North East London
Barts Health NHS Trust
Homerton Healthcare NHS Foundation Trust
Barking, Havering and Redbridge University Hospitals NHS Trust

Direct Oral Anticoagulant (DOAC) Initiation and Monitoring Guidance Template in Non-Valvular Atrial Fibrillation (NVAF)

Document control	
Title	Direct Oral Anticoagulant (DOAC) initiation and monitoring guidance template in Non-Valvular Atrial Fibrillation (NVAF)
Version	1.0
Produced by	North East London Pharmacy and Medicines Optimisation Team
Approved by	North East London Formulary and Pathways Group (FPG)
Date approved	09/04/2024
Ratified by	North East London System Prescribing and Medicines Optimisation (SyPMO) Board
Date ratified	23/04/2024
Review date	23/04/2026

Revision history

Version	Date	Change
1.1 (minor revision)	04/11/2025	Rivaroxaban added as preferred DOAC

The purpose of this template is to guide healthcare professionals in primary care to safeguard patients NVAF who are being initiated on DOAC and to guide the monitoring of DOAC therapy for all therapeutic indications.

The aim is to ensure a consistent approach to this across North East London. This guidance was originally developed Pan-London by Haematology Specialists and it has been adapted by NHS North East London for local use.

This template guidance relates to **NVAF patients ONLY at initiation**: If the patient requires anticoagulation for any other indication, please refer to specialist anticoagulation services. DOAC monitoring guidance on page 4 applies to all indications.

1. Which Patients? Assess need and offer anticoagulation for:

- Non-Valvular AF/Atrial Flutter
- Offer anticoagulation where CHA_2DS_2-VASc ≥2 for both men and women (Consider anticoagulation when CHA_2DS_2-VASc score is ≥ 1 for men)
- A cardioversion/ablation procedure when advised by a cardiology specialist (*started regardless of CHA_2DS_2-VASc score. If the score is 0, patients do not require long term anticoagulation following the procedure*)

Note: Do not withhold anticoagulation solely because of a person's age or their risk of falls

2. Contraindications?

Do not treat & refer patient to specialist services when:

- Known intolerance or contraindication to anticoagulation
- Previous serious bleed (consider a lesion or condition that is a significant risk for major bleeding e.g. current or recent gastrointestinal ulceration, known or suspected oesophageal varices)
- Hepatic disease associated with coagulopathy
- Mechanical heart valve
- Transcatheter aortic valve implantation within last 3 months
- Mitral valve replacement or repair within last 3 months
- Known moderate to severe mitral stenosis (valvular AF)
- Active or underlying cancer
- Pregnant/breastfeeding or planning a pregnancy.
- Triple positive antiphospholipid syndrome (APLS)
- Under the age of 18 years old
- History of haemorrhagic stroke
- History of clinically significant bleeding
- Significant renal or liver disease
- Underlying haematological disorders

3. Assess for initiation of DOAC

Parameter	Action	When to refer
Actual Weight	-Measured within the last year	<50kg or >120kg
Creatinine Clearance (CrCl)	-Use MDCalc to calculate CrCl (Cockcroft-Gault) **DO NOT USE eGFR or ideal body weight for CrCl** **Refer to website for full guidance on calculating CrCl** -Review nephrotoxic medication if CrCl reduced: See Guidelines for Medicines Optimisation in Patients with acute kidney injury	-CrCl <15ml/min, <30ml/min for Dabigatran *(refer to Section 4 for more information)* -If CrCl >95ml/min (**use of edoxaban is cautioned**- consider alternative DOAC before referral) -Dialysis patients
Review blood results within the last month	-U&Es: serum creatinine (Cr) -FBC: haemoglobin (Hb), platelets -LFTs: AST/ALT, bilirubin -Clotting screen	-Hb low (<100g/l) with no identifiable cause -Platelets <100 units -ALT/AST >2 x ULN -Bilirubin >1.5 x ULN -Abnormal clotting screen
Bleeding Risk ORBIT score	-Calculate ORBIT bleeding risk score -Modify risk factors to reduce bleeding risk – e.g. controlling hypertension, assessing concurrent medication, addressing alcohol consumption, addressing reversible causes of anaemia	-Gastrointestinal/genitourinary bleed within 3 months -Intracranial haemorrhage within last 6 months -Severe menorrhagia -Known bleeding disorders -Known liver cirrhosis
Alcohol consumption	Aim < 8 units per week – counsel on bleeding risk	Known liver cirrhosis
Blood Pressure (BP) mmHg	Address uncontrolled hypertension- systolic BP >140mmHg	If SBP is >180mmHg same day review
Concurrent medications	-Antiplatelets: review course length and indication -NSAIDs: bleeding risk refer to SPS for further advice -Check for interactions -Refer to SPCs BNF, HIV Drug Interaction Checker -Consider ability of patient to swallow orally – refer to SPS for advice	-Dual Antiplatelet Therapy (DAPT) - cardiologist should specify time period for prescription post CVD event/intervention and confirm dose of anticoagulant -Antiplatelet co- prescribing should be avoided (unless advised by a specialist) -Contraindications/Interactions: ask pharmacist for advice

4. Choose DOAC (consider patient preference and lifestyle- adapt dosing as below)

SPC link	Apixaban (Preferred)	Edoxaban	Rivaroxaban (Preferred)	Dabigatran
Standard dose	5mg twice daily	60mg once daily	20mg once daily (with food)	150mg twice daily
Reduced dose	2.5mg twice daily	30mg once daily	15mg once daily (with food)	110mg twice daily
Criteria for reduced doses	CrCl 15-29ml/min **OR** ≥ 2 of • age ≥ 80yrs • weight ≤ 60kg • Cr ≥ 133µmol/L	≥1 of • weight ≤ 60kg • CrCl 15-50ml/min • on ciclosporin, dronedarone erythromycin, ketoconazole	CrCl 15-49ml/min	Any of • age ≥ 80 years • on verapamil *consider reduced dose for* • *reflux/gastritis* • *age 75-80years* • *CrCl 30-50ml/min* • *"Bleed Risk"*
Contra-indications	**CrCl <15ml/min**	**CrCl <15ml/min** (Caution CrCl > 95ml/min)	**CrCl <15ml/min**	**CrCl <30ml/min**
Compliance Aid	Compatible	Compatible	Compatible	**Not compatible**

5. Monitoring: For patients who DNA for monitoring, refer to practice repeat prescribing protocol

First Review (ideally after 1 month of therapy)	**Then MINIMUM YEARLY review** (more frequent renal, liver and haemoglobin monitoring if CrCl <60ml/min, age over 75 years and/or frail- see table 6 below)
• **Check for side effects** (refer to SPC for each DOAC- table 4) – seek advice and guidance from haematology clinic if present/a concern • **Check for bruising/bleeding** – refer for further investigation according to local pathways as indicated • **U&Es and FBC** – as specified by initiating clinic/secondary care and/or if indicated by a change to clinical state of patient: **Check CrCl** (and review DOAC dosing- see table 4) • **Check medication adherence**- refer to community pharmacist for NMS (New Medicines Service) and further support (refer to DOAC counselling checklist - appendix 1) • **Carries an anticoagulant alert card** • **Schedule repeat prescriptions and reviews**	• **Age** – check if DOAC dosage adjustment is required (see table 4) • **Weight** - check if DOAC dosage adjustment is required (see table 4) • **FBC** - investigate any Hb drop without an identifiable cause and if platelets <100 • **LFTs** – seek advice and guidance from haematology clinic if Bilirubin >1.5 ULN, AST/ALT >2 x ULN • **U&Es and CrCl** (as per table below)- check if DOAC dosage adjustment is required • **Interacting/new medications**- check if may affect DOAC dosing and set a review/course length date (seek advice from pharmacist as indicated) • **Check Dosage** – up/down titrate if necessary

6. Renal function monitoring frequency

Creatinine Clearance (CrCl) range (ml/min) and other factors to consider	**How often to check renal function?**
<15	**All DOACs are contraindicated,** refer to specialist (to consider warfarin)
15 – 30	3 monthly, consider referral to specialist (dabigatran contraindicated)▲
30 – 60	6 monthly
All patients who are aged >75 years and/or frail‡	4-6 monthly
>60	12 monthly

‡EHRA/ESC 2021 recommends 6 monthly renal, liver function (LFT) and haemoglobin (Hb) monitoring for elderly and frail patients. ▲Note previous trends if chronic kidney disease (CKD): More frequent monitoring may be needed in people with previous variable or erratic renal function, and less frequent monitoring may be needed for those with stable results: https://cks.nice.org.uk/chronic-kidney-disease For acute kidney injury (AKI) see: https://www.thinkkidneys.nhs.uk/aki/wp-content/uploads/sites/2/2016/03/Guidelines-for-Medicines-optimisation-in-patients-with-AKI-final.pdf

Appendix 1: DOAC in AF Counselling Checklist for DOAC initiation for Healthcare Professionals (HCP)

Apixaban, Dabigatran, Edoxaban, Rivaroxaban

DOAC Agent Counselled: ……

Counselling points (tailor specifics to your patient and record any queries or concerns in medical notes)	**HCP Sign:**
Explanation of an anticoagulant (increases clotting time and reduces risk of clot formation) **and explanation of atrial fibrillation** (including stroke risk reduction) - Information of DOAC therapy is available on the NHS DOAC document. - Please see Home - electronic medicines compendium (emc) for individual patient information leaflets of the DOAC agent.	
Differences between DOAC and warfarin *(if applicable for patients converting from warfarin to DOAC therapy or offering choice of anticoagulation agent)* • No routine INR monitoring • Fixed dosing • No dietary restrictions • Alcohol consumption – counsel patient on bleeding risk and aim for <8 units of alcohol/week • Fewer drug interactions	
Name of drug: generic	
Explanation of dose: strength & frequency **Please review prescribed dosage in line with recommendation in Section 4 above.*	
Duration of therapy: lifelong (unless risk: benefit of anticoagulation changes)	
Oral administration – rivaroxaban should be taken with food. Apixaban, dabigatran or edoxaban can be taken with or without food. For patients with swallowing difficulties apixaban, edoxaban and rivaroxaban may be crushed – refer to the summary of product characteristics for more information	
Missed doses: Message is to "take the dose as soon as you remember and then at the same time each day". For further information: • **Apixaban and dabigatran** can be taken within 6 hours of missed dose, otherwise omit the missed dose • **Edoxaban and rivaroxaban** can be taken within 12 hours of missed dose, otherwise omit the missed dose	
Extra doses taken: advise patient to obtain advice immediately from pharmacist/GP/NHS Direct (111) *It is recommended patient should temporarily stop DOAC and observe for any sign of bleedings.*	
Importance of adherence: short half-life and associated risk of stroke and/or thrombosis if patient is non-adherent	
Common and serious side-effects and who/when to refer: symptoms of bleeding/unexplained bruising. Avoidance of contact sports • Single/self-terminating bleeding episode – routine appointment with GP/pharmacist • Prolonged/recurrent/severe bleeding/head injury – A&E Major bleeds managed/reversed by supportive measures and Prothrombin Complex Concentrate (PCC). Antidotes: *Idarucizumab for dabigatran (NICE TA);* Andexanet alfa for GI bleed with apixaban/rivaroxaban	
Drug interactions and concomitant medication: avoid NSAID's. Always check with pharmacist regarding OTC/herbal/complimentary medicines	
Inform all healthcare professionals of DOAC therapy: GP, nurse, dentist, pharmacist i.e. prior to surgery, hospital admissions This includes recommending patient to carry the patient alert card at all time.	
Pregnancy and breastfeeding: potential risk to foetus – obtain medical advice as soon as possible if pregnant/considering pregnancy. Avoid in breastfeeding	
Storage: dabigatran must be kept in original packaging – moisture sensitive. All other DOAC's suitable for medication compliance aids if required	
Follow-up appointments, blood tests, and repeat prescriptions: where and when Record here: …… *It is recommended to set an alert or entry onto patient's clinical record for the next follow up reviews. 1st follow up after initiation recommended for 4 weeks after initiation*	
Issue relevant patient information AF booklet/leaflet and anticoagulant patient alert card (*For AC alert card supplies*- email: pcse.supplies-leeds@nhs.net	
Give patient opportunity to ask questions and refer patient to Community Pharmacy New Medicines Service - prescriber to write 'eligible for New Medicines Service' in a Pharmacy Message on the DOAC prescription item of the prescription form to encourage additional follow up with Community Pharmacist	

Resources For Healthcare Professionals

DOAC risk minimisation materials (prescribing guide) for Healthcare Professional from proprietary manufacturers

Apixaban	https://www.medicines.org.uk/emc/rmm/113/Document
Edoxaban	https://www.medicines.org.uk/emc/rmm/226/Document
Rivaroxaban	https://www.medicines.org.uk/emc/rmm/626/Document
Dabigatran	https://www.medicines.org.uk/emc/rmm/399/Document

Resources For Patients

DOAC information

NHS Direct Oral Anticoagulant (DOAC) Booklet	NHS Direct Anticoagulant Therapy Booklet

DOAC alert cards

Apixaban	https://www.medicines.org.uk/emc/rmm/112/Document
Edoxaban	https://www.medicines.org.uk/emc/rmm/227/Document
Rivaroxaban	https://www.medicines.org.uk/emc/rmm/2255/Document
Dabigatran	https://www.medicines.org.uk/emc/rmm/401/Document

Acknowledgement: Adapted from South East London ICB for use in North East London ICB