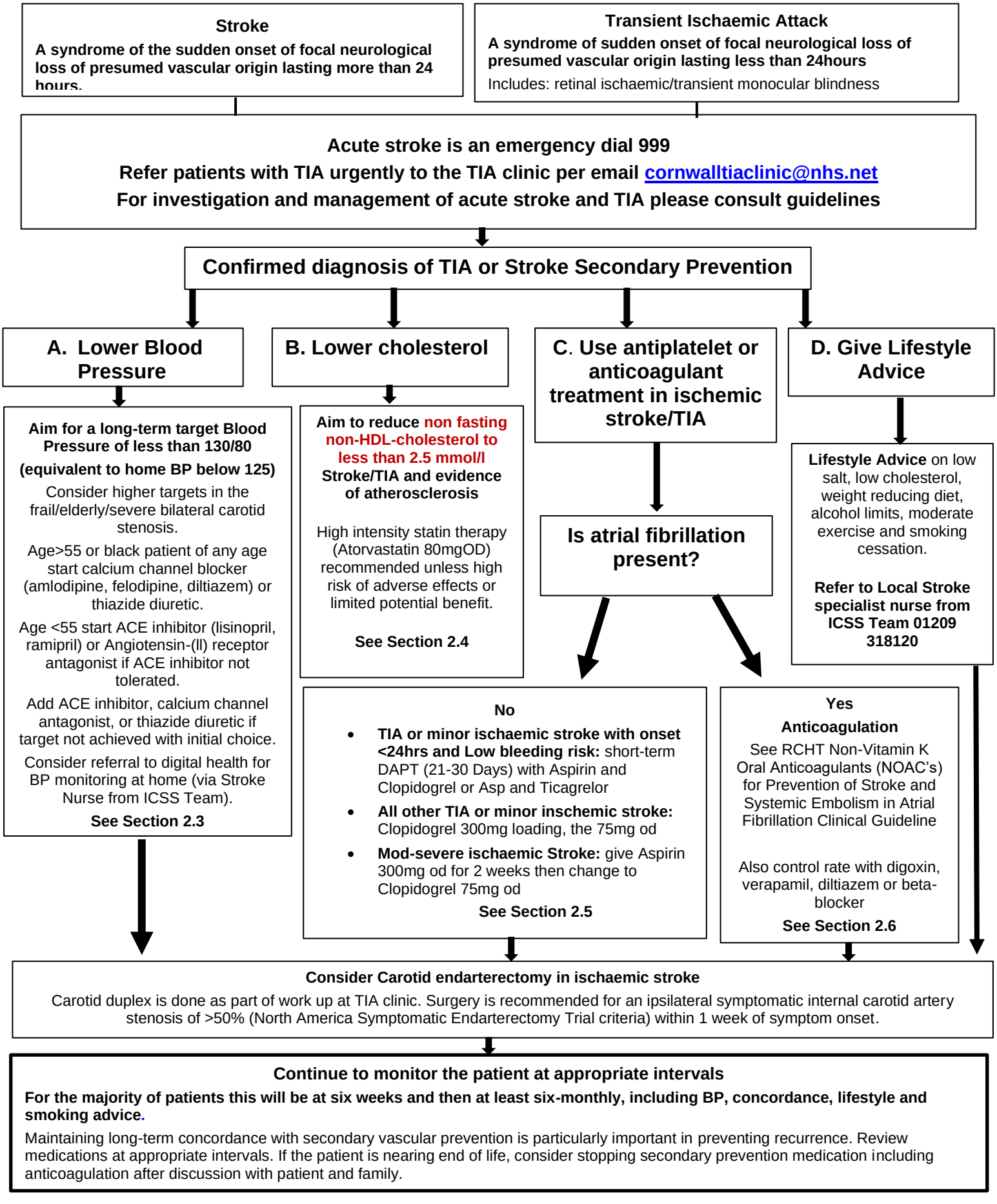
Royal Cornwall Hospitals NHS Trust

Secondary Prevention after Stroke or TIA Clinical Guideline

V10.1

June 2023

Summary


Stroke
A syndrome of the sudden onset of focal neurological loss of presumed vascular origin lasting more than 24 hours.
Transient Ischaemic Attack
A syndrome of sudden onset of focal neurological loss of presumed vascular origin lasting less than 24hours
Includes: retinal ischaemic/transient monocular blindness
Acute stroke is an emergency dial 999
Refer patients with TIA urgently to the TIA clinic per email cornwalltiaclinic@nhs.net
For investigation and management of acute stroke and TIA please consult guidelines
Confirmed diagnosis of TIA or Stroke Secondary Prevention
A. Lower Blood Pressure
B. Lower cholesterol
C. Use antiplatelet or anticoagulant treatment in ischemic stroke/TIA
D. Give Lifestyle Advice
Aim for a long-term target Blood Pressure of less than 130/80
(equivalent to home BP below 125)
Consider higher targets in the frail/elderly/severe bilateral carotid stenosis.
Age>55 or black patient of any age start calcium channel blocker (amlodipine, felodipine, diltiazem) or thiazide diuretic.
Age <55 start ACE inhibitor (lisinopril, ramipril) or Angiotensin-(II) receptor antagonist if ACE inhibitor not tolerated.
Add ACE inhibitor, calcium channel antagonist, or thiazide diuretic if target not achieved with initial choice.
Consider referral to digital health for BP monitoring at home (via Stroke Nurse from ICSS Team).
See Section 2.3
Aim to reduce non fasting non-HDL-cholesterol to less than 2.5 mmol/l Stroke/TIA and evidence of atherosclerosis
High intensity statin therapy (Atorvastatin 80mgOD) recommended unless high risk of adverse effects or limited potential benefit.
See Section 2.4
Is atrial fibrillation present?
Lifestyle Advice on low salt, low cholesterol, weight reducing diet, alcohol limits, moderate exercise and smoking cessation.
Refer to Local Stroke specialist nurse from ICSS Team 01209 318120
No
TIA or minor ischaemic stroke with onset <24hrs and Low bleeding risk: short-term DAPT (21-30 Days) with Aspirin and Clopidogrel or Asp and Ticagrelor
All other TIA or minor inschemic stroke: Clopidogrel 300mg loading, the 75mg od
Mod-severe ischaemic Stroke: give Aspirin 300mg od for 2 weeks then change to Clopidogrel 75mg od
See Section 2.5
Yes
Anticoagulation
See RCHT Non-Vitamin K Oral Anticoagulants (NOAC's) for Prevention of Stroke and Systemic Embolism in Atrial Fibrillation Clinical Guideline
Also control rate with digoxin, verapamil, diltiazem or beta-blocker
See Section 2.6
Consider Carotid endarterectomy in ischaemic stroke
Carotid duplex is done as part of work up at TIA clinic. Surgery is recommended for an ipsilateral symptomatic internal carotid artery stenosis of >50% (North America Symptomatic Endarterectomy Trial criteria) within 1 week of symptom onset.
Continue to monitor the patient at appropriate intervals
For the majority of patients this will be at six weeks and then at least six-monthly, including BP, concordance, lifestyle and smoking advice.
Maintaining long-term concordance with secondary vascular prevention is particularly important in preventing recurrence. Review medications at appropriate intervals. If the patient is nearing end of life, consider stopping secondary prevention medication including anticoagulation after discussion with patient and family.

1. Aim/Purpose of this Guideline

1.1. The aim of this document to inform clinicians on management of secondary prevention for patients after stroke or TIA in Cornwall.

1.2. This version supersedes any previous versions of this document.

Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation

The Trust has a duty under the Data Protection Act 2018 and General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team

Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

2. The Guidance

2.1. These are clinical guidelines and should be used pragmatically. Treatments should be decided upon after a shared decision-making process with your patient. The guidelines are based on studies involving younger patients with a limited range of underlying illness. Many Strokes occur in complex, multi-morbid patients who are under-represented in these studies, and aspects of the following guidance will not be appropriate for these patients. Conversely, in younger, less complex patients, one would anticipate closer adherence to the guideline.

2.2. For clinical advice in individual cases, contact Eldercare consultant via RCHT switchboard 01872 25000.

2.3. Management of Blood Pressure

2.3.1. The long-term target for blood pressure is less than **130/80 mmHg** (or **home blood pressure of less than 125 mmHg**) for patients with cerebrovascular disease. Higher blood pressure targets may be appropriate in patients who are very frail, very old, have limited life expectancy, or in those at high risk of falls.

2.3.2. The PROGRESS study showed a 5% absolute risk reduction and 43% relative risk reduction in stroke after treatment with ACE and thiazide diuretic at 5 years1. This equates to a number needed to treat (NNT) of 11 to prevent 1 stroke at 5 years (1).

2.3.3. In patients with known bilateral severe carotid stenosis (>50%) a target systolic blood pressure of 140-150 mmHg is appropriate.

2.3.4. Monitoring of ACE Inhibitor or ARB therapy: Monitor BP, renal function and serum potassium:

- 1 week prior to treatment.
- 1 week and 1 month after initiation.
- 1 week after significant change in dosage or addition of an interacting drug e.g. diuretic.
- When there is a significant change in the patient's condition or during severe concurrent illness.

2.3.5. Consider discontinuation of blood pressure medication if risks outweigh benefits.

2.4. Management of Cholesterol

2.4.1. People with ischemic stroke or TIA should be offered treatment with a statin unless contraindicated, investigation of their stroke or TIA confirms no evidence of atherosclerosis, or if there is limited potential benefit (very frail, elderly, or those approaching end of life). Treatment should:

- Begin with a **high-intensity statin such as Atorvastatin 80mg OD.**
- Lower dose (such as Atorvastatin 20mg OD should be used if there is potential for medication interactions, high risk of adverse effects, and in patients with CKD (eGFR <60 ml/min/1.73 m2).

2.4.2. Aim to reduce **non-HDL-cholesterol to a target of less than 2.5mmol/L** in a non-fasting sample (equivalent to fasting LDL-cholesterol of below 1.8 mmol/L)

2.4.3. If target is not achieved at 4-6 weeks:

- Check adherence and tolerability.
- Optimise dietary and lifestyle measures through personalised advice and support.
- Consider increased to a higher dose of statin if this was not prescribed from the outset.
- Consider adding ezetimibe 10mg OD.
- Consider use of additional agents such as:
  - Injectables (inclisiran or monoclonal antibodies to PCSK9), or

- Bempedoic acid (for statin-intolerant people taking ezetimibe monotherapy).

Consider referral to Hyperlipidemia/Lipid clinic:

- Continue to escalate lipid-lowering therapy (in combination if necessary) at regular intervals in order to meet target **non-HDL-cholesterol below 2.5mmol/L (non-fasting sample), or fasting LDL-cholesterol below 1.8mmol/L**

2.4.4. Patients with ischaemic stroke or TIA in whom investigation confirms no evidence of atherosclerosis should be assessed for lipid-lowering therapy on the basis of their overall cardiovascular risk.

2.4.5. Patients with haemorrhagic stroke should be assessed for lipid-lowering therapy on basis of their lower cardiovascular risk and the underlying cause of haemorrhage.

2.4.6. If unable to tolerate high-intensity statin aim to treat with the maximum tolerated dose.

2.4.7. If adverse effects reported when taking high intensity statin, then discuss following options:

- Stop statin & try again when symptoms resolved.
- Reduce dose within same intensity group.
- Change statin to lower intensity group.

2.4.8. Consider specialist advice [referral to Hyperlipidaemia/Lipid clinic] for people who are:

- At high risk of vascular event and intolerant to 3 different statins.
- Younger (age below 60 years) with ischaemic stroke or TIA of presumed atherosclerotic cause, who have raised lipoprotein(a) levels above 200nmol/L.

2.4.9. Consider discontinuation of cholesterol medication if risks outweigh benefits.

2.5. Antiplatelet Treatment in patients with non-cardioembolic ischaemic stroke or TIA

2.5.1. Short-term Treatment – See next page

Scenario	Recommended Treatment
TIA or minor ischaemic stroke with: - symptom onset within 24 hours and - low risk of bleeding / **no** contraindication for DAPT	Dual Antiplatelet Treatment (DAPT), with either: ▪ **First Line- Aspirin and Clopidogrel for 21 days** **Treatment regime:** Aspirin 300mg loading dose, followed by 75mg OD for next day (for 21 days). Clopidogrel 300mg od loading dose, followed by 75mg OD for next day (for 21 days). ▪ **Second Line- Aspirin and Ticagrelor for 30 days (when aspirin and clopidogrel not clinically appropriate).** **Treatment regime:** Aspirin 300mg loading dose, followed by 75mg OD for next day (for 30 days). Ticagrelor 180mg od loading dose, followed by 90mg BD for next day (for 30 days). For patients with minor ischaemic stroke being commenced on DAPT, treatment should be started after brain imaging has excluded intracranial haemorrhage. Consider addition of PPI (avoid omeprazole if on clopidogrel) if treating with DAPT. For long-term antiplatelet therapy see section 2.5.2
TIA or minor ischaemic stroke, not appropriate for dual antiplatelets	Clopidogrel 300mg loading dose, followed by 75mg OD.
Moderate-severe ischaemic stroke	Aspirin 300mg OD for 2 weeks. Patient being transferred to care at home before 2 weeks should be started on long-term treatment earlier (see section 2.5.2).

2.5.2. Long-term Treatment (after completion of short-term antiplatelet therapy – see section 2.5.1).

First line	Clopidogrel 75mg OD
Second line (if intolerant of clopidogrel)	Aspirin 75 mg OD

2.6. Anticoagulant Treatment

2.6.1. Anticoagulation is appropriate for the secondary prevention of stroke or TIA associated with atrial fibrillation (persistent or paroxysmal). It is also appropriate where stroke or TIA is associated with a prosthetic heart valve, rheumatic mitral valve disease or within three months of a myocardial infarct (mural thrombus). Warfarin reduces the annual risk of recurrent stroke by approximately two thirds, from 12% to 4% (3, 5,7).

2.6.2. See RCHT Non-Vitamin K Oral Anticoagulants (NOACS) for the prevention of Stroke and Systemic Embolism in Atrial Fibrillation Clinical Guideline.

2.6.3. Timing of commencement of anticoagulation for patients with atrial fibrillation or flutter.

Category	Description
TIA	Commence anticoagulation **as soon as possible** (after diagnosis of TIA confirmed) i.e. Day 0-1. Anticoagulation should only be commenced **after CT brain** has been performed and intracranial haemorrhage has been excluded. If patient is already on anticoagulation at the time of TIA, check patient compliance and ensure patient is on correct dose of anticoagulation (if DOAC), or review INRs/'time in therapeutic range' (if on warfarin).
Ischaemic Stroke	Anticoagulation is to be commenced after initial period of antiplatelet therapy (aspirin 300mg OD). In **minor strokes**, anticoagulation can be commenced **within 5 days** after stroke onset. In **moderate-to-severe strokes**, anticoagulation can be commenced **5-14 days** after stroke onset. Where possible patients should be offered participation in trial of the timing of initiation of anticoagulation after stroke. Early initiation may be considered in patients with - Minor strokes (NIHSS <6, small/no brain infarct on imaging). - No haemorrhagic transformation. - Patient is clinically stable. - BP is controlled, or - If there is high recurrence risk e.g. cardiac thrombus. **Decision-making should be tailored to individual patient circumstances and is to be made by Consultant.**

2.7. Contraindications (underlined) and cautions for anticoagulants:

2.7.1. Major bleeding (active, current or unexplained)

- **Uncorrected major bleeding disorder.**
- **Potential bleeding lesions** e.g. active **peptic ulcer;** oesophageal varices; aneurysm; proliferative retinopathy; recent organ biopsy; recent trauma or surgery to head, orbit, spine; recent stroke within 2 weeks; confirmed intracranial or intraspinal bleed**.**

2.7.2. **Severe hypertension** e.g. systolic greater than 200 mmHg or diastolic greater than 120 mmHg (control BP first).

2.7.3. **Bacterial endocarditis.**

2.7.4. **Pregnancy** Risk of teratogenicity

- **Uncooperative person** Problems with concordance and follow-up.
- **Repeated falls or unstable gait** Increased risk of injury.
- **Concomitant use of drug that increases risk of GI bleeding.**
- Documented **coumarin instability or non-compliance.**
- Patients nearing the end of their life.
- **Protein C deficiency** Risk of skin necrosis on initiation of treatment, so caution needed.

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Management of Secondary prevention appropriately for TIA and Stroke.
Lead	Stroke Team.
Tool	Sentinel Stroke National Audit Programme, TIA clinic.
Frequency	Daily.
Reporting arrangements	Monthly review at Stroke Operational Group Meeting.
Acting on recommendations and Lead(s)	Dr Mohana Maddula, Consultant. Nigel D'Arcy Service Manager.

Information Category	Detail of process and methodology for monitoring compliance
Change in practice and lessons to be shared	At Stroke Operational Group Meetings, led by Service Manager Nigel D'Arcy.

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the Equality Diversity And Inclusion Policy or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Secondary Prevention after Stroke or Tia Clinical Guideline V10.1
This document replaces (exact title of previous version):	Secondary Prevention after Stroke or Tia Clinical Guideline V10.0
Date Issued/Approved:	June 2023
Date Valid From:	June 2023
Date Valid To:	June 2026
Directorate / Department responsible (author/owner):	Dr Mohana Maddula, Eldercare Department
Contact details:	01872 253473
Brief summary of contents:	Management of secondary prevention including management of antiplatelet therapy, blood pressure, cholesterol, anticoagulation and lifestyle advice for patients following TIA or stroke.
Suggested Keywords:	Acute Stroke Management
Target Audience:	**RCHT:** Yes **CFT:** No **CIOS ICB:** No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Eldercare Governance Group. Stroke Operational Group.
Manager confirming approval processes:	Jo Floyd
Name of Governance Lead confirming consultation and ratification:	Paul Evangelista
Links to key external standards:	None Required
Related Documents:	References • Arima et al. Lower target blood pressures are safe and effective for the prevention of recurrent stroke: the PROGRESS trial Journal of Hypertension. 2006; 24**,** 1201-1208

Information Category	Detailed Information
	• Amarenco et al. Stroke Prevention by Aggressive Reduction in Cholesterol Levels (SPARCL). High-dose atorvastatin after stroke or transient ischaemic attack N Engl J Med. 2006; 355**,** 549-59. • NICE Guideline (NG 128). Stroke and TIA in over 16s Diagnosis and initial management. May 2019 https://www.nice.org.uk/guidance/ng128 • NHS England. Summary of national guidance for lipid management for primary and secondary prevention of CVD. December 2021 • The Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) Investigators. A comparison of rate control and rhythm control in patients with atrial fibrillation. N Engl J Med. 2002;347,1825-1833. • Cornwall Joint Formulary https://www.eclipsesolutions.org/Cornwall/ • NICE CG 180. The Management of Atrial Fibrillation. June 2014 • Non-Vitamin K Oral Anticoagulants (NOACS) for the prevention of Stroke and Systemic Embolism in Atrial Fibrillation Clinical Guideline. RCHT Guideline 2022 • Wang et al. Acute dual antiplatelet for minor stroke or TIA. BMJ 2019; 364:1895. https://www.bmj.com/content/364/bmj.l895 • Dawson et al. European Stroke Organisation (ESO) guideline on pharmacological interventions for long-term secondary prevention after ischaemic stroke or transient ischaemic attack. ESJ 2022; 7(3) • National Clinical Guidelines for Stroke 2023 Update https://www.strokeguideline.org/
Training Need Identified?	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Stroke

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
2008	V1.0	Initial issue	K Adie, consultant
2009	V2.0	Updated with new clinical evidence	K Adie, consultant
2010	V3.0	Updated with new clinical evidence	K Adie, consultant
2011	V4.0	Updated with new clinical evidence	K Adie, consultant
2012	V5.0	Updated with new clinical evidence	K Adie, consultant
2014	V6.0	Updated with new clinical evidence	K Adie, consultant
2015	V7.0	Updated with new clinical evidence and guidance	K Adie, consultant
2017	V8.0	Updated with new clinical evidence	K Adie, consultant
13.11.2019	V9.0	Updated with new guidance and transposed latest Trust template	K Adie, consultant
May 2023	V10.0	Updated with new guideline	Dr Mo Maddula, Consultant
June 2023	V10.1	Updated section 2.5.1. Addition of section 2.5.2 and minor updates to appendices 1 and 2.	Dr Mo Maddula, Consultant

All or part of this document can be released under the Freedom of Information Act 2000

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust The Policy on Policies (Development and Management of Knowledge Procedural and Web Documents Policy). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Secondary Prevention after Stroke or Tia Clinical Guideline V10.1
Directorate and service area:	Stroke
Is this a new or existing Policy?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Dr Mohana Maddula, Consultant
Contact details:	01872 252084

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	The aim of this document to inform clinicians on management of secondary prevention following stroke or TIA in Cornwall.
2. Policy Objectives	The guidance enables clinical staff to prevent further cerebrovascular events.
3. Policy Intended Outcomes	Gold standard stroke care.
4. How will you measure each outcome?	Sentinel Stroke National Audit Programme. Monthly board report.
5. Who is intended to benefit from the policy?	Patients with new stroke or TIA in Cornwall.

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: No • Patients/ visitors: No • Local groups/ system partners: No • External organisations: No • Other: Yes
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:** This is existing policy and has been widely consulted. Clinicians at RCHT, GPs, Managers, Stroke survivors Eldercare governance meeting 05/05/2023 and Stroke operational group meeting 10/06/2023. Stephen Chan, Lead Pharmacist for Eldercare, Stroke & Neurology. This is not a procedure but a clinical guideline. It has been signed off by the stroke operational group.
6c. What was the outcome of the consultation?	Agreed
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:** No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	Over 55's highlighted as greater risk and therefore pathway acknowledges this.
Sex (male or female)	No	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	Specific guidelines in place for black patients due to increased risk based on research.

Protected Characteristic	(Yes or No)	Rationale
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	
Religion or belief	No	
Marriage and civil partnership	No	
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Dr Mohana Maddula, Consultant

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis