BNF Chapter 2. Cardiovascular system

Formulary prepared and based on BNF, Summary of Product Characteristics and information provided below unless otherwise stated.For full information on treatment side effects, cautions and contraindications, see electronic British National Formulary (www.bnf.org) or the relevant summary of product characteristics (www.medicines.org.uk).

NICE Cardiovascular Guidelines

Cardiovacscular guidance is available, using the attached link, to provide information on important aspects of cardiovascular disease related patient care including latest NICE Technology Appraisals and Clinical Pathways

NICE Cardiovascular Guidance

NICE Technology Appraisals

NOAC for Pulmonary Embolism (PE) - Local commissioning decision by The Drugs and Therapeutics Commissioning Group:
The D&TCGs view is that warfarin should be used first-line for treatment of PE, and for prevention of recurrent PE.
A D/NOAC should only be considered, within its licensed indications, where the patient is known to be allergic to warfarin, or where warfarin therapy has been shown to be outside the time in therapeutic range (TTR) of 60% for 3 months.
Such use of D/NOAC would be classified as Green - GP prescribable at request/ recommendation of Consultant/Specialist

For all other NOAC licensed indications, the NOAC must be prescribed as per NICE TA and local commissioning decisions

Dabigatran

Dabigatran etexilate for the prevention of stroke and systemic embolism in atrial fibrillation

NICE TA 249

Dabigatran - Treatment and secondary prevention of proximal deep vein thrombosis in specified patient groups

NICE TA 327

Dabigatran - Prevention of venous thromboembolism after hip or knee surgery in adults.

NICE TA 157 (2008)

Edoxaban

Edoxaban for Prevention of stroke and systemic embolism in people with non-valvular atrial fibrillation

NICE TA NICE TA 355 (September 2015)

Edoxaban for treating and for preventing deep vein thrombosis and pulmonary embolism

NICE TA 354 (August 2015)

Rivaroxaban

Rivaroxaban - Prevention of stroke and systemic embolism in people with non-valvular atrial fibrillation

NICE TA 256

Rivaroxaban for treating and for preventing deep vein thrombosis and pulmonary embolism

NICE TA 261 (July 2012)

Rivaroxaban - Prevention of venous thromboembolism after hip or knee surgery in adults.

NICE TA 170 (2009)

Apixaban

Apixaban for the treatment and secondary prevention of deep vein thrombosis and/or pulmonary embolism

NICE TA 341

Apixaban - Stroke and systemic embolism (prevention, non-valvular atrial fibrillation)

NICE TA 275

Apixaban - Prevention of venous thromboembolism after hip or knee surgery in adults.

NICE TA 245 (2012)

Ticagrelor

Ticagrelor for the treatment of acute coronary syndromes

NICE TA 236

Ezetimibe

Ezetimibe for the treatment of primary (heterozygous-familial and non-familial) hypercholesterolaemia

NICE TA 132

Prasugrel

Prasugrel with percutaneous coronary intervention for treating acute coronary syndromes (review of technology appraisal guidance 182)

NICE TA 317

MHRA warnings

New oral anticoagulants apixaban (Eliquis▼), dabigatran (Pradaxa) and rivaroxaban (Xarelto▼): risk of serious haemorrhage—clarified contraindications apply to all three medicines

http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON322347

Dabigatran (Pradaxa): contraindicated in patients with prosthetic heart valve(s) requiring anti-coagulant treatment, because of the risk of thrombosis and haemorrhage

http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON252010

Dabigatran (Pradaxa▼): risk of serious haemorrhage – contraindications clarified and reminder to monitor renal function

http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON175429

Smoking Cessation

The following link allows access to local smoking cessation.
https://www.knowledgeanglia.nhs.uk/KMS/Norwich/Home/ClinicalInformation/Other/SmokingCessation.aspx

Therapeutic Drug Monitoring

Suggested Guidance on Monitoring Drugs In Primary Care TAG guidance

Local Prescribing Information

Shared Care Protocol for Low Molecular Weight Heparin (LMWH)

New Oral Anticoagulants (OACs) for the prevention of stroke and systemic embolism in atrial fibrillation

Summary of Guidance and Clinical Practice on the Use of Anti-platelets to prevent Occlusive Vascular Events

Local Key Message Guidance available for further information

Key Message Bulletin 1 : Reviewing ACE inhibitors (ACEi) and Angiotensin Receptor Blockers (A2RAs)
Bulletin One
Key Message Bulletin 2 : Which A2RA?
Bulletin Two
Key Message Bulletin 9 : Calcium Channel blockers
Bulletin Nine
Key Message Bulletin 25 : Ezetimibe
Bulletin Twenty-five

Formulary Key

1st line formulary choice Alternative formulary choice 2nd line formulary choice Shared Care (TAG Amber)	Encouraged On Formulary 2nd Line Shared Care Agreement

▼ This medicinal product is subject to additional monitoring by regulatory authorities in the European Union (EU) - Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme.

Drug	Formulations	Dose	Notes
2.1 Positive Inotropic Drugs			
2.1.1 Cardiac Glycosides			
DIGOXIN	**T:** 62.5 micrograms 125 micrograms 250 micrograms **L:** 50micrograms / ml	62.5 - 250 micrograms daily	Higher doses can be divided to avoid nausea. Side-effects usually associated with excessive dosage, include: nausea, vomiting, diarrhoea, abdominal pain, visual disturbances, headache. Regular monitoring of electrolytes recommended, especially if on diuretics BNF.org Suggested Guidance on Monitoring Drugs In Primary Care
2.2 Diuretics			
2.2.1 Thiazides and related diuretics			
http://publications.nice.org.uk/hypertension-cg127 NHS Clinical Knowledge Summaries - Clinical topic - Hypertension - not diabetic			
INDAPAMIDE	**T:** 2.5mg	2.5mg in the morning	Recommended in NICE Hypertension guidelines as first choice thiazide - like diuretic
BENDROFLUMETHIAZIDE	**T:** 2.5mg, 5mg	2.5 - 5mg in the morning	Hypertension: 2.5mg daily produces a near-maximal BP lowering effect. Can take up to 6 weeks to exert full anti-hypertensive effect.
2.2.2 Loop diuretics			
First Choice			
FUROSEMIDE	**T:** 20mg, 40mg, 500mg **L:** 20mg/5ml, 40mg/5ml	20-80mg in the morning	Can be combined with bendroflumethiazide or metolazone
Second Choice			
BUMETANIDE	**T:** 1mg **L:** 1mg/5mL	0.5-1mg in the morning	Better absorbed in patients with gastric oedema in right sided heart failure, restrict use for this condition. Furosemide 40mg is approximately equal to 1mg bumetanide at low doses. At high doses of bumetanide this ratio falls.
2.2.3 Potassium-sparing diuretics			
AMILORIDE	**T:** 5mg **L:** 5mg/5mL	5-20mg daily in 1-2 divided doses	Hypertension: 5-10mg daily. May be added to existing diuretic treatment to promote potassium retention (better than adding potassium supplements). **Liquid expensive as it is a "Special" not listed in Part VIIIb of Drug Tariff.**

SPIRONOLACTONE	**T:**	25mg, 50mg, 100mg	25-200mg daily	Aldosterone antagonist. Indications heart failure, oedema and ascites in cirrhosis of the liver. Heart failure dose 25mg daily. Recommended by NICE at step 4 for hypertension 25mg dose (unlicensed)
				MHRA Feb 2016 - Spironolactone and renin-angiotensin system drugs in heart failure: risk of potentially fatal hyperkalaemia. Monitoring of blood electrolytes is essential in patients coprescribed a potassium-sparing diuretic and an angiotensin converting enzyme inhibitor (ACEi) or an angiotensin receptor blocker (ARB) for heart failure.
Second Choice - for Heart Failure				
EPLERONONE	**T:**	25mg, 50mg	Initially 25 mg once daily, increased within 4 weeks to 50 mg once daily	Second-line therapy in patients with heart failure who are intolerant to spironolactone due to hormonal side-effects
2.3 Anti-arrhythmic Drugs				
2.3.2 Drugs for arrhythmias				
Hospital initiated prescribing – follow consultant recommendations				
AMIODARONE	**T:**	100mg, 200mg	200mg three times daily for 1 wk, then 200mg twice daily for 1 wk, then 200mg daily thereafter	Amiodarone has a long half-life. Following loading doses it should be given ONCE DAILY. LFT, U & Es and TFT are required prior to therapy and then every 6 months. If amiodarone is an adjunct to maintenance digoxin, the dose of digoxin needs to be halved. **For full monitoring guidance please see TAG TDM guidelines.** Suggested Guidance on Monitoring Drugs In Primary Care **NICE - Do Not Do Recommendation June 2014 - Do not offer amiodarone for long-term rate control.**
SOTALOL	**T:**	40mg, 80mg, 160mg, 200mg	Under ECG monitoring & measurement of corrected QT intervals – 80mg daily in 1-2 divided doses, titrated upwards under specialist supervision	CSM advice: the use of sotalol should be limited to the treatment of ventricular arrhythmias or prophylaxis of supraventricular arrhythmias; it should no longer be used for other indications.
DRONEDARONE	**T:**	400mg	400mg twice daily (with motning and evening meal)	Maintentance of sinus rhythmn after successful cardioversion in paroxysmal or recurrent AF, but NOT permanent AF, following consultant initiation, where other antiarrhythmic drugs have been considered, and in the following circumstances. **Second line** after beta blockers where Amiodarone is contraindicated **Third line** use if Amiodarone has been tried but not tolerated. **See TAG Shared Care for full prescribing guidance.** Dronedarone Shared Care Guideline
2.4 Beta-adrenoceptor blocking drugs				
First Choice				
NICE CG 108 - Chronic Heart Failure NHS Clinical Knowledge Summaries - Clinical topic - Heart failure - chronic				
BISOPROLOL	**T:**	5mg, 10mg	5 - 10mg daily	Dose for hypertension & angina
	T:	1.25mg, 2.5mg, 3.75mg, 7.5mg, 10mg (as Cardicor)	1.25mg daily for one week, increasing if tolerated (see BNF)	Dose for heart failure
METOPROLOL	**T:**	50mg, 100mg	50mg - 300mg daily in divided doses. Tablets are scored	**Hypertension:** initially 100 mg daily, increased if necessary to 200 mg daily in 1–2 divided doses **Angina:** 50–100 mg 2–3 times daily **Arrhythmias:** usually 50 mg 2–3 times daily; up to 300 mg daily in divided doses if necessary
Other Beta- Blockers				
PROPRANOLOL	**T:** **C:**	10mg, 40mg, 80mg, 160mg 80mg, 160mg (MR)	160 – 320mg - total daily dose.	**Licensed for indications below, but mainly used for migraine and anxiety. Standard formulation should be used first line.** **Hypertension:** 80mg twice a day, if required increase to 160 - 320mg daily in divided doses. Portal hypertension see BNF. **Angina:** 40mg two or three times daily, maintenance 120 – 240mg daily in divided doses **Arrhythmias** 10-40mg three to four times a day **Prophylaxis after MI** – see BNF **Migraine prophylaxis: essential tremor, anxiety with symptoms** 40mg two to three times daily
ATENOLOL	**T:**	25mg, 50mg, 100mg	25-50mg daily	Dose for hypertension
			50 -100mg daily	Dose for arrythmias
			100mg daily in 1 or 2 doses	Dose for angina

2.5 Hypertension and Heart Failure

2.5.5.1 Angiotensin-converting enzyme inhibitors

First Choice

LISINOPRIL	**T:**	2.5mg, 5mg, 10mg, 20mg	2.5-20mg daily (normal max 20mg daily)	Elderly start at 2.5mg Hypertension: 10-20mg od (max. 80mg daily) Heart failure: 2.5mg once daily, increasing slowly if necessary to 20mg. Prophylaxis after MI – see BNF. Diabetic nephropathy: initially 2.5mg increasing slowly if necessary to 10-20mg daily in divided doses
RAMIPRIL	**T &C:**	1.25mg, 2.5mg, 5mg, 10mg	1.25 - 10mg daily	Prophylaxis after MI BNF.org: Hypertension: 1.25mg initially increasing to 2.5-5mg daily (Max.10mg daily) Heart failure: as above (doses >2.5mg can be taken in 1-2 divided doses)

Second Choice

PERINDOPRIL	**T:**	2mg, 4mg, 8mg	2mg - 8mg daily	Prescribe generically. Do NOT use perindopril arginine (Coversyl Arginine) - not dose equivalent. Hypertension: 4 mg daily, max 8mg (start 2mg in elderly) Heart failure: 2 to 4mg daily Post MI: 4mg to 8mg daily (start at 2mg in elderly)

2.5.5.2 Angiotensin-II receptor antagonists

Only recommended where an ACEI has been tried & caused persistent cough which cannot be tolerated

See Key Message Bulletin 1 - Reviewing ACEi and ARAs and

Key Message Bulletin 2 - Which ARA?

First Choice

CANDESARTAN	**T:**	2mg, 4mg, 8mg, 16mg, 32mg	2mg - 32mg daily	**Only consider if ACE inhibitors induce cough. Prescribe generically.** Hypertension: 8mg daily (2mg in hepatic or renal impairment) increase if necessary to max 32mg daily. Heart Failure: initially 4mg daily, increased slowly if necessary to a max of 32mg or maximum tolerated dose
LOSARTAN	**T:**	25mg, 50mg, 100mg	50mg daily. May be increased up to 100mg daily.	**Only consider if ACE inhibitors induce cough. Prescribe generically.** Licensed for hypertension, HF and treatment of diabetic nephropathy in Type 2 diabetic patients. Elderly - volume depleted 25mg starting dose.

Second Choice

IRBESARTAN	**T:**	75mg, 150mg, 300mg	150mg daily. May be increased up to 300mg daily. Elderly 75mg daily.	**Only consider if ACE inhibitors induce cough. Prescribe generically.** Licensed for hypertension and renal disease in hypertensive patients with Type 2 diabetes. Reduce dose in renal impairment.
VALSARTAN	**T:**	40mg, 80mg, 160mg	See notes	**Only consider if ACE inhibitors induce cough. Prescribe generically.** Hypertension 50mg daily. Heart Failure: 40mg twice daily increasing to 160mg twice a day. MI: 20mg twice a day, increasing slowly to 160mg twice a day.

2.6 Nitrates, Calcium-channel Blockers & Other Antianginal Drugs

2.6.1 Nitrates

First Choice

GLYCERYL TRINITRATE	**T:**	Sublingual: 300 micrograms 500 micrograms	300 micrograms to 1mg as required	Need to be stored in original container, with foil-lined top and no cotton wadding. Discard 8 weeks after opening. If tablets do not tingle on contact with mucus membrane then they may have expired
	Spray	400 micrograms /dose	1-2 puffs prn	Infrequent angina
ISOSORBIDE MONONITRATE	**T:**	10mg, 20mg, 40mg	20 – 120mg daily in divided doses	Can be given twice daily. Nitrate free periods can be achieved by prescribing first thing in the morning and mid afternoon. Tablets may be chewed for more rapid effect
		60mg M/R	60 – 120mg daily	Use where compliance is a problem. **Prescribe by brand name** using the most cost effective brand which can be halved.

2.6.2 Calcium-channel blockers

First Choice

AMLODIPINE	**T:**	5mg, 10mg	5-10mg daily	Does not reduce myocardial contractility. Licensed for angina, hypertension.
LERCANIDIPINE	**T:**	10mg, 20mg	10-20mg daily	Licensed for hypertension only. Useful in isolated systolic hypertension

Second Choice				
FELODIPINE	**T:**	2.5mg, 5mg, 10mg	5-10mg daily	Does not reduce myocardial contractility. Licensed for angina and hypertension.
DILTIAZEM	**T:**	90mg - 120mg	90mg -120mg BD	Licensed for hypertension and angina prophylaxis. Use longer acting preparations for hypertension i.e XL not M/R. Swallow whole do not chew. **Prescribe MOST COST EFFECTIVE CHOICE by brand.**
	C:	120mg, 180mg, 240mg, 300mg XL	Once daily Hypertension - see under preparation in BNF	
NIFEDIPINE	**T:**	20mg , 30mg, 60mg LA or XL	30-90mg once a day	Licensed for hypertension and angina prophylaxis. Use long-acting preparations i.e. LA/XL preparations rather than M/R. Swallow whole do not chew.**Prescribe MOST COST EFFECTIVE CHOICE by brand.**
2.6.3 Other anti-anginal drugs				
NICORANDIL	**T:**	10mg, 20mg	10-30mg twice daily	If susceptible to headache start with 5mg twice daily and increase from there. Licensed for the prophylaxis and treatment of stable angina (scored tablet)
				MHRA January 2016 - Nicorandil (Ikorel): now second-line treatment for angina - risk of ulcer complications - some ulcers may progress to complications unless treatment is stopped.
IVABRADINE	T:	5mg, 7.5mg	5 mg twice daily, increased if necessary after 2 weeks to 7.5 mg twice daily	Option for mild to severe stable chronic heart failure in combination with standard therapy including a beta-blocker (unless contra-indicated or not tolerated), an ACE inhibitor, and an aldosterone antagonist, in patients who have a left ventricular ejection fraction of ≤ 35%, and are in sinus rhythm with a heart rate of ≥ 75 beats per minute
NICE TA267			5 mg twice daily, increased if necessary after 3–4 weeks to 7.5 mg twice daily	For adjunctive use in stable angina unresponsive to other treatments. Not for initiation if heart rate <70bpm. TAG recommendation: Prescribable at request of consultant.
2.6.4.1 Peripheral vasodilators and related drugs				
These preparations are considered to be less suitable for prescribing				
2.8 Anticoagulants and Protamine				
2.8.1 Parenteral anticoagulants				
As per hospital guidelines for the use of low molecular weight heparins for the community treatment of DVT				
Low Molecular Weight Heparin - Shared Care Protocol				
2.8.2 Oral anticoagulants				
NICE CG180 Atrial fibrillation				
First Choice Atrial Fibrillation (AF), Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE)				
WARFARIN	**T:**	500 micrograms (white) 1mg (brown) 3mg (blue)	Appropriate to INR. Dose must be taken at the same time each day	INR: 2-2.5 for prophylaxis of DVT, and surgery on high risk patients INR: 2.5 for the treatment of DVT and PE (or recurrence in patients no longer on warfarin), AF, cardioversion, dilated cardiomyopathy, mural thrombus following MI, and rheumatic mitral valve disease. INR: 3.5 for recurrent DVT (currently on Warfarin),PE and mechanical prosthetic heart valves. In general prescribe only 1mg and 3mg tablets as it is the policy at NNUHT. This avoids possiblity of dosing / prescription errors with 500 micrograms and 5mg tablets. Occasionally patients may require a higher dose to be prescribed - the use of 5mg MAY be suitable for these patients ONLY
Second choice for AF and DVT- use NOACs as per NICE TAs, licensed indications and local commissioning.				
NOAC for Pulmonary Embolism (PE) - Local commissioning decision by The Drugs and Therapeutics Commissioning Group: The D&TCGs view is that warfarin should be used first-line for treatment of PE, and for prevention of recurrent PE. A D/NOAC should only be considered, within its licensed indications, where the patient is known to be allergic to warfarin, or where warfarin therapy has been shown to be outside the time in therapeutic range (TTR) of 60% for 3 months. Such use of D/NOAC would be classified as Green - GP prescribable at request/ recommendation of Consultant/Specialist				
For all other NOAC licensed indications, the NOAC must be prescribed as per NICE TA and local commissioning decisions as indicated below.				

See local guidance on Oral Direct Inhibitors (ODIs)

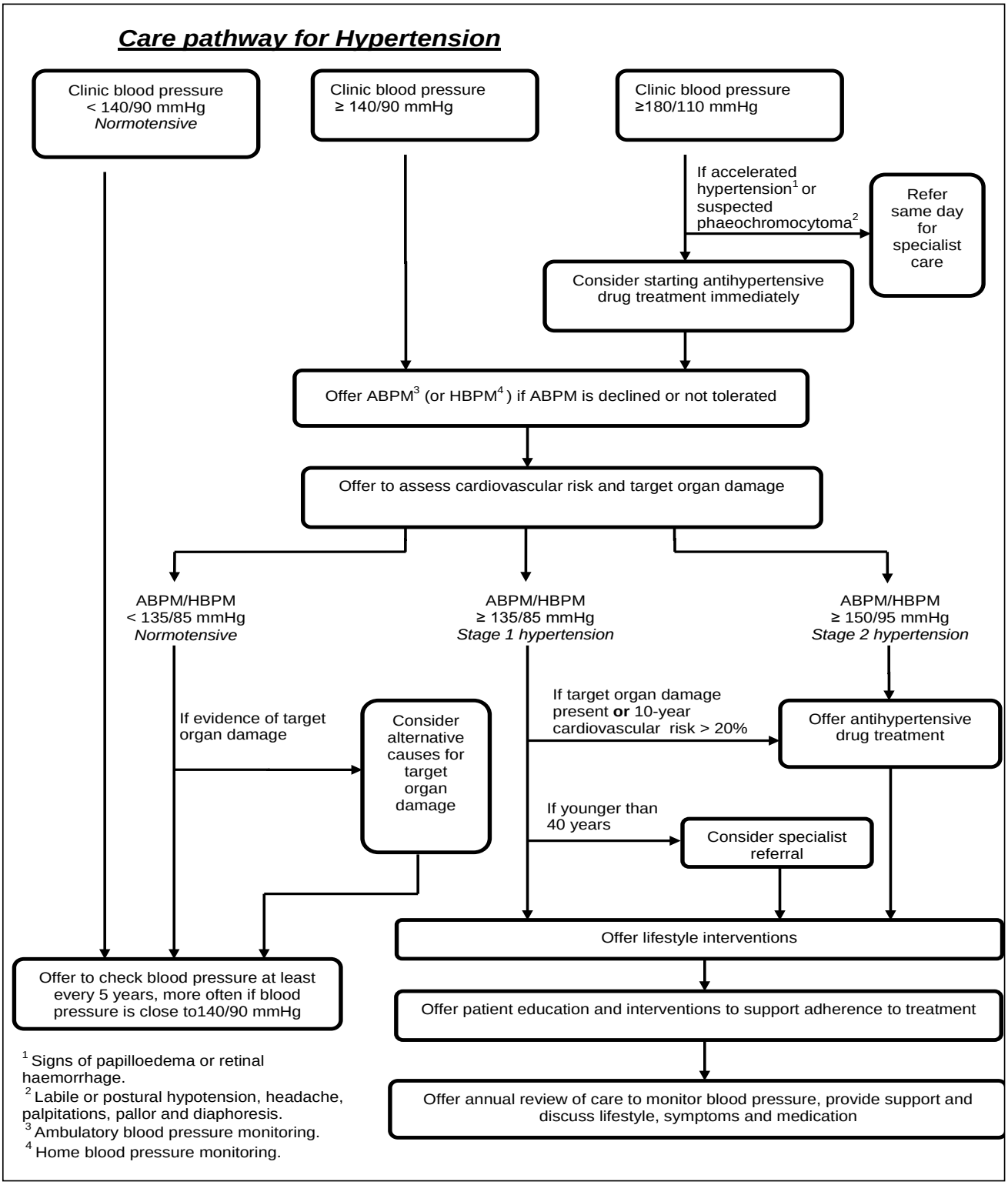
Oral Anticoagulant Therapy in Atrial Fibrillation – July 2018
New Oral Anticoagulants (NOACs): GP / Patient Decision Support Aid
New Oral Anticoagulants (NOACs) - Prescriber checklist before making the final decision with the Patient
New Oral Anticoagulants (NOACs) Patient Information

Choice of NOAC below is listed as per locally agreed cost effectiveness. When making a prescribing decision the most cost effective NOAC MUST be chosen UNLESS clinical need and patient suitability suggests otherwise.			
First Choice NOAC			
EDOXABAN ▼ NICE TA NICE TA 355 (2015)	**T:** 30mg, 60mg	Dose dependant on indication See SPC and local guidelines	**TA 355: TAG Double-Green / Suitable for GPs to initiate and prescribe.** Prevention of stroke and systemic embolism in people with non-valvular atrial fibrillation who have one or more risk factors - as per local pathway.
NICE TA 354 (2015)			**TA 354: TAG Green / GP prescribable at request/ recommendation of Consultant/Specialist** Treatment and secondary prevention of proximal deep vein thrombosis in specified patient groups: but **commissioned only regarding DVT, not PE,** as follows: ☐ Proximal DVT associated with active cancer (total 6 months/ 26 weeks' treatment) - option for individual cases. ☐ Proximal DVT with standard/low recurrence risk (total 13 weeks' treatment) - only if allergic to warfarin. ☐ Proximal DVT with high recurrence risk/low bleeding risk (long term) - only if allergic to warfarin
			TA 354 TAG Red - Hospital / Specialist for treatment of calf vein deep vein thrombosis (the 6 week treatment course to be supplied by the hospital to avoid inappropriate continuation in Primary Care)
Second choice NOAC			
DABIGATRAN ETEXILATE NICE TA 249 (2012)	**C:** 110mg, 150mg	Dose dependant on indication See SPC and local guidelines	**NICE TA 249 TAG: Double-Green / Suitable for GPs to initiate and prescribe.** For the prevention of stroke and systemic embolism in adult patients in non-valvular atrial filbrilation as per the local agreed pathway.
NICE TA 327 (2014)			**TA 327: TAG Green / GP prescribable at request/ recommendation of Consultant/Specialist.** Treatment and secondary prevention of proximal deep vein thrombosis in specified patient groups: but **commissioned only regarding DVT, not PE**, as follows: ☐ Proximal DVT associated with active cancer (total 6 months/ 26 weeks' treatment) - option for individual cases. ☐ Proximal DVT with standard/low recurrence risk (total 13 weeks' treatment) - only if allergic to warfarin. ☐ Proximal DVT with high recurrence risk/low bleeding risk (long term) - only if allergic to warfarin
			TA 327: TAG Red - Hospital / Specialist for treatment of calf vein deep vein thrombosis (the 6 week treatment course to be supplied by the hospital to avoid inappropriate continuation in Primary Care)
NICE TA 157 (2008)			**TA 157:TAG Red - Hospital / Specialist for treatment of** Prevention of venous thromboembolism after hip or knee surgery in adults.
			The oral bioavailability may be increased by 75 % after a single dose when the pellets are taken without the Hydroxypropylmethylcellulose (HPMC) capsule shell. Therefore, patients should be advised not to open the capsules and taking the pellets alone (e.g. sprinkled over food or into beverages) (SPC)
Third choice NOAC			
RIVAROXABAN ▼ NICE TA 256 (2012)	**T:** 20mg	Dose dependant on indication See SPC and local guidelines	**NICE TA 256 TAG: Double-Green / Suitable for GPs to initiate and prescribe**. For the prevention of stroke and systemic embolism in adult patients in non-valvular atrial filbrilation as per the local agreed pathway.
NICE TA 261 (2012)			**NICE TA 261 TAG: Green / GP prescribable at request/ recommendation of Consultant/Specialist.** Treatment of deep vein thrombosis (except calf vein DVT) and prevention of recurrent DVT in specified patient groups – but **commissioned only regarding DVT, not PE,** as follows: ☐ Proximal DVT associated with active cancer (total 6 months/ 26 weeks' treatment) - option for individual cases. ☐ Proximal DVT with standard/low recurrence risk (total 13 weeks' treatment) - only if allergic to warfarin. ☐ Proximal DVT with high recurrence risk/low bleeding risk (long term) - only if allergic to warfarin
			TA 261 TAG Red - Hospital / Specialist for treatment of calf vein deep vein thrombosis (the 6 week treatment course to be supplied by the hospital to avoid inappropriate continuation in Primary Care)
NICE TA 170 (2009)			**TA 170 TAG Red - Hospital / Specialist for treatment** Prevention of venous thromboembolism after hip or knee surgery in adults.

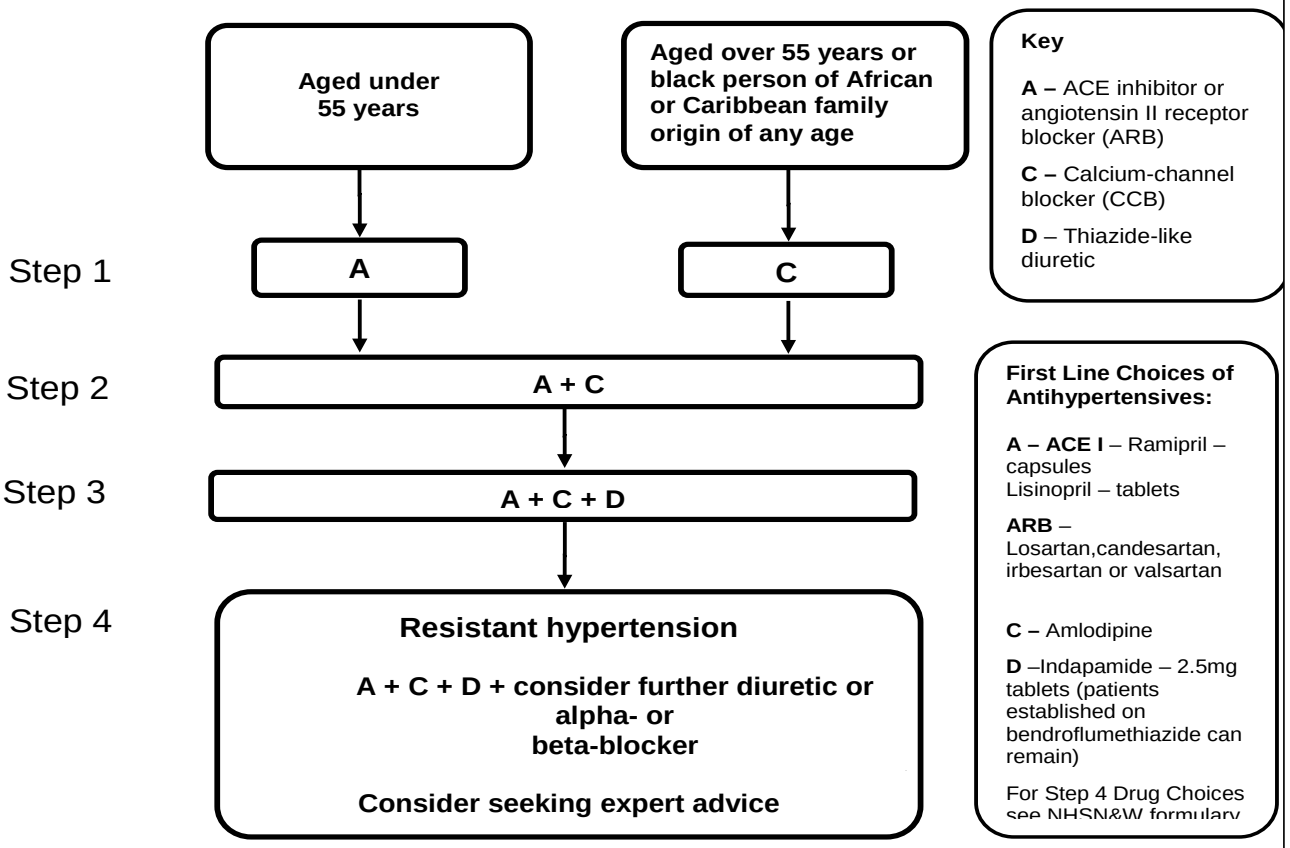
Fourth choice NOAC				
APIXIBAN NICE TA 275 (2013)	**T:**	2.5mg, 5mg	Dose dependant on indication See SPC and local guidelines	**TA 275: TAG Double-Green / Suitable for GPs to initiate and prescribe.** Prevention of stroke and systemic embolism in people with non-valvular atrial fibrillation who have one or more risk factors - as per local pathway
NICE TA 341 (2015)				**TA 341: TAG Green / GP prescribable at request/ recommendation of Consultant/Specialist** Treatment and secondary prevention of proximal deep vein thrombosis in specified patient groups: but **commissioned only regarding DVT, not PE**, as follows: ☐ Proximal DVT associated with active cancer (total 6 months/ 26 weeks' treatment) - option for individual cases. ☐ Proximal DVT with standard/low recurrence risk (total 13 weeks' treatment) - only if allergic to warfarin. ☐ Proximal DVT with high recurrence risk/low bleeding risk (long term) - only if allergic to warfarin
				TA 341 TAG Red - Hospital / Specialist for treatment of calf vein deep vein thrombosis (the 6 week treatment course to be supplied by the hospital to avoid inappropriate continuation in Primary Care)
NICE TA 245 (2012)				**TA 245:TAG Red - Hospital / Specialist for treatment of** Prevention of venous thromboembolism after hip or knee surgery in adults.
2.9 Antiplatelet drugs				
NICE CG 94 Unstable Angina and NSTEMI: quick reference guide				
Local guidance on use of Anti-platelets to prevent Occlusive Vascular Events				
ASPIRIN dispersible	**T:**	75mg	75-150mg (max. 300mg) daily	Take after food. Where dyspepsia is a problem, add a low dose PPI (lansoprazole or omeprazole caps)
CLOPIDOGREL NICE TA 210	**T:**	75mg	75mg daily	Secondary prevention of CHD. Summary of Guidance and Clinical Practice on the use of Anti-platelets to prevent Occlusive Vascular Events should be used as a prescribing reference - **See Appendix Two.**
PRASUGREL NICE TA 317	**T:**	5mg, 10mg		An option, in combination with aspirin, for preventing atherothrombotic events in adults with acute coronary syndrome (unstable angina, non-ST segment elevation myocardial infarction or ST segment elevation myocardial infarction) having primary or delayed percutaneous coronary intervention. - **See Appendix Two** TAG Recommendation: GP prescribable on request of specialist/consultant
TICAGRELOR NICE TA 236	**T:**	90mg	90mg bd	For use with aspirin to prevent atherothrombotic events in specified patients with ACS. TAG Recommendation: GP prescribable on request of specialist/consultant. **Use with Caution if : Bradycardia < 50bpm, High bleed risk eg. Requirement for warfarin, recent major bleed, recent major surgery, anaemia, haemorrhagic stroke, Age>80 years.**
NICE TA 420	**T:**	60mg	60mg bd	In combination with aspirin for preventing atherothrombotic events who had a myocardial infarction and who are at high risk of a further event as per NICE TA 420 TAG Recommendation: GP prescribable on request of specialist/consultant.
Clopidogrel and co-prescription with PPIs: MHRA statement (April 2010) "*Consider PPIs other than omeprazole or esomeprazole in patients* Locally we would recommend lansoprazole capsules 15-30mg daily or ranitidine 300mg twice daily http://www.mhra.gov.uk/Publications/Safetyguidance/DrugSafetyUpdate/CON076501				
2.12 Lipid-regulating drugs				
STATINS				
Lipid lowering drugs should only be prescribed with dietary and other lifestyle advice.				
NICE CG181 Lipid Modification				
NICE CG 87 Type 2 Diabetes: quick reference guide				
First Choice				
ATORVASTATIN	**T:**	10mg, 20mg, 40mg, 80mg **Not chewable tablets, 30mg or 60mg tablets (expensive choice)**	**Primary prevention:** 20 mg daily if 10% or greater 10-year risk of developing CVD.	See NICE CG 181 for CVD prevention in people with Diabetes and CKD.
			Secondary prevention: 80mg daily (unless drug interactions, adverse effects or patient preference)	Chewable tablets may be an option for patients who require a liquid preparation as a more cost effective alternative to simvastatin oral suspension.

Second Choice			
PRAVASTATIN	**T:** 10mg, 20mg, 40mg	Prevention of cardiovascular events. 40mg daily at night.	Use when simvastatin not tolerated, or patient taking drugs which interact with simvastatin
SIMVASTATIN	**T:** 10mg, 20mg, 40mg	Prevention of cardiovascular events. 20-40mg daily at night. Increase to 80mg daily if necessary.	Max of 10mg daily with ciclosporin, danazol, fibrate or lipid-lowering dose of nicotinic acid. Max 20mg daily with amiodarone, amlodipine or verapamil. Max 40mg daily with diltiazem.
FIBRATES			
FENOFIBRATE	**T:** 160mg	160mg daily	Tablets are cost effective choice. See BNF for indications.
BEZAFIBRATE	**T:** 200mg **MR T:** 400mg	T: 200mg three times daily MR T: 400mg daily	MR not appropriate in patients with renal impairment
Other Lipid Lowering Drugs			
EZETIMIBE	**T:** 10mg	10mg daily	For familial hypercholesterolaemia use only as per NICE TA 385 See Key Message Bulletin 25 - Ezetimibe.
Note that most of the benefit of statins is seen at standard doses			

Appendix One



Summary of antihypertensive drug treatment



- Use clinic blood pressure measurements to monitor the response to antihypertensive treatment with lifestyle modifications or drugs.
- Aim for a target clinic blood pressure below 140/90 mmHg in people aged under 80 years with treated hypertension.

Arden&GEM Commissioning Support Unit

Norfolk & Waveney Therapeutics Advisory Group (TAG) – July 2018

Summary of Guidance and Clinical Practice on the Use of Anti-platelets to prevent Occlusive Vascular Events

Therapeutics Advisory Group

Acute Coronary Syndrome ♥

*Patients having **PCI***

STEMI or NSTEMI

NNUH preference:
¤¤ Aspirin 75mg + **Ticagrelor** 90mg BD for 12 months, then aspirin alone thereafter.
Or
♥ Aspirin 75mg + **Clopidogrel** 75mg once daily for 12 months, then aspirin alone thereafter.
Or
§ Aspirin 75mg + **Prasugrel** 10mg (or 5mg) once daily 12 months, then aspirin alone thereafter.

STEMI or NSTEMI unsuitable for PCI, or patient given CABG

Aspirin 75mg + **Clopidogrel** for 12 months, then Aspirin alone thereafter.
♥ Aspirin should also be offered to people who have had an MI >12 months ago, and continued indefinitely.

If Aspirin contraindicated or not tolerated

Clopidogrel / Ticagrelor alone for agreed period.
(*§ Prasugrel may also be used for stent thrombosis within treatment period, or for intolerance to Clopidogrel.*)

At least 1 year and at most 2 years post Myocardial Infarction ¤

Patient at high risk of developing an atherothrombotic event – extended antiplatelet treatment deemed necessary

¤ Aspirin 75mg OD + **Ticagrelor** 60mg BD for up to 3 years or otherwise agreed with the cardiologist

Ischaemic Stroke / Transient Ischaemic Attack without paroxysmal or permanent AF ♦ ♠

Aspirin 300mg OD for 14 days, then **Clopidogrel** 75mg OD long term ♠

If Clopidogrel contraindicated (CI'd) or not tolerated

Aspirin 75mg plus MR Dipyridamole ♦

If Aspirin CI'd or not tolerated

MR Dipyridamole ♦

If Dipyridamole CI'd or not tolerated

Aspirin 75mg

Peripheral Arterial Disease (PAD) ♣

If ≥50 years old with single site disease

Aspirin 75mg

If the patient:
- *is <50 years old*
- *or has PAD in multiple vascular beds*
- *or is intolerant of aspirin*
- *or has suffered events whilst on aspirin*

Clopidogrel

Patients with PAD *and* infra-inguinal stent / stent graft

Aspirin plus Clopidogrel for 3 months, then monotherapy thereafter as per Vascular Surgeon's discharge letter (NNUH)

- ♥ NICE Clinical Guidelines 172 (MI -Secondary prevention (Nov 13) and 94 (Management of unstable angina and NSTEMI) refer to combined use of anti-platelet drugs.
- ¤¤ As per NICE TA 236 and local commissioning agreement with the NNUH (April 2013)
- § NICE TA 317 (July 2014) recommends prasugrel (with aspirin) as an option for preventing atherothrombotic events in adults with ACS having primary or delayed PCI. Prasugrel is also supported for patients who have been on aspirin + clopidogrel but who present with stent thrombosis within the 12 month treatment period, or who have true intolerance to clopidogrel. First month's treatment is supplied by the hospital.
- ¤ NICE TA 420 (Dec 2016) recommends ticagrelor (with aspirin) as an option for preventing atherothrombotic events in adults who have had a myocardial infarction and who are at high risk of a further event.
- ♦ NICE TA 210: MR dipyridamole for Acute Ischaemic Stroke or TIA is no longer limited to 2 years' use from the most recent event. **Liquid dipyridamole should not be used** due to a lack of evidence of effectiveness for this or any other immediate-release formulation.
- ♠ RCP National Clinical Guideline for Stroke 5th Edition Oct 2016 https://www.strokeaudit.org/SupportFiles/Documents/Guidelines/2016-National-Clinical-Guideline-for-Stroke-5t-(1).aspx
- ♣ NNUHFT Guideline for the Management of Peripheral Arterial Disease in Adults (March 2010)

Version 5.1 Supported by the TAG July 2018 Review due: July 2020